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Original Paper

Vocational Education Quality Evaluation: Theoretical Foundation and Indicator System Construction

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Abstract

This paper constructs a comprehensive evaluation framework for the quality of vocational education in China based on the CIPP model. Traditional evaluation methods have difficulty fully reflecting the multidimensional characteristics of modern vocational education that integrates academic knowledge, technical skills, and practical abilities. Therefore, we constructed a set of evaluation index systems covering four dimensions: environmental system, resource input, educational process, and educational outcome. The evaluation system provides a practical and feasible tool for assessing and improving the quality of vocational education. The findings help to serve China's strategic goals of building a strong education nation and cultivating new quality productivity, and provide support for the systematic assessment and continuous improvement of vocational education quality.

Keywords

vocational education, quality evaluation, CIPP model, indicator system

1. Introduction

The rapid development of vocational education, driven by the strategic objectives of establishing an effective education nation and fostering new productivity forces, has highlighted the pressing need for systematic quality evaluation frameworks. Traditional educational assessments, while valuable, often fall short in capturing the complex, multifaceted nature of modern vocational education, which integrates academic knowledge, technical skills, and practical competencies.

In recent decades, educational measurement and evaluation theories have evolved significantly, establishing a foundation for more comprehensive and dynamic assessment systems. Traditional evaluation models, including goal-oriented evaluation, goal-free evaluation, responsive evaluation and CIPP model, have each provided unique viewpoints. The CIPP model (Context, Input, Process,

Product), proposed by Stufflebeam (1971), has become a well-recognized and adaptable framework, particularly effective for assessing complex educational programs such as vocational education.

Building upon these theoretical foundations, this study focuses on developing a system for evaluating the quality of vocational education based on the CIPP model. The research aims to combine factors like the context, resources, processes, and results into a unified system of indicators, making sure the evaluation is thorough, fair, and useful. This paper aims to create a way to evaluate vocational education that not only looks at educational results but also helps improve and innovate teaching methods by carefully examining existing theories and matching them with the needs of vocational education.

This study contributes to the literature by clarifying the theoretical basis for vocational education quality evaluation and by proposing a scientifically grounded indicator system. It responds to the practical demands for robust, evidence-based evaluation tools in the context of rapidly transforming educational and industrial landscapes.

The contributions of this study are reflected in three key dimensions. First, at the theoretical level, this study systematically applies the CIPP model to the quality evaluation of vocational education, thereby providing a robust theoretical foundation and a coherent logical framework for related research in China. Second, at the methodological level, it establishes clear principles for indicator system construction, defines the dimensional categorization, and outlines the structural pathways, thus enriching the methodological approaches available for developing educational quality evaluation systems. Third, at the practical level, the study lays a solid foundation of indicators for future empirical assessments, regional comparisons, and performance diagnostics, offering practical guidance for policymakers and educational administrators aiming to enhance vocational education quality.

2. Theoretical Sources

2.1 Theoretical Foundations

Educational evaluation refers to the implementation of a variety of educational activities, educational processes, and educational outcomes of scientific judgment processes guided by certain educational values, based on the establishment of educational objectives, and using certain techniques and methods. Educational evaluation originated from the test of students' academic ability in ancient schools, but the formation of the theory and method of the educational evaluation system came directly from the educational testing movement that emerged at the beginning of the 20th century with the purpose of pursuing the objectivity of the educational effect. The theoretical basis of vocational education quality evaluation mainly includes educational measurement theory and educational evaluation theory.

Educational measurement theory is the foundation of vocational education evaluation, focusing on how to quantify educational phenomena using scientific methods and how to convert quantifiable educational goals into measurable indicators. Measurement theory has two components: traditional measurement theory and current measurement theory.

Evaluation theory is a theoretical system that investigates how to judge measurement results completely. It includes both qualitative and quantitative evaluations. Educational evaluation theory is concerned with complete and systematic value judgments of the educational process and results, and it provides a theoretical foundation to evaluate the efficiency of educational initiatives. In vocational education, assessment theory can help us decide on the purpose, substance, and manner of evaluation. Evaluation theory also addresses the interpretation and implementation of evaluation outcomes, as well as how to provide feedback to educational decision makers and practitioners and use this knowledge to improve the teaching process.

2.2 Theoretical Models

The development of educational evaluation has led to the formation of a series of mature models, each with distinctive features. Each model is based on a different degree of understanding of education, evaluation, quality, and different perspectives of understanding, and the educational evaluation models that have had a greater impact mainly include the goal evaluation model, goal-oriented evaluation, goal-free evaluation, responsive evaluation, and CIPP evaluation model.

(1) Goal-Oriented Evaluation

The goal-oriented evaluation model, commonly referred to as the "Tyler Model," was introduced in the 1930s. This model is a single closed system that evaluates whether or not a student has achieved a set goal based on a predetermined educational objective. The method of evaluation involves the following stages: (a)determining and categorizing the objectives of the educational program; (b) defining and expressing each objective in terms of behavior and content; (c) constructing a situation that produces the desired behavior within the student; (d) selecting or developing measurement techniques; (e) designing the means of obtaining the records and selecting the method of evaluation; (f) deciding on the method of obtaining a representative sample; (g) modifying the program and re-executing it, and so on.

The Taylor model focuses on educational goals and directly reflects those goals through evaluation activities, expanding the scope of evaluation and ensuring the integrity and rigor of the evaluation system (Harahap et al., 2021). By comparing the changes in students' learning behaviors with the established goals, the model effectively improves the effectiveness of educational evaluation. However, the model focuses mainly on results and summative evaluation, emphasizes quantitative description, relies on statistics and measurement methods, and limits the ability to evaluate changes in students' affective attitudes.

(2) Goal-Free Evaluation

In the late 1960s, American educator M. Scriven, in critiquing the goal-oriented orientation of the Tyler model, proposed the Goal-Free Evaluation model, which seeks to eliminate the influence of subjective factors. This model advocates minimizing the impact of the program designer’s subjective intentions on the evaluation process by ensuring that evaluators are not informed of the program’s intended goals. In this way, the evaluation remains independent of any predetermined objectives. The model shifts the

focus of evaluation from reflecting the intentions of managers and decision-makers to the perspectives of external stakeholders. It emphasizes that evaluation conclusions should not be based on the developers' intended goals but rather on the actual outcomes achieved by those involved in the educational practice.

Scriven emphasized that the goal-free evaluation model should consider the following components: description, stakeholders, the evaluated subject and its context, resources, functions, delivery systems, consumers, needs and values, standards, history, results, profile, cost, comparisons, significance, recommendations, reports, and meta-evaluation. These components are not fixed procedures but may be applied cyclically throughout the evaluation process.

The goal-free evaluation model holds particular significance for methods such as educational connoisseurship and criticism, participatory evaluation, authentic evaluation, and generative evaluation.

(3) Responsive Evaluation

The Responsive evaluation model is proposed in 1973. Unlike traditional approaches that conform to the demands of external authorities, this model actively focuses on the real and practical problems encountered by educational practitioners. It does not begin with predetermined goals or assumptions; instead, it takes as its starting point the actual or potential issues raised by decision-makers and practitioners in educational activities. The model emphasizes respect for the practical realities of the educational world and the diversity of values, advocating for pluralistic perspectives as the foundation for evaluation. Responsive evaluation is conducted through sustained, effective communication between evaluators and those being evaluated. This interaction helps evaluators understand the perspectives, concerns, and expectations of stakeholders—particularly the psychological intentions of those being assessed—and informs necessary modifications to educational programs.

The responsive model mainly uses qualitative research methods like watching people in their natural settings, group discussions, and interviews, and includes methods such as responsive evaluation, portfolio assessment, and interpretive evaluation, focusing especially on techniques based on observation. It views educational evaluation as an objective process of both description and value judgment that spans three stages of educational activity: premise, implementation, and outcome. The premise refers to the preconditions of teaching that are linked to educational results; implementation represents the continuous evaluation that shapes the learning process; and outcome refers to the effectiveness of the instructional program. This model enhances the democratic nature of evaluation by incorporating multiple stakeholder perspectives and supports a more flexible, context-sensitive assessment of educational effectiveness.

The responsive evaluation lies in its capacity to reflect the needs of all stakeholders related to the value, thereby incorporating a degree of democratic engagement. The evaluation method emphasizes observation, interviews, and qualitative descriptions under natural conditions, but it does not exclude the use of tests. The method facilitates the integration of qualitative and quantitative approaches, enables effective value judgments, and allows for timely feedback. However, due to the complexity of

its design and implementation, the responsive evaluation model requires substantial human, material, and financial resources, which often discourages evaluators. Additionally, because it focuses heavily on the subjective perceptions of participants while overlooking the constraints imposed by objective realities, it tends to overstate the role of human agency.

(4) Constructivist Evaluation

This model fully considers the contextual factors surrounding the object of evaluation and emphasizes that the scope of educational evaluation should account for the value systems of all stakeholders involved. It departs from earlier models that overly emphasized scientific methodology by advocating for a genuine pursuit of value in the practical operation of evaluation. It integrates scientific methods with other evaluation approaches and posits that evaluation is essentially a “psychological construction” formed through negotiation. Therefore, evaluation is viewed as a process of collaborative negotiation and pluralistic participation grounded in the principle of value plurality rather than the top-down control exercised by the evaluator.

The specific procedures of the constructivist model include: (a) identifying all stakeholders involved in the evaluation, including decision-makers, implementers, evaluators, subjects of adaptation, and outsiders; (b) soliciting each stakeholder's evaluation concepts and requirements; (c) assessing and interpreting divergent views; (d) formulating a consultation agenda for unresolved issues and collecting relevant information; (e) facilitating negotiation and debate among stakeholders to reach consensus; and (f) continuously resolving emerging issues through ongoing consultation and deliberation.

The strength of the constructivist model lies in its democratic nature. Democracy is reflected not only in the equal value assigned to individual and group perspectives during the evaluation process but also in the fact that student achievement standards are not predetermined or fixed. Instead, they are continuously constructed and regenerated in practice, thereby respecting the diverse growth trajectories of students and acknowledging the legitimacy and significance of all evaluative voices.

However, the model has certain limitations. In practical educational evaluation, a managerialist tendency may lead to unequal power relations between managers and evaluators. Furthermore, the emphasis on value plurality may hinder consensus-building among stakeholders with differing value systems. Finally, insufficient recognition of the complexity and depth of educational and evaluative processes may limit the acceptance and impact of the evaluation outcomes, thereby reducing their guiding effect on educational practice.

(5) CIPP Evaluation Model

The CIPP assessment model is a comprehensive assessment model proposed by the American scholar Stufflebeam, based on reflections on Taylor's behavioral objective model. It is widely used in research in the field of education to assess and improve the outcomes of educational activities. The model provides a comprehensive assessment mechanism for a wide range of organizations and institutions serving the field of education. The CIPP evaluation model consists of four important components,

namely context evaluation, input evaluation, process evaluation, and product evaluation (Stufflebeam, 2000).

Context evaluation is the assessment of needs, problems, resources, and opportunities within a given context. It identifies the background of the organization implementing the program, clarifies the evaluation target and its needs, specifies the opportunities to meet those needs, diagnoses fundamental problems, and determines whether the objectives reflect the identified needs. Context evaluation emphasizes judging the objectives themselves in terms of audience needs to assess their consistency.

Input evaluation assesses the conditions and resources required to achieve the objectives and the relative merits of alternative plans based on the context evaluation. In essence, it evaluates the feasibility and utility of the plan, primarily to help decision-makers select the best means to achieve the goals while evaluating various available options (Stufflebeam & Zhang, 2017).

Process evaluation is the continuous monitoring, inspection, and feedback of the program implementation process. It mainly describes the actual implementation process to identify or predict problems in the design or execution phases, thereby providing decision-makers with useful information for program modification.

Product evaluation measures the extent to which objectives have been achieved. It includes the measurement, judgment, and interpretation of the program's achievements and confirmation of how well people's needs have been met. It collects various descriptions and judgments related to outcomes, links them with goals and information from the context, input, and process stages, and evaluates their value and merit.

The CIPP model differs from previous types of evaluation in purpose, methodology, and effectiveness. In applying the CIPP model, evaluators can adopt different strategies as needed (Zhang et al., 2011). The various evaluations can be conducted before or during program implementation. A single evaluation or multiple types may be applied, depending entirely on the needs of the evaluation users, making it a highly flexible model.

The advantages of the CIPP evaluation model include its resolution of some difficult issues in the Taylor model, emphasis on the developmental function of evaluation, integration of diagnostic, formative, and summative assessments, and enhanced acceptance of evaluation activities. However, its limitation lies in the focus on information collection and organization to serve educational decision-making, while lacking sufficient value judgment regarding educational decisions.

3. The Connotation and Characteristics of the Vocational Education Quality Evaluation Index

3.1 Definition

Vocational Education Quality Evaluation Index (VQEI) is a comprehensive and quantitative index system that highlights the characteristics and attributes of vocational education in China in the context of the construction of a strong education country, and is oriented to the high-quality development of vocational education, aiming to measure and assess the quality and effectiveness of vocational

education within a certain period of time. Vocational Education Quality Evaluation Index is a kind of comprehensive index to measure the quality of vocational education, which is constructed based on a series of related factors and indicators, aiming to reflect the quality and level of vocational education comprehensively and objectively, with the characteristics of goal orientation, systematic, dynamic, comparability and feedback.

3.2 Characteristics

The index for evaluating the quality of vocational education generally has four main characteristics. First, it is multidimensional, covering different aspects of vocational education such as teaching quality, student growth, and government responsibilities. This allows for a more complete understanding of the overall quality and performance. Second, it is dynamic, meaning the index changes over time as vocational education develops and as social needs evolve. This approach helps keep the evaluation results up to date and relevant. Third, the index is based on scientific principles, following clear rules and methods when choosing indicators, setting their weights, and collecting and analyzing data. This approach makes the results more reliable and fairer. Finally, the index is practical and easy to use since it is built on measurable data and can be calculated. This feature ensures that the index can be applied in real situations to help improve the quality of vocational education over time.

4. Components of the Vocational Education Quality Evaluation

4.1 Principles and Methods

(1) Student-centered

The concept of student-centered education ultimately determines the starting point for the evaluation of education quality, and all aspects of the education and teaching process should be student-oriented. When selecting indicators for evaluating the quality of vocational education, try to choose the key factors affecting the quality of growth and success of the vast majority of students as evaluation indicators, rather than focusing on the exceptional achievements of a select few students as indicators of quality performance. At the same time, not only evaluating the quality status quo but also emphasizing the need to have a continuous improvement mechanism, and in this way to continuously improve the quality of education and teaching, and to establish a quality evaluation system with the goal of continuous improvement.

(2) Scientific and representative

Scientific means that, from the perspective of system engineering, the indicator system should be constructed scientifically and rationally so that it is real-time, open, and dynamic and can adapt to the needs of different occasions and levels of evaluation. The principle of representativeness means that the selected education quality evaluation indicators should be able to represent all aspects of the development level of vocational education. When selecting indicators for evaluating the quality of vocational education, typical indicators with strong representativeness should be chosen, which can truly reflect the actual situation and potential problems in the scale, efficiency and quality of vocational

education development. At the same time, more information should be covered by as few indicators as possible, so the indicator system is clear, concise, and easy to understand.

(3) Objectivity and feasibility

The principle of objectivity means that the data for each indicator in the vocational education quality evaluation index system must be true and accurate, and the availability and reliability of data should be taken into account when designing education quality evaluation indicators. When selecting indicators, try to choose those that can be quantified as much as possible and give up those qualitative indicators that are difficult to reflect quantitatively. In terms of data sources, official statistical data released by authoritative organs should be chosen as far as possible to ensure that the data used in the study are real and effective. Additionally, the study should select indicators that are operable and capable of effective application in practice. Consideration should be given to incorporating into the evaluation index system as many indicators as possible that are clear in concept and content and can be measured in practice, while those that are too abstract and cannot be measured should not be considered for the time being.

(4) Focus on outputs and tangible results

Focusing on the output of education and its actual effectiveness is the core of the pursuit of educational quality, which is not only conducive to educational effectiveness but also to educational management. On the one hand, it can guide educational practitioners to focus on the results of their work, pursue practicality, and do their jobs better; on the other hand, it can free educational managers from daily management and give educational practitioners more space to give full play to their abilities and creativity in a performance-oriented manner. Only by emphasizing educational outputs and actual results can a virtuous cycle of educational development be formed and more sustained investment in education funding and resources be obtained.

4.2 Theoretical Framework

The CIPP evaluation model was proposed by the renowned American educational evaluation expert Daniel L. Stufflebeam in the 1960s and 1970s. It is a decision-oriented evaluation model. The acronym CIPP is composed of the initial letters of four types of evaluation activities: context evaluation, input evaluation, process evaluation, and product evaluation, each providing information for different aspects of decision-making. The CIPP evaluation model is characterized by its comprehensiveness, process orientation, and feedback mechanism, and it has been widely applied in the field of education. The CIPP evaluation model has been internationally adopted and is considered to possess an advanced conceptual foundation, making it a relatively complete evaluation system.

Based on educational theory, by following the principles for constructing a system for evaluating quality and applying the CIPP model, it is possible to build a vocational education indicator system suitable for China's context. In this research, following the CIPP evaluation model, an index for evaluating the quality of vocational education is constructed from four dimensions, specifically including the environment system (context quality), the input system (input quality), the process system (process quality), and the output system (output quality).

4.3 Constituent Elements

Based on a comprehensive review of existing domestic and international studies, it is observed that scholars' common concerns regarding vocational education quality evaluation primarily focus on three aspects: the quality of student development, the quality of educational instruction, and the quality of vocational education's contribution to regional economic and industrial development.

This study evaluates the quality of vocational education using the CIPP evaluation model, looking at four areas: the environmental system (context quality), the input system (input quality), the process system (process quality), and the output system (output quality), all based on how vocational education develops and its unique features. Among these, the environmental and input systems are the base for developing vocational education, the output system is the main part, and the process system is the important connection. Among these, the environmental system and the input system form the foundation for vocational education development, the output system represents its core, and the process system constitutes the critical link. According to the overall requirements for vocational education quality evaluation, a preliminary framework for the evaluation indicator system has been established. Structurally, the framework consists of four modules: the "Vocational Education Environmental System (Context Quality)," the "Vocational Education Input System (Input Quality)," the "Vocational Education Process System (Process Quality)," and the "Vocational Education Output System (Output Quality)."

(1) Vocational Education Environment System

The healthy development of vocational education depends on a favorable institutional and policy environment. The environmental system is the prerequisite and foundation for the flourishing development of vocational education. The environmental system of vocational education mainly includes three aspects: educational opportunities, scale of development, and infrastructure. (a) Educational opportunities: Indicators reflecting access mainly include the enrollment rate of secondary vocational education, the gross enrollment rate of higher vocational education, and the growth rate of enrollment in higher vocational education. (b) Scale of development: Indicators measuring the scale of development include the average number of students enrolled in vocational education per 100,000 people, the proportion of higher vocational education to the total scale of higher education, and the proportion of secondary vocational education to the total scale of senior secondary education. (c) Infrastructure: Indicators for infrastructure measurement mainly include the average school building floor area per vocational student, the value of teaching, scientific research, and internship equipment assets per student, the average number of books per student, the average area of sports grounds per student, and the number of teaching terminals per 100 students.

(2) Vocational Education Input System

The state of input of vocational education resources constrains the impetus for the development of vocational education and also reflects the degree of importance attached to the development of vocational education by the state and various regions. The input of educational resources mainly

includes three aspects: human, material, and financial resources. (a) Manpower input: The level of manpower input is mainly reflected in the quality of teachers. Indicators reflecting the development of manpower input in vocational education usually include the student-teacher ratio, the number of full-time teachers, the number of "dual-qualified" teachers, the number of teachers with senior professional and technical titles, and the proportion of teachers whose academic qualifications meet the required standards. (b) Physical input: The level of material input is mainly reflected in infrastructure construction. Indicators reflecting the development of material input in vocational education usually include per capita capital expenditures, per capita floor area of training bases, per capita school area, and per capita number of books. (c) Financial input: The level of financial investment is mainly reflected in education funding. Measurement indicators usually include per capita general public budget expenditure on education, per capita general public budget expenditure on public utilities, per capita education funding index, and special financial allocations.

(3) Vocational Education Process System

Process indicators reflect the quality of the process system of vocational education, which is a key part of the overall assessment of vocational education capacity. The quality of the process system is mainly reflected in aspects such as professional program design, industry-education integration, and curriculum development. Among them, indicators of professional program design mainly include the degree of alignment between vocational college programs and the regional economy and industry, as well as the degree of alignment between secondary school graduates' majors and their employment positions. Indicators for assessing the quality of industry-education integration usually include the number of school-enterprise cooperation initiatives, the number of constructed collaborative platforms, the number of internship and training bases, and the level of industry-education integration. Indicators for evaluating curriculum development include the number of nationally recognized online quality courses, the number of educational resource libraries, and the number of textbooks developed.

(4) Vocational Education Output System

The education output system is an important basis for measuring the level and quality of vocational education development. The quality of the output system is mainly measured by indicators of teaching performance, student growth and success, service to economic and social development, and international influence. We primarily divide the outputs of education into direct and indirect outputs. Direct outputs are primarily reflected in student growth and success (i.e., the quality of student cultivation), with measurement indicators including satisfaction with teaching, graduate employment rate, graduate satisfaction, employer satisfaction, and so on.

Indirect outputs of vocational education are reflected in social services and contributions to the local economy and industrial development. Indicators include the amount of horizontal technical service revenue, the number of non-degree training programs, the number of training hours for public welfare projects, and the average proportion of graduates who remain employed locally.

Based on a comprehensive analysis of the above and drawing on domestic and international research results on vocational education quality assessment indicators as well as the framework of the CIPP model—and in combination with the actual development status of vocational education in China—we have initially constructed a vocational education quality evaluation index system consisting of four first-level indicators, twelve second-level indicators, and twenty-nine third-level indicators across the environment system, input system, process system, and output system, as shown in Table 1.

Table 1. Indicator System of Vocational Education Quality Index

Level 1 indicators	Level 2 indicators	Level 3 indicators	Direction of Indicators
A Environmental systems	Educational opportunities A1	Gross enrollment rate in higher education (%) A11	Positive indicators
		Rate of (secondary) graduates going on to higher education (%) A12	Positive indicators
	Scale of development A2	Average number of students enrolled in vocational education per 100,000 population A21	Positive indicators
		Proportion of the size of higher education to the size of tertiary education (%) A22	Positive indicators
		Proportion of secondary school size to the size of upper secondary education (%) A23	Positive indicators
	Infrastructure A3	Floor space of school buildings per student (square meters/student) A31	Positive indicators
		Value of teaching instruments and equipment per student (yuan/student) A32	Positive indicators
		Number of teaching terminals per 100 students (units/100 students) A33	Positive indicators
B Input system	Financial (funding) inputs B1	Per capita general public budget expenditure on education (yuan/student) B11	Positive indicators
		Per capita education expenditure index (%) B12	Positive indicators
	Material input B2	Capital Expenditures per Pupil B21	Positive indicators

		School space per pupil B22	Positive indicators
		Books per pupil (books/pupil) B23	Positive indicators
	Manpower inputs (faculty) B3	Student-teacher ratio B31	Negative indicator
		Proportion of full-time teachers in senior professional and technical positions (%) B32	Positive indicators
		Proportion of "dual-teacher" teachers (%) B33	Positive indicators
C Process system	Specialization C1	Degree of match between vocational education specialization and regional economy and industry (%) C11	Positive indicators
		Relevance of job to specialty six months after graduation of vocational school graduates (%) C12	Positive indicators
	Curriculum Development C2	Number of online boutique courses C21	Moderate indicators
	Industry-Education Integration C3	Number of internship training bases C31	Positive indicators
		Number of platforms built C32	Positive indicators
		Industry-Education Integration Index C33	Positive indicators
D Output systems	Teaching D1	Satisfaction with teaching work in specialized courses of students (%) D1	Positive indicators
	Quality of student training D2	Higher education graduates' satisfaction with their alma mater (%) D21	Positive indicators
		Employment rate of high school graduates (%) D22	Positive indicators
		Employer Satisfaction of Higher Education Graduates (%) D23	Positive indicators
	Service contribution D3	Average percentage of graduates of higher education institutions who remain in local employment D31	Positive indicators
		Horizontal technical service arrivals ($ million) D32	Positive indicators

		Number of non-degree training programs D33	Positive indicators
	International impact D4	Number of curriculum standards developed and adopted abroad D41	Positive indicators
		Number of awards in foreign skill competitions D42	Positive indicators

5. Conclusion

This study, grounded in the CIPP evaluation model, systematically constructs a theoretical framework and indicator system for the quality evaluation of vocational education. By integrating four dimensions—context, input, process, and product—the proposed evaluation index system comprehensively reflects the multi-faceted nature of vocational education development. Through careful selection of indicators following the principles of scientific rigor, representativeness, operability, and focus on actual outcomes, the framework strives to address the current gaps of fragmentation and lack of systematization in vocational education quality assessment in China. Future research could further explore the dynamic adaptation of the indicator system based on evolving educational policies and labor market demands, ensuring that vocational education quality evaluation remains relevant, forward-looking, and impactful.

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