



Research on The Training Model of Digital Business Application Talents in Vocational Colleges in Guangdong Province, China

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Abstract

Background and Aims: This study examines the talent training model for digital commerce in higher vocational colleges in Guangdong Province in response to industry changes and the talent supply-demand gap in the digital economy. It aims to enhance the social adaptability of vocational education and contribute to the development of digital business education theory. This paper aims to solve the problem of talented people trained by higher vocational colleges not meeting the development needs of the digital commerce industry. The paper first discusses the composition and indexes of application of talents in higher vocational colleges in Guangdong Province, and analyzes the statistics of the average percentage and standard deviation of related samples, constructing a model for higher vocational colleges. The full text focuses on the three questions of "what kind of talents to cultivate", "how is the current situation of talent training", and "how to improve the quality of talent training".

Materials and Methods: The specific research contents include: (1) the use of the literature analysis method. Through the above 500 related documents, books, theoretical concepts, and related studies, the main components of digital commerce talent training in higher vocational colleges in Guangdong Province are summarized. (2) Adopt the expert meeting method. After summarizing the main components of digital business talent training in higher vocational colleges in Guangdong Province, 20 school experts need to evaluate the content of the index system under the eight dimensions, and verify it through the form of expert consultation. The information collected from the questionnaire was initially analyzed using descriptive statistical analysis and ANOVA.

Results: The results of this study are as follows: 1. The index system of digital commerce applied to talent training mode in Guangdong higher vocational colleges has five components and eight indicators. 2. The index system of digital commerce application-oriented talent training mode in Higher vocational colleges in Guangdong Province is: from high to low: curriculum system, practical teaching, teaching staff, evaluation system, school-enterprise cooperation, training objectives, educational concept, and social service. 3. The training mode of digital commerce applied to talents in Guangdong higher vocational colleges includes: training objectives, training content, training methods, quality assurance, and evaluation system. 4. The training mode of digital commerce applied to talents in higher vocational colleges in Guangdong Province has high feasibility and suitability.

Conclusion: The study found that the training index system for digital business talents in higher vocational colleges in Guangdong Province consists of five main components and eight indicators, with the curriculum system and practical teaching being the most important indicators. An appropriate training model should cover objectives, content, training methods, quality assurance systems, and evaluation. The model demonstrates a high level of feasibility and suitability. It can be effectively applied to talent development in alignment with the needs of the digital business industry.

Keywords: Training; Training Model; Digital Business

Introduction

In recent years, the rapid growth of the digital economy has brought about significant changes in global industries and economic structures. The integration of digital technologies into traditional sectors has created new opportunities and challenges, particularly in the field of education and talent development. As one of the key elements of the digital economy, digital business application talents are crucial in driving innovation and supporting the sustainable development of digital commerce (Smith, 2020). In response to the increasing demand for skilled professionals in this field, vocational colleges in Guangdong Province, China, have been tasked with adapting their educational models to equip students with the necessary skills to meet the demands of the digital economy (Johnson, 1991).





The focus of this study is to explore the training models of digital business application talents in vocational colleges within Guangdong Province. With the deepening of the digital economy, the gap between the supply and demand of digital talents has become more pronounced, highlighting the urgency for reform in vocational education (Wang, 2021). This research seeks to examine the effectiveness of the current training models and offer recommendations for enhancing the quality and relevance of vocational education programs to better align with the needs of the digital commerce industry. The study will also explore the social adaptability of talent training and its significance in the broader context of digital business education theory.

Research Objective

1. Investigate the composition and index of the digital business applied talent training mode in higher vocational colleges in Guangdong Province.
2. Discuss the current situation, expected state, and demand for digital commerce application talent training in higher vocational colleges in Guangdong Province.
3. To construct a digital commerce application-oriented talent training mode suitable for higher vocational colleges in Guangdong Province
4. To evaluate the training mode of digital commerce applied to talents in higher vocational colleges in Guangdong Province

Literature review

1. Human Capital Theory

Human Capital Theory (Becker, 1964) serves as a fundamental rationale for investing in education and training to enhance the skills and productivity of individuals. In the context of digital business, vocational colleges are expected to produce graduates with practical and applicable skills that meet the evolving needs of enterprises, thus improving regional economic competitiveness.

2. Constructivist Learning Theory

According to Piaget (1972) and Vygotsky (1978), learning is a process of constructing knowledge through active engagement and social interaction. In digital business talent training, this theory supports learner-centered approaches such as project-based learning, simulated business environments, and real-world enterprise collaboration to foster deeper skill acquisition.

3. Industry-Education Integration Theory

The theory of industry-education integration emphasizes the collaborative role of educational institutions and enterprises in designing and delivering curricula that match industry standards (Gu & Wang, 2020). It promotes the alignment of teaching content with real-world business scenarios, ensuring that digital business talents are work-ready upon graduation.

4. Competency-Based Education (CBE) Theory

CBE focuses on the development of specific competencies required in the workplace, rather than just theoretical knowledge (Le, Wolfe & Steinberg, 2014). In digital commerce, this includes skills such as data analysis, e-commerce operations, digital marketing, and platform management. This model ensures that talent training is outcomes-driven and tailored to the market's real demands.

Research Methodology

In the first stage, the composition and index of digital business application talent training in Guangdong higher vocational colleges are discussed.

This study was designed to explore the core components of digital business talent training in higher vocational colleges in Guangdong Province. It employed two main methods: literature analysis and expert consultation. Over 500 academic sources were reviewed to identify the primary components and indicators, which were then evaluated by 20 experts from four dual universities. These experts assessed the index system across eight dimensions through a structured consultation process. Feedback was collected via





email, and all responses were received within three days. The final content of the index system was refined based on expert discussions and voting outcomes.

In the second stage, discuss the current situation, expected status, and demand for digital commerce application talent training in higher vocational colleges in Guangdong Province.

1. This phase of the study utilized survey research and the Priority Needs Index (PNI) method to examine issues, causes, and expectations related to digital commerce talent training in higher vocational colleges in Guangdong Province. Data were collected through questionnaires assessing satisfaction and expected importance across eight dimensions, including educational goals, curriculum, teaching staff, practical training, and school-enterprise cooperation. The questionnaire's reliability and validity were analyzed, and PNI was applied to identify the priority and significance of each indicator, providing a foundation for expert evaluation in the next stage.

2. According to 2024 data from the Guangdong Provincial Department of Education, there are 93 higher vocational colleges in the province. Based on the Krejcie & Morgan table, a minimum sample size of 76 was required for the survey. For the pre-survey, with 35 questions, a sample size of at least 110 was determined to ensure reliability. The questionnaires were distributed to non-sample colleges, and the collected data were analyzed accordingly.

3. This stage utilized questionnaire surveys and the PNI basic demand analysis method to explore the issues, causes, and expectations surrounding digital commerce talent training in Guangdong's higher vocational colleges. The research combined a literature review with an empirical investigation. Questionnaires were created using Questionnaire Star, collecting extensive data on the current and expected status of training. These findings were then analyzed alongside relevant literature, which included academic papers, monographs, conference proceedings, dissertations, and other scholarly sources.

4. In this phase, questionnaires were distributed via Questionnaire Star to senior students, teachers, and academic leaders from 24 higher vocational colleges in Guangdong Province, selected through stratified sampling. The sample included institutions from various categories, such as national and provincial high-level construction units under the "Double High Plan." Additionally, in-depth one-on-one interviews were conducted with college leaders, program directors, and course leaders to gather deeper insights into digital commerce talent training.

The third stage is to construct a digital commerce application-oriented talent training mode of higher vocational colleges in Guangdong Province.

1. The construction of the digital commerce application talent training model in higher vocational colleges follows a structured process. First, theoretical support for the model is established. Next, the concept of cultivating digital business application-oriented talents is clarified. The index system is then developed in several steps: Based on the Priority Needs Index (PNI) from the previous stage, a preliminary index system is created, with the weights of first and second-level indicators determined by PNI values. This system is reviewed and ranked, followed by expert interviews to optimize the indicators. Finally, the system is refined through expert feedback, adjusting the first and second-level indicators, and analyzing the connotation of digital business applied talents in higher vocational colleges.

2. Experts from 5 related fields are selected to discuss the composition and weight of the index system of digital commerce application talent training mode in Guangdong higher vocational colleges through the form of expert seminars, and build the index system of talent training mode.

3. By interviewing 15 experts, we analyzed how to design the talent training mode, and constructed and evaluated the index system of the talent training mode. To evaluate the scientificity and feasibility of the talent training mode, and to study the credibility of the talent training mode.

4. The expert interviews involved 15 professionals from higher vocational colleges, each with practical experience and strong theoretical knowledge. The interview process included introducing the research purpose, explaining the index system's composition, addressing evaluation criteria, and providing a list of indicators. Experts were invited to participate via email and online interviews, where they selected, categorized, and weighted the indicators, while also offering feedback on open-ended questions. Based on





their input, a preliminary index system for digital commerce talent training in Guangdong's higher vocational colleges was developed.

The fourth stage is to evaluate the training mode of digital commerce applied to talents in higher vocational colleges in Guangdong Province.

1. In this stage, the model of digital commerce applied to the talent cultivation model in Guangdong vocational colleges will be evaluated. 8 experts from higher vocational colleges and 7 senior managers will be selected to evaluate the model and give opinions and suggestions, and modify the model according to the experts' opinions.

2. A group of 9 to 15 experts, primarily top managers from both enterprises and higher vocational colleges in Guangdong Province, was selected. These experts possess extensive experience in enterprise management and a strong understanding of the needs of businesses in relation to graduates from vocational colleges. They also have close ties with the vocational education sector in Guangdong, ensuring a deep familiarity with the challenges and requirements of talent training in the region.

3. Organize expert appreciation activities. This expert appreciation meeting will select the online meeting and adopt the Tencent video conference platform to ensure that the functions of the platform meet the discussion needs, and conduct technical tests in advance to ensure the smooth progress of the meeting.

4. The study focuses on four key dimensions of personnel training, curriculum development, teaching reform, and teacher teams. Through participatory observation, interviews, and data collection, it investigates the practical implementation of digital business talent training reforms in higher vocational colleges. Experts were invited to evaluate the training model in Guangdong's vocational colleges and provide feedback for improvement. Suggestions from enterprise experts emphasized enhancing market orientation, deepening school-enterprise cooperation, improving teaching quality, and strengthening social service functions. Recommendations included refining training objectives, optimizing the curriculum system, improving practical teaching, and boosting the social service role of the colleges.



Research Framework

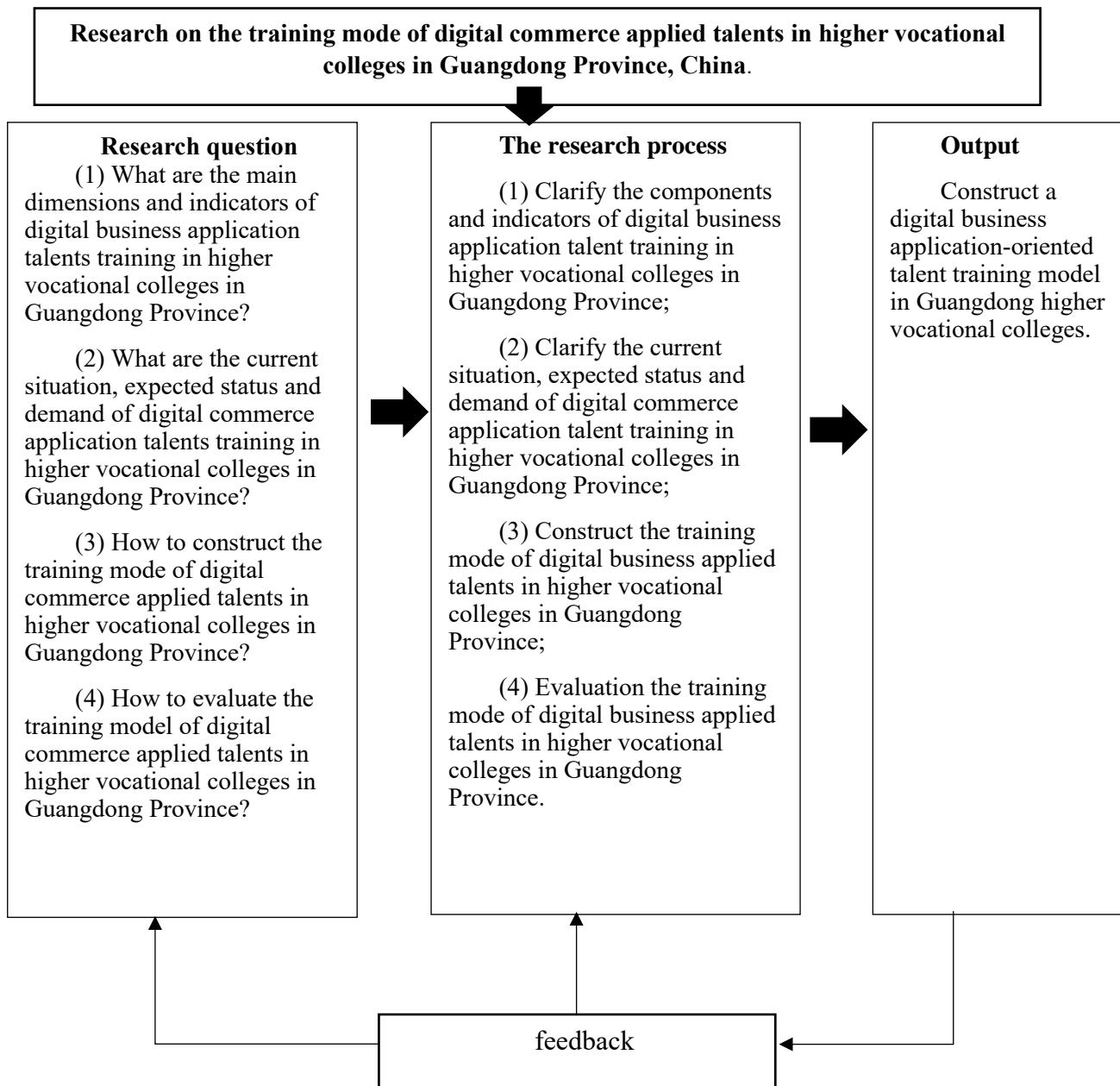


Figure 1 Research framework

Result

In the first stage, the composition and index of digital business application talent training in Guangdong higher vocational colleges are discussed.

The research in this stage is divided into the following steps. First, according to the relevant literature, books, and theoretical concepts, and at least 500 relevant literature, books, theoretical concepts, and related studies, the composition and indicators of digital business applied talents training in higher vocational colleges are analyzed and summarized. Second, experts verify the components and indicators, and



summarize the core indicators of digital commerce application talent training in Guangdong higher vocational colleges. Third, and finally, form a table and conclude.

1. The review of over 500 relevant documents and studies highlights the critical role of digital business talent training in Guangdong's higher vocational colleges in supporting the development of Digital China and a skilled society. The primary goal is to cultivate high-quality, skilled professionals to meet societal needs amid the rise of the digital economy. Literature suggests that the training framework consists of seven key components: educational concept, training objectives, curriculum system, teaching staff, practical teaching, school-enterprise cooperation, and evaluation system. These components were further refined and validated through expert consultations.

2. Expert consultation, after summarizing the main components of digital business talent training in higher vocational colleges in Guangdong Province, 20 experts from the school need to evaluate the content of the index system under the eight dimensions, and verify it through expert consultation.





Table 1 Summary of expert consultation and scoring results

Expert Consultation Scoring Table Results							
Number	component	indicator	indicator content	agree	disagree	Proportion	result
1	Cultivation Objectives	Educational Philosophy	Scientific Talent Concept, Comprehensive Human Development Concept, Lifelong Learning Concept, High Quality Development Concept, Market Concept, Industry Concept, Characteristic Concept, Innovation and Entrepreneurship Concept	16	4	80%	effective
2		The training objectives	Having relevant business literacy and abilities, clearly cultivating high-quality technical and skilled talents that meet the needs of building socialism with Chinese characteristics in the new era, emphasizing the comprehensive development of morality, intelligence, physical fitness, aesthetics, and labor, possessing e-commerce knowledge and technical skills.	15	5	75%	effective
3	Training Content	Curriculum system	Build a reasonable and diverse curriculum system, emphasizing the practicality and cutting-edge nature of course content, and ensuring consistency with industry development trends. At the same time, integrating ideological and political education content, emphasizing core social values. The curriculum system mainly includes offline and online teaching resources	17	3	85%	effective
4	Guarantee system	teaching starff	Teacher's ideological and moral level, teacher's professional knowledge and ability level, proportion of "dual teacher" teachers, proportion of high-level part-time teachers in enterprises, proportion of famous teachers and craftsmen at or above the provincial level, and practical activities of teacher enterprises	18	2	90%	effective
5	culture method	practical teaching system	Strengthen practical teaching, establish advanced training bases, introduce real projects from enterprises, and enhance students' professional skills and professional qualities through practical exercises. Includes a three-level system: on campus practical teaching, practical training based on real production projects of enterprises, and virtual simulation training that	15	5	75%	effective
6		School enterprise cooperation	Deepen school enterprise cooperation, jointly formulate training objectives, participate in curriculum design, provide practical training bases, achieve resource sharing and complementary advantages, and jointly cultivate talents that meet market demand.	13	7	65%	effective
7		community services	Actively serving regional economic development, participating in industrial project cooperation, promoting digital construction of enterprises, and providing talent support and intellectual guarantee for regional economic development. Including: the development of industries in the service area, the digital construction of service enterprises, the social training of business	15	5	75%	effective
8	Evaluation system	Evaluation system	Diversify the evaluation subjects and expand the participation of industry enterprises in the evaluation; The evaluation method mainly adopts the process evaluation method, explores value-added evaluation, and improves comprehensive evaluation	15	5	75%	effective





3. The digital commerce application-oriented talent training mode in Guangdong's higher vocational colleges is a multi-dimensional and multi-level system. It encompasses eight core areas: educational concept, training objectives, curriculum system, teaching staff, practical teaching, school-enterprise cooperation, social service, and evaluation system. These components reflect five key aspects: training goals, content, methods, quality assurance, and evaluation. A systematic analysis of these elements provides a strong foundation for improving the effectiveness of talent cultivation and serves as an important reference for other vocational institutions aiming to enhance their digital business training programs. Future research should focus on refining and quantifying these indicators for broader application.

The second stage: discuss the current situation, expected state, and demand for digital commerce application talents cultivation in higher vocational colleges in Guangdong Province.

1. Design of the questionnaire survey

In this stage of the questionnaire design, the design basis is based on the digital commerce of higher vocational colleges in Guangdong province applied talents training core factors as the main content, specific to higher vocational colleges education concept and goal, curriculum system, teaching staff, training base, practice teaching, university-enterprise cooperation, social services, education evaluation of eight aspects such as a comprehensive investigation. To facilitate the analysis and test of the reliability and validity of the questionnaire, the questionnaire was designed in the form of a Likert scale. The specific questionnaire is as follows:

Survey on the Current Situation and Expectations of Digital Business Application Talent Training in Vocational Colleges in Guangdong Province		
Hello!		
The survey questionnaire you received is a survey on the cultivation of digital commerce composite talents in vocational colleges. The purpose of this survey is to understand the current situation and existing problems in the cultivation of digital commerce composite talents in vocational colleges, and to analyze the constraining factors in the cultivation of new technology application talents in vocational colleges, providing theoretical, policy, and practical basis for the reform of vocational education.		
The choice you make regarding the survey questionnaire is crucial. Please fill out the questionnaire based on your actual situation and personal experience. The survey results are only for statistical analysis and summary purposes. Thank you for your strong support!		
Current evaluation criteria: How would you rate your satisfaction with the following issues on a scale of 1 to 5, with 1 being very dissatisfied, 2 being somewhat dissatisfied, 3 being generally satisfied, 4 being fairly satisfied, and 5 being very satisfied		
Expected evaluation criteria: How important do you think the following issues will be in future development? Please rate them on a scale of 1 to 5, with 1 being completely unimportant, 2 not very important, 3 generally important, 4 relatively important, and 5 very important		
Basic information	School Name	
	area	Guangzhou Shenzhen Zhuhai Zhongshan Buddha San Shunde, Zhanjiang Jiangmen Maoming Shaoguan Dongguan Huizhou Heyuan Shantou Qingyuan Yangjiang Yunfu Jieyang Shanwei Zhaoqing Chaozhou Meizhou
	position	Principal, Vice Principal, Dean, Vice Dean, Minister of Academic Affairs, Minister of Scientific Research, Professional Leader, Teacher, and Student

2. Content and validity analysis of the questionnaire form

After the design of the questionnaire is completed, the pre-survey stage should be carried out. Before the pre-survey, the content validity analysis of the questionnaire should be conducted first. Expert assessment of content validity ensures that the questionnaire covers the study or survey and that these are closely related to the research question or survey objective.



Table 2 Content validity average score scale

Content Validity Average Scoring Table						
Number	dimension	question	Relevance rating	Clarity rating	Integrity rating	Appropriateness rating
1	Educational Philosophy	1	4.6	4.5	4.5	4.6
2		2	4.5	4.6	4.6	4.5
3		3	4.4	4.3	4.4	4.4
4	The training objectives	1	4.5	4.6	4.5	4.4
5		2	4.6	4.6	4.5	4.4
6		3	4.4	4.3	4.5	4.5
7	Curriculum system	1	4.5	4.5	4.6	4.6
8		2	4.6	4.6	4.5	4.5
9		3	4.3	4.3	4.1	4.1
10		4	4.1	4.2	3.9	3.8
11		5	4.3	4.2	4.2	4
12		6	3.8	3.8	3.9	3.9
13	teaching staff	1	4.7	4.7	4.6	4.8
14		2	4	4.7	4.8	4.7
15		3	4.3	4.2	4.2	4.1
16		4	4.6	4.6	4.5	4.5
17		5	3.8	3.8	3.9	4.1
18		6	3.6	3.5	3.5	3.6
19	practical teaching system	1	4	4.1	4.2	4.3
20		2	3.8	3.9	4	4.1
21		3	3.8	3.9	3.9	4.1
22		4	4.4	4.5	4.6	4.7
23		5	4.6	4.5	4.8	4.7
24		6	4.4	4.5	4.6	4.7
25	School enterprise cooperation	1	3.8	3.6	3.8	3.9
26		2	4	4.1	3.9	3.6
27		3	3.8	3.6	3.5	3.5
28		4	3.5	3.6	3.6	3.5
29	community services	1	3.5	3.4	3.4	3.3
30		2	3.7	3.8	3.8	4
31		3	3.7	3.8	3.8	4
32		4	4.1	4.2	4.3	4.5
33	Evaluation system	1	3.5	3.6	3.4	3.6
34		2	4.1	4.2	4.3	4.5
35		3	3.5	3.6	3.7	3.8

3. Overall evaluation

Based on the test of the above questions, the experts rated the whole questionnaire as follows:



Table 3 Content validity expert overall evaluation and scoring table

Evaluation Content	IOC score
Overall relevance score (1-5)	4.11
Overall clarity rating (1-5)	4.14
Overall integrity score (1-5)	4.15
Overall appropriateness rating (1-5)	4.18

General opinions and suggestions of the experts: After testing the validity of the questionnaire of digital commerce applied to talents in Higher Vocational Colleges in Guangdong Province, the five experts agreed that the questionnaire passed the validity test and met the conditions of the questionnaire.

4. Reliability Analysis of the status quo survey. Reliability analysis of the current survey

The Klonbach coefficient (Cronbach's alpha) is an index to test the reliability of the questionnaire and is widely used in the analysis of empirical data. Generally speaking, when the Cronbach alpha value of the scale designed by the questionnaire is lower than 0.7, it means that the internal consistency of the variables of the scale is poor and the scale needs to be recompiled; when the Cronbach alpha value of the scale is higher than 0.7, the internal consistency of several variables constructed by the scale is good; if the Cronbach alpha value of the scale is higher than 0.9, it means that the internal consistency of the variables designed by the scale is excellent.

Klonbach Alpha	
Reliability analysis of the actual state	Reliability analysis of the expected state
0.954	0.897

5. Official investigation

Through the research on the training of digital commerce applied talents in different types of higher vocational colleges, the challenges brought by the digital economy to the training of digital commerce applied talents in higher vocational colleges are clarified, and the difficulties faced by the training of digital commerce talents in higher vocational colleges are grasped, and then addressed.

Analysis of the survey results

Descriptive statistical analysis was applied to the data collected from the returned questionnaires to identify factors that significantly affect the differences. Interviews and data from the questionnaires were analyzed in greater depth to reveal the connections between the data and hypotheses regarding underlying causes. The survey results in this study used the Priority Needs Index (PNI) method to determine the importance and priority ranking of each evaluation index. This approach helps experts define and enhance the capabilities of the indices in the next steps to create a rational and scientific evaluation index system. The PNI is used to measure the gap between the actual values and the expected values of the indices to prioritize areas for improvement.





Table 4 Analysis of the mean score and PNI results

Analysis of Average Score and PNI Results						
Number	First level indicator	indicator	Current average value	Expected average value	PNI	Dimension PNI
1	Educational Philosophy	1. Scientificity of educational philosophy	3.55	4.02	0.13	0.49
2		2. The Timeliness of Educational Concepts	3.77	4.25	0.13	
3		The sociality of educational philosophy	2.89	3.55	0.23	
4	The training objectives	1. Cultivate the human nature of the target	2.3	3.41	0.48	0.73
5		2. Training objectives oriented towards market	2.92	3.03	0.04	
6		3. Cultivate the social adaptability of the	2.58	3.11	0.21	
7	Curriculum system	1. Rationality of curriculum design	2.78	3.1	0.12	1.31
8		2. Diversity in curriculum design	3	3.29	0.1	
9		3. Practicality of course content	2.36	3.16	0.34	
10		4. Frontiers of course content	2.14	2.96	0.38	
11		5. Integration of ideological and	2.72	3.19	0.17	
12		6. Status of online course resources	2.64	3.18	0.2	
13	teaching staff	1. Teacher's ideological and moral	2.93	3.39	0.16	1.47
14		2. Professional knowledge of teachers	3.09	3.47	0.12	
15		3. Teacher's professional skill level	2.71	3.48	0.28	
16		4. Proportion of high-level part-time	2.58	3.13	0.21	
17		5. Proportion of famous teachers and craftsmen	2.17	3.09	0.42	
18		6. Status of Teacher Enterprise Practice	2.44	3.12	0.28	





19	practical teaching system	1. Configuration of on campus training bases	2.59	3.2	0.24	1.31
20		2. Configuration of off campus training bases	2.32	2.98	0.28	
21		3. Industry progressiveness of	3.08	3.38	0.1	
22		4. The improvement of professional core	3.21	3.9	0.21	
23		5. Level of enterprise participation in	2.36	3.17	0.34	
24		6. The effectiveness of practical teaching	3.19	3.63	0.14	
25	School enterprise cooperation	1. The improvement of students' core	2.83	3.56	0.26	0.91
26		2. Technological innovation in school enterprise cooperation	2.34	3.17	0.35	
27		3. Enterprise participation in school enterprise cooperation	2.58	3.18	0.23	
28		4. The effect of school enterprise cooperation on talent cultivation	3.1	3.33	0.07	
29	community services	1. Development of industries in the service area	2.25	2.74	0.22	1.29
30		2. Digital construction status of service	2.32	2.95	0.27	
31		3. Situation of conducting social	2.84	3.43	0.21	
32		4. Assistance in rural revitalization	2.19	3.48	0.59	
33	Evaluation system	1. Diversification of evaluation methods	2.37	3.26	0.38	0.29
34		2. Diversification of evaluation subjects	2.18	2.96	0.36	
35		3. Participation of industry enterprises in evaluation	2.16	2.79	0.13	

After the recovery of the questionnaire, the results of the questionnaire are analyzed, and through the questions of different dimensions, the average score and standard deviation of each question of each dimension are obtained. The average score can reflect the satisfaction of the respondents to the problem, measuring the dispersion of the standard deviation, the greater the difference of the respondents, the greater to the difference of answers.

The third stage: to build a digital commerce application-oriented talent cultivation mode suitable for higher vocational colleges in Guangdong Province

In this stage, the focus is on addressing the issues arising in the training of digital commerce talents in vocational colleges by attempting to construct a training model for digital commerce professionals in





vocational colleges. The results from using the Priority Needs Index (PNI) method in the second stage of the formal survey allowed for the preliminary creation of an index system for the digital commerce talent training model in Guangdong Province. The PNI value reflects the priority of improvement for each index, with higher values indicating a greater need for improvement. The digital commerce talent training model should encompass training goals, training content, training methods, training evaluation, and quality assurance to create a multidimensional, methodologically sound, scientific, and rational training model. This will help enhance the quality of digital commerce talent training and support the development of a skilled society in the country.

1. The goal of training digital commerce professionals in Guangdong vocational colleges is to cultivate skilled digital commerce personnel for the development of society. The creation of a talent training system focused on new technology applications must consider school management, curriculum planning, and the determination of teaching content to align with market demands and employment opportunities. The training objectives should be consistent with social needs to ensure that the training direction is correct and practically effective. Personnel training should be adjusted according to changes in market demands to meet the societal need for professionals skilled in new technologies.

2. Digital commerce training should focus on the development of new technologies, aiming to develop teaching content that aligns with modern technologies and is adapted to market demands. Vocational education should reflect the specific characteristics of vocational training and focus on developing new technologies to enhance training efficiency. With the rapid expansion of production and the use of new technologies in education, training must consider updating the educational model and developing a talent training system that meets the needs of the modern era.

3. The training of personnel in China's vocational education system emphasizes the all-around development of students, starting from the "knowledge-based" model that emerged in the 1950s to the education system focused on skill development since the 1990s. Training should prioritize the development of students' skills, abilities, and qualities, with a focus on four main areas: fostering a sense of student engagement, viewing development as a comprehensive process, enhancing teamwork and innovation abilities, and respecting students' personalities and interests. This approach ensures that students can effectively meet the demands of job positions and contribute to economic and social development.

4. Guided by high-level employment positions, High-quality employment is the ultimate way to train new technology applied talents, and the quality of employment is an important basis to measure the quality of new technology application-oriented talents.

Determination of the index system of digital commerce applied to talent training mode in Guangdong Province

1. Expert interview, the experts interviewed by this expert are 15 higher vocational college experts with both practical working experience and a profound theoretical foundation.





Expert Interview List			
Number	School type	Number of schools	Important school name
1	National "Double High Plan" high-level school	3	Guangdong Vocational and Technical University of Light Industry
2			Guangzhou Panyu Vocational and Technical College
3			Shunde Vocational and Technical College
5	National "Double High Plan" high-level professional	3	Guangdong Vocational College of Science and Technology
6			Guangdong Vocational and Technical College of Water Resources and Hydropower
7			Guangzhou Railway Vocational and Technical College
8	National "Double High Plan" high-level professional group construction unit (C-level)	6	Dongguan Vocational and Technical College
9			Guangdong College of Industry and Commerce
10			Guangdong Vocational and Technical College of Mechanical and Electrical Engineering
11			Guangdong Food and Drug Vocational College
12			Guangzhou Civil Aviation College
13			Zhongshan Torch Polytechnic
14	Construction unit of high-level vocational colleges in	4	Guangdong Vocational College of Foreign Languages and Arts
15			Guangdong Vocational and Technical College
18			Guangdong Vocational and Technical College of Transportation
19			Guangdong Engineering Vocational and Technical College
20	Guangdong Province's high-level vocational	3	Guangdong Songshan Polytechnic College
21			Guangdong Women's Vocational and Technical College
22			Guangdong Vocational and Technical College of Ecological Engineering

Digital commerce talent training in vocational colleges focuses on development in five key areas: 1) clearly defining training objectives, 2) comprehensive training content that includes curriculum, teaching systems, and diverse teaching methods, 3) establishing a quality assurance system, 4) training evaluation, and 5) assessing the quality of the trained personnel. Developing a professional training system that aligns with market demands requires collaboration with industry, government, and vocational colleges by integrating theoretical learning and practical training to create a training system with flexible, practical features that respond to market changes.

The fourth stage: to evaluate the training mode of digital commerce applied to talents in higher vocational colleges in Guangdong Province

In this stage, the model of digital commerce applied to talent cultivation in Guangdong higher vocational colleges will be evaluated, and 15 experts from higher vocational colleges and 7 senior managers of enterprises will be selected to evaluate the model.

1. Expert choice

1.1 selection criteria: choose 9 - 15 experts, these enterprise experts are in the process of questionnaire questions more enterprise type, they belong to the top managers in the enterprise, they have rich experience in enterprise management, higher vocational colleges in Guangdong province business professional to the enterprise graduates and talent very well, and higher vocational and technical colleges have close ties in Guangdong province.

1.2 Confirmation of participation: contact the candidate experts to confirm their willingness to participate, and inform the purpose, time, and form of the appreciation activity.





Interview List of School Experts				
Number	School type	School Name	Number of experts	Expert Type
1	National "Double High Plan" high-level school construction unit	Guangzhou Panyu Vocational and Technical College	2	teacher
2		Shunde Vocational and Technical College		teacher
3	National "Double High Plan" high-level professional group construction unit (B-level)	Guangdong Vocational College of Science and Technology	2	Professional Director
4		Guangzhou Railway Vocational and Technical College		Professional Director
5	National "Double High Plan" high-level professional group construction unit (C-level)	Guangdong Food and Drug Vocational College	1	Vice Dean
6	Construction unit of high-level vocational colleges in Guangdong Province	Guangdong Vocational and Technical College	2	teacher
7		Guangdong Engineering Vocational and Technical College		Dean of the School of Business
8	Guangdong Province's high-level vocational college cultivation unit	Guangdong Women's Vocational and Technical College	1	Dean of Business School

List of enterprise expert interviews

Number	Enterprise type	Enterprise Name	Number of experts	Expert Type
1	E-commerce category	Guangdong Urban Beauty Co., Ltd	1	division manager
2	Modern service industry	Guangdong JD Urban Intelligent Investment Co., Ltd	1	Operations Director
3	Logistics category	JD Logistics Group	1	Director of Human Resources
4	Supply chain category	Guangzhou Xiyin Supply Chain Co., Ltd	1	division manager
5	Human Resources category	Guangdong Qianbai Human Resources Co., Ltd	1	general manager
6	Retail category	Guangdong Wanxun Network Agriculture Co., Ltd	1	general manager
7	Cosmetics category	Guangdong L'Oréal Baiku Network Technology Co., Ltd	1	division manager

2. Send the invitation letter

Official invitation: Send a formal invitation letter to the experts confirming their participation, detailing the agenda of the event, the materials required to be prepared, the date, time, and place.

Material preparation: advance the background materials, relevant documents, and questionnaires of the model in higher vocational colleges in Guangdong Province, so that experts can make full preparations before the activity.

3. Determine the form and details of the appreciation activities

3.1 Form selection:

Online form: This expert appreciation meeting will select the online meeting and adopt the Tencent video conference platform to ensure that the functions of the platform meet the discussion needs, and conduct technical tests in advance to ensure the smooth progress of the meeting.

3.2 Time and date arrangement:

Date selection: Coordinate with the experts on appropriate dates to ensure that all experts can participate.

Schedule: The event is scheduled during the weekday to ensure participation and focus.

4. Implement appreciation activities

4.1 Opening and Guidance:

Opening speech: The researcher delivered a speech with a brief introduction of the background and objectives.

Model introduction: Introduce the specific content of the model of digital commerce in Guangdong Province, and clarify the purpose of the expert appreciation meeting.





4.2 Expert appreciation:

Group discussion: According to the different schools and enterprises where the experts belong, the experts are divided into three groups, and each group of five people will evaluate the model separately.

Free discussion: give experts sufficient time and space to discuss and evaluate the scientificity, rationality, and operability of the model.

Opinion collection: record all comments and suggestions made by experts to ensure that no critical feedback is missed.

5. Expert appreciation will evaluate the conclusion

Experts are generally satisfied with the model in higher vocational colleges in Guangdong Province, but there are still some areas that need to be modified. The specific improvement suggestions are given as follows:

Number	Expert group	expert	Improvement aspect	Expert Appreciation Meeting Improvement Suggestions
				Improvement suggestions
1	Enterprise Expert Group	1. Department Manager of Guangdong Urban Beauty Co., Ltd. 2. Operations Director of Guangdong JD Urban Intelligent Investment Co., Ltd. 3. Human Resources Director of JD Logistics Group 4. Department Manager of Guangzhou Xiyin Supply Chain Co., Ltd. 5. General Manager of Guangdong Qianbai Human Resources Co., Ltd. 6. General Manager of Guangdong Wanxun.com Agriculture Co., Ltd. 7. Department Manager of Guangdong L'oreal Baiku Network Technology Co., Ltd	Strengthen market orientation	Enterprises hope that the training objectives of vocational colleges can be more closely aligned with market demand, ensuring that graduates possess the core skills and professional qualities required by the enterprise. It is suggested to add specific indicators in the "market-oriented training objectives" section, such as the proportion of enterprises participating in the formulation of training objectives and regular surveys on the satisfaction of graduates' skills by enterprises.
2			Deepen school enterprise cooperation	Enterprises expect to have deeper cooperation with vocational colleges, not limited to student internships and practical training, but also hope to cooperate in technology research and development, product innovation, and other areas. Suggest adding indicators under the dimension of "school enterprise cooperation", such as the quantity and quality of cooperative projects, joint patent applications or publication of scientific research papers, etc.
3			Improving the quality of practical teaching	Enterprises believe that practical teaching is a key link in enhancing students' core skills. It is suggested to further refine the configuration standards of the training base under the dimension of "practical teaching", ensure that the training content is synchronized with the forefront technology of the industry, and increase the proportion and depth of enterprise mentors participating in practical teaching.
4			Strengthen social service functions	Enterprises hope that vocational colleges can better serve regional industries and digital construction of enterprises. Suggest adding specific quantifiable indicators in the dimension of "social services", such as the economic benefits of schools participating in regional industrial projects, the number of successful cases of enterprise digital transformation, etc.
5	School Expert Group	1. Teachers from Panyu Vocational and Technical College in Guangzhou 2. Teachers from Shunde Vocational and Technical College 3. Professional Director of Guangdong Science and Technology Vocational College 4. Professional Director of Guangzhou Railway Vocational and Technical College 5. Vice Dean of Guangdong Food and Drug Vocational College 6. Teachers at Guangdong Vocational and Technical College 7. Dean of the School of Business at Guangdong Engineering Vocational and Technical College 8. Dean of the Business School at Guangdong Women's Vocational and Technical College "	Improve training objectives	Schools should ensure that the training objectives meet the personalized development needs of students and closely align with market demands. It is recommended to strengthen services for students' career planning and employment guidance in the dimension of "training objectives", regularly collect data on the employment rate and quality of graduates, and adjust training objectives in a timely manner.
6			Optimize the curriculum system	Schools should continuously optimize their curriculum system to ensure the practicality and cutting-edge nature of course content. Suggest adding an evaluation mechanism for new course development and old course updates in the dimension of "curriculum system" to ensure that course content is consistent with industry development trends
7			Strengthening the construction of ideological and political education in courses	Schools should attach importance to ideological and political education in their curriculum and integrate it into the entire process of professional course teaching. Suggest developing specific implementation plans and evaluation criteria for ideological and political education in courses and online resources, to ensure the organic integration of ideological and political education with professional education
8			Enhance the level of practical teaching	Schools should increase investment in practical teaching and improve the configuration and management level of training bases. It is suggested to strengthen cooperation with enterprises to jointly build training bases in the dimension of "practical teaching", introduce advanced technology and equipment from enterprises, and improve the pertinence and effectiveness of practical teaching.
9			Strengthening social service functions	Schools should fully leverage their professional advantages and actively serve regional economic and social development. It is suggested to clarify the specific paths and measures for the digitalization construction of industries and enterprises in school service areas under the dimension of "social services", strengthen communication and cooperation with local governments and enterprises, and jointly promote high-quality development of regional economy.





Conclusion

There are four research objectives in this paper, so this study summary is also explained from four aspects.

1. Digital business applied talent training in higher vocational colleges in Guangdong Province is a multi-dimensional system encompassing five main aspects: training objectives, content, methods, security, and evaluation systems. These include eight key dimensions: educational concepts, training objectives, curriculum system, teaching staff, practical teaching, school-enterprise cooperation, social services, and evaluation systems, each with specific evaluation indicators. Educational concepts emphasize scientific, era-relevant, and socially impactful ideas. Training objectives focus on human-centered, market-oriented, and socially adaptable goals. The curriculum system addresses rationality, diversity, practicality, and modern content, while school-enterprise cooperation enhances professional skills, technological innovation, and long-term talent development. Practical teaching involves well-equipped training bases and significant enterprise participation, aimed at improving core skills. Social services include industrial development, digital enterprise construction, and rural revitalization. Teaching staff quality is measured by ethics, professional knowledge, enterprise engagement, and the proportion of high-level teachers, while the evaluation system incorporates diverse methods, widespread participation, and input from industry and external institutions.

2. The actual status, expected status, and requirements of each part and indicator are as follows:

2.1 The actual state of the components and indicators is at a high level. Practice teaching is the highest, which indicates the number of higher vocational colleges in Guangdong Province

The practical teaching of business talent training had the highest score in the actual situation survey, indicating that the respondents had the highest evaluation of the practical teaching system of talent training.

2.2 The expected state of each component and indicator is at a high level. Education concept, teachers, practical teaching, school

The demand for each component from the social service is at the highest level. It can be seen that the respondents have high expectations for higher vocational colleges in Guangdong Province in these aspects, and they hope that higher vocational colleges in Guangdong Province will perform better in these aspects.

2.3 From the top to the end, they are: curriculum system, practical teaching, teaching staff, evaluation system, training goals, and educational concepts.

3. The training mode of digital commerce applied to higher vocational colleges in Guangdong Province includes five parts, namely: training objectives, training content, training method, guarantee system, and teaching evaluation.

4. The feasibility and applicability level of the digital commerce application-oriented talent training mode in higher vocational colleges in Guangdong Province is relatively high. Through appreciating the results, the total feasibility score is 4.35, and the total suitability score is 4.46. The results show that the training mode of digital commerce applied to talents in Guangdong higher vocational colleges is established.

Discussion

Based on the four research objectives set by the study, the findings are discussed in detail, and it is found that the following four aspects need to be discussed.

1. The digital business application-oriented talent training mode in higher vocational colleges in Guangdong Province consists of five key aspects: training objectives, content, methods, guarantee systems, and evaluation systems. After conducting literature research and consulting with five experts, the training system is structured around eight dimensions: educational concepts, training objectives, curriculum system, teaching staff, practical teaching, school-enterprise cooperation, social services, and the evaluation system. Each dimension contains specific evaluation indicators. Educational concepts focus on the scientific, era-relevant, and social nature of training. Training objectives emphasize human-centered, market-oriented, and socially adaptable goals. The curriculum system addresses rationality, diversity, and modern relevance, while school-enterprise cooperation aims to enhance professional skills and technological innovation. Practical teaching involves well-equipped training bases and significant enterprise participation. Social services contribute to regional industrial development, digital construction, and rural revitalization. Teaching staff quality is evaluated based on ethics, professional knowledge, enterprise involvement, and





the proportion of high-level part-time teachers, while the evaluation system includes diverse methods and widespread participation from industry and external institutions. In the study of training objectives, several documents align with the research findings at this stage. The study by Wang and Yin (2024) analyzed the training model for digital talents within industry-academia collaborative institutes, using Guangdong Polytechnic of Science and Technology as a case study. The model emphasizes curriculum development in partnership with industry, project-based learning, and the involvement of faculty members with both academic and industry experience. The findings indicate that this approach enhances graduate employment rates, skill development, and fosters a culture of innovation and entrepreneurship among students.

2. Current situation, expected status, and demand analysis results of digital commerce application talent training in higher vocational colleges in Guangdong Province.

2.1 The components and indicators of digital business talent training in higher vocational colleges are at a high level, with the educational concept ranking the highest, followed by practical teaching, teaching staff, and curriculum system. Several studies align with these findings. For instance, Easy Aijun, in his paper on business innovation talent training, emphasizes the importance of clarifying business education concepts and goals, followed by focusing on practical business education, including case studies and industry-education alliances. The components and indicators of digital business talent training in higher vocational colleges are at a high level, with the educational concept ranking the highest, followed by practical teaching, teaching staff, and curriculum system. Several studies align with these findings. For instance, Easy Aijun, in his paper on business innovation talent training, emphasizes the importance of clarifying business education concepts and goals, followed by focusing on practical business education, including case studies and industry-education alliances (Easy, 2024).

2.2 The expected state of each component and indicator in digital business talent training is at a high level, with the education concept, teaching staff, practical teaching, and school-enterprise cooperation being the highest in demand. Several studies align with these findings. The expected state of each component and indicator in digital business talent training is at a high level, with the education concept, teaching staff, practical teaching, and school-enterprise cooperation being the highest in demand. Several studies align with these findings. For instance, Easy Aijun, in his paper on business innovation talent training, emphasizes the importance of clarifying business education concepts and goals, followed by focusing on practical business education, including case studies and industry-education alliances (Easy, 2024).

2.3 From top to bottom, the key components in digital business talent training are the curriculum system, practical teaching, teaching staff, evaluation system, training goals, and educational concepts. From top to bottom, the key components in digital business talent training are the curriculum system, practical teaching, teaching staff, evaluation system, training goals, and educational concepts. This hierarchical structure aligns with findings in recent studies on vocational education reform in China, which emphasize the importance of a well-structured curriculum, hands-on training, qualified instructors, and robust evaluation mechanisms in developing digital business competencies (Wang & Li, 2021).

3. The development of a digital commerce applied talent cultivation mode in higher vocational colleges in Guangdong Province is a comprehensive framework aimed at addressing the evolving demands of the digital economy. This mode consists of five essential components: training goals, training content, training methods, guarantee systems, and teaching evaluations. The focus is placed on eight key dimensions, which include training objectives, educational concepts, curriculum system, school-enterprise cooperation, practical teaching, social services, teaching staff, and evaluation systems. These elements work in synergy to enhance the quality and relevance of vocational education, ensuring students are equipped with the necessary skills and knowledge for the digital commerce industry. This approach reflects the increasing need for a holistic and adaptable educational model that aligns with industry requirements, fostering partnerships between schools and enterprises. It emphasizes practical teaching methods, high-quality teaching staff, and a strong evaluation system to ensure continuous improvement. The framework also highlights the importance of educational concepts that are forward-thinking and adaptable to future industry trends, making it a crucial component in the development of vocational education in Guangdong Province (Dong et al., 2024).

4. To evaluate the training mode of digital commerce applied to talents in higher vocational colleges in Guangdong Province. The feasibility and applicability level of the digital commerce application-oriented talent training mode in Guangdong higher vocational colleges is relatively high. It shows that the training mode of digital commerce applied to talents in Guangdong higher vocational colleges has been established.





Including training objectives, training content, training methods, guarantee system, and teaching evaluation. The following studies are roughly similar to the model construction at the stage of this study. Such as: (1) liu in his doctoral thesis "the study on new technology applied talent training in higher vocational colleges" page 1 6 1 , points out that through the design questionnaire, chose the vocational education experts, enterprise managers, vocational college leaders, department (secondary college) / professional head, teachers, students, graduates in higher vocational colleges of the questionnaire survey, collect relevant data, through DEMATEL method for empirical research, the composition of the importance of factors.

Suggestions

Through the research on the construction of digital commerce application talents cultivation mode in higher vocational colleges in Guangdong Province, the following suggestions are summarized.

1. Suggestions for research results

1.1 Suggestions on the current situation and expectations of digital business application talents training in higher vocational colleges in Guangdong Province.

1.2 In the third stage of the research, suggestions for optimizing the index system of digital business applied talent training in higher vocational colleges in Guangdong Province were made, based on enterprise evaluations and expert opinions.

1.3 Suggestions on the model of higher vocational colleges in Guangdong Province.

2. Suggestions for further research

2.1 Expand the research scope and promote the practical application of the findings. While this study focuses on higher vocational colleges in Guangdong province, future work will extend to other provinces, increasing attention to students in various regions. The goal is to broaden the strategy for training digital commerce applied talents and enhance the implementation and content of the talent training system.

2.2 Enhance research methods and integrate quantitative research with case studies. Future research should include larger-scale empirical tracking and systematic theoretical analysis of digital commerce applied talent training cases. This will allow for a more accurate assessment of the training process, its influencing factors, and effects. The next step will involve detailed research, combining focus group interviews, observations, and a mixed research approach to explore the differences in applied talent training across various higher vocational colleges, with a focus on large-scale investigations and case studies.

2.3 Conduct case studies and practical applications through a higher vocational college in Guangdong, focusing on the digital business applied talent training model. This approach will consider regional management, local cultural characteristics, and industrial integration. By leveraging the technological advantages and innovation capabilities of digital business applied talents, the model will align with local development needs and industrial upgrades. The goal is to enhance technological innovation and R&D while building a training model suitable for Guangdong's higher vocational colleges.

2.4 Establish a dynamic performance evaluation system for digital commerce applied talent training in higher vocational colleges. This system will be comprehensive and flexible, with clear evaluation elements and standards, ensuring it aligns with the actual development needs of digital commerce applied talent training in these institutions.

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