THE SCHOOL-ENTERPRISE COOPERATION OF HIGHER VOCATIONAL EDUCATION IN GUANGDONG PROVINCE

By

Mr. Deng BINCHU

A Thesis Submitted in Partial Fulfillment of the Requirements

for Doctor of Philosophy EDUCATIONAL ADMINISTRATION

Department of Educational Administration

Silpakorn University

Academic Year 2024

ความร่วมมือทางการศึกษาของระบบอาชีวศึกษาชั้นสูงในมณฑลกวางตุ้ง

โดย
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วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปรัชญาดุษฎีบัณฑิต
สาขาวิชาการบริหารการศึกษา แบบ 2.1
ภาควิชาการบริหารการศึกษา
มหาวิทยาลัยศิลปากร
ปีการศึกษา 2567

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Title	The School-Enterprise Cooperation of Higher Vocational Education in Guangdong Province
By	Mr. Deng BINCHU
Field of Study	EDUCATIONAL ADMINISTRATION
Advisor	Associate Professor Nuchnara Rattanasiraprapha, Ph.D.

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620630025 : Major EDUCATIONAL ADMINISTRATION
Keyword : School-Enterprise Cooperation of Higher Vocational Education/ Guangdong Province

Mr. Deng BINCHU : The School-Enterprise Cooperation of Higher Vocational Education in Guangdong Province Thesis advisor : Associate Professor Nuchnara Rattanasiraprapha, Ph.D.

This research objective was to discover the School-Enterprise Cooperation of Higher Vocational Education in Guangdong Province. The Ethnographic Futures Research technique was used to collect the research findings. Through purposive sampling, a jury of 17 experts with profound theories and rich practical experience in school-enterprise cooperation was selected. The research tool used to collect data was an unstructured interview. Based on the results of expert interviews, this study summarizes the dimensions on the school-enterprise cooperation of higher vocational education in Guangdong Province

The findings of the research were as following:

The School-Enterprise Cooperation of Higher Vocational Education in Guangdong Province consist of 10 dimensions 85 items: 1) Laws and regulations 2 items 2) Policy Support 4 items 3) Capital investment and resource allocation 9 items 4) Curriculum Setting and Teaching Reform 10 items 5) Teachers and professional training 10 items 6)Training base and practice platform 10 items 7) Employment guidance and career planning 10 items 8) Scientific research cooperation and technological innovation 10 items 9) Quality supervision and evaluation mechanism 10 items and 10) Information exchange and resource sharing 10 items. In order to further promote school-enterprise cooperation in Guangdong Province, the study puts forward a series of suggestions, including to improve laws and regulations, increase policy support, capital investment and resource allocation, develop curriculum setting and teaching reform, strengthen teaching staff and professional training, promote the establishment of training bases and practice platforms, enhance student employment guidance and career planning, strengthen scientific research cooperation and technological innovation, improve the quality supervision and evaluation mechanism, and establish an information exchange and resource sharing platform.

ACKNOWLEDGEMENTS

First and foremost, I would like to express my heartfelt gratitude to my primary advisor, Associate Professor Nuchnara Rattanasiraprapha, PhD. I appreciate her guidance and support throughout my doctoral studies. Her profound academic expertise and professional knowledge have provided invaluable guidance and inspiration. I am thankful for her patient and meticulous guidance in research design, data analysis, and thesis writing.

Simultaneously, I would like to extend my sincere thanks to my co-advisors, Associate Professor Prasert Intarak, E&D, and Associate Professor Sakdipan Tonwimonrat, Ph.D. I am grateful for the valuable advice and expertise they have contributed during my research process.

Furthermore, I want to express appreciation to the chairperson, Associate Professor Mattana Wangthanomsak, Ph.D. for her assistance during my doctoral project.

Lastly, I want to thank my family and all those who have shown care and encouragement throughout my academic and research journey. Their support and understanding have given me boundless motivation and courage.

I extend my deepest gratitude to all of you!

Deng BINCHU

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Chapter I

Introduction

Higher vocational education is an integral part of China's vocational education system and a crucial avenue for cultivating high-quality technical and skilled professionals. The development of high-level vocational education relies on comprehensive cooperation between schools and enterprises. As a guiding policy for national-level school-enterprise cooperation, the Ministry of Education and six other departments jointly issued the "Measures for Promoting School-Enterprise Cooperation in Vocational Schools" in February 2018. This document clearly outlines the promotion of in-depth cooperation between vocational schools and enterprises in terms of policies and funding. The "National Vocational Education Reform Implementation Plan" issued by the State Council in 2019 emphasized, under the guidance of promoting the integration of industry and education and the dual education of school and enterprise, that practical teaching hours in vocational schools should account for more than half of the total teaching hours, and on-the-job internship periods are generally six months. Half of the professional teachers should be double-qualified. It is evident that the government strongly supports vocational education policies.[1]

In recent years, with the development of China's economy and society, higher vocational education faces new challenges and opportunities. On the one hand, there is a growing demand in the economy for high-quality technical and skilled professionals, requiring higher vocational education to enhance the quality of talent cultivation to meet societal needs. On the other hand, higher vocational education faces challenges such as a mismatch between talent cultivation and corporate employment needs and an imperfect school-enterprise cooperation mechanism. It is necessary to further deepen cooperation between schools and enterprises to promote the improvement of talent cultivation quality. Therefore, establishing an

[1]State Council. (2019). Implementation Plan for National Vocational Education Reform.

effective mechanism for school-enterprise cooperation is an inherent requirement for the development of vocational education. It can be said that as long as there is vocational education, there is an inevitable need for cooperation between schools and enterprises.[2]

As one of the most developed regions in China, Guangdong Province requires a large number of practical and skilled talents. The higher vocational education in Guangdong Province has been committed to cultivating high-quality technical and applied talents that meet societal demands. The collaboration between higher vocational education institutions in Guangdong Province and enterprises is a strategic initiative aimed at strengthening the close relationship between schools and enterprises, dedicated to promoting the integration and development of education and industry. This collaborative mechanism seeks to deepen the interaction between schools and enterprises, share resources, facilitate knowledge transfer, and promote technological innovation to meet the increasingly complex and diverse industrial demands in Guangdong Province. The initiative not only focuses on theoretical knowledge cultivation for students but also emphasizes the development of practical operational skills to ensure that graduates can quickly adapt to workplace challenges. Through close collaboration with enterprises, higher vocational education can better reflect market demands and provide students with more practical and comprehensive vocational training, resulting in a win-win situation for school-enterprise cooperation and contributing to the sustained economic development of Guangdong Province. Against this backdrop, conducting an in-depth study on the collaboration between higher vocational schools and enterprises in Guangdong Province holds significant theoretical and practical significance. This research aims to comprehensively understand the situation of school-enterprise cooperation in higher vocational education in Guangdong Province, with the goal of providing valuable recommendations and insights for improving the effectiveness of such collaborations

[2]Zhang, J. Z. (2008). An Empirical Study on the Motivation of Enterprises to Participate in School-Enterprise Cooperation Education. *Higher Engineering Education Research,* 20.

and promoting the sustainable development of higher vocational education.

Significance of the study

The research topic on the school-enterprise cooperation in higher vocational education in Guangdong Province holds significant importance in various aspects. Firstly, it signifies progress and innovation within the higher vocational education system. Through in-depth exploration of the school-enterprise cooperation mechanism, a better understanding of current industry trends and corporate demands can be obtained, providing a scientific basis for optimizing professional programs, teaching content, and training methods.[3]

Secondly, this research topic aids in building closer relationships between educational institutions and enterprises, fostering a deep integration of academia, industry, and research. By devising cooperative plans, establishing shared training bases, and collaborating on research and development projects, universities and enterprises can mutually benefit, enhancing the practicality and adaptability of education.[4]

Furthermore, the significance of the research lies in providing students with more practical and market-oriented training experiences. Through innovative teaching models that closely align education with industry realities, students' practical skills and problem-solving abilities are cultivated, better preparing them for the challenges of the professional world.[5]

Ultimately, this research topic plays a positive role in advancing industrial upgrading, technological innovation, and the overall quality of higher vocational

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[3] Zhang, Y. J., Xu, Y. N., & Chu, J. H. (2008). A Review of the Research on School-Enterprise Cooperation in Higher Vocational Colleges in China. *Vocational Education Forum*, 12.

[4] Huo, L. J. (2009). Survey and Analysis of Enterprises' Willingness to Participate in School-Enterprise Cooperation. *Vocational and Technical Education*, 34.

[5] Li, M. Q., & Zhang, B. Z. (2011). A Review and Reflection on the System of School-Enterprise Cooperation in China. *Vocational and Technical Education*, 25.

education in Guangdong Province. It contributes to the creation of a modern economic system that emphasizes the synergistic development of industry and education.

Statements of the Problem

If we only focus on the development of some top vocational colleges and excellent students and the support of the government's macro policies for school-enterprise cooperation, it is obviously too early to conclude that China's vocational education has developed to a higher level and that vocational colleges and enterprises have achieved in-depth cooperation. there are still obvious problems in the field of school-enterprise cooperation in higher vocational education, including:

1. Insufficient depth and breadth of cooperation

This is mainly reflected in the following three aspects:

First, the content of school-enterprise cooperation is relatively simple. The functional view of higher vocational education mainly focuses on the training of high-tech talents, and there are few cases of all-round and multi-level cooperation between schools and enterprises. Second, the form of school-enterprise cooperation is relatively simple. At present, it mainly focuses on order cultivation, base construction and post internship. The proportion of students participating in other forms of cooperation is low, and various forms of school-enterprise cooperation modes need to be further explored. Third, the ways to obtain cooperation information are not rich enough. The main channels for enterprises to obtain relevant cooperation information are often limited to vocational colleges' active contact, enterprises' independent search, industry association recommendation, etc., while the main ways for higher vocational colleges to obtain cooperative enterprise information are only active search for enterprises. The role played by the government and industry associations in the communication between schools and enterprises to obtain information from both sides and the willingness to cooperate is very limited.[6]

[6]Zhao,G.Z.(2018).*Study on School-Enterprise Cooperation in Vocational Education*. *Shantou: Shantou University Press*.13-14

At present, the school-enterprise cooperation of higher vocational colleges in Guangdong province is still at a low level. Only 30% of enterprises believe that school-enterprise cooperation should be further carried out between the two sides in professional construction, and 70% of enterprises believe that the current "school-enterprise cooperation" is just a form without in-depth cooperation. The overall evaluation of school-enterprise cooperation in Guangdong province is also low, with only 10% enterprises saying "good".[7]

2. Interest demands are difficult to satisfy

(1) It is difficult to coordinate the interests of both sides in the cooperation. In the process of school-enterprise cooperation, it is difficult to coordinate the interests between higher vocational colleges and cooperative enterprises.

It is difficult to coordinate long-term and short-term benefits between schools and enterprises. In the process of school-enterprise cooperation, higher vocational colleges and cooperative enterprises carry out in-depth cooperation in personnel training, curriculum reform, practice and training base construction, professional teacher training and other aspects. Among them, higher vocational colleges and higher vocational students will receive obvious benefits in the short term. Through the reform and innovation of talent training mode, higher vocational colleges have cultivated a large number of excellent application-skilled talents for the society. Vocational college students can not only gain the growth of professional theoretical knowledge in school, but also get the practice of skills in the enterprise, their comprehensive quality and adaptability can be significantly improved, and finally may obtain valuable employment opportunities. The interests of the enterprises, on the other hand, have been generally reflect in order to obtain a stable source of human capital, although the benefits is itself the reality problem cannot be solved in the short term, but enterprise is still not willing to give up

[7]Yao,Q.Y.(2016). Problems and countermeasures of school-enterprise cooperation in Higher Vocational education in Guangdong province. *China Vocational and Technical Education.* 17-19.

immediate interests to make long-term investments in that part of the small and medium-sized enterprises have realized that even if the ideas in the significance of vocational education, They are not willing to cooperate with higher vocational colleges for a long time.[8]

(2) The interests of all parties are not satisfied. In the process of school-enterprise cooperation, enterprises aim at making profits, and economic interests are the main driving force to promote their participation in school-enterprise cooperation. Higher vocational colleges are based on the cultivation of talents, and the development of practice and training teaching is the fundamental reason to promote higher vocational colleges to participate in school-enterprise cooperation. Only when the demands of higher vocational colleges and cooperative enterprises can be satisfied to a certain extent can the cooperation between them be effectively developed and sustained. On the contrary, in the process of cooperation between the two parties, if their respective needs cannot be well satisfied, their own interests will be damaged, and conflicts will easily occur.[9]

In university-enterprise cooperation process, for example, if the higher vocational students as an intern for the enterprise, by its own professional ability insufficiency, the professional technology is not enough skilled problems caused by the accidental bodily injury, enterprises not only need to bear the cost of the huge, but also to undertake the social responsibility, moral responsibility and legal responsibility, so many enterprises in order to avoid the risk of such, Often unwilling to accept vocational college students into the factory internship.[10]

And, in some higher vocational colleges to enterprises to discuss

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[8] Zhao,G.Z.(2018).*Study on School-Enterprise Cooperation in Vocational Education*. *Shantou: Shantou University Press*.15-16

[9] Sun, X. L. (2015). An Analysis of the Influence of Enterprise Characteristics on Enterprises' Willingness to Participate in School-Enterprise Cooperation in Higher Vocational Colleges. *Vocational Education Communication*, 3.

[10] Zhao,G.Z. (2018).Study on School-Enterprise Cooperation in Vocational Education, 1st. *Shantou: Shantou University Press*,18-20.

matters relating to cooperation in running schools between colleges and enterprises are provide much money for schools and equipment support, care about how much is the enterprise can absorb internship students, rarely consider the business needs and interests, often take it for granted that this is the enterprise should shoulder social responsibility.

In such a cooperative environment, some enterprises with the ultimate goal of maximizing profits are not willing to integrate the educational function of vocational education into the value chain of enterprises, let alone take the initiative to undertake the training of applied skilled talents. School-enterprise cooperation involves many stakeholders. While studying the interests of schools and enterprises, we should not ignore the interests of students, teachers and other stakeholders.

3. The cooperation platform is not yet perfect.

At present, school-enterprise cooperation in higher vocational education is mostly temporary and phased. Only when enterprises have substantial employment demand and schools are faced with teaching practice tasks, relevant staff will have the idea of seeking cooperation outside and arrange it through temporary contact. From the point of view of schools, most of higher vocational colleges carry out school-enterprise cooperative education at the level of colleges and departments, and lack of school-level cooperative education platform; From the perspective of enterprises, there is no specialized organization in charge of cooperative education, most of which are carried out by the human resources department part-time or in the form of projects. Due to the lack of fixed exchange places, specialized organizations and continuous interactive platforms, especially the lack of clear cooperation norms and necessary cooperation funds, higher vocational colleges and enterprises have not set up a common cooperation organization, joint organization or management department. The lack of such interactive communication platform not only makes it difficult to achieve the integration of school-enterprise culture and complementary advantages of resources, but also to achieve the purpose of

expanding the depth and breadth of school-enterprise cooperation.[11]

4. The quality of cooperation needs to be improved.

School-enterprise cooperation in higher vocational education has rich connotation and shows various forms in reality, but practice and training is always the most important form. Therefore, the quality of school-enterprise cooperation in higher vocational education can be reflected from the quality of practice and training.

First, in terms of the number of internship students, the number of internship students accepted by enterprises is relatively small every year, and schools often take the initiative to contact enterprises for negotiations and provide a certain number of internship positions for students.From the practice arrangement, the enterprise will be more students used as production employees in jobs, less consider skills talents cultivation objective laws, mainly according to the needs of the production of the unit for students training, student practice mating rate is lower, and the students in higher vocational colleges want to arrange practice process, according to the specialties of not arranged according to production requirements, The problem of the low matching rate of students' internship has been highly concerned by the school. Third, in terms of student internships, enterprises rarely provide supporting funds. Higher vocational colleges and enterprises spend a lot of time and energy in the process of school-enterprise cooperative education, but the cooperation benefit is not obvious, there is still a big gap from the requirements of "cooperative education, cooperative education, cooperative employment, cooperative development".[12]

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[11] Zhao,G.Z.(2018).*Study on School-Enterprise Cooperation in Vocational Education*. *Shantou: Shantou University Press*.21-22

[12] Zhao,G.Z.(2018).*Study on School-Enterprise Cooperation in Vocational Education*. *Shantou: Shantou University Press*.23-26

Statistics show that 700,000 students graduate from higher vocational colleges every year without working as an intern in enterprises and public institutions, and 1.4 million students are engaged in so-called internships unrelated to their majors.[13]

To conduct this research has important theoretical significance and practical significance, theoretical significance is mainly based on stakeholder theory to definition, identification of university-enterprise cooperation between stakeholders, analysis the influence factors of university-enterprise cooperation, emphasis on "effective government intervention", the choice for the government intervention in vocational education degree of university-enterprise cooperation way, time, to provide theoretical basis. The practical significance is to provide empirical experience for vocational colleges to cultivate skilled personnel through school-enterprise cooperation so as to establish an effective school-enterprise cooperation mechanism.

Research Objective

To find the School-Enterprise Cooperation in higher vocational education of Guangdong Province.

Research Question

What are the School-Enterprise Cooperation in higher vocational education of Guangdong Province ?

Conceptual Framework

The researcher collected both the researchers at home and abroad related research, reports, journals and books, articles, through review and summarized the research achievements of scholars in China and other countries, further defined the problem of this study and sort out the train of thought, on the basis of constructing

[13]Mycos Company.(2016). Analysis of college students' practice.*Mycos Research*,49

theoretical models and put forward the research hypothesis, by the experts of the semi-structured interview method to collect and gather the opinions of the jury.

A. Principles, Concept, Theory of School-Enterprise Cooperation which were:

1. The Essence of Vocational Education

This paper introduces the concept of vocational education, the connotation of vocational education, the law of vocational education and the essence of vocational education, and gives a comprehensive consideration to the principle of vocational education.[14]

2. School-Enterprise Cooperation To Build a Future together

In 2014, Shen described the theory and concept of school-enterprise cooperation education in his book School-Enterprise Cooperation To Build a Future together: Theoretical and Practical Research on School-Enterprise Cooperation Education in Higher Vocational Colleges.[15]

3. Study on school-enterprise Cooperation in Vocational Education

This book takes school-enterprise cooperation in vocational education as the research object, mainly studies how to construct the effective system system of school-enterprise cooperation in vocational education. Specific include: review of university-enterprise cooperation development course in our country, through the investigation and study found that the main problems and causes, puts forward the countermeasures to solve the problem, in university-enterprise cooperation models and summarizes the university-enterprise cooperation successful cases abroad, on the basis of effectiveness factors: professional education system is put forward the

[14]Jiang,D.Y.(2017).The Essence of Vocational Education.*Beijing:Beijing Normal University Press*, 8.

[15]Sun,X.W.(2014).School-enterprise Cooperation building the Future together: Research on theory and Practice of School-enterprise Cooperation education in Higher Vocational Colleges, *Beijing:China Radio, Film and Television Press*, 20.

design idea and overall framework.[16]

4. Government and social capital cooperation (Public Private Partnership) model interpretation

This book sorts out the basic knowledge of PPP, and focuses on the basic understanding of PPP, mainly through diagrams, illustrations, cartoons and other bright color expression, from the understanding of PPP mode, PPP legal relations, how to operate PPP, PPP practical difficulties brief analysis, demonstration project introduction and other aspects.[17]

5. Public Private Partnership model and its entry - exit mechanism in higher vocational field

From the perspective of theoretical tracing and historical observation, this paper reveals the internal mechanism of PPP mode in higher vocational field and its own personality characteristics. From this point of view, the basic law of PPP mode mechanism operation in higher vocational field is explained.[18]

6. Strategic Management: Stakeholder Approach

The stakeholder theory was first systematically proposed by American scholar Freeman in strategic Management: An Analytical Approach to Stakeholder Management in 1984. It refers to the management activities conducted by enterprise managers to comprehensively balance the interest requirements of various stakeholders.[19]

7. Synergy theory

In 1971 Haken proposed the synergy theory, that is, in a complex system,

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[16]Zhao, G.Z.(2018). Study on School-Enterprise Cooperation in Vocational Education, 1st. *Shantou: Shantou University Press,2018*,6.

[17]Zheng,J.X.(2017).Interpretation of public-Private Partnership (PPP) Model.*Hunan: Hunan Fine Arts Publishing House*,2.

[18]Xiong,H.P.(2021). PPP mode and its operation of entry-exit mechanism in higher Vocational Field. *Zhejiang: Zhejiang University*, 2.

[19]Freeman,R.E.(2016).Strategic Management: Stakeholder Approach .*Shanghai: Shanghai Translation Publishing House*, 10.

coordination, cooperation and competition among various subsystems can form a new stable and orderly structure of the whole system, Finally, the effect of 1+1 is greater than 2.[20]

8. Skill Formation, School-firm Collaboration and Regional Innovation

This book adopts the perspective of institutional economics and political economy to discuss three major issues in the field of skill formation: central-local interaction, local government coordination of school-industry cooperation, and school-industry skill cooperation. The book proposes that the central government encourages local governments to invest in skills through fiscal adjustment, financial input and project system. By means of recognition, encouragement, coordination and participation, local governments have formed local property rights protection for school-enterprise cooperation at the regional level, which is regulated by regional endowment. Localized property rights protection mechanism and regional endowment regulation mechanism may promote the emergence of "Chinese model of skill cooperation innovation" as a social governance mode.[21]

9. Study on quality Evaluation System of Vocational Education

The development mode of vocational education is gradually changing from denotation to connotation, and the quality has gradually become the core problem of the development of vocational education, This book studies the basic problems of vocational education quality evaluation system.[22]

10. Study on long-term mechanism of school-enterprise Cooperation in Vocational Education

Content starting from the practical problems of vocational education cooperation between colleges and the external economic theory, stakeholder

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[20]Haken,H. (2005).Synergistics: The Mysteries of Natural Composition**,** *Shanghai: Shanghai Translation Publishing House*,11.

[21]Yang,P.(2020).Skill Formation, School-firm Collaboration and Regional Innovation**.** *Beijing: Social Sciences Academic Press*, 2.

[22]Zhou,Z.G.(2018).Study on quality Evaluation System of Vocational Education, *Beijing: Economic Science Press*, 10.

theory, the design theory of the mechanism of the new public service theory, under the guidance of teasing out the ten items prescribed by the state education cooperation tasks, put forward the construction of laws and regulations and the involvement of the allocation of resources to form a long-term mechanism, to build "a six eyes" university-enterprise cooperation governance mode and mechanism, Through the practice of the professional town industrial college of government, school and enterprise cooperation, it shows that the effect of the two levels of city, county (town) to intervene in the school-enterprise cooperation is obvious, and puts forward specific policies and suggestions.[23]

B. Related Research (National and International Researches)

There are many researches on school-enterprise cooperation at home and abroad. They pay attention to different problems, some pay attention to the connotation of school-enterprise cooperation, some pay attention to the model of school-enterprise cooperation, some pay attention to the influencing factors of school-enterprise cooperation, and some pay attention to the long-term mechanism of school-enterprise cooperation.

1. Research on the connotation of school-enterprise cooperation

The connotation research literature provides different perspectives and analyzes on the connotation of school-enterprise cooperation, which helps to deeply understand the motivations, conditions and challenges of school-enterprise cooperation.

Cai and Hallinger 's research explore school-enterprise cooperation in China and analyzes its scale, determinants and barriers from a teacher's perspective. The research reveals the meaning, motivations and benefits of school-enterprise cooperation, as well as the challenges and problems that exist in the Chinese

[23] Wu,J.X.(2016).Study on Long-term Mechanism of School-Enterprise Cooperation in Vocational Education**,** *Beijing: Science Press*.4.

context.[24] jiang& Fetters studied the conditions and process of cooperation between universities and enterprises. By systematically reviewing a large amount of research literature, the study summarized the connotation of school-enterprise cooperation and proposed the conditions and key processes required for successful cooperation.[25] Barnes et al.' research conducted an in-depth discussion on the definition of school-enterprise cooperation and positioned its goals from different perspectives.[26] Van&Rip's research analyzed school-enterprise cooperation cases in the field of membrane technology and explored the connotation behind school-enterprise cooperation. The research focuses on the development, innovation and application of membrane technology, and interprets the formation and evolution of school-enterprise cooperation from the perspective of social constructionism.[27]

2. Research on the benefits of school-enterprise cooperation

Research on the benefits of school-enterprise cooperation can help provide a deeper understanding of the positive impact of school-enterprise cooperation on innovation and economic development.

Hong and Liao conducted a systematic review and meta-analysis to explore the impact of school-enterprise cooperation on innovation outcomes. The study found that school-enterprise cooperation has a significant positive impact on

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[24] Cai,Y., & Hallinger,P. (2013). University–industry research collaboration in China: Scale, determinants, and obstacles from the perspective of faculty. *Research Policy, 42(3)*, 625-635.

[25] Jiang, S., & Fetters, M. L. (2017). Conditions and processes for university–industry collaborations: *A systematic review. R&D Management,* 47(3), 499-513.

[26] Barnes, T., Pashby, I., & Gibbons, A. (2002). Effective university–industry interaction: A multi-case evaluation of collaborative R&D projects. *European Management Journal, 20(3)*, 272-285.

[27] Van Lente, H., & Rip, A. (1998). The rise of membrane technology: From rhetorics to social reality. *Social Studies of Science*, 28(2), 221-254.

promoting innovation, improving R&D efficiency and creating economic value.[28] Taking Chinese listed companies as the research object, Zhao & Morgan explored the impact of school-enterprise cooperation on corporate innovation capabilities. The study found that companies closely related to school-enterprise cooperation are more innovative and able to realize the transformation and application of technology and knowledge.[29]

Koh& Park summarized the benefits of school-enterprise cooperation through a systematic evaluation of a large number of studies. Research has found that school-enterprise cooperation can jointly promote knowledge sharing and transfer, improve corporate competitiveness, and increase innovation and entrepreneurial opportunities.[30] Santoro's research emphasizes the impact of school-enterprise cooperation on students' employment competitiveness, laying the foundation for students' success in the workplace by providing practical experience.[31]

3. Research on the subject of school-enterprise cooperation

Research on different perspectives of school-enterprise cooperation entities will help to deeply understand different forms of school-enterprise cooperation and the roles they play.

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[28]Hong, J. C., & Liao, C. M. (2020). The Effects of University–Industry Collaboration on Innovation Outcomes: A Systematic Review and Meta-Analysis. *Research Policy, 49(1),* 103876.

[29] Zhao, Y., & Morgan, T. (2020). University–industry collaboration and firm innovativeness: Evidence from Chinese listed firms. *Journal of Business Research*, 112, 31-42.

[30]Koh,M.S.,&Park,J.W.(2016).University–industry collaboration: A systematic review. *Industrial Marketing Management*, 63, 88-100.

[31]Santoro,M.D.(2000).Success breeds success:The linkage between relationship intensity and tangible outcomes in industry-university collaborative ventures. *The Journal of High Technology Management Research*, 11(2), 255-273.

Meyer-Krahmer, F., & Schmoch, U. Research explores the different motivations and expectations of academic institutions and businesses for participating in school-industry collaborations.[32] Bruneel, J., D'Este, P., & Salter, explore the multiple roles of enterprises in school-enterprise cooperation, including fund providers, partners and technology transferors.[33]

Harryson, S., Kliknaite, S., & Dudkowski, R. explore how knowledge is transferred between academic institutions and businesses, and how both parties learn together through collaboration.[34]

Settanni, E., & Merli, R. analyzed entrepreneurial universities and entrepreneurial ecosystems in Italy, and discussed the characteristics and role of entrepreneurial universities as the main body of school-enterprise cooperation. The research focuses on entrepreneurial education, technological innovation and entrepreneurial culture, and summarizes the latest trends and future development directions of Italian entrepreneurial universities.[35]

[32]Meyer-Krahmer, F., & Schmoch, U. (1998). Science-based technologies: university-industry interactions in four fields. *Research Policy, 27(8),* 835-851.

[33]Bruneel, J., D'Este, P., & Salter, A. (2010). Investigating the factors that diminish the barriers to university–industry collaboration. *Research Policy*, 39(7), 858-868.

[34]Harryson, S., Kliknaite, S., & Dudkowski, R. (2007). Making innovative use of academic knowledge to enhance corporate technology innovation impact: A case study of leading technology firms in Japan and Europe. *R&D Management, 37(3)*, 259-278.

[35]Settanni,E.,&Merli,R.(2013).Entrepreneurial universities and entrepreneurship in Italy: *Recent trends. Technovation, 33(2)*, 76-92.

4. Research on the content of school-enterprise cooperation

Research on the content of school-enterprise cooperation is helpful to understand the content characteristics and influencing factors of school-enterprise cooperation.

Cui,Y and Calderon, A.D.'s research found that cooperation content usually involves technology and knowledge transformation, talent training, product and service innovation and other fields, and is also affected by factors such as social and economic environment and technical feasibility.[36]

The study by Grindatto, A., & Tsekouras, G. reviewed the research results of the past few decades and summarized the content and impact of school-enterprise cooperation. The literature classifies the content of cooperation, including research and development, talent training, technology transfer, market innovation, etc., and also analyzes the impact of school-enterprise cooperation on innovation and economic benefits.[37]

Hagedoorn explores how academic institutions and industry collaborate on research and development projects, and the benefits and challenges of such collaboration.[38]

Plewa describes how academic institutions and businesses design and implement joint training and education programs and provide students with practical

[36]Cui, Y., & Calderon, A. D. (2012). What motivates firms to engage in inter-organizational collaboration? The role of social, economic, and technological factors. *Journal of Technology Transfer,* 37(6), 849-869.

[37]Grindatto,A., & Tsekouras, G. (2020). Industry-University Collaboration and Innovation: A Review. *International Journal of Innovation and Technology Management*, 17(3), 2050031.

[38]Hagedoorn, J., Link, A. N., & Vonortas, N. S. (2000). Research partnerships. *Research Policy*, 29(4-5), 567-586.

work experience.[39]

5. Research on the model of school-enterprise cooperation

Research on different models of school-enterprise cooperation can help us understand and grasp the practice and characteristics of school-enterprise cooperation.

Wang,'s research constructed a taxonomy of school-enterprise cooperation models based on the transformation of scientific and technological achievements of Chinese universities. The study found that school-enterprise cooperation models mainly include several types such as technology acquisition, joint ventures, classification and transfer, and technology leasing, and the choices vary among different enterprise types and industries.[40]

Gupta reviewed the research results of the past few decades and summarized six models of school-enterprise cooperation: direct agreement, joint research and development, joint sales, industry-university-research cooperation, technology transfer and personnel mobility. The study analyzes the characteristics, advantages and disadvantages of these models and proposes an agenda for future research.[41]

Link et al. introduced how academic institutions and enterprises can cooperate to establish joint research centers to promote cooperation between the

[39]Plewa, C., Korff, N., Baaken, T., & Macpherson, G. (2013). University–industry linkage evolution: An empirical investigation of relational success factors. *R&D Management*, 43(4), 365-380.

[40]Wang, X., & Veugelers, R. (2017). A taxonomy of university spin-off firms in China: An empirical examination. *Journal of Technology Transfer*, 42(6), 1383-1410.

[41]Gupta, M., & Wong, Y. T. (2019). Understanding school–enterprise interactions: A critical review of models, frameworks and research agenda. *Technological Forecasting and Social Change*, 138, 337-351.

two parties in the fields of technology and research.[42] Plewa&Quester discussed how academic institutions and businesses can collaborate to provide students with industry-relevant education and training.[43]

6. Research on the evaluation of school-enterprise cooperation

Research on the evaluation of school-enterprise cooperation helps us evaluate the effect and value of school-enterprise cooperation.

Gu and Wang used bibliometric analysis methods to evaluate the performance of school-enterprise cooperation. Based on the paper citation data, the study analyzed the evaluation indicators of the influence, innovation level and international cooperation of the cooperation projects, and put forward suggestions for improving the evaluation system and methods.[44]

Adams et al.provides a quantitative method to evaluate the research output of collaborations between universities and industry.[45]

Cohen et al. studied the quality of university-industry collaboration and its impact on research output and knowledge transfer.[46]

Bruneel et al. proposed a comprehensive evaluation framework that

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[42] Link, A. N., Siegel, D. S., & Bozeman, B. (2007). An empirical analysis of the propensity of academics to engage in informal university technology transfer. *Industrial and Corporate Change*, 16(4), 641-655.

[43]Plewa, C., & Quester, P. (2007). Key drivers of university–industry relationships: The role of organisational compatibility and personal experience. *Journal of Services Marketing*, 21(5), 370-382.

[44]Gu,Q.,& Wang, Y. (2020). Evaluating university-industry collaboration performance: A bibliometric analysis. *Scientometrics,* 124(2), 1125-1151.

[45]Adams, J. D., Chiang, E. P., & Jensen, J. L. (2003). The influence of federal laboratory R&D on industrial research. *The Review of Economics and Statistics*, 85(4), 1003-1020.

[46]Cohen, W. M., Nelson, R. R., & Walsh, J. P. (2002). Links and impacts: The influence of public research on industrial R&D. *Management Science*, 48(1), 1-23.

combines quantitative and qualitative indicators to comprehensively evaluate the effectiveness of school-enterprise cooperation.[47]

7. Guarantee research on school-enterprise cooperation

Research on the guarantee of school-enterprise cooperation will help us understand and implement guarantee measures for school-enterprise cooperation.

Etzkowitz ei al. discussed the issue of ensuring school-enterprise cooperation and put forward the perspective of "from ivory tower to entrepreneurial paradigm". The study emphasizes the role of universities as platforms for innovation and cooperation, and advocates measures such as implementing intellectual property policies and establishing good cooperation mechanisms and incentive mechanisms to ensure the smooth progress of school-enterprise cooperation.[48]

Toivonen&Tuominen discussed the importance of building trust in school-enterprise cooperation through communication. The study found that effective communication can increase the understanding and transparency of all parties, strengthen the trust relationship between partners, and put forward suggestions for improving communication, such as establishing regular meetings, open communication platforms, etc.[49]

Perkmann& Walsh discussed the risks that may arise in school-enterprise

[47]Bruneel, J., D'Este, P., & Salter, A. (2010). Investigating the factors that diminish the barriers to university–industry collaboration. *Research Policy*, 39(7), 858-868.

[48]Etzkowitz, H., Webster, A., Gebhardt, C., & Cantisano Terra, B. R. (2000). The future of the university and the university of the future: Evolution of ivory tower to entrepreneurial paradigm. *Research Policy,* 29(2), 313-330.

[49]Toivonen, M. M., & Tuominen, T. (2009). Building trust through communication in university–industry-government collaboration. *Industrial Marketing Management*, 38(7), 732-742.

cooperation and proposed corresponding management strategies.[50]

Bruneel ei al. analyzed how to fairly allocate resources in cooperation to ensure that the interests of both parties are protected.[51]

8. Research on the laws and regulations of school-enterprise cooperation

The study of laws and regulations on school-enterprise cooperation helps us understand and avoid the legal risks of school-enterprise cooperation, and provides researchers with a comprehensive perspective on in-depth understanding of laws and regulations in school-enterprise cooperation.

Wang and Gu analyzed China's legal framework supporting school-enterprise cooperation. The study found that China's laws and regulations such as intellectual property law, contract law and preferential tax policies provide basic guarantees and encouragement for school-enterprise cooperation, but there are still problems of legal restrictions and insufficient explanations. It is proposed to strengthen policy implementation and intellectual property protection. suggestions.[52]

Gao ei al. discussed the legal risks and response strategies in the process of school-enterprise cooperation in China. The study found that the laws, regulations and risks involved in cooperation agreements, intellectual property rights,

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[50]Perkmann, M., & Walsh, K. (2007). University–industry relationships and open innovation: Towards a research agenda. *International Journal of Management Reviews,* 9(4), 259-280.

[51]Bruneel, J., D'Este, P., & Salter, A. (2010). Investigating the factors that diminish the barriers to university–industry collaboration. *Research Policy,* 39(7), 858-868.

[52]Wang,Y.,&Gu,Q.(2016). Legal support for university–industry collaboration in China. *Journal of Technology Transfer, 41(3)*, 376-389.

commercial confidentiality and other issues need to be fully considered and avoided, and suggestions were put forward to build a legal and compliant school-enterprise cooperation structure and risk management mechanism.[53]

Shane discussed how to ensure the rights and interests of both parties in the cooperation through contractual and legal means.[54]

Hagedoorn ei al.studied how to ensure that various terms in school-enterprise cooperation are properly implemented through contract law.[55]

9. Research on the influencing factors of school-enterprise cooperation

Research on the influencing factors of school-enterprise cooperation helps us understand and grasp the key influencing factors and development trends of school-enterprise cooperation

Gu and Wang explores the environmental factors and impacts of school-enterprise cooperation in China. The study found that industry characteristics, regional resources and policy environment have an important impact on school-enterprise cooperation, and put forward suggestions such as strengthening government support, promoting resource sharing and integration, and improving evaluation indicators.[56]

Ankrah and AL-Tabbaa explores how organizational culture affects

[53]Gao, H., Liang, J., & Luo, J. (2019). Legal risks and solutions in university-industry research cooperation in China. *Frontiers of Law in China, 14(2),* 305-324.

[54]Shane,S.(2002).Selling university technology: Patterns from MIT. *Management Science, 48(1),* 122-137.

[55]Hagedoorn, J., Link, A. N., & Vonortas, N. S. (2000). Research partnerships. *Research Policy, 29(4-5)*, 567-586.

[56]Gu,Q.,&Wang,Y.(2018). Exploring the environmental factors influencing university–industry research cooperation in China: A three-level analysis. *Journal of Cleaner Production, 201*, 597-611.

partnerships between schools and businesses.[57]

D'Este and Patel studied how economic factors influence the willingness of universities and businesses to collaborate.[58] Mowery ei al.analyzed how different policy environments promote or restrict school-enterprise cooperation.[59]

10. Research on the problems of school-enterprise cooperation

The analysis and review of existing problems in school-enterprise cooperation will help us understand and solve the problems and challenges existing in school-enterprise cooperation.

Wang and Zhang discussed existing problems and countermeasures in school-enterprise cooperation in China. The study found that problems such as inflexible school-enterprise cooperation models, talent flow and intellectual property issues, and imperfect risk control mechanisms are bottlenecks that restrict the development of school-enterprise cooperation. It also proposed solutions to build an innovation ecosystem, improve cooperation mechanisms, and strengthen legal protection. measure.[60]

Bruneel ei al. explores the clash of cultures and values that can arise in

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[57]Ankrah, S., & AL-Tabbaa, O. (2015). Universities–industry collaboration: A systematic review. *Scandinavian Journal of Management, 31(3)*, 387-408.

[58]D'Este, P., & Patel, P. (2007). University–industry linkages in the UK: What are the factors underlying the variety of interactions with industry? *Research Policy, 36(9),* 1295-1313.

[59]Mowery, D. C., Nelson, R. R., Sampat, B. N., & Ziedonis, A. A. (2004). Ivory tower and industrial innovation: University-industry technology transfer before and after the Bayh-Dole Act. *Stanford University Press.*

[60]Wang,X.,& Zhang,Y. (2019). A study on the problems and countermeasures of university-enterprise cooperation in China. *International Journal of Emerging Technologies in Learning (iJET), 14(21)*, 37-50.

collaborations between schools and businesses.[61]

Perkmann ei al. analyzed the potential conflict between schools pursuing long-term academic goals and companies pursuing short-term financial returns.[62]

Bekkers and Bodas believes that how schools and businesses allocate resources in a partnership may lead to dissatisfaction on one or both sides.[63]

C. Research on the Ethnographic Future Research (EFR)

Ethnographic Futures Research (EFR) was invented by R. B. Textor in 1976. EFR is a participatory research method that aims to explore and record the various possibilities and expectations of the future by interacting with sample groups in a social and cultural context. This article elaborates on the theoretical basis, methodological steps and practical application cases of EFR. Through interviews and scenario analysis, researchers construct a variety of future scenarios, analyze and interpret them, and help understand the diversity and uncertainty of the future.[64]

Mitchell used the Ethnographic Futures Research (EFR) method to explore the future of the digital divide. Through the EFR method, researchers can gain in-depth understanding of people's expectations and concerns about the future application and impact of digital technology in different cultural contexts. The article describes

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[61]Bruneel, J., D'Este, P., & Salter, A. (2010). Investigating the factors that diminish the barriers to university–industry collaboration. *Research Policy, 39(7)*, 858-868.

[62]Perkmann, M., Tartari, V., McKelvey, M., Autio, E., Broström, A., D'Este, P., ... & Krabel, S. (2013). Academic engagement and commercialisation: A review of the literature on university–industry relations. *Research Policy, 42(2)*, 423-442.

[63]Bekkers, R., &Bodas Freitas, I. M. (2008). Analysing knowledge transfer channels between universities and industry: To what degree do sectors also matter? *Research Policy, 37(10),* 1837-1853.

[64] Textor, R. B. (1995). The ethnographic futures research method. *Futures, 27(5),* 507-521.

in detail the implementation steps of EFR, including interview design, data collection and scenario analysis, and presents multiple possible scenarios for the future development of the digital divide obtained through these methods. Mitchell concluded that understanding these scenarios can help to formulate more inclusive and effective digital technology policies.[65]

Facer explores how to use the Ethnographic Futures Research (EFR) method to work with indigenous communities to develop sustainability indicators. Through participatory research, researchers and community members explore multiple possibilities for the future, helping to identify and evaluate sustainable development strategies that are suitable for the community. The article describes the implementation process and case analysis of EFR in detail, demonstrating its practical application in indigenous communities.[66]

MacDonald and Willox discuss the future research method in anticipatory anthropology. This method combines applied anthropology and future research, aiming to improve the quality of human life in the future by systematically incorporating future dimensions into social and cultural research. The article describes in detail the philosophical foundations, theoretical frameworks, and methodology of anticipatory anthropology, showing how to predict and plan for the future by studying human experience, helping people better cope with future uncertainties.[67]

These data were used to be a conceptual framework of this research as shown in Figure 1 below.

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[65] Mitchell, M. M. (2002). Exploring the future of the digital divide through ethnographic futures research. *First Monday*, 7(8).

[66]Facer, K. (2021). Ethnographic futures research as a method for working with Indigenous communities to develop sustainability indicators. *ResearchGate.*

[67]MacDonald, D. H., & Willox, A. C. (2020). Futures research in anticipatory anthropology. *Oxford Research Encyclopedia of Anthropology.*

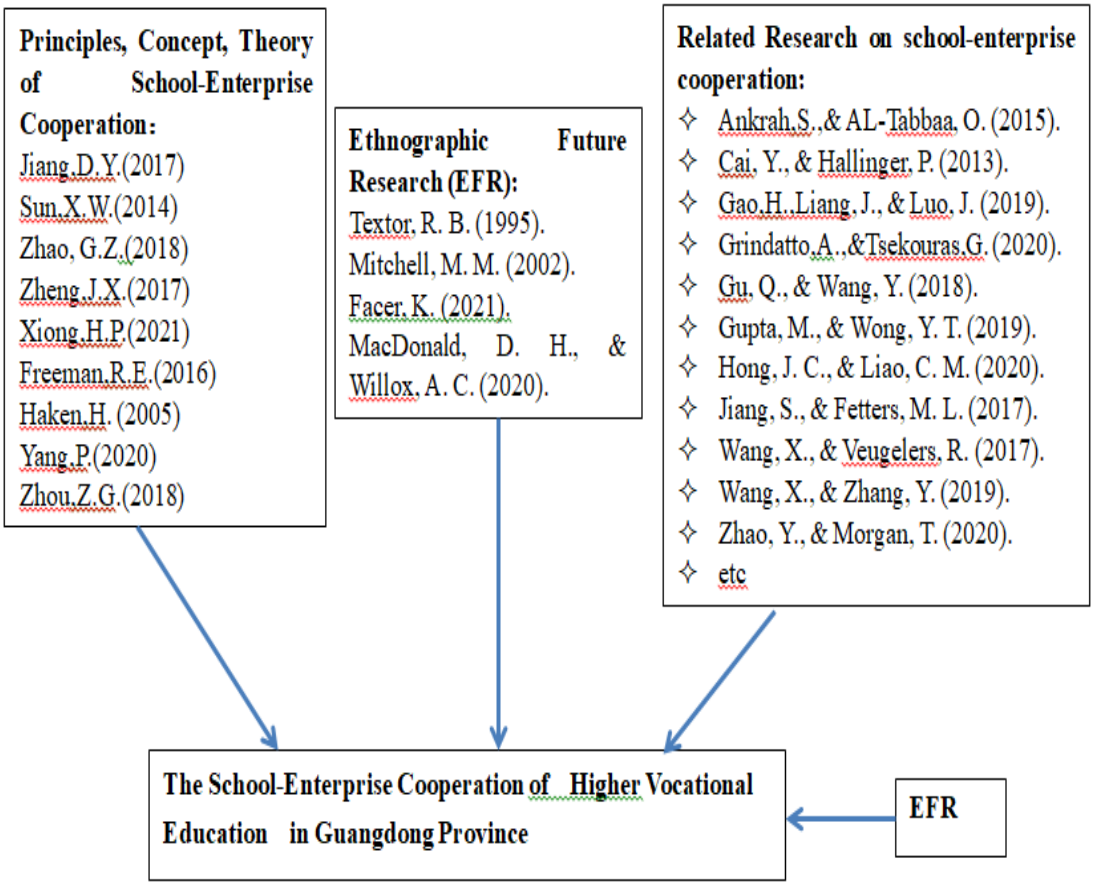

Figure 1 Conceptual Framework

Adams, J. D., Chiang, E. P., & Jensen, J. L. (2003). The influence of federal laboratory R&D on industrial research. *The Review of Economics and Statistics, 85(4)*, 1003-1020.

Ankrah, S., & AL-Tabbaa, O. (2015). Universities–industry collaboration: A systematic review. *Scandinavian Journal of Management, 31(3)*, 387-408.

Barnes, T., Pashby, I., & Gibbons, A. (2002). Effective university–industry interaction: A multi-case evaluation of collaborative R&D projects. *European Management Journal, 20(3)*, 272-285.

Bekkers, R., & Bodas Freitas, I. M. (2008). Analysing knowledge transfer channels between universities and industry: To what degree do sectors also matter?

Research Policy, 37(10), 1837-1853.

Bruneel, J., D'Este, P., & Salter, A. (2010). Investigating the factors that diminish the barriers to university–industry collaboration. *Research Policy, 39(7)*, 858-868.

Bruneel, J., D'Este, P., & Salter, A. (2010). Investigating the factors that diminish the barriers to university–industry collaboration. *Research Policy, 39(7)*, 858-868.

Bruneel, J., D'Este, P., & Salter, A. (2010). Investigating the factors that diminish the barriers to university–industry collaboration. Research Policy, 39(7), 858-868.

Bruneel, J., D'Este, P., & Salter, A. (2010). Investigating the factors that diminish the barriers to university–industry collaboration. Research Policy, 39(7), 858-868.

Cai, Y., & Hallinger, P. (2013). University–industry research collaboration in China: Scale, determinants, and obstacles from the perspective of faculty. *Research Policy, 42(3)*, 625-635.

Cohen, W. M., Nelson, R. R., & Walsh, J. P. (2002). Links and impacts: The influence of public research on industrial R&D. *Management Science, 48(1)*, 1-23.

Cui, Y., & Calderon, A. D. (2012). What motivates firms to engage in inter-organizational collaboration? The role of social, economic, and technological factors. *Journal of Technology Transfer, 37(6)*, 849-869.

Dayuan Jiang,The Essence of Vocational Education *(Beijing :Beijing Normal University Press,2017)*, 8.

D'Este, P., & Patel, P. (2007). University–industry linkages in the UK: What are the factors underlying the variety of interactions with industry? *Research Policy, 36(9),* 1295-1313.

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Gao, H., Liang, J., & Luo, J. (2019). Legal risks and solutions in university-industry research cooperation in China. *Frontiers of Law in China, 14(2)*, 305-324.

Grindatto, A., & Tsekouras, G. (2020). Industry-University Collaboration and Innovation: A Review. *International Journal of Innovation and Technology Management, 17(3)*, 2050031.

Gu, Q., & Wang, Y. (2018). Exploring the environmental factors influencing university–industry research cooperation in China: A three-level analysis. *Journal of Cleaner Production, 201,* 597-611.

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Zhao,G.Q.(2018).Study on School-Enterprise Cooperation in Vocational Education, 1st ed. *Shantou: Shantou University Press*,6

Gupta, M., & Wong, Y. T. (2019). Understanding university–industry interactions: A critical review of models, frameworks and research agenda. *Technological Forecasting and Social Change, 138*, 337-351.

Hagedoorn, J., Link, A. N., & Vonortas, N. S. (2000). Research partnerships. *Research Policy, 29(4-5)*, 567-586.

Hagedoorn, J., Link, A. N., & Vonortas, N. S. (2000). Research partnerships. *Research Policy, 29(4-5)*, 567-586.

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Harryson, S., Kliknaite, S., & Dudkowski, R. (2007). Making innovative use of academic knowledge to enhance corporate technology innovation impact: A case study of leading technology firms in Japan and Europe. *R&D Management, 37(3)*, 259-278.

Hong, J. C., & Liao, C. M. (2020). The Effects of University–Industry Collaboration on Innovation Outcomes: A Systematic Review and Meta-Analysis. *Research Policy, 49(1)*, 103876.

Xiong,H.P.(2021).PPP mode and its operation of entry-exit mechanism in higher Vocational Field**.***Zhejiang: Zhejiang University*, 2

Jiang, S., & Fetters, M. L. (2017). Conditions and processes for university–

industry collaborations: A systematic review. *R&D Management, 47(3)*, 499-513.

Zheng,J.X.(2017) Interpretation of public-Private Partnership (PPP) Model *Hunan: Hunan Fine Arts Publishing House*,2

Wu,J.X.(2016),Study on Long-term Mechanism of School-Enterprise Cooperation in Vocational Education.*Beijing: Science Press*.4

Koh, M. S., & Park, J. W. (2016). University–industry collaboration: A systematic review. *Industrial Marketing Management, 63*, 88-100.

Link, A. N., Siegel, D. S., & Bozeman, B. (2007). An empirical analysis of the propensity of academics to engage in informal university technology transfer. *Industrial and Corporate Change, 16(4),* 641-655.

Meyer-Krahmer, F., & Schmoch, U. (1998). Science-based technologies: university-industry interactions in four fields. *Research Policy, 27(8)*, 835-851.

Mowery, D. C., Nelson, R. R., Sampat, B. N., & Ziedonis, A. A. (2004). Ivory tower and industrial innovation: University-industry technology transfer before and after the Bayh-Dole Act. *Stanford University Press*.

Perkmann, M., & Walsh, K. (2007). University–industry relationships and open innovation: Towards a research agenda. *International Journal of Management Reviews, 9(4)*, 259-280.

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Plewa, C., Korff, N., Baaken, T., & Macpherson, G. (2013). University–industry linkage evolution: An empirical investigation of relational success factors. *R&D Management, 43(4)*, 365-380.

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Santoro, M. D. (2000). Success breeds success: The linkage between relationship intensity and tangible outcomes in industry-university collaborative

ventures. *The Journal of High Technology Management Research, 11(2)*, 255-273.

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Toivonen, M. M., & Tuominen, T. (2009). Building trust through communication in university–industry-government collaboration. *Industrial Marketing Management, 38(7)*, 732-742. T

Van Lente, H., & Rip, A. (1998). The rise of membrane technology: From rhetorics to social reality. *Social Studies of Science, 28(2)*, 221-254.

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Wang, Y., & Gu, Q. (2016). Legal support for university–industry collaboration in China. *Journal of Technology Transfer, 41(3)*, 376-389.

Shen,X.W.(2014) School-enterprise Cooperation building the Future together: Research on theory and Practice of School-enterprise Cooperation education in Higher Vocational Colleges, *Beijing: China Radio, Film and Television Press,* 20.

Zhao, Y., & Morgan, T. (2020). University–industry collaboration and firm innovativeness: Evidence from Chinese listed firms. *Journal of Business Research, 112*, 31-42.

Zhou,Z.G.(2018).Study on quality Evaluation System of Vocational Education, *Beijing:Economic Science Press,*10.

Definition of terms

Ethnographic Future Research (EFR) is a participatory research method first proposed by Textor in 1976. It aims to explore multiple possibilities for the future through interaction with research subjects. EFR is particularly suitable for socio-cultural research. Through interviews and discussions, EFR can obtain participants' ideas and expectations about future scenarios.

School-Enterprise Cooperation is the vocational education activities jointly carried out by vocational schools and enterprises in the process of cultivating skilled talents, including cooperative education, cooperative employment, cooperative research and development, and the mode of realizing vocational education jointly based on interests. The two sides take specialized use of skilled human capital as the common goal, realize the operation mechanism of achievement sharing and risk sharing, realize resource complementarity and win-win cooperation of vocational education.

Higher vocational education is the education that gives students the knowledge and skills they need to engage in a certain occupation or production and labor. Higher vocational education belongs to the higher education level of vocational education and is an important part of higher education. It aims to cultivate students with certain theoretical knowledge and strong practical ability. The purpose of vocational education is to provide practical and skilled senior applied talents for grassroots, production, service and management positions.

Higher Vocational Education in Guangdong Province are vocational schools that held in Guangdong Province, including public and private vocational schools funded by the government, vocational schools invested by investors, and the number of undergraduate and junior college students in Guangdong's higher vocational education in 2019 was 894,200, of which the number of full-time higher vocational school students (including junior colleges) was 802,200.

Chapter Ⅱ

Related Literature Review

In order to deeply explore school-enterprise cooperation in higher vocational education in Guangdong, China, this chapter will conduct a comprehensive review of relevant literature and theories. First, the basic knowledge of school-enterprise cooperation will be introduced. Then, the researcher will discuss in depth the three major theories closely related to school-enterprise cooperation: PPP (Public-Private Partnership) theory, stakeholder theory and multi-party collaboration theory. At the same time, the researcher will introduce the use of this study. The method is EFR (ethnographic future research) theory. These theories provide a profound theoretical foundation and framework guidance for the cooperation between higher vocational education and enterprises, build a complete and systematic theoretical framework, and provide a solid theory for subsequent research and analysis.

Knowledge of School-Enterprise Co-operation

Definition of school-enterprise cooperation

The term "school-enterprise cooperative education" first appeared in the United States at the beginning of the 20th century. In 1906, Cincinnati University put forward the first cooperative education plan, which implemented vocational education for 27 technical students.[68] The Morell Act, the first federal legislation related to vocational education in history.

In China, school-enterprise cooperation first appears as a policy concept. The Decision on Vigorously Developing Vocational Education issued by The State Council in 2005 pointed out that "vocational education should reform the traditional talent training mode centered on schools and classrooms, and vigorously promote the

[68]O.Y. Yuan and Y. J. Zhang, (2015) “Comparative study of school-enterprise cooperation in Higher vocational education between China and Foreign countries.” ***Education and Occupation***, 27-29.

training mode combining work with study and school-enterprise cooperation."[69]

In 2010, the Outline of The National Medium - and Long-term Education Reform and Development Program (2010-2020) clearly stated that it is necessary to establish and improve the government-led, industry-guided, and enterprise-participated school-running mechanism, formulate regulations to promote school-enterprise cooperation in running schools, and promote the institutionalization of school-enterprise cooperation. According to the Measures for Promoting School-Enterprise Cooperation in Vocational Schools issued by the Ministry of Education and other six departments in 2018, school-enterprise cooperation refers to cooperative activities carried out by vocational schools and enterprises through joint education, cooperative research, joint establishment of institutions and sharing of resources.[70]

The connotation of school-enterprise cooperation includes broad sense and narrow sense. University-enterprise cooperation in a broad sense refers to university-enterprise cooperation and work-study combination. It is the cooperation between higher vocational colleges and related enterprises or industries on the principle of equality and mutual benefit to complement each other's advantages, and also a combination of educational resources of schools and various resources of enterprises.

This combination requires that the school set up classes in enterprises so that students can learn in the process of enterprise production and operation. On the other hand, enterprises regard students as formal employees, manage and assess them according to the requirements of enterprises, and train applied talents suitable for the needs of enterprises or industries as the main goal of education mode. The

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[69]State Council. (2005). Decision of the State Council on Vigorously Developing Vocational Education. *Retrieved from https://www.gov.cn/zwgk/2005-11/09/content_94296.htm*

[70]Ministry of Education and Five Other Departments. (2018). Measures for Promoting School-Enterprise Cooperation in Vocational Schools. *Retrieved from http://www.moe.gov.cn/srcsite/A07/s7055/201802/t20180214_327467.html*

emphasis of the broad school-enterprise cooperation is to emphasize the organic combination of schools and enterprises.

School-enterprise cooperation in the narrow sense is a kind of operation mechanism oriented by market and social demand, and it is the cooperation of schools and enterprises to jointly cultivate talents. It focuses on students' overall quality, comprehensive ability and employment competitiveness. It utilizes two different educational environments and resources of schools and enterprises, and adopts the method of combining classroom teaching with practical operation to cultivate applied talents to meet the needs of different employers.

In the narrow sense, researchers of school-enterprise cooperation emphasize the leading role of schools in university-industry cooperation, that is, how schools formulate teaching objectives, teaching plans and curriculum setting. However, both definitions reveal the goals of university-industry cooperation at different levels and point out different research directions.[71]

To sum up, the concept of school-enterprise cooperation in this study is defined as follows: School-enterprise cooperation is the vocational education activities jointly carried out by vocational schools and enterprises in the process of cultivating skilled talents, including cooperative education, cooperative employment, cooperative research and development, and the mode of realizing vocational education jointly based on interests. The two sides take specialized use of skilled human capital as the common goal, realize the operation mechanism of achievement sharing and risk sharing, realize resource complementarity and win-win cooperation of vocational education.

Benefit of school-enterprise cooperation

School-enterprise cooperation is the internal need of vocational education and the objective demand of economic development, which is beneficial to all parties: (1) for vocational schools, talent training is the key to the sustainable

[71]Yang, Y. X. (2022). Research on the Talent Training Model and Development of School-Enterprise Cooperation. *Jilin Publishing Group Co., Ltd*.22-30

development of schools. School-enterprise cooperation is conducive to the improvement of school running strength and the level of teachers; (2) For enterprises, obtaining high-level talents is the key to the development of enterprises. Through school-enterprise cooperation, enterprises can obtain the latest technological trends, obtain excellent technical talents needed by enterprises, improve the quality of human resources, and thus enhance the core competitiveness of enterprises; (3) For the government, effective university-enterprise cooperation is beneficial to economic development and regional economic transformation, enhancing economic strength, and is the engine and secret weapon of economic take-off; (4) For the society, school-enterprise cooperation is an important public welfare undertaking, which can give full play to the optimization of their respective resources and create greater social and economic benefits; (5) For students, through school-enterprise cooperation, professional knowledge can be put into practice in the actual work positions of enterprises, which improves students' career adaptability and lays a foundation for their career development.[72]

School-enterprise cooperation subjects

School-enterprise cooperation adopts a cooperation mechanism of school-enterprise leading, government promotion, industry guidance and school-enterprise cooperation. Therefore, the main cooperative subjects include higher vocational colleges, industrial enterprises and the government.[73]

1. Higher vocational colleges

The important role of higher vocational colleges in school-enterprise cooperation is mainly reflected in two aspects: imparting basic technical theoretical knowledge to students and cultivating technical and skilled talents.

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[72]Zheng, Y. (2020). "Exploration of talent training models through university-enterprise cooperation in higher education under the new era." **Higher Architectural Education**, 29(3), 45-52.

[73]Ministry of Education. (2018). "Regulations on the Promotion of School-Enterprise Cooperation in Vocational Schools." Retrieved from http://www.moe.gov.cn/srcsite/A07/s7055/201802/t20180214_327467.html

First of all, higher vocational colleges are responsible for the implementation of technical skills education for students, the school through the theoretical knowledge of technical skills to students, to lay a foundation for production practice teaching. If students do not receive solid basic theoretical knowledge training and lack necessary cognition of basic theoretical knowledge, it is impossible for them to play their due role in professional posts, let alone achieve the goal of technological innovation. This will directly affect the confidence of enterprises on the output talents of higher vocational colleges, and school-enterprise cooperation cannot achieve ideal results.

Secondly, fundamentally speaking, higher vocational education is a form of education that contains both higher education and vocational education. Paying attention to the all-round development of students is not only the origin of higher education, but also the educational purpose of vocational education. As the combination of these two educational elements, higher vocational education also pays attention to the all-round development of students. In addition to imparting basic theoretical knowledge and professional knowledge to students, emphasis is placed on cultivating students' practical operation and skill application ability, and also focuses on strengthening the training of students' basic technical accomplishment and professional ethics. In the process of school-enterprise cooperation in higher vocational education, the comprehensive quality of talents becomes the prerequisite for both sides to consider whether to cooperate or not.[74]

2. Industry enterprise

Industry and enterprise are the social foundation for the survival and development of higher vocational education. Industry is engaged in the same nature of production in the national economy or other economic and social business units, individual organizational structure system. An enterprise is a legal entity facing the

[74]Li, M. (2019). Exploration and Practice of the "Five Closed-Loop" Training Mode for Innovation and Entrepreneurship Education Based on University-Enterprise Cooperation. **Higher Vocational Education Research**, 29(4), 45-52.

market, operating independently and responsible for its own profits and losses. In the whole process of school-enterprise cooperation, enterprises are the main participants and one of the organizations and implementers of the cooperation, while industry organizations play the role of professional guidance and technical support.

The Ministry of Education, the State Economic and Trade Commission and the Ministry of Labor and Social Security issued the Opinions on Further Giving play to the role of Industries and Enterprises in vocational education and training in 2002, which pointed out: We should fully rely on the industry and enterprise to develop vocational education and training, and determine that the industry and enterprise have a decisive position and role in the development of higher vocational education and the combination of school and enterprise.[75]

According to the Measures for Promoting School-Enterprise Cooperation in Vocational Schools (2018), enterprises should fulfill their obligations to implement vocational education in accordance with the law, and use capital, technology, knowledge, facilities, equipment and management to participate in school-enterprise cooperation and promote human resources development.

Because of the higher vocational education has the dual nature of higher education and professional, it cultivates talents specification should meet the actual requirements of jobs, more to adapt to the change of market demand, therefore, in every link of higher vocational education, including major setting, curriculum design, theoretical study and practice the stages, has obvious characteristics of technical skills.

Industry organizations on the one hand holds the enterprise production process, process technology and its change characteristics, on the other hand, to the enterprise for professional workers, specifications and quality requirements have

[75]Ministry of Education.(2002). Opinions on Further Enhancing the Role of Industries and Enterprises in Vocational Education and Training. Retrieved from http://www.moe.gov.cn/s78/A07/zcs_left/zcywlm_crjypx/201001/t20100129_8616.html

accurate positioning, also known as on-site internship and working atmosphere influence on students, so, in the process of higher vocational education university-enterprise cooperation operation, cannot do without the positive intervention of industry and strong guidance.

Enterprises also have their unique advantages in the cooperation process of students' practice and training.

First of all, according to the practice situation, it can scientifically formulate the practice plan and professional technical standards, effectively assist the school to improve the teaching content and way of practice and training, objectively evaluate the quality of cooperation, and provide corresponding technical consulting services.

Secondly, as the cooperative subject of school-enterprise cooperation in higher vocational education, enterprises can also undertake the teaching task of some skills acquisition of students in higher vocational colleges, and can also accept the professional practice learning and investigation work planned by teachers in higher vocational colleges.

Thirdly, enterprises can provide internship guidance technicians with professional skills for the implementation of school-enterprise cooperation to guide the "seamless connection" between students' vocational skills training and actual needs, so as to realize the transformation of students from potential labor force to real labor force and ensure the quality of cooperative internship.

Finally, as a consumer of human resources, enterprises actively participate in cooperative education, which can not only help schools cultivate talents, but also give priority to the recruitment of outstanding graduates from cooperative colleges, which can reduce the cost of obtaining human resources for enterprises on the one hand, and alleviate the current employment difficulties on the other hand. It is an effective dynamic guarantee for the deep development of school-enterprise

cooperation in higher vocational education.[76]

3. Government

The government may adopt the form of policies and regulations to establish special systems and implementation rules for school-enterprise cooperation. It can be seen from the development history of vocational education developed countries in the world that the government plays a decisive role in encouraging and guiding school-enterprise cooperation. The government is an important party participating in school-enterprise cooperation and the only subject with the ability to formulate laws and regulations. It plays an irreplaceable role in the construction and improvement of school-enterprise cooperation mechanism, which is determined by the function of the government itself.[77]

In the process of school-enterprise cooperation, the government's responsibility is to serve society, industry, enterprises and schools. The government should formulate policies and regulations to guide and regulate the cooperative behaviors between schools and enterprises, reduce direct administrative intervention, use financial tax, funds and other economic means to carry out macro-control, and standardize the operation environment of school-enterprise cooperation mechanism.

The government should provide corresponding social services for the cooperation between higher vocational colleges and enterprises, strengthen the construction of information consultation network for the combination of schools and enterprises, carry out research on the combination of schools and enterprises, establish and perfect necessary policy service and consultation institutions, and assume the responsibility of setting up a correct publicity orientation for the combination of schools and enterprises to the society.

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[76]Ministry of Education. (2018). Regulations on the Promotion of School-Enterprise Cooperation in Vocational Schools. Retrieved from *http://www.moe.gov.cn/srcsite/A07/s7055/201802/t20180214_327467.html*

[77] Ministry of Education. (2018). Regulations on the Promotion of School-Enterprise Cooperation in Vocational Schools. *Retrieved from http://www.moe.gov.cn/srcsite/A07/s7055/201802/t20180214_327467.html*

In the process of promoting the development of school-enterprise cooperation in China, the role of the government has begun to change from a ruling manager to a service manager under the market economy system, which is embodied in two aspects:

First, through financial and other means of macro management of the regulator role. At present, China's higher vocational education has not fully operated in accordance with the market mechanism, so the government's macro-control and management function will be more and more prominent.

The second is to establish the service role of "multi-participation" relationship. In order to establish the "multi-party participation" relationship between the government and the university and enterprise, the government should take the initiative to provide specific measures for the development of the university and enterprise cooperation, increase and balance the investment of the university and enterprise cooperation funds in a planned way, set up scientific research funding projects, carry out the study of the university and enterprise cooperation mechanism, and provide necessary and timely information data, policy consultation and other services. In the school-enterprise cooperation plays the role of threading a needle and erecting a bridge.

The main contents of school-enterprise cooperation

The main content of school-enterprise cooperation includes nine aspects, including the development plan, specialty construction, curriculum construction, faculty construction, practice teaching, teaching evaluation, research and development, enrollment and employment, and student management.[78]

1. Formulation of School Development Plans

In School-enterprise cooperation, formulating the school's development plans is the foundation for ensuring long-term collaboration and coordinated development. With the participation of enterprises, schools can better understand industry demands and market trends, thereby formulating more feasible

[78] Zhao, G.Z.(2018). Study on School-Enterprise Cooperation in Vocational Education, 1st. *Shantou: Shantou University Press,2018*,40-50.

development strategies. Strategic planning helps organizations better respond to abrupt changes when investing time and resources.[79]

2. Professional Construction

Professional construction is a crucial part of School-enterprise cooperation, aiming to ensure that the professional settings and teaching content keep pace with industry development needs. By cooperating with enterprises, schools can introduce advanced technologies and concepts, enhancing the practicality and foresight of professional teaching. This cooperation helps cultivate high-quality talents that meet market demands and improves the teaching quality and competitiveness of the schools.[80]

3. Curriculum Construction

Curriculum construction needs to fully integrate the actual needs of enterprises, combining theoretical knowledge with practical skills. Enterprises can participate in course design and teaching implementation, providing real projects and cases to enrich the content and enhance its practical value. This cooperative approach helps students accumulate hands-on experience during their studies and improve their professional competence.[81]

4. Faculty Development

School-enterprise cooperation has significant advantages in faculty development. Enterprises can send experts to schools for teaching, or invite school teachers to practice in enterprises, enhancing the teaching level and practical ability

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[79] Hamdani, K. (2021). The strategic planning of university transformation. *Projectique, 1(51), 1-10.*

[80] Krouglov, A. (2018). Developing effective university-enterprise relations. SIE Journal, 3(2), 98-104.

[81] Indeed. (2023). Curriculum Design: Definition, Types and Best Practices. *Retrieved from https://www.indeed.com/career-advice/career-development/what-is-curriculum-design*

of both parties. This bidirectional exchange mechanism enriches the teaching content and enhances the adaptability and professionalism of teachers.[82]

5. Practical Teaching

Practical teaching is a crucial link in School-enterprise cooperation. Through internships provided by enterprises, students can apply the theoretical knowledge they have learned in the classroom to actual work. Internships not only improve students' practical skills but also enhance their adaptability to professional environments (Zhou, 2023). The guidance and evaluation provided by enterprises during internships offer valuable feedback for schools to improve teaching content and methods.[83]

6. Teaching Evaluation

Teaching evaluation plays an important role in School-enterprise cooperation. Enterprises' involvement in teaching evaluation can provide more practical feedback, helping schools adjust and optimize teaching content. Regular evaluation and feedback mechanisms enable schools to continuously improve teaching methods and enhance education quality.[84]

7. Research and Development

School-enterprise cooperation can achieve complementary advantages in research and development. Schools and enterprises jointly conduct research projects, tackle technical challenges, and achieve the transformation and application of innovative achievements. This cooperative model not only promotes academic

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[82] Krouglov, A. (2018). Developing effective university-enterprise relations. *SIE Journal, 3(2)*, 110-115.

[83]Zhou, Y. (2023). Vocational School–Enterprise Cooperation in China. *SAGE Open*, 13(2), 117-134.

[84] Hamdani, K. (2021). The strategic planning of university transformation. *Projectique*, 1(51), 25-30.

research development but also enhances the technological competitiveness and market position of enterprises.[85]

8. Enrollment and Employment

In terms of enrollment and employment, School-enterprise cooperation can provide students with more job opportunities and career guidance. Enterprises participate in enrollment promotion and career guidance, helping students understand industry prospects and employment trends, thereby improving employment rates and quality. This close cooperative relationship provides a solid guarantee for students' career development.[86]

9. Student Management

School-enterprise cooperation also plays an important role in student management. By jointly formulating student management systems and implementation rules, schools and enterprises can provide more comprehensive support and services for students, promoting their all-around development (Krouglov, 2018). This cooperative mechanism enhances students' sense of responsibility and teamwork skills.[87]

Relevant theories of school-enterprise cooperation

1. Public-private Partnerships (PPP) theory

1.1 Public Private Partnership (PPP) Background

Public-private partnership (PPP) is a model that has gradually developed in recent decades. Its background and origins are related to the government's privatization and marketization efforts, as well as the public sector investment gap.

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[85] Krouglov, A. (2018). Developing effective university-enterprise relations. *SIE Journal, 3(2),* 120-124.

[86] Zhou, Y. (2023). Vocational School–Enterprise Cooperation in China. SAGE Open, 13(2), 135-144.

[87] Krouglov, A. (2018). Developing effective university-enterprise relations. *SIE Journal, 3(2),* 130-134.

The UK is a pioneer in the PPP model, particularly through its Private Finance Initiative (PFI). PFI encourages private capital to invest in public projects and has become the basis of modern PPP practice.[88] At present, the PPP model has been widely used in infrastructure, health, education and other fields. The core idea is to combine the planning and regulatory capabilities of the public sector with the capital and operational experience of the private sector.[89]

1.2 PPP definition and key concepts

Public-Private Partnership (PPP) is a cooperation model between the public sector and the private sector to provide public services or infrastructure.

Definition:

PPP can be defined as a cooperation model in which the government and the private sector cooperate to jointly finance, develop, operate and maintain public facilities or services.[90]

Key concepts:

Risk Sharing: In the PPP model, risks are allocated between public and private partners. The private sector typically bears construction and operational risk, while the government may bear policy or government default risk.

Value-based: PPP project selection is often based on so-called "value-based" considerations, which means that this model is chosen because it provides better value to the public, rather than solely based on cost considerations.

Long-term contracts: PPPs usually involve long-term contracts, usually 20 to 30 years. This ensures that the private sector is able to recover its investment and provide continued quality of services to the government.

Performance Standards: PPP contracts are usually based on performance

[88]Yescombe, E. R. (2011). Public-private partnerships: Principles of policy and finance. *Butterworth-Heinemann*.

[89]Grimsey, D., & Lewis, M. K. (2004). Public private partnerships: The worldwide revolution in infrastructure provision and project finance. *Edward Elgar Publishing*.

[90]Grimsey, D., & Lewis, M. K. (2004). Public private partnerships: The worldwide revolution in infrastructure provision and project finance. *Edward Elgar Publishing*.

standards. Private partners are required to provide services to predetermined standards or risk fines or other consequences.

Financing model: While PPPs bring private funding to public projects, they are not always cheaper or more efficient. The financing cost and structure of the project, especially in terms of risk allocation, are key factors that determine the economic benefits of PPP projects.[91]

1.3 Classification of PPP modes

Common PPP model classifications:[92]

BOT (Build-Operate-Transfer): In this model, the private sector is responsible for the construction, operation and maintenance of public facilities and then hands them over to the public sector after a period of time. This model is often used in public facility construction projects that require large amounts of capital investment.

BOOT (Build-Own-Operate-Transfer): Similar to BOT, but during operation, the private sector holds ownership of the facility.

BOO (Build-Own-Operate): In this model, the private sector is responsible for the construction, operation and maintenance of public facilities and has ownership of the facilities. This model is typically used for projects where the public sector does not intend or is unable to take ownership.

DBFO (Design-Build-Finance-Operate): The private sector is responsible for designing, building, financing and operating public facilities, usually on the basis of long-term contracts. This model is suitable for projects where the public sector is unable or unwilling to provide financing.

DBOT (Design-Build-Operate-Transfer): Combines design and construction responsibilities, with the facility transferred back to the public sector upon expiration

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[91]Yescombe, E. R. (2011). Public-Private Partnerships: Principles of Policy and Finance. *Butterworth-Heinemann*.

[92]World Bank. (2012). Public-private partnerships reference guide version 1.0. *World Bank*.

of the contract.

ROT (Rehabilitate-Operate-Transfer): The private sector is responsible for rebuilding, operating the facility, and then transferring it back to the public sector after a period of time.

MOT (Maintain-Operate-Transfer): The private sector maintains and operates public facilities and then transfers them back to the public sector after a period of time.

OMT (Operate-Maintain-Transfer): Similar to MOT, but the responsibilities of operation and maintenance are different.

1.4 PPP mode function

In terms of the function of PPP mode, there are few scholars' studies, but when scholars call PPP mode, some will call it "PPP financing mode" or "PPP project financing", and some will call it "PPP management mode", but it is obvious that these terms are the function embodiment of PPP mode. Therefore, this paper believes that the PPP model has two functions: "financing function" and "management function".

(1) Financing function

Finance function is the direct function of the PPP mode, because the PPP model in the beginning of birth is in order to solve the lack of government financial investment question[93] whether it's the beginning of the lighthouse, roads, railways and other infrastructure construction, or later of public utilities such as water heating, garbage disposal, construction, government according to the different construction projects to choose different ways of financing. In the 1980s, THE PPP model was introduced into China. At that time, the government needed a lot of infrastructure construction, but the government's fiscal revenue was insufficient to meet a large number of fiscal expenditures. The introduction of foreign capital through the PPP model solved part of the fund problem.

BOT is a PPP model widely used by the government, and the history of

[93]Jia K, Sun J.(2009).The concept, origin, characteristics and function of public-private partnership (PPP) .*Fiscal Research*.2-10.

BOT as a financing function can be traced back to the construction of British lighthouses in the 17th century. In the first place, private individuals applied to the British government to build and operate lighthouses. After the application was approved, private individuals obtained the franchise to build lighthouses. The government provides land for private individuals to build and operate lighthouses, with ownership transferred to the British government when the franchise expires. This is the manifestation of PPP mode financing function.

From the perspective of the promotion motivation of PPP mode in China, it is mainly to solve the related problems in financial and economic operation, such as local debt and pressure rate of fiscal expenditure. At present, China's economic development has entered a new normal of medium-high speed. With the replacement of business tax with VALUE-ADDED tax and structural tax reduction, the growth rate of fiscal revenue continues to decline, but the financial input such as economic structural transformation and urbanization construction still increases at a fast speed. In 2014, The State Council issued the Opinions of The State Council on Strengthening the Management of Local Government Debt, which included "promoting the use of government-private capital cooperation mode" as one of the ways for local governments to borrow and finance.

(2) Management functions

The management function is the indirect function of PPP mode, which is extended from the practice of PPP mode. The management function of THE PPP model can be traced back to the privatization reform of the British public sector in the late 1970s.Privatization reform is based on the "new public management" theory, that is, the more efficient public sector provided by the market will be provided by the market, and the introduction of competition can reduce costs and improve quality. The PPP model is to extend these benefits brought by privatization to the core public service field that cannot be privatized. It can be seen from the above that the PPP model of Britain is actually the product of public management reform. Through PPP mode to promote the optimization of government management ability,

and this is the embodiment of PPP mode management function.[94]

Since BOT was used to introduce foreign investment in China in the 1980s, PPP model has gone through more than 20 years of development in China. The revival of THE PPP model in 2014 is not an "old bottle of wine", as the government pays more attention to the management function of the PPP model while solving the local debt problem. For example, in 2014, the Ministry of Finance issued the Notice on The Promotion and Application of The Cooperation Model between The Government and Private Capital, which emphasized that the government should expand financing channels in areas under great pressure of financial input, and at the same time "promote the transformation of government functions and improve the way of financial input and management".

However, the embodiment of management function is a change of concept and thought, and it is a long process to improve the quality and efficiency of government public management through PPP mode. The local government is the most enthusiastic about PPP mode. All provincial units have issued relevant policies of PPP mode in their own province and established their own PPP project library, with the main purpose of alleviating the financial expenditure pressure of their region through PPP mode. However, local governments still have insufficient understanding of PPP mode in the transformation of government functions.

The management function of PPP mode includes adopting the project system in the fields involved in PPP mode, that is, using specific organizational forms to complete one-off tasks with clear expected goals under the constraints of limited time and resources[95].Make market decisions according to modern company system, design, build and operate PPP projects. Both parties reach an equal partnership through the project contract, set goals that are in line with the common interests of

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[94] Yescombe, E. R. (2011). Public-Private Partnerships: Principles of Policy and Finance. *Butterworth-Heinemann.*

[95]Wang,Y&Zhang,B.(2009).Project Management Association. Guide to Project Management Knowledge System.*Beijing: Publishing House of Electronics Industry*.199.

both parties, allocate responsibilities and undertake obligations, and ensure the smooth completion of the project.

1.5 PPP hypothesis and empirical support

(1) PPP hypothesis

Private sector efficiency: The private sector is generally considered to be more efficient than the public sector in some areas.

Risk transfer: Project risks can be managed and reduced more effectively by transferring certain risks to the parties best suited to manage them.

Diversity of funding sources: In addition to traditional public financing, the PPP model can also attract private and international capital and expand financing channels.[96]

(2) PPP empirical support

UK health sector: The UK's Private Finance Initiative (PFI) is its main means of public-private cooperation. Many hospitals receive funding through PFIs, in which the private sector funds the construction and maintenance of new hospitals and the public sector is responsible for medical services.[97]

China's Urbanization: Many cities have launched public-private partnership projects, including the construction of subways, bridges and commercial complexes.[98]

[96]Estache,A.,& Saussier, S. (2014). Public-private partnerships and efficiency: A short assessment. *CESifo DICE Report*, 8-13.

[97]Broadbent, J., & Laughlin, R. (2003). Public private partnerships: An introduction. *Accounting, Auditing & Accountability Journal*, 332-341。

[98]Jin,X.H., &Doloi, H.(2009). Interpreting risk allocation mechanism in public–private partnership projects: An empirical study in a transaction cost economics perspective. *Construction Management and Economics*, 707-721.

1.6 The significance and application of school-enterprise cooperation based on PPP model

In the field of vocational education, government, schools, enterprises in the tripartite cooperation, on the one hand, the government and the representatives of vocational education school is the public sector, enterprises and other social capital is the representatives of the private sector, three belong to the public-private partnership of cooperation, on the other hand, the government, schools, enterprises will form a complicated principal-agent relationship between the partners. School-enterprise cooperation involves not only infrastructure construction, but also the design, implementation and evaluation of education and training content. The evaluation of school-enterprise cooperation is usually based on performance and contract execution. The cost of school-enterprise cooperation is mainly borne by government funds, and trainees and enterprises sometimes share part of the cost. School-enterprise cooperation can provide quasi-public and private products to meet the development needs of individuals, enterprises and industries. These characteristics are consistent with the characteristics of PPP projects, so school-enterprise cooperation can be regarded as a specific type of PPP project, whose goal is to provide highly skilled labor for the industry [99]

(1) Potential risk and benefit sharing:

In school-enterprise cooperation, both parties can share project risks and benefits through the PPP model, thereby reducing single-sided investment risks. This helps ensure both parties are more proactive in the collaborative process.

(2) Improve resource usage efficiency:

The PPP model encourages cooperation between the public and private sectors, combining the professional knowledge and resources of both parties to achieve complementary advantages and improve overall efficiency.

(3) Promote innovation and research:

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[99]Marques I. Remington T. F.and Bazavliuk,V.(2020).Encouraging Skill Development**:** Evidence from Public- Private Partnerships in Education in Russia' s Regions." *European Journal of Political Economy*,63

Enterprises provide actual scenarios and needs, and schools provide research foundation and technology. Cooperation between the two parties can more effectively promote technological research and innovation.

(4) Training and talent development:

The PPP model also helps students accumulate practical experience in school-enterprise cooperation, providing them with opportunities to interact directly with enterprises, making them more suitable for their future careers.

(5) Promote the close integration of industry, academia and research:

The PPP model provides a platform for cooperation between academia and industry, allowing research results to be transformed into practical applications more quickly.

To sum up, PPP theory provides an effective cooperation framework for school-enterprise cooperation, allowing both parties to cooperate more deeply and closely to jointly promote technological research, talent training and innovation.[100]

1.7 PPP in China's vocational education field

PPP is a new phenomenon in education system. The goal of EDUCATION PPP is to expand the supply of education opportunities and improve the quality of education output). Education PPP can be classified from two perspectives. One is from international experience, education PPP can be divided into three categories: first, education infrastructure, which refers to the construction and maintenance of teaching buildings, dormitories, training bases and other infrastructure; The second is the "infrastructure + operation" binding contract, in which the social partner is responsible for both infrastructure and school operation. Class three are infrastructure, including management services (with financial management and human resource management services), professional services (provide teacher training, curriculum design, textbooks and near the service delivered), supporting

[100]Cheung, E., Chan, A. P., & Kajewski, S. (2012). Factors contributing to successful public private partnership projects: Comparing Hong Kong with Australia and the United Kingdom. *Journal of Facilities Management,* 45-58.

service (serve breakfast, bus, etc.), operating services (process service, undertake the responsibility of the school daily operations, Including teaching, financial management, teacher appointment, professional services and building maintenance, etc.), education services (providing output services, private vocational schools providing attendance).The other is to consider the two dimensions of property rights (involving property rights and not involving property rights) and producers (public sector and private sector), and divide education PPP into four types: public sector promotion, private sector partial funding mode (such as the national training fund system of India and Jamaica);Government-provided schools with private sector involvement (e.g., school-enterprise partnerships in the US and Singapore);The private sector provides back to public sector models (such as BOT and BOOT models in Indonesia and Nigeria);The private sector provides, the government funds the mode (such as the government reduces the tuition fee, provides the special subsidy, tax breaks and other ways to subsidize the private vocational schools, etc.).[101]

In recent years, the Chinese government has issued a number of policies to support school-enterprise cooperation and regulate the development of PPP projects. The State Council and the Ministry of Education are the main policy makers of vocational education, and the Ministry of Finance and the National Development and Reform Commission also play an important role in the implementation of PPP policies. In 2014, the Ministry of Finance promulgated the "Government Procurement Management Measures for Government-Private Capital Cooperation Projects", and in 2016 drafted the "Interim Measures for Financial Management of Government-Private Capital Cooperation Projects", which promoted The State Council to issue rules and regulations regulating PPP. In 2015, the Ministry of Finance government and Social Capital Cooperation Center was established, which established a national DATABASE of PPP public service projects. As of August 2017, the database had a total of 658 EDUCATION PPP projects.

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[101]Liu,Y.B.(2019).Does The National Demonstration Higher Vocational Colleges Drive the Development of Surrounding Colleges, *Education Review of Peking University*,45

PPP in the field of vocational education adopts a variety of modes, such as campus infrastructure construction, training base and dormitory construction, purchase of equipment and facilities, teacher training, curriculum design and logistics services, etc. At present, there are three modes : First, PPP of education service, which mainly provides education services for talent cultivation. The goal of such PPP is to improve the quality of education services and the job prospects of graduates. Public vocational schools generally sign education service contracts with industrial partners, industry associations or enterprises, covering major and curriculum design, examination management and evaluation, teaching evaluation, internship arrangement, and teaching resource cooperation. School-enterprise cooperation between public vocational schools and enterprises belongs to PPP of education services, including named schools set up by enterprises, named colleges set up by enterprises, and dual-apprenticeship programs. The second is infrastructure PPP. For new schools, the government chooses BOT mode (build-operation-transfer mode) in cooperation with social capital. Local governments work with private capital to set up special cooperative enterprises and then sign PPP contracts with special purpose partnerships to finance, design projects and build, operate and maintain infrastructure. Local governments supervise and evaluate the results of construction, and pay social capital in the form of financial allocations and facility fees. When the contract ends, social capital turns over the facilities it runs to schools or local governments. Local governments usually adopt the TOT model (transfer - operation - transfer mode) for the cooperation between existing schools and social capital. In this model, local governments or schools' hand over infrastructure to social capital, which operates or manages it. Social capital charges management fees for the duration of the contract. When the contract is terminated, social capital transfers the facility to the government or school. The third is integrated operation PPP. In this mode, local governments hand over all the operation of vocational schools to social partners, including teaching and facility construction[102].

[102]Han,F.Q&Yue,W.J,(2016).Ideas and Suggestions on Actively and Steadily Promoting PPP in Vocational Education,*Fiscal Science*, No.2.84-85.

In local practice, the above modes are combined with local specific situations to develop a variety of modes, the core of which is to revitalize the stock resources of vocational education. The first is modular outsourcing mode, in which a subsystem of school operation is separated and transferred to the private sector with more professional advantages to contract, including management services, professional services and support services. The second is the integrated outsourcing model at the professional level. In terms of specific division of labor, public vocational schools provide basic educational conditions, undertake the teaching of basic cultural and professional courses and student management, while private vocational schools provide practical training equipment, professional teachers and courses that meet the needs of the industry. The third is the restructuring mode of public vocational schools, in which the local government transfers the property rights of schools to the private sector, and the local government continues to provide human and financial support, while holding varying degrees of control over the restructuring of schools (footnote).It is worth noting that the same model may or may not succeed in different Settings, which is highly relevant to whether social partners can make credible commitments and whether local governments can actively coordinate the relationship between public vocational schools and social partners. Studies have pointed out that the greatest contribution of PPP in the field of vocational education lies in the introduction of social partners to supplement the key elements of the development of vocational education, awaken dormant stock resources and inject vitality into the development of vocational education.

1.8 Coordination mode and characteristics of China PPP School-enterprise cooperation projects

PPP in the field of vocational education is a specific cooperation between the government and social partners, whose goal is to provide skilled labor force. The PPP project coordination mode mainly includes two dimensions[103].

[103]Remington.T. F.(2016).Regional Variation in Business- Government Relations in Russia and China. *Problems of Post- Communism*.1- 12.

The first dimension is the level of inter-firm coordination, which measures the extent of an enterprise's participation in PPP and the extent of the enterprise alliance within the same industry. Such alliances are an important tool for improving the match between vocational education and the Labour market.Such coordination involves and is supported by industry associations. In the absence of coordination among firms, some of the characteristics of fragmentation can emerge, in which large firms use in-house training to meet their own needs or establish one-to-one partnerships with vocational schools.

The second dimension is the level of coordination among local governments. Capitalist diversity theory recognizes the role of local government as investment in vocational education, and the triple helix theory of histological analysis emphasizes the role of local government as coordinator in innovation. These studies view local government as a key actor in vocational education, rather than just an external regulatory force. The high level of local government coordination means that local policy makers can directly support PPP in vocational education. For example, local governments can provide vocational training for many enterprises in local industrial parks or high-tech parks, and provide preferential tax policies, funds and facilities for school-enterprise cooperation. Set up quasi marketization of human resources for related enterprises to provide training, or the local enterprise of professional skill requirements and local vocational education institutions match the talent training scheme, on the contrary, the low level of local government coordination means that local governments are less professional skill development cooperation with industry, to introduce market mechanisms to meet local demand. The above two dimensions define four PPP project coordination modes, including enterprise-led coordination mode, government-led coordination mode, joint coordination mode and loose coupling mode.

The firm-led model is characterized by a high level of coordination among peer firms and less government coordination. This coordination mode has two typical operation modes. The first is that the industry or industry association participates in the cooperation with local large enterprises to provide vocational skills training to meet the needs of industrial chain enterprises. This pattern often appears

in monopolistic industries, such as Zhuzhou rail transit industry. The second is that industry associations coordinate vocational skills training of local small and medium-sized enterprises.

Loosely coupled model, including low level of coordination between enterprises and local government involvement is also low, the lack of coordination of the PPP projects, in this mode, the training is seen as the private product in a competitive market, this mode leads to plenty of university-enterprise cooperation of one-to-one vocational education field, local governments to provide general guidance for university-enterprise cooperation, but did not provide a specific incentive mechanism, This pattern now exists in most places.

Government-led coordination mode, in which local government coordination level is high and inter-enterprise coordination level is low.In this case, vocational skills training is considered to be a quasi-public good in the market, provided by local governments. Of course, different from the government-led control during the planned economy period, the current local government no longer matches the demand of the industry directly with the supply of vocational schools, but plays the role of cross-enterprise training intermediary in the industrial park. The city of Zhongshan in Guangdong province is an example of such coordination. A training committee has emerged in the National Zhongshan Torch High-tech Industrial Development Zone, which is responsible for the operation of the public training base and innovation pilot zone, with members from several government agencies and local vocational schools.

Joint coordination model, the coordination of local government and enterprises in the coordination level is very high, training as a quasi-public product in the market, local governments often use training as an organic part of its industrial policies, give priority to provide training services for local leading enterprises, in return, leading enterprises are responsible for coordinating their upstream or downstream industry chain enterprises training needs. A typical case is the sanitary products industry in Jinjiang city, Fujian Province, in which Fujian Hengan Group and the government established a vocational education system for the regional sanitary products industry.

1.9 Limitations of the PPP model

(1) Uneven distribution of risks: In some PPP projects, risks may be excessively transferred to one party, resulting in unbalanced cooperation.

(2) Complex contracts and management structures: The contracts and management structures of PPP projects may be too complex, resulting in reduced efficiency in project execution.

(3) Conflicts of interest: There may be different interests and objectives between the public and private sectors, resulting in inconsistent project goals.

(4) Long-term commitment: PPP projects often require long-term commitment and investment, which may result in certain short-term benefits being overlooked.

(5) Transparency issues: PPP projects may lack transparency, leading to reduced public trust in the project.

In general, the PPP model provides an effective cooperation mechanism in school-enterprise cooperation, but it also has certain limitations that need to be considered in practical applications.[104]

1.10 PPP related literature

Through the theoretical framework of incomplete contracts and using public-private partnerships as a case study, Hart analyzed the challenges of the distribution of rights and responsibilities between the two parties in the cooperation process, and emphasized the importance of formulating clear contracts and supervision mechanisms to safeguard common interests. Provides guidance on the design and management of public-private partnership projects.[105]

Through empirical research in Canada, the importance of the external

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[104]Hodge, G. A., & Greve, C. (2007). Public–private partnerships: An international performance review. *Public Administration Review, 67(3)*, 545-584.

[105]Hart, O. (2003). Incomplete contracts and public ownership: Remarks, and an application to public-private partnerships. *The Economic Journal, 113(486)*, 69-76.

economic environment on the success of public-private partnerships is explored and theoretical and empirical evidence is provided. This provides useful guidance and reference for public-private partnership project implementers and policymakers to ensure the successful implementation of projects in different economic environments.[106]

This literature mainly explores the role of public policy in public-private partnerships and provides guidelines for public-private partnerships by setting clear goals and expectations. At the same time, the article also introduces the performance evaluation method of public-private partnership projects and emphasizes the effectiveness and sustainability of cooperation. This article provides important guidance for governments and the private sector in public-private partnerships to help them understand the advantages and challenges of collaboration, and provides practical performance evaluation tools and methods designed to promote the successful implementation of public-private partnership projects.[107]

Summary

PPP theory emphasizes the importance of public-private cooperation, especially in resource integration and project implementation. It emphasizes the integration between private sector efficiency and public sector social responsibility, aiming to achieve the best interests of both parties. From the expert interviews in Chapter 4, we can observe the importance of policy support, laws and regulations, and economic environment in school-enterprise cooperation. Among them, policy support is a key factor that is often closely related to the success of PPPs. For example, if the policy can provide appropriate incentives for enterprises or provide

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[106]Vining, A. R., & Boardman, A. E. (2008). Public–private partnerships in Canada: Theory and evidence. *Canadian Public Administration, 51(1)*, 9-44.

[107]Hodge, et al. (2007). Public–private partnerships: An international performance review. *Public Administration Review, 67(3)*, 545-558.

tax incentives for cooperation, then the PPP model may be more popular with enterprises. In addition, laws and regulations can provide a clear framework for cooperation and ensure fairness and transparency in cooperation, which is closely linked to certain key elements in PPP theory. In the subsequent discussion in Chapter 5, we will deeply explore how PPP theory provides a framework for us to understand the reality of school-enterprise cooperation, and how to use this theory to make suggestions for improvement.

Stakeholders of school-enterprise cooperation

In 1984, The book Strategic Management: An Analytical Approach to Stakeholder Management was finally written and published by Freeman, which clearly proposed the theory of stakeholder management. The stakeholder theory is a theoretical proposition put forward by western economists in the study of corporate governance, which has been widely used in the study of corporate social responsibility. The emergence of stakeholder theory has dispersed the business objectives of enterprises. In addition to economic objectives, enterprises must also undertake social and political responsibilities. Since the 1980s, with the in-depth development of economic globalization and the intensification of competition among enterprises, corporate governance and corporate social responsibility have become the origin and development of stakeholder theory and become the focus of people's attention and discussion. The main difference from the traditional shareholder primacy enterprise theory lies in the stakeholder theory, which holds that "the development of any enterprise cannot be separated from the input or participation of various stakeholders, and the enterprise pursues the overall interests of stakeholders, rather than just the interests of a certain subject". Therefore, enterprises should consider their relationship with all stakeholders and the whole society from a higher perspective, and assume corresponding social responsibilities. The goal of an enterprise is no longer to maximize the interests of shareholders, but to maximize the interests of the collective or the enterprise itself, so as to maximize

the overall interests of stakeholders.[108]

1. The concept of stakeholders

(1) "Stakeholder" definition:

A “stakeholder” is any individual or group that can influence or be affected by an organization's actions, decisions, and policies. This definition encompasses all internal and external stakeholders of an organization, including but not limited to shareholders, employees, customers, suppliers, governments, non-governmental organizations, communities and the media. Freeman clearly mentioned in his work that any group or individual that can influence or be affected by corporate decisions should be considered a stakeholder.[108]

(2) Primary and secondary stakeholders:

Key Stakeholders: Individuals or groups with direct financial and contractual relationships with the organization. Such as shareholders, employees, suppliers and customers.

Secondary stakeholders: Groups or individuals that may influence or be influenced by the organization's actions and decisions, although they do not have a direct financial or contractual relationship. Such as media, communities, government and non-governmental organizations.

(3) Stakeholder mapping:

It is a method of classifying stakeholders according to their influence on the organization and the organization's importance to them. A common approach is to use a matrix with two axes: one axis represents the stakeholder's influence, and the other represents its importance to the organization. Based on these two dimensions, stakeholders can be divided into four categories: high influence/high importance, high influence/low importance, low influence/high importance, and low influence/low importance.

(4) Stakeholder Management:

It is a systematic approach to identifying an organization's key

[108]Freeman, R. E. (1984). Strategic Management: A Stakeholder Approach. *Pitman*.

stakeholders, understanding their needs and expectations, and developing strategies to meet those needs and expectations. Successful stakeholder management helps organizations build and maintain positive relationships with key stakeholders, thereby promoting the organization's long-term success and sustainability.

2. Classification of stakeholders

In order to use this theory to carry out specific research, it is necessary to classify and analyze different stakeholders first. Only when scientific classification is carried out can targeted measures and classified management be formulated according to different types and categories of stakeholders.

Multidimensional subdivision is a basic classification method, which simply classifies stakeholders by different classification standards or indicators. Representative studies include the classification methods of Freeman, Charkham, Clarkson, Wheeler and others. Freeman divides corporate stakeholders into three categories from the perspective of ownership, economic dependence and social responsibility. (1) Ownership stakeholders refer to the subjects who hold corporate stocks, including board members and managers with equity.(2) Economically dependent stakeholders are the subjects of economic relations and transactions with enterprises, such as employees, creditors, suppliers, etc.(3) Social stakeholders mainly refer to subjects that have mutual influence or relationship with the company in terms of social interests, such as government departments, media or special groups.[109] According to the nature of the contractual relationship between stakeholders or institutions and enterprises, Zuckerham divides stakeholders into contractual type (mainly shareholders, employees, suppliers, etc.) and public type (such as media, government departments, public, consumers, etc.)[110]. Clarkson divided the former into important and secondary stakeholders and the latter into

[109]Donaldson T, Preston LE.(1995).The Stakeholder Theory of the Corporation: Concepts,Evidence,and Implications".*Academy of Management Review*.65-91.

[110]Clarkson M.A ,(1995).Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance".*Academy of Management Review*,92-117.

active and passive stakeholders according to two different classification standards based on the closeness of enterprise interest relationship and the way of undertaking enterprise risk. He also integrated the two classifications.Weiler in attribute classification takes into consideration the interests of society, at the same time reference clark of the index of the close degree of relation with corporate interests, the multidimensional classification is made for the stakeholders, according to the social attribute to stakeholders into society and the society, then this basis according to the close degree is divided into primary and secondary stakeholders, eventually form the four types of stakeholders.[111]

3. Key assumptions and empirical support for stakeholder theory

Stakeholder interests are complementary: an organization can satisfy the needs of one stakeholder while also satisfying the needs of other stakeholders.

Positive stakeholder relationships are critical to an organization's long-term success: Establishing and maintaining good relationships with stakeholders can bring many benefits to an organization, including improved reputation, reduced risk, and increased market opportunities.

Many scholars have proven through research the positive impact of stakeholder management on organizational performance. For example, Jones found that establishing long-term relationships with stakeholders improves an organization's financial performance. Other studies have also shown that there is a positive correlation between an organization's good relationships with its stakeholders and its innovation capabilities, market performance and reputation.[112]

4. The definition and classification of school-enterprise cooperation stakeholders in Higher Vocational Colleges

There are different opinions on the classification of school-enterprise

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[111]Wheeler D,Sillanpaa M.(1998).Including the Stakeholders:the Business Case[J].*Long Range Planning*.201-210.

[112]Jones, T. M. (1995). Instrumental stakeholder theory: A synthesis of ethics and economics. *Academy of Management Review, 20(2)*, 404-437.

cooperation stakeholders in vocational education in China. Li et al. regarded the relationship between stakeholders and vocational education development as the basis of division, and divided it into two levels: core layer and extension layer. Among them, the core level mainly includes teachers, students and vocational college administrators; The extension level mainly includes the government, enterprises, communities, media, vocational education associations and third-party independent institutions.[113] According to Freeman's definition of stakeholders, Chen divides school-enterprise cooperation participants in vocational colleges into three types of interest subjects, namely government and education departments, industrial enterprises and other employers, and vocational colleges.[114] According to the different roles played by participants in the school-enterprise cooperation process, Luo proposed seven stakeholder groups for school-enterprise cooperation in vocational colleges: government, enterprises, industries, vocational colleges, students, teachers and enterprise mentors.[115]Through the above elaboration and analysis, we can find that the academic circle is concerned with stakeholders of school-enterprise cooperation in vocational education.

In order to meet the research needs, the author divides three core stakeholders, namely, higher vocational colleges, enterprises and the government, based on the closeness of the relationship between stakeholders and the school-enterprise cooperation and development of higher vocational colleges. This paper focuses on the investigation and analysis of the interests of higher vocational colleges, enterprises and governments in the school-enterprise cooperation in higher vocational education, in order to provide reference for promoting the long-term

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[113] Li, M.L.& Xie,Y.Q.(2011).Vocational Education Stakeholders: Interest Demands and Management Strategies.*Vocational Education Communication*.5-9

[114] Chen.S.(2013).Research on rights and Responsibilities and Role Orientation of School-enterprise Cooperation Stakeholders. *Education and Career*,18-20.

[115]Luo,G.L.(2013).Research on stakeholder groups of school-enterprise cooperation in vocational colleges. *Human Resources*.57-58.

development of school-enterprise cooperation in higher vocational education.

5. The application of stakeholder theory in education

In the field of education research, the theory has been used to analyze the rights, interests and responsibilities of various participants in educational activities, and to diagnose the drawbacks existing in the practice of educational management. Stakeholder theory is also applicable to school-enterprise cooperation in vocational education. The core content of school-enterprise cooperation in vocational education is to break the current situation of closed running of vocational colleges, realize the diversification of running subjects and participate in the training of vocational education talents. Therefore, it is necessary to establish a new mode of vocational education personnel training involving government departments, vocational colleges, enterprises, industries, students, parents and social groups and other stakeholders.In the process of school-enterprise cooperation in vocational education, the interests of stakeholders should be fully taken into account. Only on the basis of widely soliciting the opinions of stakeholders, can the initiative, enthusiasm and creativity of stakeholders be fully mobilized. Only in this way can we ensure that all stakeholders truly participate in joint education and achieve their own interests. Therefore, it will become a research trend to analyze and explore the effectiveness of school-enterprise cooperation in vocational education from the perspective of stakeholders, applying the theory of stakeholders and from the perspective of "interests".

Application cases of stakeholder identification and management in school-enterprise cooperation:

Identifying key stakeholders: A technical university collaborated with a leading IT company to develop an artificial intelligence research project. During the initial phase of the project, the school assessed its internal faculty, students, research groups, and administration, while also considering corporate executives, technical teams, and marketing departments to accurately identify key stakeholders. [116]

[116]Smith, J. & Thomas, R. (2008). Stakeholder Analysis in Higher Education: A Case Study. *Journal of Higher Education Policy and Management, 30(4)*, 379-391.

Balancing the needs of different stakeholders: In the above-mentioned cooperation, schools are more concerned about academic achievements and the cutting-edge nature of research, while companies hope that research can produce actual commercial value. Through many consultations and exchanges, the two parties reached a balance that not only satisfied academic pursuits, but also ensured the commercial application of the research. [117]

Establish a communication mechanism: In order to ensure the smooth progress of the project, the two parties established a joint project team responsible for holding regular project progress meetings to ensure that all stakeholders can keep abreast of the project progress and challenges encountered, and provide feedback.[118]

Dealing with conflicts of interest: During the cooperation process, the school and the enterprise had disagreements over the distribution of intellectual property rights. Using the method of stakeholder theory, the two parties conducted multiple rounds of negotiations and finally reached an agreement acceptable to both parties, avoiding interruption of cooperation. [119]

This application case shows that stakeholder identification and management play a vital role in school-enterprise cooperation, helping both parties overcome challenges and achieve successful cooperation.

Summary

The stakeholder theory of school-enterprise cooperation focuses on analyzing and understanding the interests and demands of all parties involved in school-

[117]Jones, M. (2010). Stakeholder Engagement in Academic-Industry Research Collaboration. *Research Technology Management, 53(1)*, 20-27.

[118]Wang, L. & Zhang, Y. (2012). University-industry collaboration in China: A case study approach. *Industry & Higher Education, 26(5)*, 383-393.

[119]Liu, F. & Tan, J. (2015). Strategic management of stakeholder relationships in Chinese HEIs. *Higher Education, 70(4)*, 567-582.

enterprise cooperation, including but not limited to schools, enterprises, students, educational institutions, governments, etc. This theory reminds us that in order to make cooperation more successful and effective, we must not only take into account the interests of the main partners (i.e. schools and enterprises), but also ensure that the needs and expectations of other key stakeholders are met.

6. Stakeholder related literature

Driscoll and Starik mainly discussed the viewpoint in stakeholder theory that organizations must effectively manage and allocate resources to meet the expectations of all parties. Paying particular attention to the status of the natural environment as an important stakeholder, the authors emphasize the importance of protecting and responding to the needs of the natural environment. By advancing the development of stakeholder theory, this literature provides important thinking and guidance for organizational sustainability and social responsibility.[120]

In this book, the author introduces the concept of stakeholders and emphasizes the interdependence between organizations and various stakeholders. According to stakeholder theory, the success of an organization depends not only on satisfying shareholder interests, but also taking into account the needs and expectations of other stakeholders such as employees, customers, suppliers, society, and the natural environment. The authors propose a stakeholder-centered approach to strategic management that encourages organizations to consider the interests of all parties more comprehensively and incorporate stakeholder perspectives into decision-making and strategy-making processes. This approach helps organizations build relationships, ensure collaborative efforts, and achieve sustainable success.[121]

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[120]Driscoll, C., & Starik, M. (2004). The primordial stakeholder: Advancing the conceptual consideration of stakeholder status for the natural environment. *Journal of Business Ethics, 49(1)*, 55-73.

[121]Freeman, R. E. (1984). Strategic Management: A stakeholder approach. *Pitman Publishing Inc*.

This document mainly introduces stakeholder theory and points out evaluation and incentive mechanisms as key tools to ensure stakeholder participation and continued investment. The author emphasizes that in company operations, in addition to shareholders and profits, we also need to pay attention to the rights and interests of other stakeholders to achieve sustainable long-term development. The evaluation mechanism can help the company monitor problems and adjust strategies, and the incentive mechanism can stimulate the enthusiasm and work enthusiasm of stakeholders. Furthermore, the literature also mentions the importance of corporate social responsibility as a manifestation of stakeholder theory that can strengthen corporate image and reputation. This literature provides important theory and guidance for companies to understand and respond to the rights and responsibilities of stakeholders.[122]

Multi-party collaboration of school-enterprise cooperation

1. The theoretical background of synergy theory

"Synergy theory" was proposed by Professor Haken of University of Stuttgart in Germany in 1976. In recent years, synergy theory has been widely adopted as a comprehensive discipline, mainly studying the common rules from disorder to order in various systems and phenomena, and revealing the common characteristics and collaborative operation mechanism of different systems. The object of our study is presented by the joint development of many subsystems, which requires us to use the knowledge and methods of different disciplines to study, so as to reveal the cooperative operation principle between systems and elements within systems. Haken's synergy theory holds that a synergy system consists of multiple order parameters that compete and cooperate with each other. When the system is in the disordered initial state, each subsystem runs independently of each other, there is no cooperative relationship between each other, and order parameters cannot be formed. Only when the external environment changes and the system runs to a

[122]Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of management Review, 20(1)*, 65-91.

certain critical point, can the subsystem produce strong synergy and the system order parameters gradually form.[123]

2. Multi-party collaboration definition and core concepts

definition: Multi-party collaboration, sometimes called "cross-sector collaboration" or "collaborative governance," refers to the cooperation of multiple independent organizations or groups on a common issue or goal. These organizations or groups may have different backgrounds and purposes. , resources and power. Such collaborations are not limited to traditional public-private partnerships but may also include complex networks of public, private, and nongovernmental organizations.[124]

3. Core concepts

(1) Shared goals: All parties in a multi-party collaboration must agree on a certain issue or goal and commit to working together to achieve it.

(2) Complementary resources: Participants contribute their own resources, skills, and knowledge to create greater value for the collaboration.

(3) Mutual trust and communication: Successful multi-party collaboration requires the establishment of mutual trust and frequent and open communication to deal with possible misunderstandings or conflicts.

(4) Dynamic process: Multi-party collaboration is an ongoing, non-linear process that requires constant adjustment and adaptation in response to external and internal changes.

(5) Structure and Governance: An effective governance structure can support collaborative decision-making and implementation among multiple parties, while

[123]Haken, H. (1977). *Synergetics: An introduction*. *Springer-Verlag*.

[124]Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory, 18(4)*, 543-571.

also ensuring the responsibility and accountability of participants.[125]

3. Basic assumptions of multi-party collaboration:

(1) Complementarity exists between organizations: different organizations or individuals have their own unique resources and capabilities, and can better achieve common goals through collaboration.

(2) Collaboration enhances effectiveness: Working together can lead to greater benefits and results than acting alone.

(3) Inputs and outputs in relationships are long-term: multi-party collaboration takes time to establish and develop, and the results may be medium- to long-term rather than short-term.[126]

4. Advantages of multi-party collaboration:

(1) Resource integration: Multi-party collaboration enables various participants to share and integrate their own resources to achieve greater benefits. For example, when multiple nonprofits collaborate, they may share funding, expertise, and staff to achieve common goals.

(2) Knowledge sharing: A collaborative environment encourages the exchange of knowledge, thereby improving overall decision-making and innovation capabilities.

(3) Risk diversification: Multi-party cooperation can allocate risks to multiple participants, reducing the risks faced by a single entity.[127]

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[125]Beran, D. (2016). Partnerships in global health and collaborative governance. *Global Health Action, 9*(1), 30545. https://doi.org/10.3402/gha.v9.30545

[126]Thomson, A. M., & Perry, J. L. (2006). Collaboration processes: Inside the black box. *Public administration review, 66*, 20-32.

[127]Bryson, J. M., Crosby, B. C., & Stone, M. M. (2006). The design and implementation of cross-sector collaborations: Propositions from the literature. *Public administration review, 66*, 44-55.

5. Application of multi-party collaboration theory in school-enterprise cooperation

The application and relevance of multi-party collaboration theory in school-enterprise cooperation mainly involves how to integrate resources, knowledge and skills between higher education institutions and enterprises to achieve common goals, such as R&D, training, technology transfer and innovation. The following is a description of the application and relevance of multi-party collaboration theory in school-enterprise cooperation:

(1) Resource integration: School-enterprise cooperation usually requires the integration of resources from both parties to achieve common goals. For example, universities can provide research facilities and expert knowledge, while businesses can provide funding, market access and practical experience.[128]

(2) Knowledge sharing and transfer: Cooperation between universities and enterprises can promote the two-way flow of knowledge. For example, enterprises can share their practical knowledge on markets and technologies with academia, and academia can provide enterprises with the latest research results and technological advances.[129]

(3) Training and talent development: Cooperation between companies and universities can involve jointly developing training programs or courses to meet the specific needs of the company while providing students with practical work experience.[130]

(4) Technology transfer and commercialization: Multi-party collaboration can promote technology transfer and commercialization of university research, and bring

[128]Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university–industry–government relations. *Research policy, 29(2)*, 109-123.

[129]Perkmann, M., Tartari, V., McKelvey, M., Autio, E., Broström, A., D'Este, P., ... & Sobrero, M. (2013). Academic engagement and commercialisation: A review of the literature on university–industry relations. *Research policy, 42(2)*, 423-442.

[130]Rosenberg, N. (2002). Why do firms do basic research (with their own money)?. *Research policy, 19(2)*, 165-174.

innovative technologies to the market through corporate funding and market channels.[131]

(5) Joint R&D: Universities and businesses can collaborate on R&D activities to jointly solve problems of practical significance and produce valuable knowledge output.[132]

Relevance: Multi-party collaboration theory provides a framework for understanding and guiding the different stages of school-enterprise collaboration, such as the initiation, management, and maintenance of collaboration, as well as how to deal with challenges that may arise in collaboration, such as goal inconsistency, power imbalance, and Trust issues.

6. Limitations and application challenges of multi-party collaboration theory in school-enterprise cooperation:

Multi-party collaboration theory faces many limitations and challenges in school-enterprise cooperation:[133]

(1) Cultural differences and mismatch of values: There are often cultural differences between academic institutions and businesses, especially in their values, goals and ways of operating. This difference can lead to communication breakdowns and misaligned goals.

(2) Intellectual Property Issues: Disputes over ownership of research results may arise in collaborations, especially if there is a need to commercialize the

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[131]Siegel, D. S., Waldman, D., & Link, A. (2003). Assessing the impact of organizational practices on the relative productivity of university technology transfer offices: an exploratory study. *Research policy, 32(1)*, 27-48.

[132]Ankrah, S., & AL-Tabbaa, O. (2015). Universities–industry collaboration: A systematic review. *Scandinavian Journal of Management, 31(3)*, 387-408.

[133]D'Este, P., & Perkmann, M. (2011). Why do academics engage with industry? The entrepreneurial university and individual motivations. *Journal of Technology Transfer, 36(3)*, 316-339.

research results.

(3) Unbalanced resource allocation: In multi-party collaboration, different organizations may have different resource inputs. If resources are unevenly distributed or one party feels neglected, it can cause tension in the partnership.

(4) Information asymmetry: The two parties may have different information resources, resulting in inefficient decision-making or inconsistent strategic directions.

(5) Lack of long-term commitment: Academic and corporate collaboration requires long-term commitment and investment, but some companies may prefer short-term returns, which may lead to disruptions in collaboration or goal deviation.

(6) Management and organizational complexity: Multi-party collaboration means more management levels and parties, which may lead to increased organizational and coordination complexity.

7)Trust issues: In the early stages of cooperation, both parties may have doubts and distrust about each other, which affects the depth and breadth of cooperation.

7. Multi-party collaboration related Literature

Powell, Koput, and Smith-Doerr took the field of biotechnology as an example to study inter-organizational cooperation and innovation, paying special attention to the role of learning networks in the innovation process. The article points out that innovation in the field of biotechnology often requires cross-organizational cooperation and knowledge sharing. By studying the cooperation network among biotechnology companies, the author reveals the important role of multi-party collaboration and learning networks in promoting innovation, accelerating knowledge flow, and promoting technological progress.[134]

In this book, the author explores the impact of different cultures on organizational behavior and cooperation by studying examples of international

[134]Powell, W.W., Koput, K. W., & Smith-Doerr, L. (1996). Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology. *Administrative science quarterly*, 116-145.

businesses and cross-cultural teams. They believe that factors such as country, language, values, beliefs and communication methods will all have an impact on cooperation. The book also provides practical tools and strategies to help organizations better understand and manage collaborative relationships in cross-cultural environments. The authors emphasize the importance of cross-cultural sensitivity and adaptability to achieve effective multi-party collaboration. By studying the international dimensions of international organizational behavior, this book provides an important theoretical framework and practical guidance for organizations to deal with cultural differences and achieve success in cross-border cooperation. For businesses and practitioners facing cross-cultural collaboration, this book provides valuable insights and direction.[135]

This literature mainly discusses the theory of multi-party collaboration, which emphasizes how regional factors and geographical location affect the resources, knowledge and needs of partners. Taking the cluster economy as an example, the author describes the advantages of enterprises gathering in groups within a specific geographical area to share and pool resources, knowledge and needs to promote effective innovation and improve efficiency. This article provides enlightenment on how enterprises can better utilize resources such as geographical location to achieve innovation and improve efficiency in multi-party collaboration.[136]

Gray's book focuses on the core idea in multi-party collaboration theory that success in a complex collaboration environment requires the establishment of appropriate collaboration models. The author emphasizes that when solving multi-party problems, stable and sustainable cooperative relationships can be established by finding common ground and coordinating interests and goals. The book also introduces practical tools and techniques, including effective communication,

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[135]Adler,N.J.,&Gundersen,A.(2007). International dimensions of organizational behavior. *Cengage Learning*.

[136]Porter, M. E. (1998). Clusters and the new economics of competition. *Harvard Business Review, 76(6)*, 77-90.

negotiation, and conflict resolution strategies, to help partners succeed. In summary, this literature provides valuable guidance for people facing multi-party cooperation problems to help them establish effective cooperation models and achieve common goals.[137]

Summary

The multi-party collaboration theory of school-enterprise cooperation emphasizes that in the process of school-enterprise cooperation, it is not just a simple cooperation between schools and enterprises. In fact, the cooperation is a complex ecosystem involving multiple participants such as students, teachers, industry experts, local governments, etc. The interaction and collaboration between them are crucial to the success of the cooperation. The core idea of this multi-party collaboration is that all parties involved should work together, share resources and support each other to achieve a common goal.

Higher Vocational Education in Guangdong Province, China

A brief introduction to Guangdong Province, China

Guangdong Province, is a coastal province in the south of the People's Republic of China, with Guangzhou as its capital. Guangdong province is located in the southernmost part of mainland China, bordering Fujian in the east, Jiangxi and Hunan in the north, Guangxi in the west, and south China Sea in the south. It borders Hong Kong and Macao on the east and west sides of the Pearl River Estuary, and faces Hainan across the Qiongzhou Strait.With a land area of 179,700 square kilometers and a sea area of 419,300 square kilometers, the province has the longest continental coastline (4,114.3 kilometers) in China.

Guangdong is one of the earliest provinces to carry out reform and opening up

[137]Gray, B. (1989). Collaborating: Finding common ground for multiparty problems. *Jossey-Bass*.

in Mainland China. Since 1989, Guangdong has always been the largest province in China in terms of economic aggregate. Among them, the Pearl River Delta region, including Guangzhou and Shenzhen, the two largest first-tier cities in China, is one of the most developed regions in China. At the same time of economic take-off, Guangdong also attracted a large number of migrants, and the total population of Guangdong has risen from the sixth in China in the 1950s to the first in China. By 2020, the permanent population of Guangdong is 126 million[138].

Introduction to higher vocational Education in Guangdong Province, China

1. How many higher vocational colleges are there?

By the end of 2019, Guangdong had a total of 78 independent higher vocational colleges, including 14 national "Double Higher Education Plan" construction units, 11 national demonstration (backbone) higher vocational colleges, and 29 demonstrative higher vocational colleges at or above the provincial level. In terms of the types of colleges, comprehensive higher vocational colleges and technical higher vocational colleges are the main bodies, showing a pattern of multi-development, among which comprehensive higher vocational colleges account for 49%, and technical higher vocational colleges account for 24%.

[138]Gungag Dong province China. From https://zh.wikipedia.org/wiki/guangdongprovince

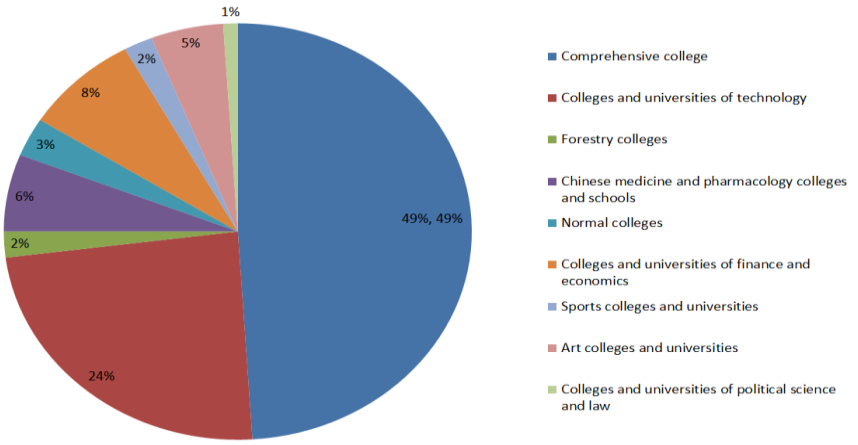

Figure 2 The type structure of higher vocational colleges in Guangdong Province in 2019

Source: https://edu.gd.gov.cn/gkmlpt/content/3/3372/post_3372530.html?jump=true

2. How many vocational students are there?

In 2019, the number of college students in Guangdong was 894,200, including 802,200 in full-time vocational schools (including colleges and universities), an increase of 43,100 or 5.68% over 2018.

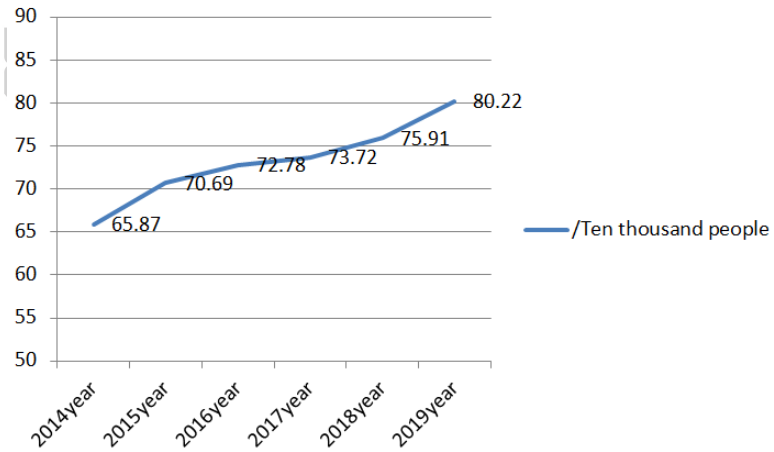

Figure 3 Number of Full-time Students in Higher Vocational Colleges in Guangdong Province from 2014 to 2019

Source: https://edu.gd.gov.cn/gkmlpt/content/3/3372/post_3372530.html?jump=true

3. What major does higher vocational college offer?

In 2019, 411 majors covering 19 major categories were offered in the province's higher vocational colleges. The number of professional distribution points was 3,105, with an average of 7.55.

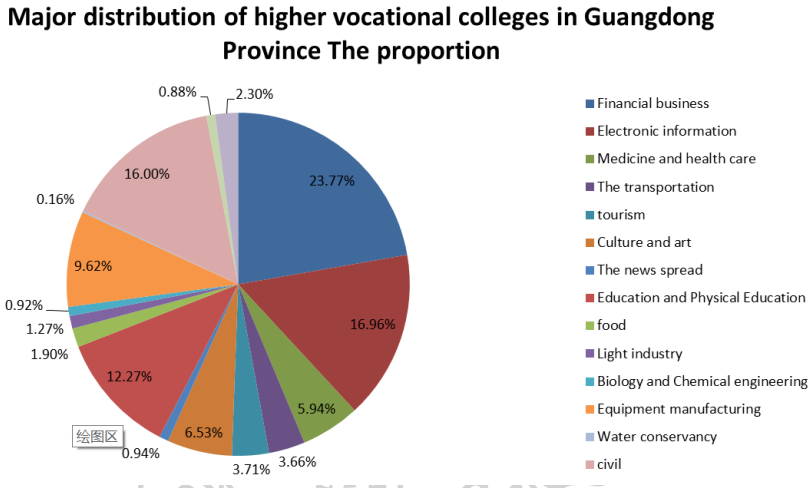

Figure 4 Major distribution of higher vocational colleges in Guangdong Province

Source: https://edu.gd.gov.cn/gkmlpt/content/3/3372/post_3372530.html?jump=true

4. How does high vocational graduate obtain employment situation?

The employment rate of vocational college students was 96.12 percent in 2019, up 1.56 percent from 2018.

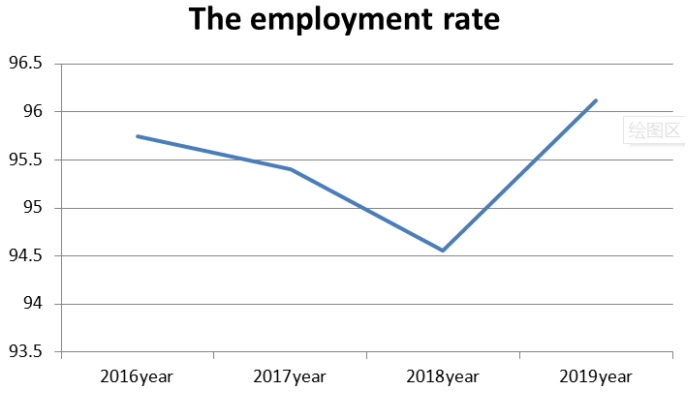

Figure 5 Employment rate of vocational college graduates from 2016 to 2019

Source: https://edu.gd.gov.cn/gkmlpt/content/3/3372/post_3372530.html?jump=true

In 2019, the average monthly income of graduates was 3,672 yuan, an increase of 310 yuan, or 9.22 percent, over that of 2018 graduates.

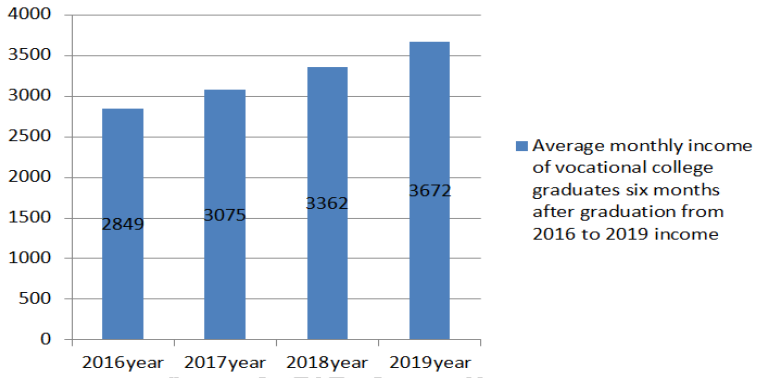

Figure 6 Average monthly income of vocational college graduates six months after graduation from 2016 to 2019

Source: https://edu.gd.gov.cn/gkmlpt/content/3/3372/post_3372530.html?jump=true

5. How about technical service ability of higher vocational colleges?

In 2019, the technical services of vocational colleges in the province reached 350 million yuan, an increase of 25.85% compared with 2018. The economic benefits of technical services reached 1.477 billion yuan, providing strong technical support for the high-quality development of enterprises.

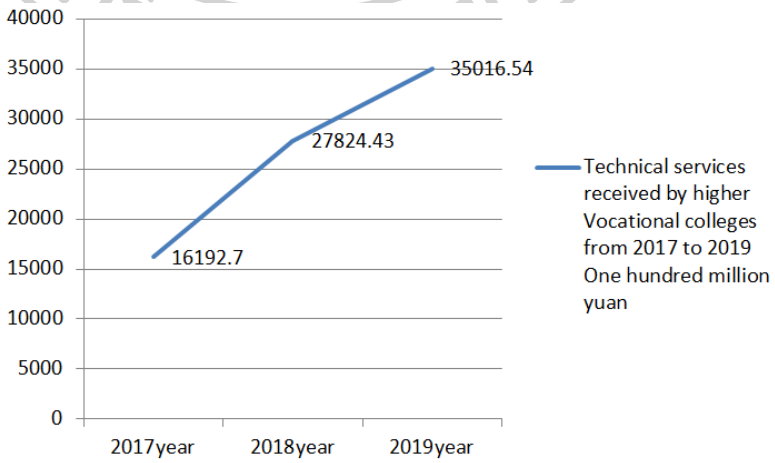

Figure 7 Technical services received by higher Vocational colleges from 2017 to 2019

Source: https://edu.gd.gov.cn/gkmlpt/content/3/3372/post_3372530.html?jump=true

6. How much is the investment?

In 2019, a total of 1 billion yuan of special funds from provincial-level governments and above were allocated for higher vocational education, including 900 million yuan from provincial-level governments. Starting in 2019, the per-student funding standard for provincial vocational colleges will be raised from 7,000 yuan to 10,000 yuan, an increase of 43 percent, to enhance the funding planning capacity of provincial vocational colleges. Governments at and above the provincial level will allocate 230 million yuan of awards and subsidies to higher vocational colleges for each student at a rate of 2,000 yuan.

In 2018, the total revenue of higher vocational colleges in the province was 36.689 billion yuan, an increase of 91.83% compared with 2017. Among them, government input and tuition income were important sources, accounting for 76.68%, reaching 28.134 billion yuan, an increase of 158.61% compared with 2017.

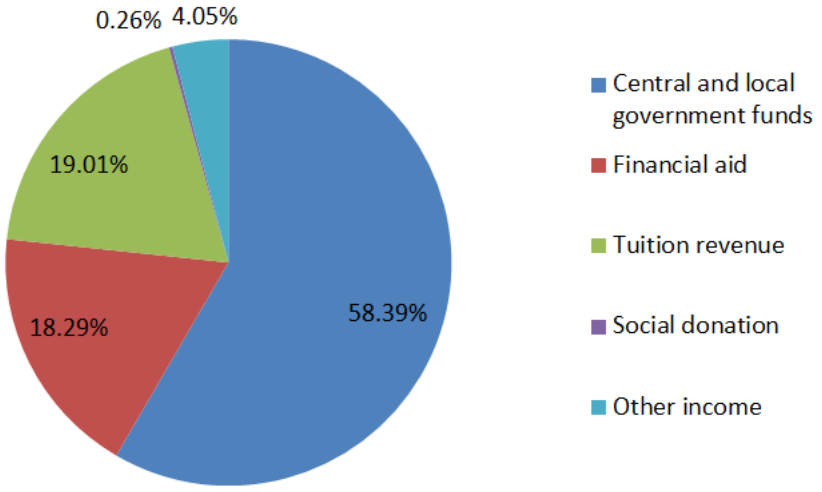

Figure 8 Revenue structure of higher Vocational colleges in Guangdong province in 2018 Accounted for

Source: https://edu.gd.gov.cn/gkmlpt/content/3/3372/post_3372530.html?jump=true

Knowledge of Ethnographic Future Research

Introduction of ethnographic future research

1. EFR founder and definition

The founder of EFR is Professor Robert B. Textor, who is an Education and Anthropology professor at Stanford University and serves as the project's coordinating advisor. Therefore, it can be said that the origins of EFR can be traced back to Professor Robert B. Textor's research work at Stanford University.

EFR (Ethnographic Futures Research) is a research method that aims to understand people's expectations and preferences for future cultures and identify major trends, patterns, and key issues. EFR involves conducting open-ended, non-directive interviews with members of a social group to elicit their images and preferences with respect to possible or probable future cultures for their group. EFR does not make a literal claim to "studying the future," but rather elicits, describes, analyzes, and interprets people's present images of possible or probable future cultures, and their preferences among those hypothetical cultures. EFR is a departure from most other types of social science research and requires experience to be fully understood. EFR is both a research and an educational undertaking, and it aims to stimulate the clarification of values and goals and the development of a proactive attitude toward "taking charge" of the future.[139]

2. Key principles of ethnographic research

According to, some of the key principles of ethnographic research include starting with a broadly phrased problem and gradually refining it based on interaction with interviewees, emphasizing relativism, context, history, and holism, working with fewer interviewees than other disciplines, and producing a product that is qualitative and cultural in nature. These principles can be applied in practice by conducting in-depth interviews with key informants, observing cultural practices and behaviors, and

[139] Textor, R. B. (1995). The ethnographic futures research method. *Futures*, 27(5), 5-22.

analyzing data to identify patterns and themes. Additionally, researchers should be open-minded and flexible, willing to adapt their research design and methods as they learn more about the culture they are studying.[140]

How EFR works

1. Design an effective research project that incorporates ethnographic methods.

The design of an effective research project that incorporates ethnographic methods depends on the specific research question and context. However, some general steps that can be taken include:

(1) Defining the research question: Clearly define the research question and objectives of the study. This will help guide the selection of appropriate ethnographic methods and data collection techniques.

(2) Selecting the research site: Choose a research site that is relevant to the research question and where the researcher can gain access to the local community.

(3) Informants. This can involve spending time in the community, participating in local events, and building trust with the community members.

(4) Data collection: Use a variety of data collection methods, such as participant observation, in-depth interviews, and document analysis, to collect data on the research question.

(5) Data analysis: Analyze the data collected using appropriate qualitative research methods, such as coding and thematic analysis.

(6) Interpretation and reporting: Interpret the findings and report them in a way that is relevant to the research question and context. This can involve presenting the findings in a narrative format, using quotes and examples to illustrate key points.

Overall, an effective research project that incorporates ethnographic methods requires careful planning, attention to detail, and a deep understanding of the local

[140]Textor, R. B. (1980). A Handbook on Ethnographic Futures Research. Stanford, *CA: Stanford University Press*.53-54.

context[141].

2. Introduction to commonly used research tools and techniques in EFR

The Ethnographic Futures Research (EFR) technical framework includes a variety of research tools and techniques designed to better capture, analyze, and understand participants' perceptions and expectations about the future. The following are commonly used research tools and techniques in EFR[142]:

Narratives: Use narratives to ask participants to describe their imagined future scenarios. This bottom-up approach can reveal deep cultural, social and personal values.

Scenario Building: Through group activities, participants are allowed to jointly construct and explore possible future scenarios, and deeply explore their views on different future scenarios.

Cultural Probes: Use items such as diaries, photos, objects, etc. to collect participants' activities and emotions in their daily lives, providing a contextual understanding of their views on the future.

Role-playing: Exploring possible future situations by asking participants to take on specific roles and learn how they would make decisions in a specific environment.

In-depth interviews: one-on-one in-depth interviews with targeted questions to reveal participants' unique perspectives on the future.

Participant Observation: The researcher directly participates in or observes the activities of participants to better understand their culture and lifestyle, and how these affect their views on the future.

Future Diaries: Ask participants to record their envisioned activities on a future day to capture their specific expectations for their future lives.

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[141]Textor, R. B. (1980). A Handbook on Ethnographic Futures Research. Stanford, *CA: Stanford University Press*.82-84

[142] Gaver, B., Dunne, T., & Pacenti, E. (1999). Cultural probes. *Interactions, 6(1)*, 21-29

Visual and Sound Ethnography: Use pictures, video, or sound recordings to capture participants' daily lives and their visions for the future.

Workshops and Focus Groups: Organize group discussions to use collective wisdom to explore and build future perspectives and expectations.

3. Ethical considerations that researchers need to keep in mind when conducting ethnographic research

notes that there are several ethical considerations that researchers need to keep in mind when conducting ethnographic research. These include obtaining informed consent from participants, protecting their privacy and confidentiality, and ensuring that the research does not cause harm to the participants or their community. Researchers must also be aware of power dynamics and potential conflicts of interest, and take steps to minimize any negative impact their research may have on the community being studied. Additionally, researchers should be transparent about their methods and findings, and should seek to build trust and rapport with participants throughout the research process. Finally, researchers should be prepared to adapt their research design and methods as needed to ensure that ethical considerations are being met.[143]

4. Empirical research cases demonstrate the application and effects of EFR in different fields.

Ethnographic Futures Research (EFR) is used as a tool to develop a deeper understanding of how various cultural and social groups view and imagine the future. The following are some empirical research cases demonstrating the application and effects of EFR in different fields:

Health & Medical: In a study on chronic disease management, EFR was used to understand how patients envisioned their future medical needs and expectations. This helps healthcare providers and policymakers develop more targeted and

[143]Textor, R. B.(1980). A Handbook on Ethnographic Futures Research. Stanford , *CA: Stanford University Press*.25

culturally sensitive strategies.[144]

Technology and Innovation: EFR was used in a study on future consumer expectations for artificial intelligence home technology. This research sheds light on people's acceptance, fears and expectations for future technologies, providing valuable insights for technology designers and developers.[145]

Education and Learning: In a study on the future of education, EFR was used to gain insight into how students, educators and parents envision the future of education. This provides important directions for educational policy formulation and curriculum design.[146]

Application of EFR in school-enterprise cooperation

1. EFR methodology and its application in school-enterprise cooperation research

EFR uses a variety of methods to collect data, such as in-depth interviews, participant observation, and focus group discussions. Its main strength is that it provides a comprehensive, in-depth and culturally sensitive perspective on how different cultures and communities view the future

EFR is particularly applicable when exploring future trends in school-enterprise cooperation. School-enterprise cooperation itself is a complex system involving multiple stakeholders (such as schools, businesses, governments, students and communities), and each stakeholder has its own expectations and views on the future of cooperation. EFR can help researchers gain a deeper understanding of these different expectations and perceptions, thereby providing valuable insights for future

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[144]Mathews, H. F. (2015). Anticipating the future: the promise of ethnographic futures research. *Qualitative Research in Medicine & Healthcare*, 19(2), 77-87.

[145] Dourish, P., & Bell, G. (2011). Divining a digital future: Mess and mythology in ubiquitous computing. *MIT Press*.

[146] Anderson, T. (2008). Towards a theory of online learning. *The theory and practice of online learning, 2,* 45-74.

policy formulation and strategy development.[147]

2. Analyze the challenges and limitations that EFR may encounter in school-enterprise cooperation

In school-enterprise cooperation, using Ethnographic Futures Research (EFR) to conduct research can provide decision-makers with in-depth insights, but it also faces a series of challenges and limitations:[148]

Culture and Values Conflict: Academia and the corporate world may have different cultures and values. This difference may affect both parties' assumptions about the future, causing the results of the EFR to not fully meet the expectations and needs of both parties.

Difficulty of prediction: Although EFR aims to understand people's expectations and assumptions about the future, the real future may be affected by many external factors that may be difficult to foresee in the study.

Participant subjectivity: EFR often relies on participants' personal experiences and perspectives, which can result in study results being influenced by participant subjectivity rather than truly reflecting possible future scenarios.

Time and resource challenges: Conducting EFR requires a significant investment of time and resources, including site work, in-depth interviews, etc., which may exceed the budget or time frame of some projects.

Interpretation and application of data: Because EFR data are often qualitative, there are many possible ways to interpret them. Determining how to apply this data to strategic decisions can be a challenge.

Maintain neutrality: When conducting EFR, researchers may be influenced by certain views or interest groups, which may affect the objectivity and impartiality of

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[147]Johnson, M. (2000). The merging of ethnographic and futures research methodologies: *A new approach to studying school-enterprise cooperation, 32(7)*, 709-721.

[148]Ramos, J. (2006). Futures studies and the future: A reconceptualisation of the foundations. *Foresight, 8(4)*, 35-46

the research.

In summary, although EFR provides an in-depth understanding of future scenarios for school-enterprise collaboration, it still needs to be applied with caution and consider its limitations and challenges.

Related literature of EFR

Ethnographic Futures Research: Implications for Innovating and Human-Centered Strategy explores the application of Ethnographic Futures Research (EFR) in innovation and humanistic strategies and provides relevant theoretical and practical suggestions. By deeply studying human behavior and observing social and cultural changes, the author proposes EFR as a research method to help companies innovate and formulate humanistic strategies. They emphasized the importance of understanding user experience and meaning, and co-creating it with users.[149]

Anthropologies and Futures: Researching Emerging and Uncertain Worlds. Edited by experts, this book explores the intersection of the fields of anthropology and Ethnographic Futures Research, introducing methods and theories for the study of an emerging and uncertain world. Each chapter in the book covers different topics, including technology and society, sustainable development, health and body, etc., aiming to understand current and future social phenomena through an anthropological perspective.[150]

Street phenomenology as a key to understanding cities: ethnographic futures research beyond the human introduces the application of street phenomenology in urban research, proposes the concept of Ethnographic Futures Research (EFR), and explores research methods beyond the human perspective. The author uses the city as his background and observes and analyzes street phenomena to understand the

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[149] Pine, B.J., & Kim, Y. (2019). Ethnographic Futures Research: Implications for Innovating and Human-Centered Strategy. *Journal of Business Anthropology, 8(2)*, 301-315.

[150]Pink, S., & Horst, H. (Eds.). (2018). Anthropologies and Futures: Researching Emerging and Uncertain Worlds. *Berghahn Books*.

complexity and social interactions of the city. This research approach pushes the boundaries of traditional human studies and focuses on non-human, non-verbal and informal communication.[151]

Related studies of EFR

There have been several studies that have used EFR as a method for exploring future scenarios and trends. For example, Using Ethnographic Futures Research (EFR) research methods to explore sustainable travel behaviors and future transportation modes.[152]

This study explores people's sustainable travel behaviors and future transportation methods through the Ethnographic Futures Research (EFR) method. Through on-site observation, in-depth interviews, and participatory research methods, researchers have conducted detailed observations and analyzes of sustainable travel behaviors at the individual and social levels, combined with predictions of future society, technology, and the environment to try to depict the future of transportation. possibilities of the way.

Through observation and interviews, researchers learned about different individuals' understanding and behavioral habits of sustainable travel. They constructed scenarios and four possibilities for future transportation modes by analyzing individuals' daily travel patterns, transportation usage and motivations, as well as their expectations and imaginations for future transportation modes. These scenarios may involve new energy vehicles (such as electric vehicles, bicycles, etc.), shared economic models, intelligent transportation systems, etc.

Through the EFR research method, researchers not only focus on the current status of sustainable travel behavior, but also consider the impact of possible social, technological and environmental changes on transportation modes in the future.

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[151]Kusenbach, M. (2017). Street phenomenology as a key to understanding cities: ethnographic futures research beyond the human. *City & Society, 29(1),* 5-29.

[152]Pink, S., & Hjorth, L. (2014). "Situating Everyday Life in Ethnographic Futures." *Mediating & Remediating Death*, 1-20.

Their research attempts to provide decision-makers, planners and the public with a basis for future mobility choices, promote sustainable urban development and solve transportation problems.

This study provides an example of how Ethnographic Futures Research (EFR) methods can be applied to explore sustainable travel behavior and future transportation options. By deeply understanding user behavior and expectations and combining this with future predictions, it can provide useful insights for future transportation planning and sustainable development.

Summary

Ethnographic Future Research (EFR), pioneered by Professor Robert B. Textor, is a qualitative approach that seeks to understand people's future cultural expectations and preferences, emphasizing proactive engagement with the future. Its key principles involve nuanced problem framing, holistic research, and qualitative insights. EFR's effectiveness hinges on methodical planning, diverse data collection tools, and ethical considerations, including consent, privacy, and transparency. Demonstrated across fields like health, technology, and education, EFR provides valuable insights for decision-making. In the context of school-enterprise cooperation, while it offers a comprehensive understanding of stakeholders' perspectives, it faces challenges such as cultural conflicts, subjectivity, resource constraints, and data interpretation, emphasizing the need for cautious and informed application.

Research on school-enterprise cooperation

Chinese Researches

1. Research on the connotation of school-enterprise cooperation.

Domestic scholars have different understandings. Most of them summarize the connotation of school-enterprise cooperation as "training or education mode", "ways of industry-university cooperation" or "education mechanism, operation mechanism and school-running concept", etc.

Define the connotation of school-enterprise cooperation from the perspective

of training talents. Huang believes that it is a very goal-oriented talent training mode. The goal of cooperation between higher vocational colleges and enterprises and industries is to cultivate professional and skilled talents.[153]

Li believes that school-enterprise cooperation in higher vocational education is an educational mode that integrates the superior educational resources of enterprises and higher vocational colleges to cultivate the comprehensive quality of higher vocational students in order to cultivate application-oriented talents suitable for enterprises or industries. Therefore, the cooperation between higher vocational colleges and enterprises means that higher vocational colleges and enterprises integrate and utilize the resources such as technology, capital, information and equipment of schools and enterprises to jointly implement training plans and achieve training objectives in order to cultivate talents suitable for the needs of enterprises in the industry.[154]

Sun believes that the basic connotation of school-enterprise cooperation is industry-university cooperation, and the implementation approach and method are work-study combination and on-the-job practice.[155]

2. Research on the significance of school-enterprise cooperation.

Most scholars focus on the significance of school-enterprise cooperation to schools. From the talent training mode, school-running conditions, school-running characteristics and student employment and other aspects of the discussion.

Sun proposed that school-enterprise cooperation is the need of cultivating "double-qualified" teachers. School-enterprise cooperation enterprises can provide

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[153]Huang,Y.N.(2006).A preliminary study on school-enterprise cooperation model of higher vocational Education,*Journal of Educational Development*,25-28.

[154]Li, X.S.(2013). Study on the model of university-enterprise cooperation training base. *Electronic World*. 177.

[155]Sun,W.H.(2016). The research and practice of school-enterprise cooperation and work-study combination talent training mode.*Vocational Education Communication*,64-65.

schools with professional backbones to work in schools and also provide school teachers with internship opportunities, so that teachers can experience students' professional knowledge and technology in a real working environment, so that the trained students can better meet the needs of enterprises.[156]

Liang believes that school-enterprise cooperation is conducive to the innovation of education system and talent training mode, the deepening of teaching reform, the formation of a system and mechanism for schools and enterprises to jointly train talents, and the optimization and integration of resources. It organically integrates human, material and financial resources of enterprises with teaching resources of schools. It is conducive to the improvement of students' sense of corporate culture identity and the establishment of the sense of ownership, understanding the real work environment, rules and regulations, etc.[157]

Liu demonstrated the significance of school-enterprise cooperation on students' employment, pointing out that industry-school interaction is an effective means to solve students' blind employment, enabling students to visualize and concretize abstract professional concepts in the real workplace environment, comprehensively understand their majors, and make a good life plan in advance[158].

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[156]Sun, A.R.(2004).The significance and approach of school-enterprise cooperation in higher vocational education.*Journal of Shandong Youth Management Cadre College*.76-77.

[157]Liang,Z.Y.(2015).on the "order-type" talent training of higher vocational education.*Journal of Liming Vocational University*.58-60.

[158]Liu, C.L.(2015).The significance of school-enterprise cooperation in higher vocational colleges.*Journal of Jiangsu Normal University of Technology Vocational Education communication*.74-75.

3. Research on legislation of school-enterprise cooperation in Vocational Education.

Such research has focused on macro level for the vocational education university-enterprise cooperation legislation of various countries, analyzes the development of vocational education university-enterprise cooperation legislation, reveals the growth of vocational education to carry out the cooperation between colleges and enterprises correlation, probes into the necessity of legislation of vocational education university-enterprise cooperation, has been clear about the enterprise the main body of vocational education university-enterprise cooperation accountability, This paper expounds the openness and transboundary of the legislation of school-enterprise cooperation in vocational education and its enlightenment to the construction of legal system of school-enterprise cooperation in vocational education in China.

Most of the literatures are carried out from the perspective of analyzing the necessity of the construction of the legal system of school-enterprise cooperation in vocational education in China. However, there is no systematic research on how to construct the legal system of school-enterprise cooperation in vocational education in China and what aspects should be considered. However, in view of the development of the legal system construction of school-enterprise cooperation in vocational education in various countries, it is highly emphasized to guarantee the dominant position of enterprises in the development of vocational education through legal system.

Jiang believes that Germany, as a model of vocational education implementation in the world, implements the "dual system" mode, and the key lies in establishing a school-enterprise cooperation mode regulated by legal system.In his opinion, vocational education is a type of education that transcends the boundaries of occupation and education, enterprise and school, and work and study. To standardize and guarantee such "trans-boundary" education, both occupation and education laws must be followed.Therefore, the implementation mode of vocational education must break the thinking of training in enterprises or education in schools,

and form a trans-boundary multi-angle thinking.[159]

Lei made a detailed analysis of Germany's dual system mode in Germany's Vocational Education Law, Juvenile Labor Protection Law, Vocational Training Regulations, framework Teaching Plan and other legal systems, arguing that German vocational education determines the main responsibility of enterprises in vocational education through legislation.In the legal system of a series of the student and the enterprise contract, contract signing, the specific content of the enterprise to cultivate the students' responsibility, fixed number of year of the student's status, training, training class distribution, training objectives, training content and examination requirements have unified regulation, to ensure the graduates can satisfy the need of society and the enterprise employee, and can effectively solve the employment of students,Promoting social and economic development.[160]

Li discussed the importance of protecting students' rights and interests in school-enterprise cooperation. The author points out that school-enterprise cooperation is an effective way to strengthen vocational education, but students' rights and interests are often ignored. The article analyzes the problems that students may encounter in school-enterprise cooperation and proposes strategies and methods to protect students' rights and interests. These methods include establishing a student rights protection mechanism, improving the contract system, and ensuring students' participation in decision-making. Finally, the article emphasizes the importance of strengthening supervision and evaluation of the protection of students' rights and interests, aiming to establish a more equitable, stable and sustainable school-enterprise cooperation mechanism and promote the

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[159]Jiang,D.Y.(2009).A review of Sino-German Cooperation in the field of higher vocational education. *China Vocational and Technical Education*.9-15.

[160]Lei,X.B.(2015)On the construction of campus culture in Higher Vocational Colleges from the perspective of university-enterprise culture integration. *Occupation*,19-21.

development of vocational education.[161]

4. Study on the influencing factors of school-enterprise cooperation

Qiu analyzed the motivation influencing factors of school-enterprise cooperation from both internal and external mechanisms. From the perspective of external mechanism, social and cultural environment, science and technology environment, economic environment and legal environment are the main factors that affect enterprise participation motivation. These external influencing factors not only directly or indirectly provide various elements, innovation standards and space for school-enterprise cooperation, but also constrain the development of school-enterprise cooperation in a certain period. From the perspective of internal mechanism, school-enterprise cooperation is a series of cooperation process from input to output between schools and enterprises. In this process, internal mechanisms such as drive, communication and distribution play a serial and parallel role. Among them, driving mechanism is the initial driving force of school-enterprise cooperation, communication mechanism is the growth driving force of school-enterprise cooperation, and distribution mechanism is the progressive development driving force of school-enterprise cooperation. From the influence of internal and external mechanisms, higher vocational colleges must change their development ideas, timely respond to the needs of economic and social development, actively cooperate with enterprises to carry out vocational skills teaching and training, and promote the development of school-enterprise cooperation in depth. In short, it is very important to establish a healthy school-enterprise cooperation mechanism for sustainable development and stimulate the participation enthusiasm of enterprises. The government provides institutional guarantee and schools actively cooperate with enterprises on the premise of adhering to the theme of running schools are

[161]Li,W. (2009). Student rights in school-enterprise cooperation. *Journal of Vocational Education Studies, 10(3)*, 89-100.

important conditions for high enterprise participation enthusiasm.[162]

Li studied school-enterprise cooperation from the perspective of public choice theory and labor economics theory, and believed that the lack of complete labor market under large groups and the lack of enterprise vocational training standards were important factors affecting school-enterprise cooperation and the root cause of a series of school-enterprise cooperation problems. He pointed out that the establishment of vocational training standards recognized by both schools and enterprises and the creation of a complete labor market are the key to solving the problem of school-enterprise cooperation, so that enterprises can obtain reasonable returns in the school-enterprise cooperation.[163]

Li & Zhang pointed out that companies need to fully consider factors such as job market ecology, regional economic characteristics and cultural differences when selecting partners and formulating cooperation strategies. The economic conditions and market demands in different regions of China will also affect corporate cooperation strategies. Therefore, enterprises need to customize cooperation strategies according to local conditions and carry out cooperation forms such as resource sharing, expansion of scale and improvement of market position, so as to achieve improvements in economic benefits and market competitiveness.[164]

Li studied the core position of curriculum design and implementation in school-enterprise cooperation and the impact of advanced experimental equipment on students' ability development. Through curriculum design and implementation in

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[162]Qiu,L.Y.(2011). Analysis of influencing factors of school-enterprise cooperation in higher vocational education.*Educational Exploration*.156-157.

[163]Li, J.(2015).The dilemma and breakthrough of Enterprises' participation in vocational education in China: Based on public choice theory and labor economics. *Educational Development Research*.52-58

[164]Li&Zhang,(2012). Regional Economic Differences and Corporate Strategies in China. *China Economic Review*.

the cooperation model, schools and enterprises can work together to develop courses that adapt to practical needs to meet student training needs. At the same time, the application of advanced experimental equipment provides a more practical teaching environment, which helps to promote students' practical ability cultivation and comprehensive quality improvement. These research results have important reference value for promoting the reform of school-enterprise cooperative education and improving students' comprehensive quality.[165]

Yan studied the practice-oriented teaching model and scientific research cooperation as an effective way to bridge schools and enterprises in higher vocational education and school-enterprise cooperation. The practice-oriented teaching model emphasizes the improvement of students' practical ability and employability, while school-enterprise cooperation provides students with practical opportunities and career development support. In addition, scientific research cooperation also plays an important role in strengthening cooperative relations and exchanging technical experience between schools and enterprises.[166]

Yang believes that internationalization and industry resources are new trends in future school-enterprise cooperation. In the context of globalization, the importance and opportunities of school-enterprise cooperation have become increasingly apparent. Therefore, using an international perspective to expand international school-enterprise cooperation has become a development strategy. At the same time, industry resources play an important role in school-enterprise cooperation. Through cooperation with industry, schools can obtain advanced technology, talents and market information, and provide students with more practical and employment-oriented education.[167]

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[165]Li,H.(2016). Curriculum design and implementation in school-enterprise cooperation. *Educational Reform, 9,* 33-37.

[166]Yan,Z.(2019). Practice-oriented higher vocational education and school-enterprise cooperation. *Higher Education Research, 6*, 48-52.

[167]Yang,F.(2018). School-enterprise cooperation strategy from an international perspective. *Educational Innovation, 7*, 44-49.

5. Research on school-enterprise cooperation mode.

Throughout the research literature on school-enterprise cooperation by Chinese scholars, it is found that there are abundant researches on school-enterprise cooperation mode. The cooperative modes are divided from the characteristics of practical operation, according to the standards of education providers and places, and according to the standards of age development, school-running system and training process.

Starting from the main body of school-enterprise joint education, Li divides the school-enterprise joint education mode into co-construction mode, order mode and output mode, and divides it into school-worker alternate mode, in-post mode and sandwich mode according to the distribution of students' hours.[168]

He proposed six modes of school-enterprise cooperation, namely, "oral-order" talent training mode, B0T cooperation mode, "industry-university-research" mode, "double-hang-out" base mode, "Enterprise Cup" professional skill competition form and entrepreneur report meeting form.[169]

Hu carried out exploratory research on innovation and development of school-enterprise cooperation， Enterprises and higher vocational colleges jointly carry out the "interchange type" talent training mode. In the whole learning process, the school interacts with the enterprise, the enterprise participates in the specific teaching management of the school, and the students go deep into the enterprise to carry out practical operation and on-the-job internship.[170]

Ma carried out exploratory research, First, enterprises and higher vocational colleges jointly carry out the "order-type" talent training mode. Second, enterprises

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[168]Li, J.(2018).Construction of enterprise University Based on community Theory.*China Vocational and Technical Education*.51-54.

[169]He,P.(2008).Innovating the training mode of accounting talents in higher vocational colleges.*Northern Economics and Trade*.140-142.

[170]Hu,X.H.(2008).Vocational Education Forum for exploring the "interchangeable" Talent Training mode combining work with Study in school-enterprise cooperation,*Vocational Education Forum*,50.

and higher vocational colleges jointly carry out the "2+1" talent training mode.This talent cultivation mode divides students' learning into two stages. The first stage is dominated by school education, and enterprises play an active role. The period of this stage is generally 2 years. The second stage focuses on enterprise practice education, with schools playing an active role. The duration of this stage is generally one year.[171]

Wan studied the innovation and development of university-industry cooperation, including specialized entity companies. This innovative development mode adheres to the trinity development mode of "school-enterprise-society", takes the market as the guidance, leads the teaching management of the school to the front line of production practice, and actively integrates the forces of the society, enterprises and other parties to participate in running schools.[172]

Gao believes that the talent cultivation mode of school-enterprise cooperation is oriented to the needs of society and enterprises, and the training and education should focus on improving students' basic quality and vocational ability, and ultimately promote students' employment and the sound development of the whole economy and societ.[173]

6. Research on policy factors of school-enterprise cooperation in higher vocational education

Wang studied school-enterprise cooperation from the perspective of social

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[171]Ma,Q.F.(2010).New progress of China's vocational education research,*(Shanghai: East China Normal University Press),*230.

[172]Wan,Y.X.(2008).Practice and research on establishing school-enterprise cooperation mode characterized by professional materialized company,*Chinese higher education research*,62.

[173]Gao, P.Y.(2010).The current situation and development strategies of school-enterprise cooperation in vocational education,*Doctoral dissertation Shandong Normal University*,18.

exchange theory and believed that the unequal status of schools and enterprises in cooperation was an important factor affecting school-enterprise cooperation. In his opinion, the cooperation between higher vocational colleges and enterprises in China is essentially an unequal exchange, which gives birth to "power" in school-enterprise cooperation, especially "enterprise power". The emergence of "enterprise power" makes higher vocational colleges in a subordinate position in cooperation. It is very important to encourage enterprises to participate in school-enterprise cooperation, but the school-enterprise cooperation maintained by "enterprise power" cannot achieve sound development. Therefore, the government should issue more guarantee policies to encourage enterprises to participate in school-enterprise cooperation, constantly enhance the school resources of higher vocational colleges, enhance the value of school resources to enterprises, and gradually repair the unequal exchange relationship.[174]

7. Research on problems existing in school-enterprise cooperation.

For the research on the problems of school-enterprise cooperation, domestic scholars mainly focus on the backward concept of cooperation, imperfect cooperation mechanism, imperfect cooperation policies and regulations, insufficient government investment and low enterprise enthusiasm.

Huang pointed out that up to now, school-enterprise cooperation has not formed a complete system, mechanism and institutional guarantee, there is no overall planning, unified layout to lead the overall situation, and no strong measures to ensure implementation. At the present stage, school-enterprise cooperation is the subject of the school, but there are "formalism", "discipline" and other problems that cannot be ignored.[175]

Wang pointed out that the school itself is weak and lacks school-running

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[174]Wang, D.(2013).Social exchange theory explaining the dilemma of school-enterprise cooperation.*Vocational Education Forum*.19-22.

[175]Huang,Y.X.(2017).the way of education through school-enterprise cooperation.*China Labor security*.28-29.

characteristics and advantageous disciplines.The enterprise lacks strategic thinking and long-term talent concept to pursue short-term interests, so it lacks enthusiasm for cooperation.[176]

Liu pointed out that the safety of middle school students in the school-enterprise cooperation process is not guaranteed. Interns and on-the-job internships are not protected by Labor Law at the present stage, and students' salary, social insurance and personal accident insurance are not guaranteed[177].

Cai believes that the traditional talent training mode restricts the long-term development of school-enterprise cooperation. School curriculum design and talent training can not meet the needs of enterprises for talent, the lack of double-qualified teachers, the quality of teachers to be improved.[178]

8. PPP mixed ownership school running research

Mixed ownership in running schools can better concentrate idle social funds to participate in running schools, which can not only reduce the financial burden of the country to a certain extent, but also innovate the system and mechanism of running vocational schools and add vitality to running vocational schools. In addition, mixed-ownership schools can deepen practical teaching and help meet the needs of

[176]Wang, S.P.(2018).A study on the governance subjects of higher vocational colleges from the perspective of stakeholder theory.*Journal of Beijing Vocational College of Politics and Law*.107-109.

[177]Liu,Y.P.(2016).Problems and reflections on school-enterprise cooperation in vocational education.*Education and Occupation*, 164-165.

[178]Cai,Y.H.(2015).The significance, model, problems and countermeasures of school-enterprise cooperation in higher vocational colleges.*Journal of Changchun Institute of Education 31*.140-142.

high-quality talents cultivation for economic development under the new normal.[179]

The diversification of investment subjects of mixed ownership vocational colleges is helpful to change the dependence of vocational colleges on government resources.By referring to the market operation mechanism of enterprises, the implementation of school legal person governance is conducive to the construction of modern university system.In addition, the reform of mixed-ownership schools will help deepen the school-enterprise cooperation mechanism.[180]

Study on stakeholders of school-enterprise cooperation

With the continuous expansion of the application scope of stakeholder theory, domestic education field has also carried out corresponding discussions and studies based on this theory. The research content mainly focuses on university governance, university-enterprise cooperation and quality evaluation. One is the governance of universities.

Zhang argues that under the stakeholder theory of the evaluation of higher education should focus on government agencies, schools, teachers and students and other stakeholder interests, from the evaluation subject, evaluation standard, and then evaluates the coordination mechanism and so on four aspects to build a comprehensive, the authenticity of the educational evaluation system, to guide the standard and perfect managerial behavior.[181]

Chen and Xiao analyzed the problems existing in the current graduate training process in China through the theory and method of stakeholders, and proposed that more stakeholders should be involved in the graduate training process of colleges

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[179]Yan,D.(2016).Theoretical exploration of mixed ownership reform in Higher Vocational education.*Journal of National Institute of Education Administration*,65-69.

[180]Fan, M.C.(2016).Some thoughts on developing mixed ownership vocational Colleges.*China Higher Education Research*,92-96.

[181]Zhang,J.X.(2017).Study on the coordination mechanism of university education evaluation System construction from the perspective of stakeholders.*Education Research*, 62-69.

and universities.[182]

Zhang&Hu. analyzed the interest subjects and interest demands involved in the teaching quality evaluation system of colleges and universities, and constructed the teaching quality evaluation system from the aspects of evaluation subjects and objects, evaluation objectives and contents, evaluation standards and methods, and feedback system by using the statistical method of stakeholder theory.Strive to reflect the teaching level of colleges and universities more objectively and truly, and provide reliable basis for teaching reform and teaching quality improvement.[183]

Foreign Researches

Related studies of university-enterprise cooperation abroad focuses on the study of theory construction and practice mode, British professor freeman in the technical and economic running: from Japan's experience "points out that the university-enterprise cooperation is a national behavior, the country's behaviour and improve competitiveness for the development of Chinese economy shows the enormous role.In other words, in the national economic development and leap-forward catch-up, it is not enough to rely on the market economy with free competition and the previous spontaneous school-enterprise cooperation, but also need to pay for policy intervention and institutional support to ensure the implementation of the long-term strategy of enterprises and the country. This study clarifies the important role of government in school-enterprise cooperation and lays a solid theoretical foundation for the wide development of school-enterprise

[182]Chen,Y.,&Xiao,W.j.(2016).Empirical research on postgraduate training quality evaluation from the perspective of stakeholders.*Higher Engineering Education Research*, 168-171.

[183]Zhang,R.G.,&Hu,X.Q.(2018).Construction of comprehensive evaluation System of university teaching quality based on stakeholder Perspective .*Journal of Chengdu University of Technology 0 Earth Science Edition*, 101-104.

cooperation.[184]

Park established university science and technology parks by introducing enterprises to the university, and carried out cooperation mode of talent training between enterprises and universities.[185]

Smith, an Australian vocational education researcher, studied relevant theories of vocational and technical education and training and concluded that apprenticeship training is the key content of school-enterprise cooperative education. There is a better connection between its theoretical framework and its knowledge output, and its research results have been widely used in academic circles[186].

Brown and Smith adopted qualitative research methods and found that in the context of community, enterprises play a role in developing skills and expanding participation in education and training. Based on the perspective of enterprise research model, social enterprises and training companies are combined to provide vocational training for children and adults, while helping adult learners develop the business operation skills they need. The study proved that the communities they serve benefit significantly. The study also explores the major factors that influence success, providing lessons for others to learn and develop skills in the community[187].

[184]Freeman,Christopher.(1987).Technology policy and economic performance : lessons from Japan.*(London;New York:Pinter Publishers)*,12

[185]Park,H.W.(2010).longitudinal trends in networks of university-industry-government ralations in South Korea:the role of programmatic incentives.*Research policy*,640-649.

[186]Smith,Er.(2012).How vovat ional educ at ion and training researc hers use theory in their reseac h Internat ional,*Journal of Traning Research,Vol.10 Is sue*.251.

[187]Brown,A.,&Smith,P.(2000).The use of a soc ial enterprise construct for widening part ic ipat ion, learning and training for employment,*Journal of education&Work,Vol.13 Issue 1*.41.

Yorke and Knight think that colleges and universities should regard the cultivation of students' employability as an important goal of talent training, and integrate the cultivation and improvement of employability into daily teaching management. The teaching in colleges and universities should not only focus on cultivating students' professional ability, but also on cultivating students' general ability. Therefore, the curriculum design and teaching process design of colleges and universities must be combined with vocational practice, teachers' teaching and students' learning must be carried out under the actual vocational situation.[188]

Goho showed that cooperative education between enterprises and schools significantly improved students' career competitiveness. By means of comparative analysis, the benefits and costs of graduates from cooperative education programs and non-cooperative education programs were comparatively analyzed. The differences between the two groups were statistically analyzed and the significant variables affecting the differences were found by regression analysis. The results show that graduates who have participated in school-enterprise cooperation programs are more likely to find jobs, and their jobs are more suitable for their majors, and their incomes are relatively higher. The results show that school-enterprise cooperative education is beneficial to students' smooth employment, and is more conducive to them to find jobs corresponding to their major.[189]

Toner believes that vocational and technical education plays an important role in helping to establish vocational and technical education and training system, and also provides help for the generation and diffusion of technology and well-trained workers. Many researchers have shown that the school-enterprise innovation model makes enterprises more dependent on the innovation of vocational skills. Although vocational and technical education and training are largely excluded from

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[188]Yorke,M.,&Knight,P.(2004).Self-throries :some implications for teaching and learning in higher education,*Studies in Higher Education*. 25-37.

[189]Goho,J.(2012).Effects of Cooperative Education on Community College Employment outcomes at the School to Work Transition". *Journal of Applied Research in the Community College*,83.

government innovation programs and policies, many important benefits of vocational and technical education and training are thus defined, and broader innovation systems will emerge from closer integration of vocational and technical education and innovation policies.[190]

Germany in the 1970 s cost and fiscal studies expert committee for the first time to carry out the "cost of vocational education and funding" survey, the survey found that accept the apprentice in addition to save manpower cost also has more advantages, such as enterprise own training apprentice to master specialty knowledge, identity, corporate culture of training to meet the special requirements of enterprises; The risk of misplacement and turnover of self-trained employees is lower than that of recruiting employees from mobile markets. In particular, the cost of absenteeism can be prevented, especially in the case of labor shortage. Apprenticeships can solve the problem of production manpower shortage and the resulting abandoned orders.[191]

Phillip and Rauner demonstrate that training quality can be improved without increasing training input through 24 case studies. It is recommended that enterprises integrate apprenticeship training with the production process.[192]

Educators, the economist Henry Russell, in his book "the American campus culture - students, professor of management," suggests that university is a composed of "shareholder", complex institutions, each "shareholders" have equal rights and obligations of students, teachers, between employees, directors, alumni, media, the public are lurking certain conflicts of interest.[193]

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[190]Toner,P.(2012).Vocational education and training:the terrainc ognita of innovation policy.*Prometheus* ,411.

[191]HaraldPfeier.Forschungsprojekt .(2009).Kostenund Nutzenderbetrieblichen Berufsausbldung.*Abschlussbericht.BibbBonn*.17.

[192]Phillip,G,Felix Rauner.(1998).Exploring innovative apprenticeship:quality and costs.*Education TrainingVol.49Iss:6*, 431-446.

[193]Henry Russell.(2010).American Campus Culture - Student and professor management.*(Jinan: Shandong People's Publishing House)*, 243.

Research on laws and regulations regarding school-enterprise cooperation

The key role of intellectual property rights in innovation and research was discussed, and the importance of clear ownership and protection of intellectual property rights in promoting innovation and research was emphasized. Johnson pointed out that clear intellectual property ownership can encourage inventors and researchers to innovate and discover knowledge. At the same time, the protection of intellectual property rights can ensure that they receive reasonable returns, promote technology transfer and cooperative research, and promote the progress of scientific research and technological innovation. The article also raises the challenges and issues facing intellectual property protection, and discusses how to promote open innovation and knowledge sharing while protecting intellectual property.[194]

The study discusses funding and tax management issues in university-industry collaborations. Smith pointed out that both parties need to pay attention to fund management issues, including funding sources, budget management and expenditure monitoring. In addition, tax issues also require attention, such as tax liability, tax law compliance and tax compliance. The article provides some practical financial and tax planning methods aimed at promoting the successful development of university-business cooperation. In summary, this literature highlights the importance of funding and tax management for university-industry collaborations and provides relevant guidance and recommendations.[195]

Study on the influencing factors of school-enterprise cooperation

Jones research believes that during economic booms, companies are more willing to cooperate with schools to promote innovation and market competitiveness. However, during an economic recession, companies may reduce investment in school-enterprise cooperation to reduce costs. Changes in the

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[194]Johnson, B. (2007). Knowledge property and research innovation. *Journal of Intellectual Property, 8(1)*, 45-60.

[195]Smith, P. (2015). Financial and Tax Planning in University-Business Collaborations. *Finance and Law Review, 18(4)*, 90-104.

economic cycle will affect the willingness and ability of enterprises, and have an impact on the number and timing of school-enterprise cooperation projects. Therefore, understanding the impact of economic cycles on school-enterprise cooperation is of great significance for enterprises to formulate appropriate strategies and respond to market changes.[196]

Taylor discussed the relationship between industry life cycles and business strategy. The article introduces the four stages of the industry life cycle model and analyzes the business strategies and decisions that companies need to take in each stage. According to the market demand and industry characteristics at different stages, enterprises need to promote, innovate, consolidate or adjust strategies to maintain or expand market share. At the same time, the article emphasizes the importance of flexibly adjusting business strategies according to market changes and points out the challenges and opportunities when implementing the industry life cycle model.[197]

The impact of smart and connected products on corporate competition is discussed and countermeasures are proposed. Smart, connected products provide more accurate and customized solutions by collecting and analyzing large amounts of data, while also changing the competitive landscape and increasing the number and diversity of market players. The article emphasizes that companies need to develop new business models, strengthen data analysis capabilities, establish a cooperative ecosystem, and pay attention to important issues such as product security and privacy protection. Smart and connected products bring business opportunities and challenges to enterprises, requiring continuous innovation and cooperation.[198]

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[196]Jones et al.,(2003) The Role of Economic Cycles in Shaping Business Behavior. *Journal of Business Studies*.

[197]Taylor, (2008) . Industry Lifecycles and Business Strategies. *Business Review Journal*.

[198]Porter, M. E., & Heppelmann, J. E. (2014). How smart, connected products are transforming competition. *Harvard Business Review, 92(11)*, 64-88.

Nelson compared the innovation systems of different countries, including differences in innovation policies, scientific research institutions, education and training. It emphasizes the importance of the national innovation system to economic growth and competitiveness, and proposes policies and measures to establish and develop the innovation system. This book provides readers with an important reference for studying national innovation systems.[199]

Etzkowitz and Leydesdorff's research policy article discusses the dynamics of innovation systems and proposes a concept called the "triple helix," which emphasizes the importance of collaborative relationships between universities, industry, and government for the development of innovation. The article introduces the traditional national innovation system and the concept of "Mode 2", and then proposes the "Triple Spiral". The concept reveals the closely interactive collaborative innovation relationships between universities, industry and government and explores how they drive economic development and social change. This article provides important guidance and reference for our understanding of the formation and operation of innovation networks.[200]

The important role of research universities in industrial innovation was discussed, including providing technical and knowledge support, providing research foundation and human resources. The author also mentioned the challenges faced in university research and industry cooperation, as well as the financing methods that need to be adopted, such as industry providing funds to help complete research. In addition, the article also emphasizes the importance of patent and intellectual property protection for technological innovation. These findings are valuable for promoting exchanges between universities and industry and promoting scientific and

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[199]Nelson, R. R. (Ed.). (1993). National innovation systems: A comparative analysis. *Oxford university press*.

[200]Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university–industry–government relations. *Research policy, 29(2)*, 109-123.

technological innovation.[201]

Shulman's research on the improvement of teachers' knowledge and teaching abilities emphasizes the importance of teachers' professional knowledge in improving teaching quality and student learning outcomes. The authors introduce different types of teacher knowledge, including subject content knowledge, general pedagogical knowledge, and curriculum expertise, and point out their interrelationships and importance. The article also provides ways for teachers to acquire and improve knowledge, emphasizing the importance of practical experience and the necessity of teaching reflection. In short, this document has important guiding significance for teachers' professional development and improvement of teaching standards.[202]

Schultz raised the importance of education and training in improving worker productivity. The author believes that education is a capital investment that can increase an individual's productivity at work by improving their skill level and knowledge base. At the same time, the author emphasizes that education should be regarded as an important investment by society and government, which can improve overall productivity and promote economic development by providing high-quality education and training opportunities.[203]

Rogers' innovation diffusion theory divides the social innovation transmission process into five stages: informed, interested, evaluated, tried and adopted. He believes that there are obvious differences in the speed and way in which different types of people accept new things, and based on these differences, he divides five types of people, namely innovators, early adopters, early majority, late majority and laggards. Rogers' innovation diffusion theory provides important empirical research on

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[201]Mansfield, E. (1995). Academic research underlying industrial innovations: sources, characteristics, and financing.

[202]Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational researcher, 15(2)*, 4-14.

[203]Schultz, T. W. (1961). Investment in human capital. *The American economic review, 51(1)*, 1-17.

the spread of social innovations and makes important theoretical contributions to the study of the spread and acceptance of new things in society. At the same time, innovation diffusion theory also plays an important guiding role in the promotion and marketing strategies of new products and new technologies.[204]

The content involves product development theory and discusses the impact of product innovation on corporate performance. Cooper believes that product innovation is an important factor for companies to maintain a competitive advantage in a highly competitive market. The definition of product innovation in the literature includes aspects such as product improvement, expansion, creation, and application of new technologies and concepts. Through empirical research and case analysis, the author explores the relationship between product innovation and corporate performance, and provides some theoretical framework and practical experience.[205]

Porter proposed the famous five forces model to evaluate the competitive environment and competitive position of enterprises. The model includes five core dimensions: bargaining power of suppliers, bargaining power of buyers, threat from potential competitors, threat from substitutes and competition among existing competitors.[206]

[204] Rogers, E. M. (1962). Diffusion of innovations. *The Free Press*.

[205] Cooper, R. G. (1990). Product innovation and firm performance. *Journal of business & industrial marketing, 5(4)*, 5-18.

[206] Porter, M. E. (1980). Competitive strategy: Techniques for analyzing industries and competitors. *The Free Press*.

Summary

This chapter introduces the relevant knowledge and theories about school-enterprise cooperation in higher vocational education in Guangdong. First of all, this chapter introduces the definition, benefits, subjects and content of school-enterprise cooperation, and systematically sorts out the characteristics and significance of school-enterprise cooperation. Secondly, this chapter deeply discusses the theories related to school-enterprise cooperation, including PPP theory, stakeholder theory and multi-party collaboration theory, as well as EFR ethnography future research theory, to provide theoretical support for subsequent research. Finally, this chapter also introduces the research area: higher vocational education in Guangdong Province, China, as well as relevant school-enterprise cooperation research literature, including research results from China and abroad.

Chapter III
Research Methodology

In order to achieve the research goals and objectives mentioned in chapter 1, the methods by which they will be achieved need to be defined. This study will use EFR as the research method, EFR research method is a theory-driven approach that focuses on complex social phenomena. EFR stands for "Ethnographic Feasibility Report", which is used to evaluate the feasibility and impact of implementing technology, policies or procedures. This method is commonly used in fields such as emerging technologies and organizational change. Therefore, this chapter will discuss the research methods, data collection and analysis methods used in this study.

Research Procedure

The specific purpose of this study is to determine the School-Enterprise Cooperation of Higher Vocational Education in Guangdong Province. The researcher divided the procedure into 3 stages/phases which were as following:

Phase 1: Preparing the research project

This phase of this research, the researcher must be involved, reviewed and analyzed a comprehensive review of the existing literature on school-enterprise cooperation in higher vocational education.

Phase 2: Implementing the research project

This phase of this research, the researcher employed the Ethnographic Futures Research (EFR) technique, by interviewing 17 experts to elicit their perceptions and preferences among possible alternative concept for School-Enterprise Cooperation of Higher Vocational Education in Guangdong Province. During this stage, the researcher contacted all 17 experts and prepared the unstructured interview to ensure adequate coverage of all broad subject areas, but restrict the researcher role to be a non-directive stimulator and careful scribe. The interview is open-ended questions, which are non-directive, non-judgmental and non-

manipulative in both content and style. This stage is shown in the following diagram. (Figure 1):

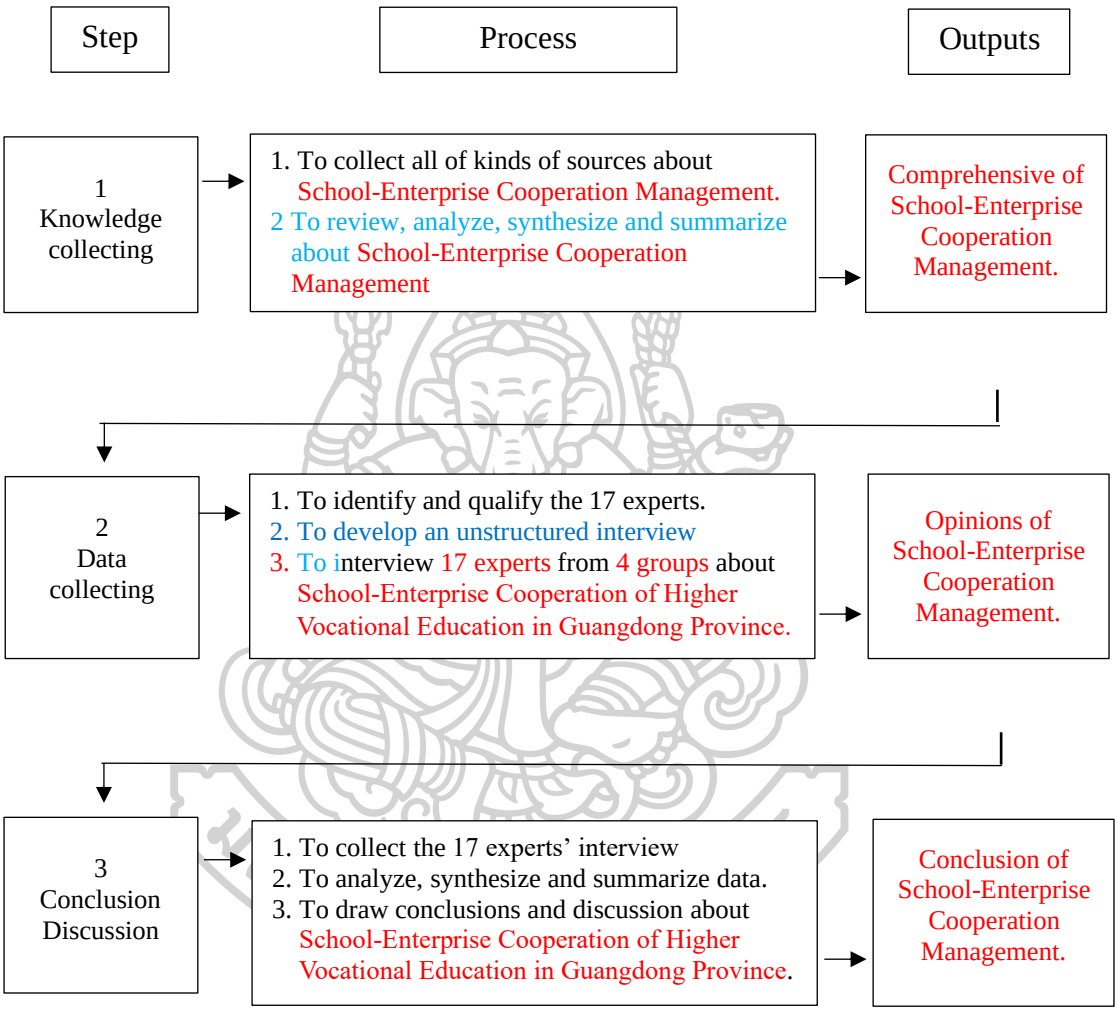


Figure 9 Implementing the research project

Phase 3: Completely the research report

This phase of this research, the researcher concluded the data, analyze the data and develop a set of common scenarios to identify the alternative concept for School-Enterprise Cooperation of Higher Vocational Education in Guangdong Province The research then submitted the final report in partial

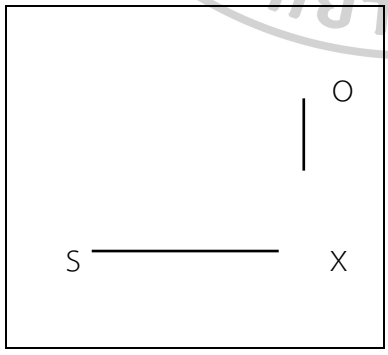
fulfillment of the requirements for the Doctor of Philosophy in Educational Administration from Silpakorn University.

Research Methodology

With school-enterprise cooperation in higher vocational education in Guangdong Province as the research object, the researchers conducted a comprehensive review of existing theoretical results and adopted the EFR method. According to the recommendations of Thomas Macmillan in the Delphi study to ensure the lowest error, the size of the expert panel should be at least 17. Therefore, 17 school-enterprise cooperation experts were selected for one-on-one interviews to explore their future expectations for school-enterprise cooperation in higher vocational education in Guangdong Province.

Research Design

This study was a descriptive research which adopt the technique of EFR (Ethnographic Futures Research). The research design was the One–Shot, Non–Experimental Case Study that shown in diagram as figure 1:



Note: S means 17 jury of experts
X means the international cooperative management
O means the conclusion of the international cooperative management

Jury of experts

The researcher designed how to perform as:

1. To identify the number of jury of experts equal to 17 experts.

2. To divided the 17 jury of experts into 3 group which were 1) 5 School-enterprise cooperation Policy experts 2) 6 School-enterprise cooperation leaders and 3) 5 School-enterprise cooperation academic researchers

3. To conducted one-on-one interviews with them with the following qualifications using EFR:

(1) Have conducted in-depth research or published relevant papers in the field of school-enterprise cooperation or higher vocational education.

(2) Have played key roles in school-enterprise cooperation projects, such as policy makers or directors of school-enterprise cooperation.

(3) Priority will be given to experts with experience in school-enterprise cooperation or research in Guangdong Province, as the study focuses on the province.

(4) Have more than 5 years of relevant work experience, preferably at the level of lecturer or above.

Developing instrument

The instrument used in this study was an unstructured interview.

In EFR, the research instrument is not a fixed questionnaire or survey, but rather a flexible and non-directive approach to interviewing. The EFR research instrument is designed to elicit scenarios from a sample of interviewees that will support conclusions as to their shared and patterned perceptions and preferences with respect to possible or probable future cultures (or subcultures) for their society (or group), usually as of some approximate time horizon in the middle range future.

The EFR research instrument involves open-ended, non-directive interviews that allow interviewees to freely express their views and expectations about the future. The interviews are recorded and the data is organized and analyzed using

techniques such as Cumulative Summarization Technique[207]. The EFR research instrument emphasizes interaction and collaboration with interviewees to understand their perspectives and expectations about the future. This approach can help researchers better understand people's views and expectations about the future, and better address future challenges.

Data Collection

Data collection in EFR is done through open-ended, non-directive interviews. The EFR research instrument is designed to elicit scenarios from a sample of interviewees that will support conclusions as to their shared and patterned perceptions and preferences with respect to possible or probable future cultures (or subcultures) for their society (or group), usually as of some approximate time horizon in the middle range future[208].

A total of 17 EFR interviews were conducted in this study, and they all started with a certain structure. Once the interview begins, it offers a fair amount of flexibility and openness. The purpose of each interview is to draw possible scenarios for the future of school-enterprise cooperation in higher vocational education in Guangdong Province. Each interview was recorded, transcribed, analyzed and summarized.

Data Analysis

The data obtained from interviews with 17 experts will be summarized by the researcher. Then, the researcher will construct various dimensions related to school-enterprise cooperation in higher vocational education in Guangdong Province according to the data obtained from the expert interview, and list the corresponding items according to the contents of each dimension. Finally, the researcher should draw conclusions and make recommendations based on the analysis results.

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[207]Textor, R. B. 1980. A Handbook on Ethnographic Futures Research. Stanford, *CA: Stanford University Press*.81.

[208]Textor, R. B. 1980. A Handbook on Ethnographic Futures Research. Stanford, *CA: Stanford University Press.*41

Summary

This chapter describes the methodological framework of this study in detail, selecting Ethnographic Futures Research (EFR) as the core method, and using expert interviews as the main data collection tool. We collected key data through interviews with 17 experts in the field of school-enterprise cooperation in higher vocational education in Guangdong Province. Subsequently, data processing and analysis were carried out systematically. The selection and application of these methods provided a reliable basis for the research results in subsequent chapters and laid a solid foundation for subsequent research results.

Chapter IV
Data Analysis

This chapter aims to collect data and conduct a comprehensive exploration and analysis of the collaboration between educational institutions and enterprises in higher vocational education in Guangdong Province, China. To ensure the systematicity and depth of the research, this chapter is divided into two main stages. In the first stage, interviews were conducted with 17 experts who have rich experience in the field of school-enterprise cooperation to collect and organize first-hand information about this field. The insights from these experts provide valuable industry insights and practical experience for the researchers. In the second stage, based on the data collected in the first stage, the researchers start to develop and determine the school-enterprise cooperation in higher vocational education in Guangdong, China. Each dimension encompasses corresponding detailed content, ensure that researchers can comprehensively and thoroughly understand the situation of school-enterprise cooperation.

Part I : The results of the 17 experts' interview

After finish the 17 experts' interview, the researcher did 17 summaries and show one-by-one as:

Expert 1's Opinions:1) Experts pointed out that the current vocational education legislation in Guangdong Province is not perfect enough and lacks systematisms and comprehensiveness. In order to ensure the standardization and sustainable development of school-enterprise cooperation, it is recommended to formulate special vocational education laws and regulations to provide detailed regulations for each link of school-enterprise cooperation. According to expert opinions, clear cooperation contracts, intellectual property protection, effective dispute resolution mechanisms, protection of the rights and interests of students and teachers, as well as transparent fund management and tax compliance are all keys

to ensuring successful cooperation. These laws and regulations should clearly define the rights and obligations of schools and enterprises in cooperation, standardize the procedures and standards of cooperation, provide legal guarantees, and prevent legal risks in the process of cooperation. Experts suggest inviting legal experts, education experts and enterprise representatives to participate in legislative discussions to ensure the scientific nature and operability of legal provisions. 2) Experts believe that promoting the standardization of vocational education is an important measure to improve the quality of education and the effectiveness of cooperation. National and industry standards for vocational education should be formulated and promoted, covering curriculum setting, teaching methods, construction of training bases, teacher training and other aspects. Through standardization, the standardization and uniformity of vocational education can be ensured, so that school-enterprise cooperation has rules to follow. Specific measures include formulating curriculum standards that match industry needs, promoting advanced teaching methods and evaluation standards, and formulating construction and management standards for training bases. Experts suggest promoting and disseminating through channels such as government websites and training sessions to help schools and enterprises understand and apply standardization guidelines. 3) Experts stressed that in order to encourage enterprises to actively participate in vocational education, special tax incentives should be formulated to grant tax exemptions to enterprises participating in school-enterprise cooperation. This can not only reduce the cooperation costs of enterprises, but also encourage more enterprises to participate in vocational education and form a good atmosphere of cooperation. Specific tax incentives can include tax exemptions for donations and pre-tax deductions for R&D expenses to reduce the tax burden of enterprises and stimulate their enthusiasm for participating in school-enterprise cooperation. However, it is necessary to set up a special review agency to review and certify the application of enterprises to ensure the fairness and effectiveness of policy implementation. 4) Experts believe that the government should set up a special school-enterprise cooperation fund to support the development of school-enterprise cooperation projects. These funds can be used to finance the start-up and operation

of cooperation projects, help schools and enterprises solve funding problems in cooperation, and ensure the smooth implementation of projects. The use of the fund includes project start-up funds, equipment purchases and update, and scientific research project funding, fully supporting all aspects of school-enterprise cooperation. Through public bidding, excellent projects can be selected for funding, and regular supervision and performance evaluation can be carried out. 5) Experts pointed out that in order to encourage schools and enterprises to actively participate in school-enterprise cooperation, a sound incentive mechanism should be established to commend and reward units and individuals that have outstanding performance in cooperation. The incentive mechanism can include financial rewards, policy preferences, honorary titles, etc. Specific measures include giving financial rewards to schools and enterprises that have made outstanding achievements in school-enterprise cooperation, giving policy preferences to enterprises that actively participate in school-enterprise cooperation in government procurement and project approval, and establishing honorary titles such as "Excellent Unit for School-Enterprise Cooperation" and "Outstanding Individual for School-Enterprise Cooperation".

Expert 2's Opinions: 1) Experts pointed out that establishing a long-term and stable cooperation mechanism is the key to achieving efficient school-enterprise cooperation. Short-term cooperation often fails to produce far-reaching effects, while a long-term cooperation mechanism can ensure that both parties form a stable cooperative relationship in terms of talent cultivation, technological innovation and resource sharing. Specifically, the government should formulate relevant policies to encourage schools and enterprises to sign long-term cooperation agreements and continuously deepen and expand the content of cooperation during the cooperation process. In addition, a regular evaluation and feedback mechanism for cooperation should be established to ensure continuous improvement and optimization of cooperation. 2) Experts suggest that the establishment of a special school-enterprise cooperation fund is an important guarantee for the smooth implementation of school-enterprise cooperation projects. The government should set up a special fund

specifically to support the development of school-enterprise cooperation projects. These funds can be used to finance the start-up and operation of cooperation projects, help schools and enterprises solve funding problems in cooperation, and ensure the smooth implementation of projects. The use of the fund should include project start-up funds, equipment purchases and renewal, and scientific research project funding, fully supporting all aspects of school-enterprise cooperation. 3) Experts believe that joint funding between the government and enterprises is an important way to improve the efficiency of fund use and the effectiveness of cooperation. Through joint funding, the government and enterprises can jointly bear the capital investment of cooperative projects, reduce unilateral financial pressure, and enhance the sustainability of cooperation. Specific measures include formulating a joint funding agreement, clarifying the investment ratio and use method of each party, and ensuring the rational use and effective management of funds. 4) Experts pointed out that diversified financing channels are an effective way to solve the problem of funding shortage in school-enterprise cooperation. In addition to direct investment from the government and enterprises, financial support can also be obtained through various channels such as bank loans, social donations, and venture capital. Specific measures include establishing a school-enterprise cooperation financing platform, providing professional financing consulting and services, and helping both parties to obtain more financial support. In addition, a school-enterprise cooperation foundation can be established to attract donations and support from all walks of life and form a diversified source of funds. 5) Experts stressed that special fund subsidies are an important means for the government to promote school-enterprise cooperation. The government should set up a special fund subsidy plan to provide financial support and rewards for projects that have performed outstandingly in school-enterprise cooperation. Specific measures include formulating application conditions and evaluation criteria for special fund subsidies to ensure fair allocation and efficient use of funds. Special fund subsidies can be used to support innovative projects, reward outstanding cooperative achievements, and subsidize the training and practice of teachers and students, etc., to comprehensively improve the quality and level of school-enterprise cooperation.

Expert 3's Opinions: 1) Experts pointed out that corporate equipment donations are an important way to improve the quality of vocational education and teaching and practical ability. Many higher vocational colleges have a shortage of funds for equipment and technology, which leads to a disconnect between teaching content and actual industry needs. Through corporate equipment donations, not only can the school's lack of hardware facilities be made up, but students can also be exposed to the most cutting-edge technology and equipment, improving their practical ability and employment competitiveness. It is recommended to establish a donation incentive mechanism to give corresponding tax exemptions and honorary recognition to companies that actively donate equipment, so as to encourage more companies to participate in donation activities. 2) Experts believe that co-building and sharing laboratories is an important form of school-enterprise cooperation. Through this model, schools and enterprises can jointly invest in the construction of advanced laboratory facilities, share resources, and achieve complementary advantages. Co-building and sharing laboratories can not only improve resource utilization efficiency and reduce repeated investment, but also provide students with a real practice environment, so that they can be exposed to the actual operation process and technical standards of enterprises while in school. 3) Experts stressed that the curriculum should be closely aligned with industry needs to ensure that the talents trained by vocational education can meet the actual needs of enterprises. To this end, schools should work closely with enterprises to jointly design and develop course content so that the curriculum is both forward-looking and practical. Specific measures include establishing a school-enterprise cooperation curriculum development team, conducting regular industry demand surveys, and timely adjusting and updating course content to ensure that the curriculum can reflect the latest trends and technological advances in industry development. 4) Experts believe that introducing enterprise experts to participate in teaching is an important measure to improve teaching quality and students' practical ability. Enterprise experts have rich practical experience and industry knowledge, and can bring the latest industry trends and practical operation skills to students. It is recommended that schools regularly invite enterprise experts to teach, hold lectures or participate in curriculum

development. Through various forms of cooperation, students can directly obtain valuable knowledge and experience from industry experts, and enhance their professional quality and employment competitiveness.

Expert 4's Opinions: 1) Experts pointed out that the dual-tutor system is an effective way to improve students' practical ability and comprehensive quality. Through the dual-tutor system, students can not only learn theoretical knowledge from professional teachers in schools, but also obtain practical skills and industry experience from enterprise mentors. This model can make up for the lack of connection between theory and practice in traditional education, so that students have stronger employment competitiveness when they graduate. It is recommended that schools and enterprises jointly formulate an implementation plan for the dual-tutor system, clarify the responsibilities and assessment standards of mentors, and ensure the effective implementation of the dual-tutor system. 2) Experts believe that the on-the-job training of teachers in enterprises is an important measure to enhance teachers' practical ability and industry background. Through on-the-job training, teachers can go deep into enterprises, understand the latest industry trends and technological developments, enhance their practical experience, and thus better combine theory with practice and improve teaching quality. It is recommended that education departments and enterprises jointly formulate a plan for on-the-job training for teachers, clarify the content and time arrangement of the on-the-job training, provide necessary support and guarantees, and ensure that teachers can truly learn something during the on-the-job training. 3) Experts emphasize that the training of dual-qualified teachers is the key to improving the quality of vocational education and teaching. Dual-qualified teachers not only have solid theoretical knowledge, but also have rich practical experience, and can better guide students' learning and practice. It is recommended that schools and enterprises jointly carry out the training and certification of dual-qualified teachers, set up special funds to support teachers in obtaining relevant professional qualification certificates, and encourage teachers to continuously improve their professional ability and practical level. 4) Experts pointed out that the establishment of a special fund for teacher

training is an important measure to support the professional development of teachers. Through the special fund, more training opportunities and resources can be provided to teachers to help them continuously improve their teaching ability and professional level. It is recommended that the government and enterprises jointly invest in the establishment of a special fund for teacher training to subsidize teachers to participate in professional training and academic exchanges at home and abroad, and to improve teachers' international vision and teaching level. 5) Experts believe that jointly building a teacher training base is an important form of school-enterprise cooperation. By jointly building a training base, schools and enterprises can jointly invest resources to create a platform that integrates teaching, training and practice, and provide teachers with a high-quality training environment and conditions. It is recommended that schools and enterprises jointly formulate a training base construction and management plan, clarify the responsibilities and division of labor of both parties, and ensure the efficient operation and sustainable development of the training base.

Expert 5's Opinions: 1) Experts believe that the establishment of a student entrepreneurship fund is an important measure to support innovation and entrepreneurship education. By providing financial support, students can better transform innovative ideas into actual projects and cultivate their entrepreneurial ability and practical experience. It is recommended that the government and enterprises jointly fund the establishment of a student entrepreneurship fund, which will be used specifically to support students' entrepreneurial projects and innovative activities. Specific measures include setting up an entrepreneurial project review committee, formulating strict project review and fund management processes, and ensuring the effective use of funds and the smooth implementation of projects. 2) Experts stressed that international cooperation funding is an important way to improve the internationalization of vocational education. Through international cooperation, we can introduce advanced foreign educational concepts and technologies and improve the quality and level of education. It is recommended

that the government set up special funds to support schools to carry out cooperation projects with internationally renowned companies and educational institutions and promote international exchanges and cooperation among teachers and students. Specific measures include providing financial support for international cooperation projects, subsidizing teachers and students to participate in international academic conferences and training, and promoting international scientific research cooperation and technology transfer. 3) Experts pointed out that regular evaluation and dynamic adjustment are important means to ensure the effective implementation of school-enterprise cooperation projects. Through regular evaluation, we can timely understand the progress and effects of cooperation projects, find existing problems and make adjustments and improvements. It is recommended to establish a scientific evaluation system and conduct regular comprehensive evaluations of cooperation projects, covering cooperation goals, implementation process, fund use, and output results. According to the evaluation results, timely adjust and optimize the cooperation plan to ensure the efficient operation and continuous improvement of the cooperation project. 4) Experts believe that establishing quality standards for school-enterprise cooperation is the key to improving the quality and effectiveness of cooperation. Unified quality standards can regulate all aspects of cooperation, provide clear operating guidelines, and ensure the standardization and scientific nature of cooperation. It is recommended that the government and education authorities jointly formulate quality standards for school-enterprise cooperation, covering cooperation agreements, project management, resource sharing, quality assessment and other aspects. Specific measures include formulating detailed standard guidelines, conducting quality standard training, promoting advanced quality management methods, and improving the overall level of school-enterprise cooperation.

Expert 6's Opinions: 1) Experts believe that project-oriented teaching is an effective way to improve students' practical operation and innovation capabilities. By introducing real corporate projects as teaching cases, students can master professional knowledge and skills in project practice and enhance their ability to

solve practical problems. It is recommended that schools work closely with companies to jointly design and develop project-oriented courses to ensure that the course content is highly consistent with industry needs. Specific measures include inviting corporate experts to participate in course design and teaching, regularly updating project cases, and ensuring the foresight and practicality of the courses. 2) Experts stressed that the joint development of textbooks by schools and enterprises is the key to improving the quality and practicality of textbooks. Jointly developed textbooks can not only reflect the latest industry development trends and technological progress, but also combine the actual needs of enterprises to enhance students' career adaptability. It is recommended that schools and enterprises set up textbook development teams to jointly compile and review textbook content to ensure that the textbooks have both theoretical depth and practical operability. Specific measures include regularly organizing textbook review meetings and inviting industry experts and enterprise technicians to participate to ensure the scientific and authority of textbook content. 3) Experts believe that establishing an enterprise practice base is an important measure to enhance students' practical ability and professional quality. By setting up a practice base within an enterprise, students can practice and train in a real working environment and directly contact the production process and work standards of the enterprise. It is recommended that schools cooperate with enterprises to jointly build and manage the practice base to ensure that the base has complete facilities and equipment to meet the practical needs of students. Specific measures include formulating a management system for the practice base, clarifying the internship content and requirements for students, and ensuring the standardization and effectiveness of practical activities. 4) Experts pointed out that joint training between schools and enterprises is an important means to improve the strength and professional level of teachers. Through joint training, school teachers can understand the latest industry trends and technological developments, and improve their professional quality and teaching ability. It is recommended that schools and enterprises jointly formulate teacher training plans and conduct joint training activities on a regular basis to ensure that teachers can continuously update their knowledge and skills. Specific measures include inviting

enterprise experts to give lectures and arranging teachers to conduct practical training in enterprises to improve their practical experience and teaching level.5) Experts believe that the joint construction of training bases by schools and enterprises is the key to improving students' practical operation ability and cultivating high-quality skilled talents. By jointly building training bases, schools and enterprises can jointly invest and manage, provide advanced training facilities and equipment, and provide students with a high-quality practical teaching environment. It is recommended that schools cooperate with enterprises to formulate detailed co-construction plans, clarify the investment ratio and management responsibilities of both parties, and ensure the efficient operation and sustainable development of training bases. Specific measures include regularly updating training equipment, organizing the development and implementation of training courses, and ensuring that the training base can meet students' learning and practice needs.

Expert 7's Opinions: 1) Experts pointed out that setting up student training sites within enterprises is an effective way to improve students' practical operation ability and professional quality. By setting up training sites within enterprises, students can directly participate in the production and operation of enterprises, understand the work processes and standards of enterprises, and accumulate practical work experience. It is recommended that enterprises cooperate with schools to set up special training positions, provide students with systematic training plans and guidance, and ensure that students can achieve comprehensive development during the training process. 2) Experts believe that the introduction of advanced technology and equipment is an important measure to improve the level of vocational education training. By introducing cutting-edge technology and equipment in the industry, students can be exposed to the latest technology applications during the training process, improving their practical ability and innovation awareness. It is recommended that schools cooperate with enterprises to jointly invest in the introduction of advanced training equipment, build high-standard training laboratories and workshops, and provide advanced technical support and equipment guarantees. Specific measures include regularly updating and maintaining

training equipment, inviting enterprise technical experts to conduct equipment operation training, and ensuring the efficient use of equipment and the improvement of students' technical level. 3) Experts emphasize that combining practical training courses with enterprise projects is an effective way to improve students' practical ability and professional competitiveness. By introducing the actual projects of enterprises into practical training courses, students can master professional knowledge and skills in the process of completing the projects and enhance their ability to solve practical problems. It is recommended that schools cooperate with enterprises to jointly develop practical training courses, incorporate the actual projects of enterprises into the teaching content, and ensure that the course content is highly consistent with industry needs. Specific measures include selecting representative enterprise projects as practical training cases, formulating detailed project implementation plans, and arranging enterprise mentors and school teachers to jointly guide to ensure the efficient implementation of practical training courses. 4) Experts pointed out that joint career planning between schools and enterprises is an important means to enhance students' employment competitiveness and career development. Through the joint career planning between schools and enterprises, students can clarify their career goals and development paths while in school, and improve the scientific and effectiveness of their career development. It is recommended that schools cooperate with enterprises to jointly carry out career planning consultation and guidance, help students develop personalized career development plans, and ensure that students can smoothly enter the workplace after graduation. Specific measures include regularly holding career planning lectures and consulting activities, inviting enterprise experts to share career development experiences, and providing students with career planning and employment guidance. 5) Experts believe that the participation of enterprises in career guidance is the key to improving students' employment success rate and career adaptability. Through the participation of enterprises, students can understand the latest developments and employment trends in the industry, master job-hunting techniques and professional skills, and enhance their employment competitiveness. It is recommended that schools cooperate with enterprises to jointly carry out career

guidance activities and provide a full range of employment support and services. Specific measures include regularly organizing corporate job fairs and employment lectures, inviting corporate human resources experts to provide job search guidance, conducting mock interviews and vocational skills training, and ensuring that students have good coping skills and professional qualities in the job search process.

Expert 8's Opinions: 1) Experts pointed out that the rotation training system is an effective way to improve students' comprehensive quality and adaptability. Through rotation training in different positions in the enterprise, students can fully understand the operation process of the enterprise, master various skills, and enhance their flexibility and adaptability. It is recommended that schools cooperate with enterprises to formulate detailed rotation training plans, clarify the rotation positions, time arrangements and training content, and ensure that students can achieve comprehensive development during the training process. Specific measures include setting up a rotation training guidance team, arranging enterprise mentors to conduct job training and guidance, and regularly evaluating students' training performance to ensure the effectiveness of training. 2) Experts believe that establishing a training base network is an important measure to optimize resource allocation and improve training results. By establishing multiple training bases in the region and forming a network management model, schools and enterprises can share resources, complement each other's strengths, and improve the utilization efficiency of training resources. It is recommended that the government and education authorities take the lead in jointly building a training base network with schools and enterprises, formulate unified management standards and operating mechanisms, and ensure the efficient operation and resource sharing of training bases. Specific measures include establishing a training base management platform, regularly organizing exchanges and cooperation between training bases, and improving the overall level of training bases. 3) Experts emphasize that the guidance of enterprise mentors in practical training is the key to improving students' practical ability and professional quality. Enterprise mentors have rich practical experience and professional knowledge, and can provide students with practical operation guidance

and career advice to help students better adapt to the working environment of the enterprise. It is recommended that schools cooperate with enterprises to establish an enterprise mentor system, invite enterprise mentors to participate in the design and implementation of practical training courses, and ensure that students receive professional guidance during the practical training process. Specific measures include formulating enterprise mentor selection standards and management methods, arranging mentors to come to school regularly to guide practical training, and establishing an interactive communication mechanism between mentors and students to ensure the effectiveness and quality of guidance. 4) Experts pointed out that the integration of internships and employment is an effective means to improve students' employment rate and career development. By closely combining internships with employment, students can get in touch with potential employers during their internships and increase their employment opportunities. It is recommended that schools cooperate with enterprises to establish an internship and employment integration mechanism, regard internships as an important part of employment, and ensure that students can demonstrate their abilities and potential during the internship process. Specific measures include setting up an internship and employment integration management platform, regularly organizing corporate job fairs and internship recommendation activities, arranging corporate mentors for employment guidance, and helping students smoothly transition from internships to employment. 5) Experts believe that vocational skills competitions are an important way to stimulate students' enthusiasm for learning and improve their vocational skills. By participating in vocational skills competitions, students can demonstrate their professional skills and innovation capabilities, and enhance their self-confidence and competitiveness. It is recommended that schools cooperate with enterprises to regularly hold various vocational skills competitions, provide a variety of competition items and reward mechanisms, and encourage students to actively participate. Specific measures include formulating vocational skills competition plans, inviting enterprise experts to serve as judges, arranging competition training and coaching, ensuring the fairness and authority of the competition, and enhancing the influence and effectiveness of the competition.

Expert 9's Opinions: 1) Experts pointed out that the establishment of a joint scientific research center is the key to promoting scientific research innovation in school-enterprise cooperation. Through the joint scientific research center, schools and enterprises can integrate resources, jointly carry out cutting-edge technology research and application development, and improve the conversion rate and actual application effect of scientific research results. It is recommended that the government and education authorities take the lead in jointly building scientific research centers with schools and enterprises, formulate unified management standards and operating mechanisms, and ensure the efficient operation of scientific research centers. Specific measures include setting up special funds for scientific research projects, organizing school-enterprise joint scientific research teams, and regularly holding scientific research project review meetings to ensure the standardization and scientific nature of scientific research work. 2) Experts believe that co-building innovation laboratories is an important measure to enhance technological innovation capabilities. By co-building laboratories, schools and enterprises can share advanced experimental equipment and technical resources, carry out collaborative innovation research, and promote technological progress and industrial upgrading. It is recommended that schools cooperate with enterprises to jointly invest in the construction of high-standard innovation laboratories, provide high-quality experimental environments and facilities, and support teachers, students and enterprise technicians to carry out innovative research. Specific measures include formulating an innovation laboratory construction plan, clarifying the investment ratio and management responsibilities of both parties, and regularly organizing technical exchanges and project cooperation in laboratories to ensure efficient use and sustainable development of laboratories. 3) Experts stressed that the joint application for scientific research projects is an effective means to enhance the strength and influence of scientific research cooperation between schools and enterprises. By jointly applying for scientific research projects at the national and local levels, schools and enterprises can obtain more scientific research funding support, improve scientific research capabilities and the level of transformation of results. It is recommended that schools and enterprises work closely together to

jointly formulate scientific research project application plans, clarify cooperation goals and division of labor, and ensure the smooth implementation of scientific research projects. Specific measures include setting up a scientific research project application team, writing high-quality project application documents, regularly tracking project progress and results, and ensuring the efficient management and implementation of scientific research projects. 4) Experts pointed out that regular quality assessment and auditing are important means to ensure the high-quality implementation of school-enterprise cooperation projects. Through regular quality assessment and auditing, problems and deficiencies in cooperation projects can be discovered in a timely manner, and suggestions and measures for improvement can be put forward to improve the overall quality of cooperation projects. It is recommended that the government and education authorities formulate detailed assessment and auditing standards, and regularly organize expert teams to conduct comprehensive assessments and audits of cooperation projects to ensure the fairness and scientific nature of the assessment work. Specific measures include establishing a quality assessment and auditing system, setting up a special assessment and auditing agency, and regularly publishing assessment and auditing reports to promote the continuous improvement and optimization of cooperation projects. 5) Experts believe that a multi-party evaluation system is the key to improving the transparency and credibility of school-enterprise cooperation. By involving schools, enterprises, students, governments and other parties in the evaluation, we can fully understand the implementation effect of the cooperation project and ensure the objectivity and comprehensiveness of the evaluation results. It is recommended to establish a multi-party evaluation mechanism to clarify the roles and responsibilities of each party in the evaluation process to ensure the smooth progress of the evaluation work. Specific measures include formulating a multi-party evaluation plan, organizing evaluation meetings regularly, collecting and analyzing feedback from all parties, and forming a comprehensive evaluation report to provide a scientific basis for the improvement of cooperation projects.

Expert 10's Opinions: 1) Experts pointed out that integrating innovation and

entrepreneurship education into the curriculum is an important measure to cultivate students' innovation ability and entrepreneurial spirit. Through systematic innovation and entrepreneurship education, students can master basic entrepreneurial knowledge and skills and enhance their market competitiveness and self-development capabilities. It is recommended that schools cooperate with enterprises to jointly design and develop innovation and entrepreneurship courses and incorporate them into the compulsory courses of vocational education. Specific measures include introducing entrepreneurial cases of successful entrepreneurs, organizing entrepreneurial simulation training and competitions, establishing an innovation and entrepreneurship education platform, and providing all-round entrepreneurial guidance and support. 2) Experts believe that the implementation of a modular curriculum system is an effective way to improve the flexibility and adaptability of the curriculum. The modular curriculum system can provide a variety of course modules according to the different needs and abilities of students, helping students to independently select and combine learning content to form a personalized learning path. It is recommended that schools cooperate with enterprises to jointly design and develop course modules to ensure that the course content matches industry needs. Specific measures include establishing a modular course management platform, regularly updating and optimizing course modules, providing online learning and assessment support, and ensuring the flexibility and efficiency of the curriculum system. 3) Experts emphasize that regular professional skills training is the key to improving teachers' professional level and teaching quality. Through systematic professional skills training, teachers can continuously update their knowledge and skills and grasp the latest industry trends and technological advances. It is recommended that schools cooperate with enterprises to formulate professional skills training plans for teachers, provide diversified training courses and resources, and ensure that teachers can continuously improve their professional abilities. Specific measures include inviting industry experts to give lectures, organizing teachers to participate in industry conferences and training, and establishing a training effect evaluation mechanism to ensure the effectiveness and sustainability of training. 4) Experts believe that the teacher exchange and mutual

visit mechanism is an important means to promote school-enterprise cooperation and improve teachers' teaching level. Through regular teacher exchanges and mutual visits, school teachers can go deep into enterprises to understand the actual production and management processes, and enterprise technicians can also come to schools to teach and share practical experience. It is recommended that schools and enterprises establish a long-term teacher exchange and mutual visit mechanism, formulate detailed exchange plans and implementation plans, and ensure the standardization and institutionalization of exchange activities. Specific measures include setting up a teacher exchange fund, supporting teachers to participate in exchange activities, and regularly organizing experience sharing sessions to promote in-depth cooperation and common development between the two sides. 5) Experts pointed out that establishing a career development plan for teachers is an important measure to support teachers' professional growth and career development. Through a systematic career development plan, teachers can clarify their career development goals and paths and continuously improve their professional quality and teaching ability. It is recommended that schools cooperate with enterprises to formulate career development plans for teachers, provide comprehensive career guidance and support, and help teachers achieve their career development goals. Specific measures include setting up a career development consulting center, providing personalized career development guidance, organizing career development training and seminars, establishing career development files, and tracking and evaluating teachers' career development.

Expert 11's Opinions: 1) Experts pointed out that professional literacy training is an important means to enhance students' employment competitiveness and career adaptability. Through systematic professional literacy training, students can master basic workplace etiquette, communication skills, teamwork and time management and other professional literacy, and enhance their workplace adaptability. It is recommended that schools cooperate with enterprises to jointly design and develop professional literacy training courses and incorporate them into the compulsory courses of vocational education. Specific measures include inviting

corporate human resources experts to give lectures, organizing professional literacy training workshops and simulating workplace scenarios, and providing personalized professional literacy coaching and consulting. 2) Experts believe that the employment internship program is an effective way to improve students' actual work experience and employment success rate. Through short-term internships in enterprises, students can be exposed to the real working environment, accumulate practical work experience, and enhance their employment competitiveness. It is recommended that schools cooperate with enterprises to formulate detailed employment internship plans, clarify internship positions, time arrangements and internship content, and ensure that students can achieve comprehensive development during the internship process. Specific measures include setting up an internship guidance team, arranging enterprise mentors to provide internship guidance, and regularly evaluating students' internship performance to ensure the efficient implementation of the internship plan. 3) Experts emphasize that tracking employment services are the key to ensuring students' career development. Through systematic employment tracking services, schools can understand the employment status of graduates, provide continuous career guidance and support, and help graduates continue to develop in the workplace. It is recommended that schools establish a sound employment tracking service system, regularly track and provide feedback on the employment status of graduates, and provide career development consultation and support. Specific measures include establishing an employment tracking database, regularly conducting graduate employment surveys, organizing career development seminars and workshops, and providing personalized career development guidance and support. 4) Experts believe that establishing a school-enterprise cooperation information platform is an important measure to enhance information exchange and resource sharing. Through the information platform, schools and enterprises can share cooperation information, project progress, resource requirements, etc. in real time, promoting information symmetry and efficient use of resources. It is recommended that the government and education authorities take the lead in jointly building a school-enterprise cooperation information platform with schools and enterprises, formulate unified information release and management

standards, and ensure the efficient operation and security of the information platform. Specific measures include developing information platform functional modules, providing online project management and resource sharing services, and regularly updating and maintaining the information platform to ensure the timeliness and accuracy of information. 5) Experts pointed out that holding regular school-enterprise exchange meetings is an important means to promote in-depth cooperation between schools and enterprises and enhance the effectiveness of cooperation. Through exchange meetings, schools and enterprises can directly exchange cooperation experiences, share successful cases, explore cooperation opportunities, and enhance mutual understanding and trust. It is recommended that schools and enterprises cooperate to formulate detailed school-enterprise exchange meeting plans, clarify the theme, format and participants of the exchange meeting, and ensure the smooth progress and actual effect of the exchange meeting. Specific measures include inviting industry experts and corporate executives to give keynote speeches, organizing group discussions and interactive exchanges, showcasing the results of school-enterprise cooperation and innovative projects, and enhancing the influence and effectiveness of the exchange meeting.

Expert 12's Opinions: 1) Experts pointed out that the open sharing of training bases is an important measure to improve resource utilization efficiency and training results. By opening and sharing training bases, schools and enterprises can jointly use advanced training equipment and facilities, reduce duplicate investment, and improve resource utilization efficiency. It is recommended that schools and enterprises cooperate to formulate management measures for the open sharing of training bases, clarify the scope and use rules of resource sharing, and ensure the fairness and efficiency of sharing. Specific measures include establishing a training base reservation management system, providing online reservation and resource allocation services, and regularly evaluating resource usage to ensure the efficient operation and sustainable development of training bases. 2) Experts believe that the virtual simulation training platform is an innovative means to improve the training effect and teaching quality. Through virtual simulation technology, students can

perform simulated operations and practical training in a virtual environment to enhance their practical ability and professional quality. It is recommended that schools cooperate with enterprises to jointly develop virtual simulation training platforms, provide rich simulation training courses and resources, and ensure that students can achieve comprehensive development in virtual training. Specific measures include introducing advanced virtual simulation technology, developing diversified simulation training scenarios, regularly updating and optimizing training content, and ensuring the efficient use of virtual simulation training platforms and teaching effects. 3) Experts emphasize that practical training effect evaluation and feedback are important means to improve practical training quality and teaching. Through systematic evaluation and feedback, schools and enterprises can understand the practical training effect, find problems and deficiencies, propose improvement measures, and improve the quality of practical training. It is recommended that schools and enterprises cooperate to formulate a detailed practical training effect evaluation and feedback mechanism, clarify the content and methods of the evaluation, and ensure the scientific and fairness of the evaluation work. Specific measures include setting up a practical training effect evaluation team, regularly organizing practical training effect evaluation meetings, collecting and analyzing feedback from students and enterprise mentors, and proposing practical training improvement suggestions to ensure the continuous improvement of practical training effects. 4) Experts pointed out that student satisfaction surveys are an important way to understand student needs and improve teaching quality. Through systematic satisfaction surveys, schools can understand students' evaluations and suggestions on practical training courses, teaching methods, practical training facilities, etc., identify problems and deficiencies in teaching, and propose improvement measures. It is recommended that schools establish a sound student satisfaction survey mechanism, organize satisfaction surveys regularly, and ensure the comprehensiveness and scientific of the survey. Specific measures include designing detailed satisfaction survey questionnaires, organizing students to fill out questionnaires regularly, collecting and analyzing survey results, forming satisfaction survey reports, and proposing suggestions for teaching improvement to improve

teaching quality and student satisfaction. 5) Experts believe that the enterprise feedback mechanism is an important means to understand the needs of enterprises and improve the quality of school-enterprise cooperation. Through the systematic feedback mechanism, schools can understand the evaluation and suggestions of enterprises on practical training courses, student performance, cooperation projects, etc., find problems and deficiencies in cooperation, and propose improvement measures. It is recommended that schools cooperate with enterprises to establish a sound enterprise feedback mechanism, regularly collect feedback from enterprises, and ensure the comprehensiveness and timeliness of feedback. Specific measures include setting up an enterprise feedback platform, regularly organizing enterprise feedback meetings, collecting and analyzing enterprise feedback, forming feedback reports, and proposing suggestions for cooperation improvement to improve the quality and effectiveness of school-enterprise cooperation.

Expert 13's Opinions: 1) Experts point out that the industry mentor system is an important way to improve students' professional quality and employability. By introducing industry mentors, students can obtain professional guidance and career development advice from actual work fields, helping them to better adapt to the workplace environment and needs. It is recommended that schools cooperate with enterprises to establish an industry mentor system and invite senior professionals and managers in enterprises to serve as industry mentors. Specific measures include formulating industry mentor selection standards and management methods, arranging mentors to communicate and coach students regularly, providing industry apprenticeship and internship opportunities, and ensuring that students can receive comprehensive career guidance and support while in school. 2) Experts believe that the joint development of teaching resources between schools and enterprises is the key to improving teaching quality and practicality. By jointly developing teaching resources, schools can introduce actual cases and technical information from enterprises, making teaching content closer to actual work needs and enhancing students' practical ability. It is recommended that schools cooperate with enterprises to establish a teaching resource development team to jointly compile and review

teaching materials, develop online courses and teaching software. Specific measures include regularly organizing teaching resource development seminars, inviting enterprise technical experts to participate in teaching material compilation and course design, and ensuring the scientificity and practicality of teaching resources. 3) Experts stressed that opening the enterprise technology database is an important measure to improve students' technical level and innovation ability. By opening the enterprise technology database, students can access the latest technical information and research results, enhance their technical innovation ability and ability to solve practical problems. It is recommended that enterprises sign cooperation agreements with schools and open their technology databases to schools for students and teachers to consult and use. Specific measures include formulating the opening standards and usage rules of the technology database, ensuring the confidentiality and legality of the information, regularly updating and supplementing the technical information, and ensuring the timeliness and practicality of the information. 4) Experts believe that establishing an expert database and a tutor database is an important means to improve the quality and efficiency of school-enterprise cooperation. By establishing an expert database and a tutor database, schools can easily find suitable experts and tutors to participate in teaching and scientific research, and improve the quality of teaching and scientific research. It is recommended that schools cooperate with enterprises to collect and organize information on experts and tutors in various industries, establish an expert database and a tutor database, and ensure the integrity and accuracy of the information. Specific measures include formulating management methods for the expert database and tutor database, regularly updating and maintaining expert information, and providing online query and appointment services to ensure that experts and tutors can efficiently participate in school-enterprise cooperation. 5) Experts pointed out that the disclosure of quality assessment reports is an important means to enhance the transparency and credibility of school-enterprise cooperation. By disclosing quality assessment reports, schools and enterprises can demonstrate the results and problems of cooperation, accept social supervision and evaluation, and promote the continuous improvement and optimization of cooperation projects. It is

recommended that schools and enterprises work together to formulate standards and processes for the disclosure of quality assessment reports to ensure the scientificity and fairness of the reports. Specific measures include setting up a quality assessment report publishing platform, regularly publishing quality assessment reports of cooperation projects, and inviting third-party institutions to conduct independent evaluations and audits to ensure the authority and credibility of the evaluation results.

Expert 14's Opinions: 1) Experts pointed out that enterprise demand-driven research is the key to enhancing the practical application value of scientific research cooperation. By conducting scientific research guided by enterprise needs, it is possible to ensure that research projects are more practical and have more market value. It is recommended that schools cooperate with enterprises to jointly formulate scientific research topics and research directions to ensure that the scientific research content is closely integrated with the development needs and technical bottlenecks of enterprises. Specific measures include establishing an enterprise demand feedback mechanism, regularly collecting and analyzing the technical needs of enterprises, organizing joint scientific research teams between schools and enterprises, and carrying out targeted research projects to ensure that scientific research results can be directly applied to the production and management practices of enterprises. 2) Experts believe that establishing a scientific research achievement sharing mechanism is an important measure to improve scientific research efficiency and cooperation effects. Through the sharing of scientific research results, schools and enterprises can share what they have, make full use of each other's scientific research resources and achievements, and improve the overall scientific research level. It is recommended that schools and enterprises sign a scientific research achievement sharing agreement to clarify the scope and use rules of the results sharing and ensure the legitimate rights and interests of both parties. Specific measures include establishing a scientific research achievement sharing platform, providing online query and download services, and regularly organizing scientific research achievement exchange meetings to promote the promotion and

application of scientific research achievements. 3) Experts stressed that establishing an intellectual property cooperation mechanism is an important means to protect scientific research results and stimulate innovation. By clarifying the ownership of intellectual property and the distribution of benefits, it can stimulate the innovation enthusiasm of scientific researchers and enterprises, promote scientific and technological progress and the transformation of results. It is recommended that schools cooperate with enterprises to formulate intellectual property management measures, clarify the rights and obligations of both parties in intellectual property, and ensure the legitimacy and security of intellectual property. Specific measures include setting up an intellectual property management agency, providing professional intellectual property consultation and services, regularly organizing intellectual property training and publicity activities, and enhancing the awareness of intellectual property protection among scientific researchers and enterprises. 4) Experts pointed out that the incubation and transformation of technological achievements is an important part of realizing the value of scientific research and promoting industrial upgrading. Through effective incubation and transformation mechanisms, scientific research achievements can be quickly transformed into actual productivity and enhance the market competitiveness of enterprises. It is recommended that schools cooperate with enterprises to establish a technology achievement incubation center, provide funding, venues and technical support, and promote the industrialization of scientific research achievements. Specific measures include setting up a technology achievement incubation fund to subsidize scientific research projects with market prospects, establishing a technology transformation platform, providing technology transfer and market promotion services, and ensuring that scientific research achievements can be smoothly transformed into practical applications. 5) Experts believe that corporate funding for teachers' scientific research is an important way to enhance teachers' scientific research capabilities and promote school-enterprise cooperation. With financial support from enterprises, teachers can carry out higher-level scientific research projects and enhance their own scientific research capabilities and practical experience. It is recommended that schools cooperate with enterprises to formulate a teacher scientific research funding plan,

clarify the scope and standards of funding, and ensure the rational use of funds. Specific measures include setting up a special fund for teacher scientific research, supporting teachers in applying for corporate scientific research funding, providing scientific research project management and guidance services, regularly evaluating the progress and results of funded projects, and ensuring the efficient use of scientific research funds.

Expert 15's Opinions: 1) Experts pointed out that establishing a real-time monitoring and feedback mechanism is an important means to ensure the efficient operation and timely adjustment of school-enterprise cooperation projects. Through real-time monitoring, the progress of cooperation projects can be understood in a timely manner, potential problems can be discovered and corrective measures can be taken quickly. It is recommended that schools and enterprises cooperate to establish a unified real-time monitoring system covering all aspects of cooperation projects, including teaching quality, practical training effects, resource utilization, etc. Specific measures include developing real-time monitoring software, setting key performance indicators (KPIs), and regularly generating monitoring reports to ensure that all parties obtain feedback information in a timely manner and conduct effective project management and adjustments. 2) Experts believe that performance appraisal and reward mechanisms are the key to motivating all parties to actively participate in school-enterprise cooperation and improving the effectiveness of cooperation. Through scientific performance appraisal, the effectiveness of cooperation projects and the contributions of all parties can be objectively evaluated, and rewards can be given according to the appraisal results to stimulate the enthusiasm and creativity of all parties. It is recommended that schools cooperate with enterprises to formulate detailed performance appraisal indicators and reward standards to ensure the fairness and transparency of the appraisal. Specific measures include establishing a performance appraisal committee, conducting performance evaluations regularly, setting up a cooperation project reward fund, commending and rewarding outstanding individuals and teams, and promoting the continuous optimization and improvement of school-enterprise

cooperation. 3) Experts pointed out that establishing a resource sharing mechanism is an important measure to improve resource utilization efficiency and cooperation effects. Through resource sharing, schools and enterprises can make full use of each other's advantageous resources to achieve optimal resource allocation and mutual benefit and win-win results. It is recommended that schools and enterprises cooperate to formulate specific plans and operating procedures for resource sharing, clarify the scope and use rules of shared resources, and ensure fair allocation and efficient use of resources. Specific measures include establishing a resource sharing platform, providing online resource query and reservation services, and regularly organizing resource sharing exchange meetings to promote the rational allocation and efficient use of resources. 4) Experts believe that the information management system is an effective tool to improve the management level and efficiency of school-enterprise cooperation. Through the information management system, the whole process of cooperation projects can be digitally managed, the timeliness and accuracy of information transmission can be improved, and the transparency and controllability of cooperation can be enhanced. It is recommended that schools cooperate with enterprises to develop and apply advanced information management systems to cover all aspects and management needs of cooperation projects. Specific measures include establishing a unified information management platform, providing project management, resource management, performance appraisal and other functions, ensuring real-time updating and sharing of information, and improving the intelligence and precision of cooperation management. 5) Experts stressed that the resource sharing incentive mechanism is an important means to promote resource sharing and enhance the effectiveness of cooperation. Through the incentive mechanism, all parties can be encouraged to actively participate in resource sharing and achieve efficient allocation and utilization of resources. It is recommended that schools and enterprises work together to formulate detailed resource sharing incentive policies and implementation plans to ensure the fairness and effectiveness of incentives. Specific measures include setting up a resource sharing incentive fund to reward individuals and units that perform outstandingly in resource sharing, regularly selecting and commending outstanding resource sharing

cases, and stimulating the enthusiasm and creativity of all parties to participate in resource sharing.

Expert 16's Opinions: 1) Experts pointed out that establishing a continuous improvement mechanism is an important means to ensure the continuous optimization and improvement of school-enterprise cooperation projects. Through the continuous improvement mechanism, problems in cooperation can be discovered and solved in a timely manner, promoting the continuous improvement and progress of cooperation projects. It is recommended that schools and enterprises cooperate to formulate detailed continuous improvement plans, clarify the goals, content and steps of improvement, and ensure the systematic and scientific nature of the improvement work. Specific measures include regular evaluation and review of cooperation projects, collection and analysis of feedback from all parties, formulation of improvement plans and measures, tracking and evaluation of improvement effects, and ensuring the effectiveness and sustainability of improvement work. 2) Experts believe that the establishment of a supervisory committee is an important measure to enhance the transparency and credibility of school-enterprise cooperation. Through the independent supervision of the supervisory committee, the fairness and standardization of the cooperation projects can be ensured, and the trust and cooperation effect of the parties involved can be enhanced. It is recommended that schools and enterprises jointly establish a supervisory committee and invite representatives from the government, industry associations and third-party institutions to participate to ensure the independence and authority of the supervision work. Specific measures include formulating the charter and work process of the supervisory committee, holding regular supervisory meetings, reviewing and evaluating the progress and effects of cooperation projects, publishing supervisory reports, and accepting social supervision and evaluation. 3) Experts believe that regularly holding school-enterprise cooperation project exhibitions is an important means to showcase cooperation results and promote cooperation experience. Through cooperation project exhibitions, schools and

enterprises can showcase successful cases and innovative achievements in cooperation, and enhance the visibility and influence of cooperation projects. It is recommended that schools and enterprises jointly hold cooperation project exhibition activities, invite the government, industry associations and the media to participate, and ensure the breadth and influence of the exhibition activities. Specific measures include formulating plans and programs for exhibition activities, selecting representative cooperation projects for exhibition, arranging project leaders to give on-site explanations and demonstrations, and producing promotional materials for exhibition activities to expand the influence and effect of exhibition activities.

Expert 17's Opinions: 1) Experts pointed out that entrepreneurship guidance and support are important measures to cultivate students' innovative spirit and entrepreneurial ability. Through systematic entrepreneurship guidance and support, students can master the basic knowledge and skills of entrepreneurship, improve their innovative entrepreneurial ability, and enhance their market competitiveness. It is recommended that schools cooperate with enterprises to establish a sound entrepreneurship guidance and support system and provide a full range of entrepreneurship services and support. Specific measures include setting up an entrepreneurship guidance center, providing entrepreneurship consultation and guidance, organizing entrepreneurship training and practical training, and providing entrepreneurship funds and policy support to help students successfully realize their entrepreneurial dreams. 2) Experts believe that joint training of scientific research talents is the key to improving scientific research capabilities and promoting technological innovation. Through joint training between schools and enterprises, schools and enterprises can jointly develop scientific research projects, cultivate high-quality scientific research talents, and promote scientific and technological progress and industrial upgrading. It is recommended that schools and enterprises cooperate to jointly formulate scientific research talent training plans, provide rich scientific research resources and platforms, and ensure the comprehensive development of scientific research talents. Specific measures include setting up a joint scientific research fund to support joint research and project development of

scientific researchers, providing scientific research equipment and technical support, organizing scientific research exchanges and training, and improving the innovation ability and scientific research level of scientific researchers. 3) Experts stressed that technical training and exchanges are important means to improve technical level and promote technology transfer. Through technical training and exchanges, schools and enterprises can learn from each other and improve their technical level and innovation ability. It is recommended that schools cooperate with enterprises to regularly carry out technical training and exchange activities, provide diversified training courses and exchange platforms, and ensure the effectiveness and sustainability of technical training and exchanges. Specific measures include inviting industry experts to conduct technical training, organizing technical exchange meetings and seminars, providing online technical training and exchange services, promoting the transfer and application of technology, and improving the overall technical level. 4) Experts pointed out that international scientific research cooperation is an important way to improve scientific research level and promote technological innovation. Through international scientific research cooperation, schools and enterprises can introduce advanced foreign technologies and concepts, improve scientific research capabilities and technical levels, and promote scientific and technological progress and industrial upgrading. It is recommended that schools and enterprises actively expand international scientific research cooperation channels, establish international scientific research cooperation platforms, and provide rich international scientific research resources and support. Specific measures include setting up an international scientific research cooperation fund, supporting scientific researchers to participate in international scientific research projects and academic exchanges, organizing international scientific research cooperation seminars, and providing international scientific research cooperation consultation and services to ensure the efficient promotion and actual results of international scientific research cooperation.

Part II : Summary of the school-enterprise cooperation of higher vocational education in Guangdong Province, China(10P)

The researchers used the EFR method to gain insight into the future prospects of school-enterprise cooperation in higher vocational education in Guangdong Province. Through expert panel consultation, the researchers identified 10 key dimensions that need to be considered in the school-enterprise cooperation of higher vocational education in Guangdong Province, and the findings are :1) Laws and regulations 2) Policy Support 3) Capital investment and resource allocation 4) Curriculum Setting and Teaching Reform 5） Teachers and professional training 6） Training base and practice platform 7） Employment guidance and career planning 8） Scientific research cooperation and technological innovation 9） Quality supervision and evaluation mechanism and 10） Information exchange and resource sharing.

1. Laws and regulations

Regarding the laws and regulations on school-enterprise cooperation in Guangdong's higher vocational education, Experts believe that revising and improving the laws and regulations related to vocational education, clearly defining the rights and obligations of school-enterprise cooperation, and providing legal protection will provide a stable and predictable legal environment for school-enterprise cooperation and enhance the confidence and investment of both parties. They suggest that the relevant provisions of school-enterprise cooperation be incorporated into the Vocational Education Law through legislative procedures to clarify the rights and obligations of both parties. Experts believe that it is necessary to formulate and promote standardized operation guidelines for school-enterprise cooperation to standardize the cooperation process and operation steps. Standardization will improve the transparency and operability of cooperation and reduce friction and obstacles in cooperation. They suggest organizing experts to compile standardized operation guidelines for school-enterprise cooperation, covering all aspects of cooperation. Researchers synthesize these aspects into the dimension of “**laws and regulations**”. The following are items designed by the researcher based on

interviews with experts;

(1) improve vocational education legislation

(2) promote vocational education standardization

provide a standardized legal basis for school-enterprise cooperation; improve vocational education legislation; promote vocational education standardization

2. Policy Support

How to promote school-enterprise cooperation in Guangdong's higher vocational education through policy support, Experts believe that the government should formulate tax incentives for enterprises to participate in vocational education, such as enterprises providing equipment and financial support to schools can enjoy tax exemptions. This will encourage more enterprises to actively participate in school-enterprise cooperation projects. They suggest issuing documents stipulating that donations and support generated by enterprises participating in school-enterprise cooperation can be deducted from corporate income tax within a certain proportion. Experts believe that a special fund funded by the government should be established to support the launch and operation of school-enterprise cooperation projects. The fund can be used to subsidize the investment of schools and enterprises in the cooperation, reduce the economic pressure on both sides, and ensure the smooth implementation of the project. They suggest setting up a special fund for school-enterprise cooperation composed of donations from the government, enterprises and society, and clarifying the direction of fund use and management methods. Experts believe that the government should establish an incentive mechanism to commend and reward enterprises and schools that have performed outstandingly in school-enterprise cooperation. The rewards can include financial support, project priority, etc., to encourage more units to actively participate in cooperation. They suggest setting up a "school-enterprise cooperation award" to select enterprises and schools that have performed outstandingly in school-enterprise cooperation every year and give them financial rewards and honorary recognition. Experts believe that the government should encourage the

establishment of a long-term and stable school-enterprise cooperation mechanism, sign a long-term cooperation agreement, and clarify the cooperation goals and plans. The long-term cooperation mechanism will help both parties to make long-term plans and continuously improve the results of cooperation. They suggest encouraging schools and enterprises to sign long-term cooperation agreements of more than three years to clarify the responsibilities and goals of both parties. Researchers synthesize these aspects into the dimension of "**Policy Support**". The following are items designed by the researcher based on interviews with experts;

(1) Formulate special tax incentive policies

(2) Establish special school-enterprise cooperation funds

(3) Establish incentive mechanisms for school-enterprise cooperation

(4) Establish long-term and stable cooperation mechanisms

The government provides incentives for both parties by formulating and improving policies to support school-enterprise cooperation. For example, tax incentives, cooperative project subsidies, etc. These policies will encourage more companies to participate in vocational education.

3. Capital investment and resource allocation

Regarding the future funding and resource allocation for school-enterprise cooperation in Guangdong's higher vocational education. Experts believe that the government should set up a special fund to support the development of school-enterprise cooperation projects. The fund can provide financial support for various expenditures of schools and enterprises in cooperation and lower the threshold for cooperation. Experts believe that the government and enterprises should be encouraged to jointly invest and establish a joint funding mechanism to ensure that cooperative projects have sufficient funding sources. This model can enhance the sustainability and innovation of the projects. Experts believe that exploring diversified financing channels, including bank loans, social donations, venture capital, etc., can provide more financial support for school-enterprise cooperation projects. This can reduce the financial pressure on the government and enterprises. Experts believe that encouraging enterprises to donate advanced equipment and technology to

schools can improve the teaching and research capabilities of schools. Enterprises can obtain tax exemptions and social recognition through donations. Experts believe that schools and enterprises can jointly fund the construction of shared laboratories to provide support for scientific research and teaching on both sides. This not only improves resource utilization efficiency, but also promotes technical exchanges and cooperation. Experts believe that setting up a special entrepreneurship fund to support students' innovative entrepreneurial projects and encouraging students to practice entrepreneurship while in school can cultivate students' entrepreneurial spirit and practical ability. Experts believe that it is necessary to set up special funds for international cooperation to support schools and enterprises in carrying out joint projects with international partners, introduce advanced foreign technologies and educational resources, and improve the level of cooperation and international competitiveness. Experts believe that it is necessary to establish a regular evaluation mechanism for the use of funds and dynamically adjust capital investment based on project progress and results to ensure efficient use of funds and smooth implementation of projects. Experts believe that establishing a transparent fund management system to ensure that all fund use is open and transparent and subject to social supervision will enhance the credibility of fund use and the trust between the two parties.

Researchers synthesize these aspects into the dimension of "**Capital investment and resource allocation**". The following are items designed by the researcher based on interviews with experts;

(1) Establish a special school-enterprise cooperation fund

(2) Joint funding by the government and enterprises

(3) Diversified financing channels

(4) Enterprise equipment donations

(5) Co-construction and sharing of laboratories

(6) Establish a student entrepreneurship fund

(7) International cooperation funding support

(8) Regular evaluation and dynamic adjustment

(9) Transparent fund management

The government and enterprises jointly invest money to establish a special fund to support school-enterprise cooperation projects. This will help solve the school's funding shortage in teaching equipment, training base construction, etc., and ensure the smooth development of cooperation projects.

4.Curriculum Setting and Teaching Reform

How Guangdong's higher vocational education can carry out school-enterprise cooperation in curriculum setting and education reform in the future: Experts believe that schools should work closely with businesses to jointly design courses based on industry and market demands to ensure that course content is highly consistent with job requirements. Experts believe that inviting corporate experts and industry technical backbones to participate in course development and teaching activities can provide the latest industry trends and practical operation experience, and enhance the practicality and forward-looking nature of the courses. Experts believe that the implementation of a dual mentor system, whereby school mentors and corporate mentors jointly guide students, can ensure balanced development of students in theoretical knowledge and practical skills and improve the quality of talent training. Experts believe that by adopting a project-oriented teaching model and introducing real corporate projects into the classroom, students can improve their ability to solve practical problems and their teamwork spirit by participating in project practice. Experts believe that schools and enterprises jointly develop teaching materials and teaching resources with industry characteristics to ensure that the content of the teaching materials keeps pace with industry development trends and technological advances. Experts believe that establishing student practice bases in enterprises and regularly arranging students to intern in enterprises can enhance students' practical ability and professional quality and enable them to better adapt to the needs of enterprises. Experts believe that incorporating innovation and entrepreneurship education into the curriculum can cultivate students' innovative thinking and entrepreneurial ability and encourage students to engage in entrepreneurial practice while in school. Experts believe that building a modular curriculum system allows students to choose courses in different

modules based on their personal interests and career plans, thereby achieving personalized training and diversified development. Experts believe that it is necessary to establish a dynamic adjustment mechanism for course content, update and optimize course content in a timely manner according to industry changes and corporate feedback, and ensure the timeliness and foresight of the course. Ensure the timeliness and foresight of the course. Experts believe that it is necessary to establish a scientific evaluation and feedback mechanism, regularly evaluate the curriculum and teaching effectiveness, and continuously improve and perfect the curriculum based on the evaluation results to improve the teaching quality.

Researchers synthesize these aspects into the dimension of "**Curriculum Setting and Teaching Reform**". The following are items designed by the researcher based on interviews with experts;

(1) Design courses based on industry needs

(2) Introduce enterprise experts to participate in teaching

(3) Dual tutor training model

(4) Project-oriented teaching

(5) Jointly develop teaching materials between schools and enterprises

(6) Establish enterprise practice bases

(7) Integrate innovation and entrepreneurship education into courses

(8) Implement modular curriculum system

(9) Dynamically adjust course content

(10) Evaluation and feedback mechanism

In summary, schools and enterprises can jointly participate in curriculum setting to ensure that the course content is in line with industry needs. Enterprises can provide the latest industry dynamics and technology trends to help schools adjust and update teaching content and improve students' employment competitiveness and professional quality.

5. Teachers and professional training

About the support for teachers in Guangdong's higher vocational education school-enterprise cooperation: Experts believe that inviting corporate experts,

technical backbones and senior managers to campus to teach, share practical work experience and the latest industry trends, and enhance the professional knowledge of teachers and students. Experts believe that arranging school teachers to work in enterprises and personally participate in enterprise production and management can enhance teachers' practical ability and industry background and promote the close integration of teaching content with enterprise needs. Experts believe that it is necessary to increase the training of "double-qualified" teachers, encourage teachers to obtain industry qualification certificates, improve their ability in professional theory and practical operation, and meet the needs of vocational education. Experts believe that professional training courses jointly organized by schools and enterprises provide a platform for teachers and corporate employees to learn and communicate together, thereby enhancing the professional capabilities and cooperation level of both parties. Experts believe that the government and enterprises should jointly establish special funds for teacher training to support teachers in participating in professional training and academic exchanges at home and abroad, and to improve their teaching and scientific research levels. Experts believe that establishing a regular professional skills improvement training system for teachers will ensure that teachers can continuously update their knowledge and skills and keep up with the pace of industry development. Experts believe that schools and enterprises jointly build teacher training bases, provide advanced equipment and training resources, and provide teachers with a high-quality training environment. Experts believe that establishing a teacher exchange and mutual visit mechanism should encourage mutual visits and exchanges between school teachers and enterprise technicians to promote experience sharing and common progress between the two sides. Experts believe that enterprises should be encouraged to fund teachers to carry out scientific research projects, support their research and innovation in professional fields, and improve teachers' scientific research level and practical ability. Experts believe that schools should formulate career development plans for teachers, provide career guidance and training support, help teachers clarify their development direction, and continuously improve their professional quality and teaching ability.

Researchers synthesize these aspects into the dimension of "**Teachers and professional training**". The following are items designed by the researcher based on interviews with experts;

(1) Enterprise experts enter campus

(2) Teachers work in enterprises for training

(3) Dual-qualified teachers training

(4) Joint school-enterprise training

(5) Establishment of special fund for teacher training

(6) Regular professional skills improvement training

(7) Co-construction of teacher training base

(8) Teacher exchange and mutual visit mechanism

(9) Enterprise funding for teachers' scientific research

(10) Establishment of career development plan for teachers

In summary, Professionals from enterprises participate in school teaching, or teachers go to enterprises for training to improve the practical ability and industry knowledge of the teaching staff. In this way, the school can cultivate high-quality talents that better meet the needs of enterprises.

6.Training base and practice platform

Regarding the school-enterprise cooperation in Guangdong's higher vocational education in training bases and practice platforms: Experts believe that schools and enterprises should cooperate to build training bases, with both parties investing and managing together to ensure that the equipment and technology of the training bases are in sync with industry standards. Experts believe that setting up student training sites within enterprises will allow students to practice in a real working environment and improve their professional skills and adaptability. Experts believe that through school-enterprise cooperation, the company's advanced technology and equipment can be introduced, the technical level of the training base can be improved, and students can be exposed to the latest industry technology. Experts believe that by combining practical training courses with actual

corporate projects, students can improve their ability to solve practical problems by participating in corporate projects. Experts believe that the implementation of a rotation training system will allow students to receive training in different positions and gain a comprehensive understanding of the company's operating procedures and the responsibilities of each position. Experts believe that establishing a regional or industry-wide network of training bases will promote resource sharing and cooperation among schools and enterprises and improve the efficiency of the use of training resources. Experts believe that inviting corporate mentors to participate in practical training guidance, providing professional practical guidance and career advice, can improve students' practical training results and professional qualities. Experts believe that encouraging enterprises to open and share their training bases with schools will provide more practical opportunities and enhance the depth and breadth of school-enterprise cooperation. Experts believe that developing and utilizing virtual simulation training platforms can provide students with diverse practical opportunities and make up for the lack of resources in training bases. Experts believe that it is necessary to establish a scientific training effect evaluation and feedback mechanism, and timely adjust and optimize the training content and methods to ensure the quality and effectiveness of training.

Researchers synthesize these aspects into the dimension of "**Training base and practice platform**". The following are items designed by the researcher based on interviews with experts;

(1) Schools and enterprises jointly build training bases

(2) Set up student training points within enterprises

(3) Introduce advanced technology and equipment

(4) Combining training courses with enterprise projects

(5) Rotation training system

(6) Establish a training base network

(7) Enterprise mentors guide training

(8) Open and shared training bases

(9) Virtual simulation training platform

(10) Evaluation and feedback on training results

In summary, Schools and enterprises jointly build and maintain training bases to provide students with real working environments and practice opportunities, which will improve students' practical operation capabilities and enable them to quickly adapt to their jobs after graduation.

7. Employment guidance and career planning

Support for employment guidance and career planning in Guangdong's higher vocational education school-enterprise cooperation: Experts believe that schools and enterprises should jointly develop career planning programs to provide students with systematic career planning guidance and help them clarify their career goals and development paths. Experts believe that inviting corporate human resources experts and executives to participate in the school's career guidance activities can provide students with real workplace information and career advice, and improve their employability and workplace adaptability. Experts believe that closely combining internships with employment and establishing an integrated "internship-employment" mechanism will allow students to come into contact with potential employers during their internships and increase employment opportunities. Experts believe that school-enterprise cooperation in holding vocational skills competitions can stimulate students' enthusiasm for learning and innovative spirit, and improve their practical operation ability and professional quality. Experts believe that it is necessary to establish an industry mentor system and invite corporate experts to serve as students' career mentors to provide students with personalized career guidance and support and help them better integrate into the workplace. Experts believe that establishing a school-enterprise employment information sharing platform to publish corporate recruitment information and students' job-seeking intentions in real time will promote information docking and resource sharing and improve employment matching. Experts believe that the professional literacy training courses offered through cooperation between schools and enterprises, covering workplace etiquette, communication skills, teamwork and other content, can comprehensively improve students' professional literacy. Experts believe that implementing an employment internship program and arranging students to perform

short-term internships in companies can help them accumulate work experience, understand corporate culture and work processes, and prepare for future employment. Experts believe that school-enterprise cooperation provides entrepreneurial guidance and support, helps students with entrepreneurial intentions to develop entrepreneurial plans, provides entrepreneurial training and financial support, and cultivates students' entrepreneurial capabilities. Experts believe that it is necessary to establish a graduate employment tracking service system, regularly track the employment status of graduates, provide continuous career development support and guidance, and help them continue to develop in their careers.

Researchers synthesize these aspects into the dimension of "**Employment guidance and career planning**". The following are items designed by the researcher based on interviews with experts;

(1) Joint career planning between schools and enterprises

(2) Enterprise participation in employment guidance

(3) Integration of internships and employment

(4) Vocational skills competitions

(5) Industry mentoring system

(6) Employment information sharing platform

(7) Vocational literacy training

(8) Employment internship program

(9) Entrepreneurship guidance and support

(10) Follow-up employment services

In summary, Enterprises participate in the school's employment guidance and career planning services to help students understand industry prospects and employment opportunities. This can not only improve the employment rate of students, but also enhance the recruitment effect of enterprises and find suitable talents.

8. Scientific research cooperation and technological innovation

On the scientific research cooperation and technological innovation of

school-enterprise cooperation in Guangdong's higher vocational education: Experts believe that schools and enterprises should jointly establish joint scientific research centers, concentrate the advantages of both sides' resources, carry out cutting-edge technology research and innovative projects, and achieve deep integration of industry, academia and research. Experts believe that cooperation between schools and enterprises to jointly build innovation laboratories, provide advanced scientific research equipment and technical support, and provide a platform for technological research and development and innovation for teachers, students and corporate employees. Experts believe that schools and enterprises should jointly apply for scientific research projects at national and local levels to obtain more scientific research funding support and promote technological innovation and transformation of results. Experts believe that it is necessary to conduct applied research guided by the actual needs of enterprises, solve technical problems encountered in production, and improve the technical level and competitiveness of enterprises. Experts believe that establishing a scientific research results sharing mechanism will promote technical exchanges and cooperation between schools and enterprises and achieve two-way flow and shared use of scientific research results. Experts believe that school-enterprise cooperation can establish an intellectual property protection and sharing mechanism, clarify the ownership of intellectual property and the distribution of benefits, and motivate both parties to be more proactive in technological innovation. Experts believe that schools and enterprises should jointly train scientific research talents and establish a joint postgraduate training base to enhance students' scientific research capabilities and innovation awareness. Experts believe that regularly holding technical exchange meetings and professional training courses between schools and enterprises can promote exchanges and cooperation in the field of technology and improve technical levels. Experts believe that cooperation between schools and enterprises to establish a technology achievement incubation center can promote the industrialization and marketization of scientific research results and promote the combination of technological innovation and economic benefits. Experts believe that we should actively carry out international

scientific research cooperation, introduce advanced foreign technologies and scientific research methods, improve scientific research level and international influence, and promote the globalization of technological innovation.

Researchers synthesize these aspects into the dimension of "**Scientific research cooperation and technological innovation**". The following are items designed by the researcher based on interviews with experts;

(1) Establish a joint scientific research center

(2) Co-build an innovation laboratory

(3) Cooperate in applying for scientific research projects

(4) Enterprise demand-driven research

(5) Scientific research results sharing mechanism

(6) Establish an intellectual property cooperation mechanism

(7) Jointly train scientific research talents

(8) Carry out technical training and exchanges

(9) Technical results incubation and transformation

(10) International scientific research cooperation

In summary, the school cooperates with enterprises to carry out scientific research projects, jointly overcome technical difficulties and achieve technological innovation. This will promote the combination of academic research and industrial development, promote the industrialization of scientific research results, and improve the competitiveness of enterprises.

9. Quality supervision and evaluation mechanism

The quality supervision and evaluation of school-enterprise cooperation in Guangdong's higher vocational education should be: Experts believe that formulating and implementing unified quality standards for school-enterprise cooperation, covering all aspects of cooperation, can ensure the high quality and standardization of cooperation projects. Experts believe that it is necessary to establish a regular quality assessment and audit mechanism and invite third-party institutions or experts to evaluate and audit cooperation projects to ensure the transparency and fairness of cooperation projects. Experts believe that it is necessary to establish an evaluation

system with the participation of multiple parties, invite schools, enterprises, students, governments and other parties to participate in the evaluation process, integrate the opinions of all parties, and improve the comprehensiveness and objectivity of the evaluation. Experts believe that establishing a real-time monitoring and feedback mechanism, using information technology to monitor the progress of cooperation projects in real time, and promptly feedback and solve problems found can improve cooperation efficiency. Experts believe that it is necessary to establish a performance evaluation and reward mechanism for cooperative projects, reward schools and enterprises that perform well in the cooperation, and encourage both parties to actively participate in the cooperation. Experts believe that conducting regular student satisfaction surveys to understand students' opinions and suggestions on school-enterprise cooperation projects can serve as an important basis for evaluating and improving cooperation projects. Experts believe that it is necessary to establish an enterprise feedback mechanism and regularly collect enterprises' opinions and suggestions on cooperation projects to ensure that cooperation projects can truly meet the needs of enterprises. Experts believe that publicly publishing the quality assessment report of school-enterprise cooperation and accepting social supervision will enhance the transparency and credibility of cooperation projects. Experts believe that it is necessary to establish a continuous improvement mechanism and continuously improve cooperation projects based on evaluation results to ensure the continuous optimization and improvement of cooperation projects. Experts believe that a school-enterprise cooperation supervision committee should be established to supervise the implementation of cooperation projects and ensure the compliance and effectiveness of cooperation projects.

Researchers synthesize these aspects into the dimension of "**Quality supervision and evaluation mechanism**". The following are items designed by the researcher based on interviews with experts;

(1) Establish quality standards for school-enterprise cooperation

(2) Regular quality assessment and audit

(3) Evaluation system with multi-party participation

(4) Real-time monitoring and feedback mechanism

(5) Performance assessment and reward mechanism

(6) Student satisfaction survey

(7) Enterprise feedback mechanism

(8) Quality assessment report disclosure

(9) Continuous improvement mechanism

(10) Establish a supervisory committee

In summary, establish a scientific quality supervision and evaluation mechanism, conduct regular inspections and evaluations of school-enterprise cooperation projects to ensure the quality and effectiveness of the projects. Through feedback and adjustments, continuously improve the cooperation model and enhance the effectiveness of cooperation.

10. Information exchange and resource sharing

School-enterprise cooperation in information exchange and resource sharing in Guangdong's higher vocational education: Experts believe that building an integrated school-enterprise cooperation information platform to publish and share the latest developments, project information, resource requirements, etc. of school-enterprise cooperation in real time will promote information symmetry and efficient use of resources. Experts believe that regularly holding school-enterprise cooperation exchange meetings or seminars can provide a platform for direct communication between schools and enterprises, share cooperation experiences, and explore cooperation opportunities. Experts believe that establishing a resource-sharing mechanism, allowing schools and enterprises to share laboratories, equipment, libraries and other resources, can improve resource utilization efficiency and reduce duplication of investment. Experts believe that schools and enterprises should jointly develop courses, teaching materials and training materials to ensure that teaching resources are highly consistent with industry needs and improve teaching quality and practicality. Experts believe that enterprises should be encouraged to open their technical repositories and databases to schools and provide them to teachers and students for scientific research and learning, so as to improve the level of teaching and scientific research. Experts believe that establishing a database of corporate

experts and mentors, and regularly inviting corporate experts to schools to give lectures, guide practical training and scientific research projects, will enhance students' practical ability and professional quality. Experts believe that it is necessary to develop and utilize information management systems to record and track the progress of school-enterprise cooperation projects in real time and provide data analysis and decision-making support. Experts believe that a resource-sharing incentive mechanism should be established, and policy preferences and rewards should be given to schools and enterprises that actively share resources to encourage more units to participate in resource sharing. Experts believe that it is necessary to build an industry information exchange platform to collect the latest industry dynamics, technological development trends and market demand information for reference by schools and enterprises. Experts believe that regularly holding school-enterprise cooperation project showcase activities can showcase cooperation results and innovative projects, promote understanding and cooperation between schools and enterprises, and attract more resources and support.

Researchers synthesize these aspects into the dimension of "**Information exchange and resource sharing**". The following are items designed by the researcher based on interviews with experts;

(1) Establish a school-enterprise cooperation information platform

(2) Hold school-enterprise exchange meetings regularly

(3) Establish a resource sharing mechanism

(4) Jointly develop teaching resources between schools and enterprises

(5) Open enterprise technical database

(6) Establish expert database and mentor database

(7) Information management system

(8) Resource sharing incentive mechanism

(9) Industry information exchange platform

(10) School-enterprise cooperation project display

In summary, establish an information exchange platform for school-enterprise cooperation to promote information exchange and resource sharing between the two parties. This will improve resource utilization efficiency, reduce duplication of

investment, and promote the in-depth development of cooperation.

Based on in-depth interviews with 17 experts on school-enterprise cooperation in higher vocational education in Guangdong, the school-enterprise collaboration in higher vocational education in Guangdong Province should consider a comprehensive framework consisting of 10 dimensions and 85 items, as shown in the Table 1 and Figure 1 below.

Table 1 10 Dimensions and 85 items

No.	Dimension	Item
1	Laws and regulations	2
2	Policy Support	4
3	Capital investment and resource allocation	9
4	Curriculum Setting and Teaching Reform	10
5	Teachers and professional training	10
6	Training base and practice platform	10
7	Employment guidance and career planning	10
8	Scientific research cooperation and technological innovation	10
9	Quality supervision and evaluation mechanism	10
10	Information exchange and resource sharing	10
Total		**85**

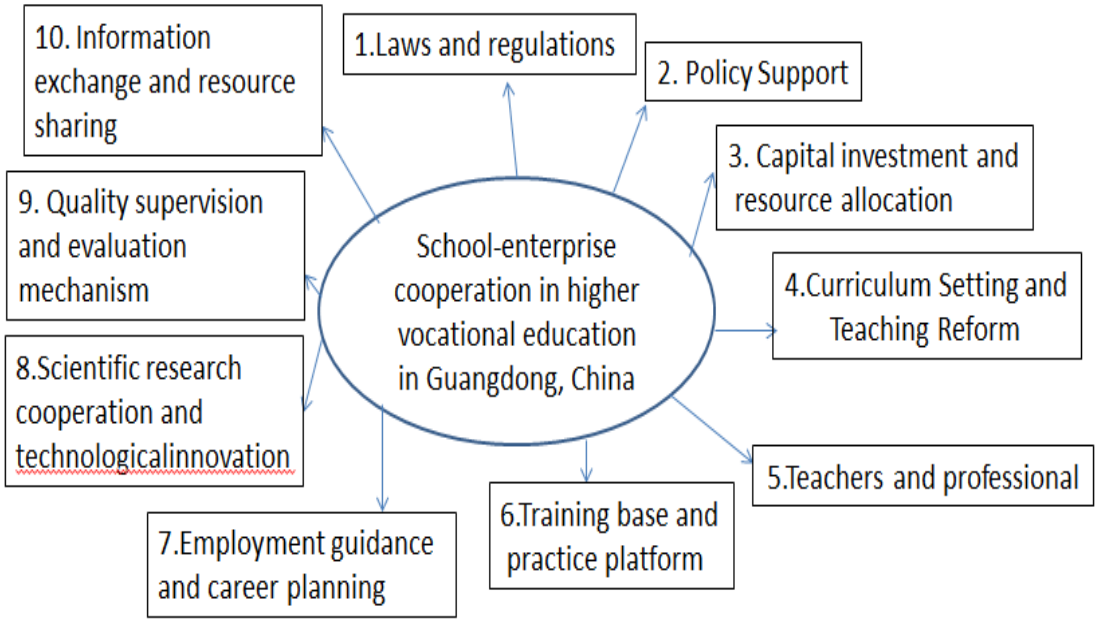

Figure 10 The future of school-enterprise cooperation of higher vocational college in Guangdong Province

Chapter V
Conclusion, Discussion, Recommendation

This study aims to explore the school-enterprise cooperation in Guangdong's higher vocational education. This study conducted in-depth interviews with 17 well-known experts with deep professional knowledge and rich practical experience in the field of school-enterprise cooperation to explore their deep understanding of school-enterprise cooperation in Guangdong's higher vocational education and their expectations for future school-enterprise cooperation. Through careful and in-depth analysis and summary of a large amount of data obtained from the interviews, the researchers identified and extracted 10 dimensions and 85 items, all of which are closely related to school-enterprise cooperation. This chapter is divided into three parts: the first part summarizes 10 dimensions and 85 items based on extensive research. The second part is a discussion of each dimension item, comparing the theory or literature of this study with the experts' views, and conducting in-depth analysis and discussion of these research results so that readers can better understand the practical application and significance of these views. Finally, this chapter puts forward a series of feasible suggestions for future research. Further research can be carried out based on the data obtained in this survey.

Conclusion

According to the opinions of experts, 10 dimensions need to be considered in the school-enterprise cooperation in higher vocational education in Guangdong, China; 1) Laws and regulations 2) Policy Support 3) Capital investment and resource allocation 4) Curriculum Setting and Teaching Reform 5)Teachers and professional training 6） Training base and practice platform 7） Employment guidance and career planning 8） Scientific research cooperation and technological innovation

9） Quality supervision and evaluation mechanism and 10） Information exchange and resource sharing.

1. Laws and regulations

In the future school-enterprise cooperation, the necessity of providing a normative basis for school-enterprise cooperation through laws and regulations is emphasized. The government will revise and improve the relevant laws and regulations on vocational education, clarify the rights and obligations of school-enterprise cooperation, provide stable legal protection for both parties, and enhance confidence and investment. In addition, it will formulate and promote standardized operating guidelines for school-enterprise cooperation, standardize cooperation processes and steps, improve the transparency and operability of cooperation, and reduce friction and obstacles. These measures will help enhance the stability and long-term nature of school-enterprise cooperation and achieve win-win cooperation.

2. Policy support

In the future school-enterprise cooperation, the important role of policy support in promoting the deep integration and high-quality development of school-enterprise cooperation is emphasized. The government provides incentives for both parties by formulating and improving policies to support school-enterprise cooperation, such as tax incentives and subsidies for cooperative projects. Specific measures include: formulating special tax incentives so that enterprises can enjoy tax exemptions when providing equipment and financial support, and encourage more enterprises to participate in school-enterprise cooperation projects; establishing special school-enterprise cooperation funds to subsidize the start-up and operation of cooperative projects and reduce the economic pressure on both parties; establishing an incentive mechanism for school-enterprise cooperation, and commending and rewarding outstanding enterprises and schools; encouraging the establishment of a long-term and stable cooperation mechanism, and by signing a long-term cooperation agreement, clarifying cooperation goals and plans, and ensuring continuous improvement and efficient implementation of cooperation.

These policies will encourage more enterprises to actively participate in vocational education and achieve win-win cooperation.

3. Capital investment and resource allocation

The key role of capital investment and resource allocation in promoting school-enterprise cooperation was emphasized. Through joint investment by the government and enterprises, a special fund was established to support school-enterprise cooperation projects, solve the problem of school funding shortages in teaching equipment and training base construction, and ensure the smooth development of cooperation projects. Specific measures include setting up a special school-enterprise cooperation fund, funding excellent projects through public bidding, encouraging joint funding by the government and enterprises, exploring diversified financing channels such as loans and venture capital, setting up a special fund subsidy plan, rewarding outstanding projects, encouraging enterprises to donate advanced equipment, jointly build and share laboratories, setting up student entrepreneurship funds, supporting international cooperation projects, establishing a regular evaluation and dynamic adjustment mechanism, and implementing a transparent fund management system. Through these measures, risk sharing and achievement sharing can be achieved, and the sustainability and innovation of school-enterprise cooperation can be enhanced.

4. Curriculum Setting and Teaching Reform

In the future school-enterprise cooperation of Guangdong higher vocational education, experts emphasized the important role of curriculum setting and teaching reform in school-enterprise cooperation. Through the joint participation of schools and enterprises in curriculum design, ensure that the curriculum content is in line with industry needs and improve students' employment competitiveness and professional quality. Specific measures include: designing courses based on industry needs, establishing a curriculum design committee, and regularly investigating industry needs; introducing enterprise experts to participate in teaching, establishing an enterprise expert database, and regularly inviting enterprise experts to teach;

implementing a dual-tutor training model, clarifying the responsibilities of school tutors and enterprise tutors; adopting a project-oriented teaching model, introducing real enterprise projects into the classroom; jointly developing teaching materials between schools and enterprises, inviting enterprise experts and school teachers to co-write; establishing student practice bases in enterprises to enhance students' practical ability; integrating innovation and entrepreneurship education into the curriculum to cultivate students' innovative thinking and entrepreneurial ability; building a modular curriculum system to achieve personalized training and diversified development; establishing a dynamic adjustment mechanism for course content, and updating course content in a timely manner according to industry changes and enterprise feedback; establishing a scientific evaluation and feedback mechanism, and regularly evaluating and improving course settings and teaching effects. Through these measures, ensure that the course content keeps up with the development trend of the industry and improves the teaching quality and students' practical operation ability.

5. Teachers and professional training

In the future school-enterprise cooperation of Guangdong's higher vocational education, experts emphasized the important role of teachers and professional training in school-enterprise cooperation. Through the participation of enterprise professionals in school teaching, or teachers working in enterprises, the practical ability and industry knowledge of the teaching staff can be improved, so as to cultivate high-quality talents that better meet the needs of enterprises. Specific measures include: inviting enterprise experts to teach on campus and establishing an enterprise expert database; arranging teachers to work in enterprises and formulating detailed work plans; increasing the training of "double-qualified" teachers and setting up special funds to support teachers to obtain industry qualification certificates; schools and enterprises jointly organize professional training courses to improve the professional capabilities of both parties; the government and enterprises jointly set up a special fund for teacher training to support teachers to participate in professional training and academic exchanges at home and abroad; establish a

regular professional skills improvement training system for teachers to ensure that teachers continue to update their knowledge and skills; schools and enterprises jointly build teacher training bases to provide advanced training environments; establish a teacher exchange and mutual visit mechanism to promote experience sharing and common progress; encourage enterprises to fund teachers' scientific research projects to improve teachers' scientific research level and practical ability; formulate career development plans for teachers and provide career guidance and training support. These measures will help improve teachers' professional quality and teaching ability, and ensure that vocational education keeps pace with the development of the industry.

6. Training base and practice platform

In the future school-enterprise cooperation of Guangdong's higher vocational education, experts emphasized the important role of training bases and practice platforms in school-enterprise cooperation. Through the joint construction and maintenance of training bases by schools and enterprises, students can be provided with a real working environment and practice opportunities, improve their practical operation ability, and enable them to quickly adapt to their jobs after graduation. Specific measures include: jointly building training bases between schools and enterprises, clarifying the investment ratio and management responsibilities of both parties; setting up student training points within enterprises and arranging students for rotation training; introducing advanced technology and equipment from enterprises and updating the hardware facilities of training bases; combining training courses with actual enterprise projects to improve students' ability to solve practical problems; implementing a rotation training system to allow students to fully understand the operation process of enterprises; establishing a regional or industry-specific training base network to promote resource sharing and cooperation; inviting enterprise mentors to participate in training guidance to improve students' professional literacy; encouraging enterprises to open and share training bases with schools to provide more practice opportunities; developing and utilizing virtual simulation training platforms to provide students with diverse practice opportunities;

establishing a scientific training effect evaluation and feedback mechanism to timely adjust and optimize training content and methods. These measures will help improve the quality and effectiveness of students' practical training and ensure that they can better adapt to the needs of enterprises.

7. Employment guidance and career planning

In the future school-enterprise cooperation of Guangdong higher vocational education, experts emphasized the importance of enterprises participating in the school's employment guidance and career planning services. Through the joint development of career planning programs by schools and enterprises, inviting enterprises to participate in employment guidance, establishing an internship and employment integration mechanism, holding vocational skills competitions, implementing industry mentoring, establishing an employment information sharing platform, opening professional literacy training courses, implementing employment internship programs, providing entrepreneurship guidance and support, and tracking employment services, students can understand the industry prospects and employment opportunities, and improve employment rates and career adaptability. Specific measures include the establishment of a joint guidance committee for career planning, the establishment of an enterprise expert database, the formulation of an internship and employment integration mechanism, regular vocational skills competitions, the selection of enterprise experts as career mentors, the development of an employment information sharing platform, the opening of professional literacy training courses, the arrangement of students for short-term internships, the provision of entrepreneurship training and financial support, and the establishment of an employment tracking service system. These measures will help improve students' employability and professional literacy, enhance the recruitment effect of enterprises, and promote win-win cooperation between schools and enterprises.

8. Scientific research cooperation and technological innovation

In the future school-enterprise cooperation of Guangdong higher

vocational education, experts emphasized the important role of scientific research cooperation and technological innovation in school-enterprise cooperation. Through the cooperation between schools and enterprises to carry out scientific research projects, jointly overcome technical difficulties, achieve technological innovation, promote the combination of academic research and industrial development, promote the industrialization of scientific research results, and improve the competitiveness of enterprises. Specific measures include: establishing a joint scientific research center to concentrate the advantages of both parties on cutting-edge technology research; jointly building an innovation laboratory to provide advanced scientific research equipment and technical support; jointly applying for scientific research projects at all levels to strive for more scientific research funds; driving research with enterprise needs to solve technical problems in production; establishing a scientific research results sharing mechanism to achieve technical exchanges and cooperation; establishing an intellectual property cooperation mechanism to clarify ownership and benefit distribution; jointly training scientific research talents and establishing a joint training base for graduate students; regularly holding technical exchange meetings and professional training courses to improve technical levels; establishing a technical results incubation center to promote the industrialization and marketization of scientific research results; carrying out international scientific research cooperation and introducing foreign advanced technologies and scientific research methods. These measures will help to achieve a deep integration of industry, academia and research, promote technological innovation, and improve the technical level and market competitiveness of enterprises.

9. Quality supervision and evaluation mechanism

In the future school-enterprise cooperation of Guangdong's higher vocational education, experts emphasized the importance of establishing a scientific quality supervision and evaluation mechanism in school-enterprise cooperation, ensuring the quality and effectiveness of the project through regular inspections and evaluations, and continuously improving the cooperation model and improving the

effectiveness of cooperation through feedback and adjustments. Specific measures include: formulating and implementing unified school-enterprise cooperation quality standards to ensure the high quality and standardization of the project; establishing a regular quality evaluation and audit mechanism, inviting third parties to conduct evaluation and audits; establishing a multi-party evaluation system to integrate the opinions of schools, enterprises, students and governments; using information technology to establish a real-time monitoring and feedback mechanism to promptly discover and solve problems; establishing a performance appraisal and reward mechanism to reward schools and enterprises with outstanding performance; regularly conducting student satisfaction surveys and enterprise feedback mechanisms to collect opinions and suggestions; publishing quality evaluation reports and accepting social supervision; establishing a continuous improvement mechanism to continuously improve cooperation projects based on evaluation results; and establishing a school-enterprise cooperation supervision committee to ensure the compliance and effectiveness of the project. Through these measures, the transparency, standardization and efficiency of school-enterprise cooperation projects can be ensured, and continuous optimization and improvement can be achieved.

10. Information exchange and resource sharing

In the future school-enterprise cooperation of Guangdong higher vocational education, experts emphasized the important role of information exchange and resource sharing in school-enterprise cooperation. By establishing a school-enterprise cooperation information exchange platform, the two sides can promote information exchange and resource sharing, improve resource utilization efficiency, reduce repeated investment, and promote the in-depth development of cooperation. Specific measures include: developing a comprehensive school-enterprise cooperation information platform to publish and share cooperation dynamics, project information and resource needs in real time; regularly holding school-enterprise cooperation exchange meetings or seminars to provide an exchange platform to share experiences and explore cooperation opportunities;

establishing a resource sharing mechanism to allow sharing of resources such as laboratories, equipment and libraries, and signing a resource sharing agreement; schools and enterprises jointly develop teaching resources, form development teams, and jointly write courses and teaching materials; open enterprise technical databases and sign agreements for teachers and students to use; establish enterprise experts and mentor databases, invite enterprise experts to teach and guide; develop an information management system to record and track the progress of cooperation projects in real time; establish a resource sharing incentive mechanism to reward units that actively share resources; build an industry information exchange platform to collect industry dynamics and market demand information; regularly hold school-enterprise cooperation project display activities to showcase cooperation results and innovative projects. These measures will help achieve efficient use of resources and promote in-depth and extensive development of school-enterprise cooperation.

Discussion

In view of the school-enterprise cooperation in higher vocational education in Guangdong Province, the researchers summarized the results into 10 dimensions and 85 items based on the results of in-depth interviews with experts. During the interview process, it was found that the 10 dimensions are very important for the future school-enterprise cooperation in higher vocational education in Guangdong, and support the research of existing literature and theories.

1. Laws and regulations

PPP theory emphasizes that in cooperation, it is crucial to clarify and guarantee the rights and responsibilities of both parties. This requires a stable legal environment and clear laws and regulations. Experts also express that a transparent and stable legal framework can ensure that the rights and interests of partners are protected, reduce risks for both parties, and bring sustainability to cooperation. Therefore, the legal and regulatory dimension is consistent with the views on the protection of partners' rights and interests in PPP theory.

Revise and improve the laws and regulations related to vocational

education, clearly define the rights and obligations of school-enterprise cooperation, and provide legal protection. This will provide a stable and predictable legal environment for school-enterprise cooperation and enhance the confidence and investment of both parties. This is consistent with the research of George Hodge et al. (2007), who pointed out in "Public-Private Partnerships: An International Performance Review" that a clear legal framework helps increase the transparency and predictability of public-private partnership projects, thereby improving the success rate of projects.

School-enterprise cooperation in higher vocational education in Guangdong requires more detailed planning and management in terms of laws and regulations. According to expert opinions, clear cooperation contracts, intellectual property protection, effective dispute resolution mechanisms, protection of the rights and interests of students and teachers, as well as transparent fund management and tax compliance are all keys to ensuring successful cooperation.

The contract is the basis for school-enterprise cooperation, and it determines the rights and obligations of both parties. As Xiaobo Lei stated in his study, a clear and complete cooperation contract is the key to successful cooperation1. This is consistent with the views of legal and regulatory experts, who emphasize that every detail in the contract should be clearly spelled out. In school-enterprise cooperation, the protection of intellectual property rights is a core issue.

As stated by Johnson, ensuring clear ownership and protection of intellectual property is key to promoting innovation and research. This is consistent with the views of legal and regulatory experts on intellectual property protection.

PPP theory points out that disputes that may arise during cooperation require an efficient resolution mechanism. Experts in law and regulations also believe that non-litigation methods such as mediation or arbitration may be more efficient ways to resolve disputes

2. Policy Support

The government provides incentives for both parties by formulating and improving policies to support school-enterprise cooperation, such as tax incentives

and cooperative project subsidies. The formulation of these policies is consistent with the incentive mechanism in PPP theory, which emphasizes that policy incentives can effectively promote cooperation between the public and private sectors.

The government should formulate tax incentives for enterprises to participate in vocational education. For example, enterprises can enjoy tax exemptions if they provide equipment and financial support to schools. This will encourage more enterprises to actively participate in school-enterprise cooperation projects. This is consistent with the research results of Grimsey and Lewis (2004). They pointed out in "Public Private Partnerships: The Worldwide Revolution in Infrastructure Provision and Project Finance" that tax incentives are an important means to encourage the private sector to participate in public projects, which can significantly reduce the cost of enterprise participation and increase its enthusiasm for participation.

Funding support policies: This is the cornerstone of cooperation. With sufficient financial support, cooperation can be expanded and deepened. In his book "Public-Private Cooperation: Principles and Practice", Yescombe also believes that financial support is a key factor in the success of PPP projects, which is consistent with the views of experts.

Tax preferential policies: Tax incentives are a key incentive for companies to participate in collaborations. Delmon pointed out in his study that tax incentives are very attractive to public-private partnerships, which is consistent with the opinions of experts.

Talent training policy: This is the core of school-enterprise cooperation. Becker also emphasized the importance of cooperation between enterprises and educational institutions in talent cultivation in his "Human Capital Theory".

Scientific research project policy: It’s about the direction and depth of cooperation. Hodge and Greve (2007) also pointed out that choosing the right cooperation project is the key to achieving the maximum return for both parties.

Intellectual property policy:A clear intellectual property policy is key to attracting business cooperation. Arora et al. (2001) mentioned the central role of intellectual property rights in technology transfer and cooperation.

Technology transfer policy:Develop clear technology transfer agreements to ensure the commercialization of technology. Teece (1986) in his study emphasized the importance of technology transfer for innovation.

Priority purchasing policy:Help enterprises obtain advanced technology and strengthen cooperative relationships. Laffont and Tirole (1993) mentioned in their work the impact of preferential procurement policies on public-private partnerships.

To sum up, policy support is an indispensable part of school-enterprise cooperation in higher vocational education in Guangdong. Combining expert opinions and previous research literature, we can better understand the role and importance of policy in cooperation.

3. Capital investment and resource allocation,

Through joint investment by the government and enterprises, special funds are established to support school-enterprise cooperation projects, solve the problem of school funding shortage in teaching equipment, training base construction, etc., and ensure the smooth development of cooperation projects. This view is consistent with the resource integration and risk sharing theory in PPP theory, which emphasizes that by integrating multiple resources, the risks in cooperation can be effectively shared and the optimal allocation of resources can be achieved.

Encourage the government and enterprises to jointly invest and establish a joint funding mechanism to ensure that cooperative projects have sufficient funding sources. This model can enhance the sustainability and innovation of the project. This joint funding model is consistent with the resource dependence theory in stakeholder theory. The resource dependence theory emphasizes that by integrating multiple resources, the implementation of cooperative projects can be effectively supported and the economic pressure of all parties can be reduced.

The government should set up a special fund subsidy program to provide financial rewards and subsidies to projects that perform well in school-enterprise cooperation, so as to encourage more schools and enterprises to participate in cooperation. This reward mechanism is consistent with the incentive mechanism in the multi-party collaboration theory, which points out that through rewards and

commendations, the enthusiasm of all parties involved in the cooperation can be enhanced, and the continuous improvement and optimization of the cooperation projects can be promoted.

Schools and enterprises can jointly invest in building shared laboratories to provide support for scientific research and teaching of both parties. This not only improves the efficiency of resource utilization, but also promotes technical exchange and cooperation. This view is consistent with the resource sharing theory in PPP theory, which emphasizes that by sharing resources, the efficiency of resource utilization can be improved and the technical exchange and innovation of the parties involved can be promoted.

Through these specific measures, Guangdong Province's higher vocational education school-enterprise cooperation can draw on the successful experience of PPP theory, stakeholder theory and multi-party collaboration theory, further improve the framework of capital investment and resource allocation, provide financial support and resource sharing, and ensure the sustainability and innovation of cooperation projects. This will not only help solve the school's funding shortage in teaching equipment and training base construction, but also enhance the overall benefits and competitiveness of school-enterprise cooperation.

4. Curriculum Setting and Teaching Reform

Stakeholder Theory emphasizes that the needs and expectations of all stakeholders should be fully considered during decision-making and implementation. By jointly designing courses with enterprises, the course content can be aligned with industry needs, thus improving students' employment competitiveness and professional quality. This view is consistent with the cooperative benefit maximization theory in stakeholder theory. Collaborative Theory emphasizes that all stakeholders in a complex system can achieve common goals through collaboration and resource sharing. The curriculum setting and teaching reform in the cooperation between higher vocational schools and enterprises in Guangdong have achieved a deep integration of education and industry through close cooperation between schools and enterprises, which is consistent with the collaborative theory.

Schools should work closely with enterprises to jointly design courses based on industry and market needs to ensure that course content is highly consistent with job requirements. This is consistent with Freeman's (1984) research, who pointed out in Strategic Management: A Stakeholder Approach that close cooperation among stakeholders can ensure the effective allocation of resources and the precise matching of needs.

Invite enterprise experts and industry technical backbones to participate in course development and teaching activities, provide the latest industry trends and practical operation experience, and enhance the practicality and foresight of the course. This measure is consistent with the research results of Bryson et al. (2006), who pointed out in "The Design and Implementation of Cross-Sector Collaborations" that cross-sector collaboration and expert participation can significantly improve the practicality and foresight of the project.

The dual-tutor system is implemented, that is, school tutors and enterprise tutors jointly guide students to ensure balanced development of students in theoretical knowledge and practical skills, and improve the quality of talent training. This dual-tutor training model is consistent with the joint guidance theory in the multi-party collaboration theory, which emphasizes that joint guidance can effectively improve the quality and effect of talent training.

The project-oriented teaching model is adopted to introduce real enterprise projects into the classroom. Students can improve their ability to solve practical problems and their teamwork spirit through participating in project practice. This is consistent with Kolb's (1984) research in "Experiential Learning: Experience as the Source of Learning and Development". He pointed out that project-based practical teaching can significantly improve students' practical operation ability and teamwork spirit. Building a modular curriculum system allows students to choose different modules of courses according to their personal interests and career plans, achieving personalized training and diversified development. This is consistent with the research of Kolb (1984), who pointed out that the modular curriculum system can significantly improve the personalized development and diversified training of students.

Through these specific measures, Guangdong Province's higher vocational education school-enterprise cooperation can draw on the successful experience of stakeholder theory and multi-party collaboration theory, further improve the curriculum setting and teaching reform framework, ensure that the course content is in line with industry needs, and improve the teaching quality and students' practical operation ability. This will not only help improve students' employment competitiveness and professional quality, but also enhance the overall benefits and competitiveness of school-enterprise cooperation.

5. Teachers and professional training

By having corporate professionals participate in school teaching, or teachers working in enterprises, the practical ability and industry knowledge of the teaching staff can be improved, thereby cultivating high-quality talents that better meet the needs of enterprises. This view is consistent with the cooperative benefit maximization theory in stakeholder theory, which emphasizes that through cooperation, the interests of all parties can be maximized. The **collaborative theory** emphasizes that the various stakeholders in a complex system can achieve common goals through collaboration and resource sharing. The teaching staff and professional training in the cooperation between Guangdong's higher vocational schools and enterprises have improved the quality of education through close cooperation between schools, enterprises and the government, which is consistent with the collaborative theory.

Invite enterprise experts, technical backbones and senior managers to give lectures on campus, share practical work experience and the latest industry trends, and enhance the professional knowledge of teachers and students. This is consistent with the research of **Freeman (1984)**, who pointed out in "Strategic Management: A Stakeholder Approach" that close cooperation among stakeholders can ensure the effective allocation of resources and the precise matching of needs.

Arrange school teachers to work in enterprises, participate in enterprise production and management, improve teachers' practical ability and industry background, and promote the close integration of teaching content with enterprise

needs.

This model of on-the-job training is consistent with the theory of multi-party collaboration. Through joint learning and practice, it can effectively improve teachers' practical ability and industry knowledge.

Through these specific measures, the school-enterprise cooperation in higher vocational education in Guangdong Province can draw on the successful experience of stakeholder theory and multi-party collaboration theory, further improve the teaching staff and professional training framework, and ensure that teachers can continuously update their knowledge and skills and improve their professional quality and teaching ability.

6. Training base and practice platform

Public Private Partnership (PPP) The public-private partnership model emphasizes the close cooperation between the government and the private sector. Through resource integration and benefit sharing, Guangdong higher vocational education provides students with a real working environment and practice opportunities by jointly building and maintaining training bases through schools and enterprises, improving students' practical operation capabilities and enabling them to quickly adapt to their jobs after graduation. This view is consistent with Han and Yue, (2016). **The resource integration and sharing theory in PPP theory**, which emphasizes that by integrating resources from multiple parties, the risks in cooperation can be effectively shared and the optimal allocation of resources can be achieved.

Establishing student training sites within the enterprise allows students to practice in a real working environment and improve their professional skills and adaptability. This measure is consistent with **Freeman's (1984)** stakeholder theory. By establishing training sites within the enterprise, enterprise resources can be effectively utilized to improve students' practical ability and adaptability.

7. Employment guidance and career planning

Stakeholder Theory emphasizes that the needs and expectations of all

relevant stakeholders should be fully considered during the decision-making and implementation process. Through the participation of enterprises in the school's employment guidance and career planning services, students can be helped to understand the industry prospects and employment opportunities, and the employment rate and career adaptability can be improved. This view is consistent with Hodge and Greve (2007). **The cooperative benefit maximization theory in stakeholder theory**, which emphasizes that through cooperation, the interests of all parties can be maximized. The multi-party collaboration theory emphasizes that the various stakeholders in a complex system can achieve common goals through collaboration and resource sharing. The employment guidance and career planning in the cooperation between Guangdong higher vocational schools and enterprises have achieved the optimal allocation of resources and coordinated development through the close cooperation between schools, enterprises and students.

Schools and enterprises jointly develop career planning programs to provide students with systematic career planning guidance and help them clarify their career goals and development paths. This is consistent with Freeman's (1984) research, who pointed out in "Strategic Management: A Stakeholder Approach" that close cooperation among stakeholders can ensure the effective allocation of resources and the precise matching of needs.

8. Scientific research cooperation and technological innovation

Stakeholder theory emphasizes that through cooperation, the interests of all parties can be maximized. Through the cooperation between schools and enterprises to carry out scientific research projects, jointly overcome technical difficulties, achieve technological innovation, promote the combination of academic research and industrial development, promote the industrialization of scientific research results, and improve corporate competitiveness. This view is consistent with Donaldson and Preston (1995). **The cooperative interest maximization theory in stakeholder theory**. The collaborative theory emphasizes that the various stakeholders in a complex system achieve common goals through collaboration and

resource sharing. The scientific research cooperation and technological innovation in the cooperation between Guangdong higher vocational schools and enterprises have achieved optimal resource allocation and coordinated development through close cooperation between schools, enterprises and the government, which is highly consistent with the collaborative theory.

9. Quality supervision and evaluation mechanism

Stakeholder Theory emphasizes that in organization and project management, the needs and expectations of all stakeholders must be identified and met to ensure the success and sustainability of the project. The importance of establishing a scientific quality supervision and evaluation mechanism in school-enterprise cooperation ensures the quality and effectiveness of the project through regular inspections and evaluations, and continuously improves the cooperation model and improves the effectiveness of cooperation through feedback and adjustments. This view is consistent with the cooperative benefit maximization theory in stakeholder theory.

In order to better carry out cooperation, quality supervision and evaluation mechanisms are essential links, and in-depth discussions are conducted based on expert opinions and previous research literature.

Performance evaluation is a key link in the cooperation between higher vocational schools and enterprises. This view is consistent with Ministry of Education (2002) mentioned in the "Balanced Scorecard" that performance evaluation is a bridge connecting strategy and execution, which is consistent with expert opinions.

Project completion is an intuitive indicator for measuring the results of school-enterprise cooperation, and consistent with Toner (2012). Believes that the success of a project depends on the completion of the project and whether it meets the needs of stakeholders, which is consistent with expert opinions.

The evaluation of scientific research output is the key to measuring the scientific research level of the school and the technological innovation ability of the enterprise, and consistent with **Jones (1995)** mentioned the positive impact of university scientific research on enterprise innovation, supporting the views of

experts.

Economic benefits are an important indicator for measuring the success of school-enterprise cooperation. Porter (1985) agreed with the experts that cooperation can create competitive advantages and bring economic benefits.

Conduct satisfaction surveys regularly. Oliver (1980) emphasized the importance of customer satisfaction in the satisfaction theory, and this view also applies to both parties in school-enterprise cooperation.

Appropriate reward policies can motivate both parties to participate in cooperation more actively. Deci and Ryan (1985) mentioned in their autonomous motivation theory that rewards can improve people's enthusiasm, which is consistent with the experts' views.

In summary, the quality supervision and evaluation mechanism of Guangdong's higher vocational school-enterprise cooperation is consistent with various theories and has been supported by experts. In order to achieve the best cooperation effect, both parties need to continue to pay attention to the relevant practices of the quality supervision and evaluation mechanism and make appropriate adjustments.

10. Information exchange and resource sharing

By establishing an information exchange platform for school-enterprise cooperation, we can promote information exchange and resource sharing between the two parties, improve resource utilization efficiency, reduce duplication of investment, and promote the in-depth development of cooperation. This view is consistent with the cooperative benefit maximization theory in stakeholder theory, which emphasizes that through cooperation, the interests of all parties can be maximized.

Develop an integrated school-enterprise cooperation information platform to publish and share the latest developments, project information, resource requirements, etc. of school-enterprise cooperation in real time, and promote information symmetry and efficient use of resources. This is consistent with the research of Bryson et al. (2006), who pointed out in "The Design and Implementation

of Cross-Sector Collaborations" that the construction of an information platform can significantly improve information symmetry and resource sharing efficiency.

Regularly hold school-enterprise cooperation exchange meetings or seminars to provide a platform for direct communication between schools and enterprises, share cooperation experiences, and explore cooperation opportunities. This measure is consistent with the research results of Freeman (1984). Through regular exchange meetings and seminars, the communication and collaboration capabilities of all parties can be effectively improved.

Schools and enterprises jointly develop courses, teaching materials and training materials to ensure that teaching resources are highly consistent with industry needs and improve teaching quality and practicality. This measure is consistent with the research results of Bovaird (2004). By jointly developing teaching resources, the quality and practicality of teaching can be significantly improved.

Develop and utilize information management systems to record and track the progress of school-enterprise cooperation projects in real time and provide data analysis and decision support. This is consistent with the research of Bryson et al. (2006). Through the development of information management systems, the efficiency of project management and decision support capabilities can be significantly improved.

Build an industry information exchange platform to collect the latest industry dynamics, technology development trends and market demand information for reference by schools and enterprises. This is consistent with the research of Provan and Kenis (2008). Through the construction of an industry information exchange platform, information sharing and the grasp of industry dynamics can be effectively improved.

Regularly hold exhibition activities for school-enterprise cooperation projects to showcase cooperation results and innovative projects, promote understanding and cooperation between schools and enterprises, and attract more resources and support. This measure is consistent with the research results of Bovaird (2004). By holding exhibition activities, the popularity and attractiveness of cooperation projects can be significantly improved.

Through these specific measures, Guangdong Province's higher vocational education school-enterprise cooperation can draw on the successful experience of stakeholder theory and PPP theory, further improve the information exchange and resource sharing framework, and ensure the efficient use of resources and information symmetry. This will not only help improve the overall quality and effect of cooperation projects, but also enhance the overall benefits and competitiveness of school-enterprise cooperation.

Recommendation

General recommendation

According to the research results of Guangdong Province's higher vocational education school-enterprise cooperation, Guangdong Province's higher vocational education school-enterprise cooperation should consider the following dimensions in the future: 1) Laws and regulations 2) Policy Support 3) Capital investment and resource allocation 4) Curriculum Setting and Teaching Reform 5） Teachers and professional training 6） Training base and practice platform 7） Employment guidance and career planning 8） Scientific research cooperation and technological innovation 9） Quality supervision and evaluation mechanism and 10） Information exchange and resource sharing.

In order to better promote school-enterprise cooperation in higher vocational education in Guangdong Province, China, the researchers put forward the following suggestions:

1. Improve laws and regulations

(1) Improve vocational education legislation: revise and improve relevant laws and regulations on vocational education, clarify the rights and obligations of school-enterprise cooperation, provide legal guarantees, and enhance the stability and long-term nature of cooperation.

(2) Promote the standardization of vocational education: formulate and promote standardized operating guidelines for school-enterprise cooperation,

standardize the cooperation process, and reduce friction and obstacles in cooperation.

(3) Provide legal aid and consulting services: establish a special legal aid and consulting service agency to provide legal consulting and dispute resolution services for school-enterprise cooperation projects.

2. Increase policy support

(1) Formulate special tax incentives: Formulate tax incentives for enterprises participating in vocational education to encourage more enterprises to participate in school-enterprise cooperation projects.

(2) Establish a special school-enterprise cooperation fund: Establish a special fund funded by the government to support the launch and operation of school-enterprise cooperation projects.

(3) Establish an incentive mechanism for school-enterprise cooperation: Commend and reward enterprises and schools that have performed outstandingly in school-enterprise cooperation to encourage more units to actively participate in cooperation.

3. Increase capital investment and resource allocation

(1) Establish a special school-enterprise cooperation fund: Fund excellent projects through public bidding to ensure that cooperative projects have sufficient funding sources.

(2) Joint funding by the government and enterprises: Encourage the government and enterprises to jointly invest, establish a joint funding mechanism, and enhance the sustainability and innovation of projects.

(3) Diversify financing channels: Explore various financing methods such as bank loans, social donations, and venture capital to broaden funding sources.

4. Promote curriculum setting and teaching reform

(1) Design courses based on industry needs: establish a curriculum design committee, regularly survey industry needs, and jointly design course content.

(2) Introduce corporate experts to participate in teaching: establish a

corporate expert database, and regularly invite corporate experts to teach or hold lectures at school.

(3) Implement a dual-tutor training model: formulate a dual-tutor implementation plan, and clarify the responsibilities and division of labor of school tutors and corporate tutors.

5. Strengthen teaching staff and professional training

(1) Invite enterprise experts to give lectures on campus: Establish an enterprise expert database and regularly invite enterprise experts to give lectures or hold lectures on campus.

(2) Arrange teachers to work in enterprises: formulate a teacher enterprise work training plan and arrange teachers to study and work in enterprises on the spot.

(3) Increase the training of "dual-qualified" teachers: set up special funds to support teachers to obtain industry qualification certificates and participate in practical training.

6. Promote the establishment of training bases and practice platforms

(1) Schools and enterprises jointly build training bases: sign a cooperation agreement to clarify the investment ratio, management responsibilities and usage rules of both parties.

(2) Set up student training points within the enterprise: cooperate with enterprises to set up multiple training points within the enterprise and arrange students to rotate training.

(3) Introduce advanced technology and equipment from enterprises: cooperate with enterprises to introduce their advanced technology and equipment and update the hardware facilities of the training base.

7. Strengthen student employment guidance and career planning

(1) Joint career planning programs between schools and enterprises: Establish a joint career planning guidance committee, regularly organize career planning seminars, and jointly formulate career planning programs.

(2) Invite enterprises to participate in employment guidance: Establish an enterprise expert database, and regularly invite enterprise human resources experts and executives to participate in employment guidance activities.

(3) Establish an internship and employment integration mechanism: Closely combine students' internships with the recruitment needs of enterprises to increase employment opportunities.

8. Strengthen scientific research cooperation and technological innovation

(1) Establish a joint scientific research center: Sign a cooperation agreement to clarify the responsibilities and rights of both parties and jointly invest in the construction of a joint scientific research center.

(2) Co-build an innovation laboratory: Schools and enterprises cooperate to build an innovation laboratory and configure advanced scientific research equipment and technical resources.

(3) Jointly apply for scientific research projects at all levels: Schools and enterprises jointly apply for national and local scientific research projects at all levels to strive for more scientific research funding support.

9. Improve the quality supervision and evaluation mechanism

(1) Formulate and implement unified quality standards for school-enterprise cooperation: formulate guidelines for school-enterprise cooperation quality standards, and clarify the quality requirements and evaluation standards of cooperation projects.

(2) Establish a regular quality evaluation and audit mechanism: conduct quality evaluation and audit of cooperation projects once a year to ensure the standardization and transparency of cooperation projects.

(3) Establish an evaluation system with the participation of multiple parties: establish an evaluation system with the participation of schools, enterprises, students and governments, and conduct evaluation based on the opinions of all parties.

10. Establish an information exchange and resource sharing platform

(1) Develop a comprehensive school-enterprise cooperation information platform: integrate project information, cooperation dynamics and resource needs, promote information symmetry and efficient use of resources.

(2) Regularly hold school-enterprise cooperation exchange meetings or seminars: regularly organize school-enterprise cooperation exchange meetings or seminars every year, and invite school and enterprise representatives to participate.

(3) Establish a resource sharing mechanism: sign a resource sharing agreement, clarify the scope and use rules of shared resources, and ensure the rights and interests of both parties.

Recommendation for the further study

Based on the research on school-enterprise cooperation in higher vocational education in Guangdong Province, the following are some suggestions for further research directions in the future:

1. Refine the research objects:

Description: Although this study covers higher vocational education in Guangdong Province, it can be more detailed in the future and conduct in-depth research on specific cities, regions or specific industries, which will help formulate more targeted policies and measures.

Methods: A mixed qualitative and quantitative approach was used to collect data related to specific industries or regions for in-depth analysis.

2. Case study:

Description: Extract experiences and lessons from specific successful or failed school-enterprise cooperation cases to provide practical operational suggestions for future cooperation.

Method: Select several representative school-enterprise cooperation cases, and conduct an in-depth study of the reasons for their success or failure through interviews, questionnaires and data analysis.

3. International Comparison:

Description: Compare the experience and practices in school-enterprise cooperation in higher vocational education between Guangdong Province and other countries or regions, and understand their respective strengths and weaknesses.

Method: Select countries or regions with similar economic and cultural backgrounds to Guangdong, such as Thailand, to conduct comparative research and extract experiences with international reference value.

4. Impact factor analysis:

Description: Further explore the key factors affecting school-enterprise cooperation and conduct a quantitative analysis of their weights.

Methods: Use statistical methods such as multi-factor analysis and structural equation modeling to conduct an in-depth analysis of the correlation and role of each influencing factor.

5. The role of technology and innovation in school-enterprise cooperation:

Description: With the development of science and technology, new technologies and innovative methods play an increasingly important role in school-enterprise cooperation. Future research could explore this aspect in greater depth.

Methods: Conduct a literature review of existing technology and innovation methods, combined with field surveys and case analysis, to explore their application and value in school-enterprise cooperation.

6. Long-term effect assessment:

Description: Evaluate the long-term effects of school-enterprise cooperation, such as student employment quality, corporate innovation capabilities, local economic development, etc.

Method: Establish a long-term tracking system, collect relevant data, and conduct time series analysis or panel data analysis.

These suggestions can provide a clear research direction for future researchers, making the research more in-depth and broader.

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