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# Construction Pathways for Modern Higher Vocational Industry Colleges: A Study in the Guangdong-Hong Kong-Macao Greater Bay Area

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**Abstract**

**Background and Aims:** A pathway for the construction of contemporary higher vocational manufacturing colleges in the Guangdong-Hong Kong-Macao Greater Bay Area institutions which primarily focused on promoting skills development among the workforce through specialty education. However, problems like funding and distribution of the colleges across regions act as limiting factors to these colleges.

**Methodology:** Primary data is obtained through a detailed questionnaire survey, while secondary data is gathered from related literature. This research countertypes the pivotal factors affecting the successful attainment of these colleges by utilizing the analytic hierarchy process (AHP) and Delphi analysis.

**Results:** The study identifies stakeholder coordination, the harmonization of documented courses to meet the business world's demand, and technological support as key factors that avail curriculum improvement.

**Conclusion:** According to the findings of this research, increasing partnerships and developing more appropriate structural approaches can be beneficial for tackling new demands in the labor market by voc ational education and training (VET) institutions and enable them to support regional development and increase innovative practices in the Greater Bay Area.

**Keywords:** Higher Vocational Education; Guangdong-Hong Kong-Macao Greater Bay; Construction Pathways; Analytic Hierarchy Process (AHP); Delphi Analysis and Industry Collaboration

## Introduction

The industrial college will be built in an industrial park, specializing in related industries. Higher vocational colleges, together with government, schools, and enterprises, offer Multiple synergies, introducing enterprise-leading technology Jiang, 2020). the latest production equipment, cutting-edge training mode, To jointly build an efficient cultivation environment that integrates industry and education, A practice platform that combines teachers and enterprise guidance, The school and the enterprise will jointly formulate talent training programs, develop curriculum standards, jointly build a "double-qualified" team, establish a practical teaching platform, establish a technology innovation platform, With the establishment of industrial college alliance, the creation of the four-link forum "commercial network, innovative thinking network, educational network, talented network" Vigorously promote professional standards docking with industry standards, "$1 + X$" certificate standards, curriculum standards with enterprise post standards, Comprehensive access to the industrial park enterprises, Implement docking enterprises, projects and double teacher team, Through the reform of the credit system and the modern apprenticeship system, Strengthen students' comprehensive quality, innovation and entrepreneurship, and professional skills, Building a multiple evaluation system, Promoting student technical skills, The continuous improvement of technological innovation and technology management level, Form a talent training mode.

The New Engineering Institute of Modern Industry Logic and Path Research, that the regulations and policy documents for the implementation of the education fusion national strategy, et al. (2019). Promoting the structure of modern industry colleges, with the institutions of higher learning needing to carry out the reform of modern industry colleges, upgrade the arduous task, and implement more in line with the actual demand of talent training. To establish a sound vocational education system, implement the concept of the integration of industry and education, actively promote school-enterprise cooperation, implement the requirements of A Few Views from the State Council's Executive Administration Considering Improving the Combination of Business and Education, and combine talent training with industrial needs. Industry education suggests a partnership between industries and institutions of learning to standardize training. This increases education relevance as students get to acquire practical experience



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and skills through internships and other practical experiences for adequate preparation to meet workforce employment and challenges. In 2020, the Procedures for the Construction of Modern Industry College (Trial) was issued, It is pointed out that the College of Modern Industry should pay full attention to the goal of education, The importance of adhering to the industry can show that current industrial college talent training model needs to be reformed, To break the original closed Higher vocational institutions' instructors lack the ability for businesses to require talent, To build a new generation of industrial colleges rooted in the park to serve the industry, Activate the vitality of the college itself and the industry businesses' determination to take part in the educational process, The government provides more supervision and service functions, To jointly promote the modern industry college talent cultivation quality to effectively improve.

The large bay area of Guangdong is considered for the development of regional industry colleges. Several studies pointed out that the industry colleges mainly consider the industry demand. The transformation of talent training mode in colleges and universities, making complete use of resources like schools, universities, and businesses, with an emphasis on developing applied talents, establishing innovation, employment, and other functions, and the coordinated development of different subject schools. Since its early construction and development, the School of Industry has been constantly exploring new functions and expanding the scope of services. By sorting out the literature, the characteristics of the industrial college can be summarized, and the specific functions analyzed as follows: first, to connect the universities and industries, transform the professional construction, develop the resource advantages of different subjects, enhance students' professional knowledge and skills, enhance the learning environment, and produce instructors of the highest standard; second, to serve the regional economic and scientific and technological construction, promote the integration of industry and education; third, to serve the enterprises, conduct staff training, technical innovation and provide corresponding talents. According to the survey results, the Industrial College of Guangdong Higher Vocational Colleges has begun to operate normally. Taking the industrial college as the platform, it connects the production chain with the professional group, establishes a good school-enterprise cooperation relationship, constantly improves the curriculum system, and realizes the goal of education. From the perspective of the functional positioning of the School of Industry, the School of Industry can provide certain support for regional industries, utilize all available resources, encourage industrial park growth to evolve, improve developmental excellence frequently, combine talented individuals and technology shackles as well, and recognize the importance of each issue. Guangdong higher vocational institutions, which rely on local resources, received federal support, integrating with the economic development zone industry, prompting the government and enterprises to participate in the construction of the college, take the interests of enterprises, parents, students, and other subjects into account, and do a good job in research and innovation. By 2020, local higher vocational colleges will have determined scientific and reasonable construction modes based on the experience of the UK and other countries and their actual conditions. Many high-quality industrial colleges have been established in this region, with an overall number of about 200, involving important local industrial areas.

The current industry college, linking vocational education and industry, due to the different collaborative education main body, investment, and management mechanisms makes a variety of industry colleges, according to the level, content, system, such as division basis, the college of industry operation mode changes, tend to diversify Sun & Huang (2019). From the function of the industry, the cooperation elements, and the types of universities, the multi-dimensional types of industrial colleges are conducted to determine the corresponding combination types, and a reasonable operation mode is adopted.

To determine the operation mode in line with the actual situation, it needs to be supported by scientific methods and data. This paper adopts the three-level index system of talent training in the industrial college to measure whether the current development path of higher vocational industry colleges is reasonable through detailed indicators, and to determine the reasonable talent training mode of College B.

**The significance of the construction of a modern industrial college**



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The construction of the School of Industry College, the school of Industry is the main force, but it also introduces market competition and integrates enterprise resources, thus realizing the precision of talent training Liu, 2010). Industrial college is a new kind of school that prepares its graduates for a vocation and offers the technical education necessary for new industries. It targets applied competencies, academic content, and internships that ensure students are ideal for the profession, institutions in engineering technology, and production sectors in innovation. Building an industrial college in the industrial park, Specialized in related industries, Higher vocational industry colleges, together with government, schools, and enterprises, Multiple synergies, Introducing enterprise-leading technology, the latest production equipment, cutting-edge training mode, To jointly build a practice platform that combines production and teaching, switching the roles between employees and students, integrates workshop and base and combines enterprise guidance and teachers, Develop the type of industry colleges with business collaboration by the skill training goals to create the talent training plan, Cooperate with enterprises to strengthen the construction of industrial colleges, Cultivate the talents enterprises are the primary unit of measurement and evaluation of practical teaching outcomes, and they are necessary for the invention and development of enterprises. The School of Industry has opened up the "last kilometer" from school to enterprise, and has made innovations in the aspects of educational concepts, training objectives, educational content, and educational methods Lu et al., 2017). Industrial college and high-tech enterprises to jointly build an industry-education integration base, To form a sustainable system of unified planning, resource sharing, complementary advantages, rational layout and harmonious development; Regarding industrial development and transformation, as well as local economic and social requirements, In an effort to strengthen pupils ' diversified quality, professional skills, innovation and entrepreneurship ability, Focusing on improving students' ability of innovation and entrepreneurship, Reform of the talent training plan, Reconstruct the curriculum system and improve the guarantee mechanism; "Introduce enterprises into education", Promote the incorporation of project, task, cooperative, enterprise reality, heuristics among other instructional types and methods, Promote the integration of talent training and industrial demand, the relative connection between teaching process and production process, course content and technology development, Information technology, artificial intelligence, the upgrading of traditional majors, Strengthen intelligent and digital enterprise management skills and projects, Will greatly deepen the students' practical skills.

This study aims to promote teaching quality improvement in higher vocational industry colleges, set up multilevel and multifaceted teaching quality evaluation standards for teaching performance, appraise teachers' competency, and make the best use of various teaching facilities to improve students' innovation and entrepreneurial competencies. To establish the fairest talent evaluation index system to upgrade students' training achievements.

The association of the article is arranged as follows: Part 1 will discuss the introduction of the study; Part 2 illustrates the Literature review; Part 3 provides research methods; Part 4 includes the results and a discussion of them. Part 5 presents the conclusion.

**The question of research**

(1) Different higher vocational industry colleges face the choice of the market, how to increase the teaching quality? Is the teaching assessment index certain?

(2) How to solve the problem of determining teachers' ability level? Can we better understand the teacher's ability and level through the establishment of indicators?

(3) Can the existing equipment and facilities be planned and utilized through the equipment implementation indicators?

(4) How to measure students' innovation and entrepreneurship ability through indicators?

(5) Can the talent evaluation index system of higher Vocational Industry Colleges build a set of independent, objective, and fair criteria, and provide specific calculation formulas and data indicators? According to the importance and weight of each index to develop a set of evaluation programs can enhance the standard and caliber of student instruction.



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## Literature review

### Analysis of the construction status and problems of the modern industrial College

Zhang (2023) believed that, first of all, there was an imbalance in the structure of modern industrial colleges in the discipline setting. At present, many schools only promote the advancement of a particular business or field but ignoring the training needs of other industries. In this way, it will lead to the discipline setting not being comprehensive, and unable to address the needs of diversified industry talent training. Therefore, in the construction of modern industrial colleges, it was imperative to consider the natural aggregation of expertise across different sectors to fulfill the societal need for diverse and all-encompassing skills. Moreover, there were issues with the way modern industrial colleges were built for professors as well. The structure of modern industry colleges needs the support of high-level teachers, but there were still some difficulties in the training and introduction of teachers in the China Modern Industry College. On the one hand, due to the emerging disciplines of modern industry, there were relatively few senior talents; on the other hand, there were still some problems in the training and training of existing teachers, which cannot meet the needs of the construction of modern industrial colleges. Therefore, it was urgent to strengthen the training of teachers in the modern industrial college and to introduce high-level talents who meet the requirements. In addition, the practical teaching link of the modern industrial college also needs to be strengthened. The characteristic of modern industrial colleges is to cultivate students' practical ability and innovative abilities, but at present, many schools have not invested enough in practical teaching, and still pay too much attention to traditional theoretical teaching. As a result, students often face the problem of insufficient practical ability after graduation, and they are unable to adapt to the needs of real work. Therefore, in the construction of modern industrial colleges, we should pay attention to strengthening the practical teaching links and provide more practical operations and internship opportunities, so that students can accumulate experience in practice and improve their practical ability. Finally, the connection problem between modern industry colleges and industry deserves attention. The purpose of the construction of a modern industrial college was to meet the needs of industrial development, so it was crucial to closely connect with the industry. But at present, there were still some problems that the cooperation between schools and industries was not deep enough or close enough. On the one hand, the school lacks an understanding of the industrial development trend and the ability to connect, and on the other hand, the industry's needs and expectations for the school were not clear. Therefore, the construction of a modern industrial college requires the university to strengthen its cooperation with the industry, deepen its cooperation with enterprises, and jointly cultivate talents to meet the needs of the industry.

### Disadvantages of index evaluation in the construction of a modern industrial College

He (2022) developed that the index evaluation system of China Vocational Industry College has the following problems: firstly, the current index evaluation system was single, which cannot reflect the real status and ability of students; secondly, the evaluation method was not transparent, but the evaluation method was not transparent. For example, the setting of evaluation indicators and the selection of weights often lack detailed instructions, so students, teachers, and government personnel do not know the specific basis and method of the evaluation results, which was not conducive to the fairness and objectivity of the evaluation results; secondly, the index weights were difficult to distribute fairly. The current index evaluation system often emphasizes the weight of subject scores and discipline competition, while ignoring the practical teaching and the assessment of comprehensive quality. At the same time, the current evaluation criteria often take the score of subject competition as part of the evaluation criteria, which makes the weight too weighted; finally, the regional differences of the evaluation criteria lack cross-regional evaluation and comparison. That led to the lack of horizontal comparison and analysis among higher vocational industry colleges in different regions and levels, which was not conducive to the development and evaluation of the higher vocational industry. Therefore, we must strengthen the reconstruction of the index system of higher vocational industry colleges.

### Discussion on the construction path of the modern Industry College



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*Promote the four-party coordinated training of "government, school, business, and enterprises"*

Fu(2018) investigated that to further improve the modern apprenticeship talent training effectiveness, colleges and universities, and the government to build an "education fusion demonstration zone", promote the "Zheng Jiao line enterprise" quartet linkage, active into the industrial park in a variety of industry college construction, strengthen the guidance of the government and cooperation between enterprises, industry, schools, through positive guidance, assist enterprises to obtain government subsidies and tax breaks, establish industry college council mechanism, clear responsibility, and obligations, eliminate the trouble back at home, promote the enthusiasm of industry enterprises to participate in.

*Combination of schools and enterprises, education and training, and the construction of a 5S talent training system*

Industrial college construction in the industrial park of excellent enterprise students into the relevant college of learning, for that kind of students skills, the characteristics of strong ability, industry college and cooperative enterprises actively explore, based on the enterprise leading "5S" talent training concept, driven by projects, results-oriented, engineering alternation, joint training, colleges, education training, gradually improve students' technical skills and innovative entrepreneurial ability.

*Improve the skill standards of the industrial college and promote the "1 + X" certificate system.*

Cui et al (2020) developed that in the vocational colleges $1 + X$ certificate system pilot error analysis and practice strategy, pointed out that the college of industry development should take the initiative to develop perfect skills standards, the implementation of the humanistic education idea, enterprises, universities organic, realize the efficient use of resources, to cultivate talents needed for economic and social development, common design college structure, professional standards, to promote the standardization of the development of industry college. Grasp the latest post-talent demand and characteristics, the enterprise training post-work project, task, and professional ability gradually decomposition, based on the typical task to determine the curriculum, based on post-professional ability curriculum content, based on work task design teaching activities, finally determine the talent training plan. At the same time, we will carry out the $1 + X$ certificate pilot with enterprises, and add the professional qualification standards and industrial technical standards into the teaching assessment work, to ensure that students have the corresponding professional quality.

*Establish an enterprise-led curriculum system and develop advanced teaching resources.*

Each pilot major was established in the modern apprenticeship curriculum reform based on enterprises, which emphasized that in the process, the school and the enterprise should jointly manage the course plan and teaching content, and standardize the teaching process management, to realize the cultivation of students' abilities.

*Build a training room that is highly compatible with the real working scene of the enterprise.*

Give full play to the main role of the enterprise, using the advanced production equipment of the enterprise, the university-enterprise joint construction of engineering center, training base, studio, and other training rooms that are highly consistent with the real work scene of the enterprise.

*Establish a high-quality guarantee system for the school-enterprise joint teaching process.*

1. Establish a special organization to strengthen the quality control of talent training. The professional leaders of the school, the education experts of the industry association, and the experts of the cooperative enterprises form the three-party expert committee to jointly formulate and review the professional teaching standards of the school, integrate the professional ability and job skills required by the post group into it, and form an enterprise-led training program.

Establish an enterprise-led multi-party participation assessment and evaluation mechanism. We could use innovative assessment and supervision systems, establish assessment and evaluation standards based on jobs, and implement the main responsibility of schools and cooperative enterprises.

**Research Gap**

The profligate fluctuating industries and employment markets are real problems for higher vocational industry colleges in the Guangdong-Hong Kong-Macao Greater Bay Area. They find themselves in a fix, as they fail to bring proximity in their contextual curriculum and teaching training to



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the market demands, and thus, teaching standards and efficiency decrease drastically. First, the absence of uniformity of evaluation indices challenges the identification of the performance rating of teaching and raises questions about the ways how teachers' abilities can be accurately gauged. There is a lack of optimum utilization of existing equipment and facilities, mainly because of weak implementation indicators. Furthermore, there is an ominous concern about how best to assess students' innovation and entrepreneurship skills. There is no standard talent assessment criteria system practiced. Institutions began to encounter such problems as objectivity in student testing. This work will seek to address these problems by establishing a tangible framework that synthesizes the vocational requirements of the industries with classroom teaching and learning processes to improve the quality of training that students receive in their chosen vocations and subject them to better employability in their respective fields.

## Methodology

### Research Direction and Framework Development

This is followed by a selection of research focus, collection of literature, and review of the framework with the tutor's input. Development of a preliminary or initial questionnaire is then done, followed by pre-testing in addition to revision of the instrument. The final form of the questionnaire is administered, and data gathered and results obtained are analyzed as shown in Figure 1. The Delphi method is also used to collect experts' opinions for the improvement of the assessment criteria. These indicators are then integrated into a scientifically developed structure through the application of the Analytic Hierarchy Process (AHP) to assign weights to these particular indicators. Such a systematic approach guarantees the identification of the right talents and the achievement of talent development goals in higher learning institutions.

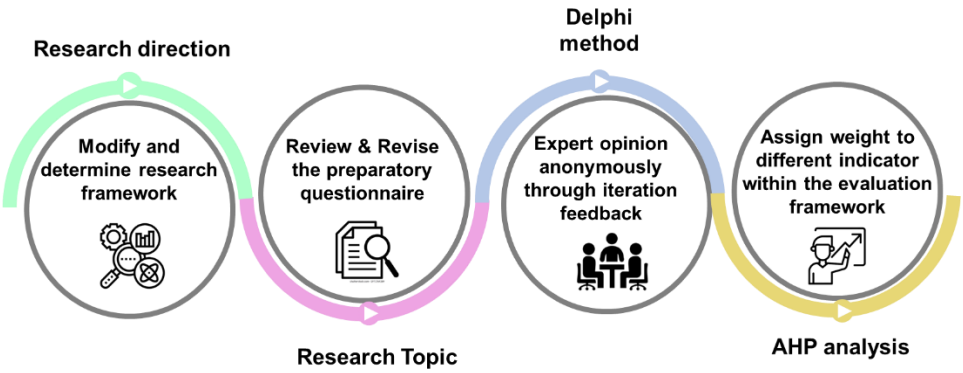


**Figure 1** Sequential Process for Developing the Talent Training System

### Preliminary Research Plan and Questionnaire Design

Teaching evaluation indices for enhancing teaching quality in higher vocational and industry colleges will be developed and prioritized in this research by implementing the AHP. The Delphi Method was applied to establish a consensus decision on the indicators to be used to estimate the teachers' ability levels. A questionnaire survey, together with literature-based research, was used to examine the planning and use of existing equipment through the use of implementation benchmarks. For assessing students' innovation and entrepreneurship, an indicator-based analysis was performed. Finally, the talent evaluation index system was constructed with the aid of the AHP to establish a scientific and impartial assessment organization.

*Literature research method*

The method is widely used in different fields. It refers to a research method that obtains new ideas or knowledge structures by collecting and sorting out policy and academic reports related to the research content Hu et al., 2023). The process of research generally adopts the steps of implementing the



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hypothesis, organizational design, collection and collation of literature materials, and literature review. The research using the literature research method is not limited by time and space, and the indirect contact method does not need to intervene in the original research investigation, which avoids the research practice of authenticity proposition studied by a large number of other scholars, and can effectively eliminate the interference items. In other words, the use of the questionnaire method there are two good, it is a wide range and the research cost is relatively low, but there is a strong tendency (on the article reading and view choice on the research itself to focus on the focus) and one-sidedness (researchers cannot choose all, so the summary point also does not represent the research conclusion in this field, is relatively one-sided).

Through the collection, collation, and research of relevant policy documents, journals, academic articles, network resources, books, and other documents, this research can deeply grasp the main research progress and academic achievements in this field, and understand its application situation. Based on the comprehensive collation of relevant achievements, it further summarizes the common methods and theories of scholars in the construction of the talent training quality evaluation index system in higher vocational education, to provide a theoretical basis and method support for the talent training quality evaluation index system.

**Survey Implementation**

*Questionnaire survey method*

Liu et al. (2018), in turning to the feedback, the sampling design for the questionnaire survey was through the use of a stratified random sampling plan to capture all major stakeholders. The sample size was estimated from a power analysis designed to determine the level of statistical power to reduce error margins. To minimize sampling bias, participants were randomly selected within each of the identified strata. To enhance validity and reliability, the Questionnaire was pretested, and based on the response of the pretested respondents, some changes in the wording and structure of the questionnaire were made. Reliability was conducted using Cronbach's alpha, and content validity was observed through expert input to improve the accuracy of the survey tool.

The core problem of questionnaire design lies in the design of question-and-answer content, that is, the design of questions and answers. The questions generally include questions about the personal background of the respondent, the verification of the authenticity by multiple people, understanding the subjective feelings of the respondent, and the objectivity of describing the factual behavior. The following principles should also be grasped in the problem design.

- ***Principle of necessity:*** The principle of necessity means that the problem is designed to complete the content of this study.
- ***Principle of likelihood:*** The answer to the questionnaire question needs to include as many possibilities as possible in the question, and also consider whether the question complies with the ability of respondent.
- ***Principle of objectivity:*** That is to say, the various questions and the corresponding answers in the questionnaire should be consistent with the actual situation and requirements.
- ***Principle of voluntariness:*** All the questions involved in the questionnaire should be able to meet the voluntary answers of the respondents, and all the questions that respondents are not willing to answer the questions should not be answered in the questionnaire.

In this study, experts in the expert advisory group were invited to score and give opinions on the evaluation index of talent training quality in B College through an anonymous written questionnaire, and the expert evaluation was selected as the boundary value of the evaluation index. The experts put forward suggestions and opinions, constantly revised the relevant indicators to form the opinions of the expert group, and then revised the preliminary quality evaluation index system of talent cultivation of B College, and finally formed the basic structure of the index system.

*Delphi method*

Huang et al. (2023) believed that anonymous written questionnaires were used to invite members of the expert advisory group to score and give opinions on the preliminarily constructed comprehensive



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strength evaluation indicators of higher vocational colleges. Expert evaluation will be used as the basis for the screening of evaluation indicators. Through expert feedback and index correction, the comprehensive opinions of the consulting expert group were finally obtained to determine the comprehensive strength evaluation index system of the higher vocational industry college.

**AHP (Analytic hierarchy process) for index weighting**

Saaty (1972) pointed out that AHP hierarchical analysis is an analytical tool for model building and problem-solving, mainly by analyzing the organization's workflow and user behavior, helping enterprises to develop solutions to improve workflow and organizational performance. In recent years, it has been widely used and favored by scholars from all over the world. It mainly makes the systematic classification of quantitative analysis. At present, the application object of this method is multi-objective, multi-element, multi-criterion, multi-factor, and multi-scheme complex events, especially in the problem of strategy choice, which is widely used. The purpose of this study is to assign the weight of each index in the talent training quality evaluation system. The main operation steps are as follows:

Step 1: Establish the basic structure of hierarchical analysis

Step 2: According to the basic structure of AHP level analysis, the quality evaluation index system of talent cultivation quality is divided into target level, criterion principal level, and program plan level according to the three-level system.

Step 3: Build a judgment matrix.

Quantitative analysis of hierarchical analysis focuses on the comparison between the elements of the same class and determines the weight relationship between the importance of the elements of the same class, and the comparison between the same class.

**Confirmatory Test**

The confirmatory test was assessed by the Baidu Encyclopedia Hierarchical Analysis method, and it was similar to the AHP. This paper applies AHP in the construction and validation of the talent training evaluation system by utilizing structured, multi-stage decision-making. This method breaks down the evaluation framework into three levels. There are three levels: the target level, the criterion principal level, and the program plan level.

After the construction of the judgment matrix, a consistency test should be conducted before the discriminant conclusion is drawn. Specifically, if A is more important than B and B is more important than C, then the importance of A must be higher than C, which is called consistency. If it is found that A is not more important than C in the questionnaire recovery, then this is called inconsistency. If CR <=0.1, then it means that the consistency test can be accepted, here CR=CI / RI, as shown in Table 1 below:

**Table 1** The mean random consistency index RI

| order | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| RI | 0 | 0 | 0.52 | 0.89 | 1.12 | 1.26 | 1.36 | 1.41 | 1.46. | 1.49 |

The CI value was determined, and λ max is calculated in Equations (1 and 2):

$$CI = (\lambda max - n)/n - 1 \quad (1)$$

$$\text{Bold}\boldsymbol{\lambda_{max}} = \sum_{1}^{n} \frac{(BW)_i}{nW_I} \ (\boldsymbol{i = 1, 2, \ldots n}) \quad (2)$$

## Results and Discussions

**The Construction of Modern Industry College to establish the construction of the index evaluation system**

***Phase 1*** is based on the Delphi method and literature research method of China's modern industry institute evaluation research and induction, built by the talent training target and positioning, teachers, teaching conditions and security, teaching resources construction and utilization, teaching management, teaching reform measures, talent training results of seven indicators, the combination of industry and



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professional, enterprise teachers, curriculum and teaching methods, credit system reform and so on several secondary indicators, And several three-level indicators, including the satisfaction of employers, The contemporary industry college's finish strength assessment index method comprises of the quantity for new resources for instruction produced in the last three years and the creation of the $1 + X$ certification system.

***Phase 2*** is based on the level analysis and fuzzy mathematics method of building the modern industry college comprehensive strength evaluation index system of weight assignment, determine the talent training target and positioning, teachers, teaching conditions and security, construction, and utilization of teaching resources, teaching management, teaching reform measures, personnel training results in 7 level indexes important, in turn, raised the evaluation framework. Based on this framework, the weight distribution of 46 is the total strength assessment index method, and its weights of contemporary industrial colleges are established, together with 138 third-level indicators and second-level indicators.

***Phase 3*** in the creation of the talent quality indicator framework at contemporary industrial colleges, the fundamental idea should be to support students' overall growth, and the goal is to ensure that students have the potential for sustainable development. To guarantee that skill training is directly linked to the advancement of the sector, it is also vital to continually change in response to shifts in social needs. The way the assessment was put together was that the indicators should also adhere to the principle of operability to ensure that the evaluation results can truly, accurately, and comprehensively reflect the quality and effect of the talent training in the modern industrial college. Such an assessment system can be beneficial in advancing the current vocational college's talent training mechanism reform.

In short, the construction of the evaluation index system of the modern industrial college should take into account the principles of students' comprehensive development, dynamic adjustment, and operability, to guarantee the efficacy of the assessment and support the update of the skills development system.

**The index evaluation system plays a role in the model selection of modern industrial colleges.**

The model of a modern industrial college is divided into six types: enterprise customization, industry co-construction, teaching practice, industry-university-research model, course customization, and whole-process service. Through AHP software, design three structures: target layer, index layer, and scheme layer. The weighted product ranking of the first seven first-level indicators in the final choice of mode is made utilizing Institution B's assessment index approach.

Six patterns of seven indicators in the weight proportion are different, how to choose the corresponding mode, in the front of Guangdong B college talent training evaluation expert group extracted 10 experts, first of higher vocational industry college pattern index ranking formed the table 1 index, 1 representative training, 2 on behalf of the teachers, 3 on behalf of the teaching conditions and security, 4 on behalf of the teaching management process, 5 on behalf of teaching resources construction and utilization, 6 on behalf of talent training target and positioning, 7 on behalf of the teaching reform measures.

The second 10 experts scored, for seven indicators, according to the results of the score, as shown in table 2, the right to heavy points worth product, the results show as "talent training results", "teachers" second, "teaching reform measures" third, fourth, "teaching management", "teaching conditions and security" fifth, "teaching resources construction and utilization" row sixth, "talent training target and positioning" seventh.

**Table 2** Product of expert score weights

| Level 1 indicators | Weight | Expert Score | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Talent training results | 0.4107 | 7 | 8 | 6 | 7 | 5 | 8 | 7 | 5 | 8 | 7 | 27.9276 |
| The teaching staff | 0.1789 | 5 | 4 | 5 | 7 | 3 | 4 | 6 | 5 | 7 | 8 | 9.6606 |
| Teaching conditions and guarantees | 0.1310 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 3 | 3 | 1 | 2.358 |



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| Level 1 indicators | Weight | Expert Score | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Teaching the management process | 0.0872 | 5 | 4 | 3 | 6 | 7 | 4 | 2 | 4 | 4 | 3 | 3.6624 |
| Construction and utilization of teaching resources | 0.0805 | 1 | 4 | 2 | 2 | 4 | 3 | 5 | 2 | 1 | 2 | 2.093 |
| Talent training objectives and positioning | 0.0570 | 3 | 3 | 6 | 4 | 2 | 1 | 5 | 3 | 3 | 5 | 1.995 |
| Teaching reform measures | 0.0547 | 9 | 8 | 6 | 7 | 5 | 9 | 7 | 5 | 8 | 9 | 3.9931 |

Data source: from the expert scoring

## Discussion

The author's academic ability and time limitation, although the construction of Guangdong B college for example to build the higher vocational colleges industry college Not only for the skilled education assessment indexing system, additionally for the entire surface indicator system, research depth is not enough, about the correction of the index also due to the actual situation of B college, the choice of experts and professionalism on the research reliability and validity also have room to improve. Simultaneously, the introduction of the approach and the particular examination of indices chosen content did not lead to more research, the school in 2024 try to apply an index system to the specific work, but also failed to produce a concrete application conclusion, therefore, on the index system of scientific feasibility also need further verification. In addition, at the end of this study, there are some suggestions for research colleagues to discuss.

**Stage 1**. The examination and assessment of the caliber of training is not completely fixed but should change with the development of the school, and should be adjusted accordingly with the change of the attention direction of the society, the school, and the government, which should be dynamic. After the change in school conditions, the standard of instruction and learning is also continuously raised. Only by giving full play to the command role of educational evaluation can the development of teaching activities have a clear direction and purpose, so it is necessary to make appropriate adjustments to the indicators of this evaluation system.

**Stage 2.** The core work of the school is talent cultivation. Consequently, a good talent education core's research development and implementation represent a talent education important status assessment index system, which may be utilized in B college annual internal education teaching work evaluation of Zhen, can promote the formation of school internal transparent benign evaluation mechanism, improve school staff work enthusiasm and target and security.

**Stage 3.** In Guangdong B the development of the real talent training quality assessment index system, given that the university further personnel training quality evaluation and index adjustment revision work has strong reference significance, at the same time, the application of the evaluation system is sure, after the adjustment and the opportunity to similar use, for the area of higher vocational education quality improvement, especially similar brothers institutions to build itself index system for evaluating the caliber of potential training.

**Stage 4.** The school is the center of attention for the Institute for the Development of the Talented Learning Models Assessment Ranking System. Basic unit of evaluation, such as the school in practical application, especially in heavy especially high professional construction projects. If you want to highlight the function of the assessment command, during system construction, it is necessary to professionalize as the basic unit to organize the personnel training mode evaluation index system.

## Conclusion

In the contemporary environment of modern industry Colleges, there exist potential problems as



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well as possibilities to develop the economic growth of the Guangdong region. This work provides the directives for these institutes and underlines their importance for discussion between educational outcomes and industry needs. In turn, with the help of the identified capabilities, industry institutes could be able to develop construction pathways and increase the overall quality of vocational education. In addition, the research supports creativity in teaching education that adapts the requirements of the job market more effectively than at present, for improving the vocational training context. Unfortunately, the partnership of educational institutions and enterprises must be strengthened to develop a skilled workforce in compliance with the market demands. Therefore, the work establishes industry institutes as important stakeholders in regional economic development to provide fresh perspectives in analyzing the issues of improving vocational education quality and efficacy, especially in shifting economic contexts.

**Limitations**

The research limitation concerns data collection in only one geographical area partly reduces the generalizability of the research findings. The use of questionnaires and more dependence on the opinion of the experts could result in a biased evaluation index. Also, the dynamic character of the industry can change quickly, and this can lead to constant revisions of the evaluation framework.

**Future Scope**

Future studies could be cross-sectional to incorporate an additional area of comparison and improve an understanding of the sector's requirements. Also, the consequences of the emerging technologies on the methods applied to improve vocational training would make interesting findings towards the development of educational practices. Longitudinal studies could also establish how effective the proposed evaluation index system is in the future for constant comparison of the evaluation results with changes in the environment.

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