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Reflections on Constructing an Evaluation System for the Effectiveness of Professional Cluster Construction under the New Round of the "Double High Plan" from the Perspective of High-Quality Development

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Abstract: As socialism with Chinese characteristics has entered a new era, vocational education in China has shifted from scale expansion to a stage of high-quality development. The launch of the new round of the "Double High Plan" (2025–2029) in 2025 marks that the reform of higher vocational education has entered a 2.0 era of deepening quality improvement. As the core carrier of the "Double High Plan" construction, professional clusters directly determine the capacity of vocational education to serve national strategies and support regional industrial development. From the perspective of high-quality development, and grounded in the policy orientation and construction requirements of the new round of the "Double High Plan", this paper reviews the theory and policy background of vocational education evaluation, clarifies the internal logic between high-quality development and professional cluster construction, and constructs a scientific and systematic evaluation system for the effectiveness of professional cluster construction. The aim is to provide theoretical support and practical reference for institutions under the "Double High Plan" to enhance their intrinsic quality, and for education administrative departments to make precise decisions.

Keywords: High-quality Development; New Round of the "Double High Plan"; Professional Cluster; Effectiveness Evaluation; Evaluation System.

1. Introduction

Vocational education, as a type of education holding an "equally important position" alongside general education, serves as a key pillar for cultivating technical and skilled personnel and driving the transformation and upgrading of the national economy. The "Double High Plan" (officially the Plan for Building High-level Higher Vocational Schools and Special Professional Clusters with Chinese Characteristics), as the core lever for the high-quality development of vocational education, has achieved remarkable results since its implementation. The new round of the plan further emphasizes the core mission of serving national strategies, integrating into regional development, and promoting industrial upgrading. In January 2025, the Ministry of Education and the Ministry of Finance jointly issued the Notice on Implementing the Plan for Building High-level Higher Vocational Schools and Special Professional Clusters with Chinese Characteristics (2025–2029), which explicitly sets the goals of high-level institutional capacity and high-quality industry-education integration, with a focus on enhancing talent cultivation quality and social service capabilities [1]. Against this backdrop, evaluating the effectiveness of professional cluster construction, as a critical means of measuring construction quality and optimizing development pathways, has become an important topic urgently requiring resolution in the field of vocational education.

2. Theoretical Foundation and Logical Framework for Evaluating Professional Cluster Construction Effectiveness under the New Round of the "Double High Plan"

(1) Definition of Core Concepts

High-quality development of vocational education. High-quality development of vocational education refers to taking fostering virtue through education as the fundamental task and serving industrial development as the orientation, achieving quantitative growth and qualitative improvement in talent cultivation quality, depth of industry-education integration, technological innovation capacity, and social service contributions. It aims to form a distinctive and sustainable institutional landscape, ultimately achieving precise matching between technical and skilled personnel cultivation and the needs of economic and social development [2]. Professional cluster under the new round of the "Double High Plan." The professional cluster under the new round of the "Double High Plan" is a clustered specialty system led by core majors and integrating related supporting specialties, with the goal of serving national strategies and regional industrial development. Its core characteristics include: more precise service orientation, deeper industry-education integration, more prominent technological innovation, and broader international vision. It emphasizes identifying a clear position within the industrial chain and value chain, and achieving integrated cultivation of "post requirements, courses, skill competitions, and certifications"[3]. Construction effectiveness evaluation. Construction

effectiveness evaluation refers to the systematic assessment of the process and outcomes of professional cluster construction using scientific evaluation methods, covering goal attainment, task completion quality, and social contribution. It aims to objectively reflect construction effectiveness, identify existing problems, and optimize development pathways[4].

(2) Theoretical foundations

Stakeholder theory. Professional cluster construction involves multiple stakeholders, including institutions, enterprises, students, government, and industries. Institutions pursue improvements in educational quality; enterprises focus on the adaptability of talent supply; students prioritize competence development and employment prospects; and the government emphasizes policy implementation and resource efficiency. Based on this theory, core evaluation subjects can be identified, and the interests of all parties can be balanced to ensure the comprehensiveness and fairness of the evaluation system[5]. Quality management theory. Quality management theory emphasizes "quality as the core, process as the orientation, and continuous improvement," providing methodological support for the construction of the evaluation system. Integrating quality management concepts into professional cluster evaluation enables full-chain monitoring from construction process to outcome delivery, driving continuous optimization of professional cluster construction. Educational evaluation theory. Educational evaluation theory emphasizes "fostering virtue and adding value through empowerment," requiring evaluation to balance quantitative and qualitative assessment, outcomes and processes, and commonalities and individual characteristics. The evaluation of professional clusters under the new round of the "Double High Plan" must follow the laws of educational evaluation, break through the limitations of single-indicator evaluation, and construct a diversified and multi-dimensional evaluation system.

(3) Logical framework

Policy logic: Aligning with national strategies and local needs. The evaluation system must strictly adhere to policy requirements such as the National Vocational Education Reform Implementation Plan and the Overall Plan for Deepening the Reform of Educational Evaluation in the New Era, aligning with the core orientation of the new round of the "Double High Plan" to "serve national strategies and support industrial development." It should also incorporate the actual conditions of regional industrial development, such as those in Hebei Province, to ensure policy adaptability [6]. Practical logic: Grounding in the reality of professional cluster construction. The evaluation system must align with the practical characteristics of professional cluster construction, focusing on core areas such as talent cultivation, industry-education integration, technological innovation, and social services. It should pay attention to both improvements in hardware conditions and enhancements in intrinsic quality; both the completion of quantitative indicators and the refinement of qualitative outcomes, ensuring the operability and relevance of evaluation[7]. Development logic: Supporting high-quality and sustainable development. The evaluation system must be dynamic and developmental, adapting to the phased characteristics of the five-year construction cycle of the new round of the "Double High Plan" while also providing guidance for long-term development of professional clusters. It should both summarize typical experiences and identify weaknesses, promoting professional clusters to achieve "promoting construction through evaluation, promoting reform through evaluation, and promoting excellence through evaluation" [8].

3. Construction of the Evaluation System for Professional Cluster Construction Effectiveness under the New Round of the "Double High Plan" From the Perspective of High-Quality Development

(1) Principles of evaluation system construction

Quality-first principle. Focusing on the core requirements of high-quality development, this principle regards talent cultivation quality, industry-education integration quality, and social service quality as the core of evaluation, highlighting that "quality is the primary lifeline." Outcome-oriented principle. Balancing process and outcomes, this principle focuses on evaluating the actual effectiveness of construction results, such as graduate employment quality, enterprise satisfaction, and technological service benefits, to avoid emphasizing form over substance. Dynamic evaluation principle. Combined with the construction cycle of the new round of the "Double High Plan," this principle designs a mechanism combining phased evaluation with summative evaluation, and dynamically optimizes evaluation indicators according to industrial development and policy adjustments to ensure the timeliness of evaluation. Classified evaluation principle. Considering differences in the foundation of professional cluster construction across different types and levels of institutions, this principle sets both common and individualized indicators, balancing the unity and diversity of evaluation to avoid a one-size-fits-all approach.

(2) Design of the evaluation indicator system

Based on the above principles, and combined with theoretical analysis and empirical investigation, an evaluation system comprising 6 first-level indicators, 16 second-level indicators, and 36 third-level indicators has been constructed, as shown in Table 1.

(3) Evaluation standards and methods

The Analytic Hierarchy Process (AHP) was employed to determine indicator weights, with the following steps: (1) Constructing a judgment matrix: Twenty experts in vocational education, institutional administrators, and enterprise representatives were invited to conduct pairwise comparisons of the importance of each indicator, forming a judgment matrix. (2) Consistency check: The Consistency Index (CI) and Consistency Ratio (CR) were calculated to ensure the reasonableness of the judgment matrix (the check passes when $CR < 0.1$). (3) Weight calculation: The eigenvector method was used to compute the weights of each indicator, ultimately yielding the weight allocation scheme presented above.

Evaluation standards: Four grades are set—Excellent, Good, Qualified, and Unqualified. Quantitative and qualitative evaluation criteria for each third-level indicator are developed in light of industry standards, policy requirements, and institutional realities. For example, a proportion of "dual-qualified" teachers of ≥80% is rated Excellent, 60%–79% as Good, 50%–59% as Qualified, and <50% as Unqualified. Evaluation methods: A combined approach of "quantitative evaluation + qualitative evaluation" and "self-assessment + third-party assessment" is adopted.

Quantitative evaluation is achieved through data collection and statistical analysis; qualitative evaluation employs expert review, interviews, and survey methods. Self-assessment is conducted by the host institutions, while third-party assessment is commissioned to professional evaluation agencies, ensuring objectivity and impartiality of the results.

Table 1. Evaluation indicator system for professional cluster construction effectiveness

First-level Indicator	Weight	Second-level Indicator	Weight	Third-level Indicators
1. Ideological and Political Work Leadership	15%	Grassroots Party Building and Educational Function	5%	Innovation effectiveness of school-enterprise joint Party branch mechanisms; Exemplary role of "dual-leader" teachers; Frequency of educational activities organized by grassroots Party organizations
		Constructing a Grand Ideological and Political Education Landscape	10%	Completeness of the ideological and political education system for the professional cluster; Effectiveness of integrating red resources, model worker spirit, and craftsman spirit into teaching; Implementation quality of the education mechanism combining moral and technical cultivation with work-study integration
2. Social Needs Alignment	15%	Demand-oriented Mechanism Development	7%	Quality of demand analysis and feasibility reports for the professional cluster; Completeness of the dynamic adjustment mechanism for majors within the cluster; Effectiveness of major optimization aligned with new quality productive forces
		Cultivation Quality for In-demand Talent	8%	Precision of targeting high-skill positions; Matching rate between graduates' majors and employment positions; Smoothness of career development and promotion pathways
3. Foundational Support Conditions	15%	Internal Condition Assurance	8%	Construction level of "dual-qualified" teaching faculty and teaching innovation teams; Quality of practical teaching bases with realistic scenarios and advanced facilities; Completeness of the internal quality assurance system for the professional cluster
		External Resource Collaboration	7%	Effectiveness of stable cooperation with leading enterprises; Level of enterprise support through equipment donations and funding; Depth and frequency of industry participation in major development
4. Implementation Achievement	25%	Major Development	6%	Quality of school-enterprise co-developed talent cultivation plans; Depth of practice in Chinese-style apprenticeship; Scale of articulated training across secondary, higher vocational, and undergraduate levels
		Curriculum Development	5%	Effectiveness of constructing an integrated "post-course-competition-certificate" curriculum system; Quality of teaching task design based on real enterprise projects; Innovation effectiveness of digital teaching spaces and teaching models
		Teaching Material Development	4%	Number of integrated secondary-higher-undergraduate teaching materials and loose-leaf/workbook-style materials; Quality of digital teaching materials; Implementation of teaching material review and selection systems
		Faculty Development	5%	Effectiveness of teacher ethics and professional conduct development; Scale of recruiting part-time teachers such as industry professors and skill masters; Teacher participation rate in enterprise practice and construction level of teaching innovation teams
		Base Construction	5%	Open sharing effectiveness of industry-education integration practice centers; Quality of virtual simulation training bases and digital remote training platforms; Number of productive training projects developed and promoted
5. Policy and Institutional Assurance	10%	Multi-party Collaborative Assurance	5%	Local government policy support and funding investment; Resource aggregation and guidance effectiveness of industry organizations; Institutional capacity to raise funds through multiple channels
		Management System Development	5%	Completeness of project management and performance evaluation systems; Implementation of error-tolerance and correction mechanisms; Efficiency of fund utilization and quality of supervision
6. Outcomes and Contributions	20%	Industrial and Social Contribution	8%	Scale of high-skill personnel cultivation and training; Number of enterprise technological breakthroughs and research achievement commercialization; Effectiveness of social services such as rural revitalization and lifelong learning
		Vocational Education and International Contribution	6%	Participation in the development of vocational education standards; Scope of dissemination and promotion of institutional achievements; Effectiveness of international cooperative education and local skilled personnel cultivation
		Stakeholder Satisfaction	6%	Satisfaction of current students, graduates, and employers; Closed-loop management effectiveness of teacher and parent satisfaction surveys

4. Reflections on High-quality Professional Cluster Construction

(1) Focusing on core weaknesses and enhancing technological innovation capacity

First, school-enterprise collaborative innovation platforms should be established, jointly building technological R&D centers with regional leading enterprises to address industrial pain points and improve the efficiency of research achievement commercialization. Second, the innovation capacity of teaching faculty should be strengthened by implementing a "dual-qualified" teacher innovation capacity enhancement program, dispatching teachers to participate in enterprise technological R&D, and recruiting industry experts and research talent. Third, innovation incentive mechanisms should be improved by incorporating technological innovation achievements into teacher performance evaluation and professional title review, and establishing innovation reward funds to stimulate the innovation vitality of teachers

and students.

(2) Deepening industry-education integration and building a collaborative education landscape

First, long-term school-enterprise cooperation mechanisms should be strengthened by signing long-term cooperation agreements that clarify the rights and obligations of both parties in talent cultivation, training base construction, and technological R&D, so as to achieve shared benefits and shared risks. Second, integrated reform of "post-course-competition-certificate" should be promoted, jointly developing talent cultivation plans and curriculum systems based on enterprise post requirements, and integrating vocational skill certificate standards and skill competition content into the teaching process. Third, the depth of enterprise participation should be enhanced by inviting enterprises to deeply engage in professional cluster construction planning and teaching evaluation, increasing the proportion of enterprise part-time teachers, and jointly building industry colleges and training bases as practical training carriers.

(3) Evaluation mechanisms and strengthening the guiding role of evaluation

First, a dynamic evaluation system should be established, periodically optimizing evaluation indicators and standards according to industrial development and policy adjustments, and incorporating the latest industry standards and enterprise demand feedback. Second, digital evaluation should be promoted by building a digital platform for professional cluster construction effectiveness evaluation, enabling automated data collection, real-time analysis, and visual presentation to improve evaluation efficiency and precision. Third, the application of evaluation results should be strengthened by linking evaluation results with resource allocation and performance assessment, developing rectification plans targeting weaknesses, and forming a closed-loop mechanism of "evaluation–feedback–improvement."

(4) Strengthening support and consolidating the foundation for high-quality development

First, funding investment should be increased and the expenditure structure optimized, with priority given to core areas such as technological innovation, faculty development, and industry-education integration, in order to improve fund utilization efficiency. Second, the level of digitalization should be enhanced by building smart teaching and management platforms, integrating data resources from teaching, training, and research, and providing technical support for professional cluster construction and evaluation. Third, regional collaboration should be strengthened by building a provincial-level exchange platform for professional cluster construction, promoting typical experiences, and facilitating resource sharing and collaborative development among institutions, thereby leading the high-quality development of regional vocational education.

5. Conclusion

Grounded in the perspective of high-quality development and combined with the policy requirements of the new round of the "Double High Plan," this paper constructs an evaluation system for professional cluster construction effectiveness comprising six first-level indicators: ideological and political work leadership, social needs alignment, foundational support conditions, implementation achievement, policy and institutional assurance, and outcomes and contributions. The paper also proposes reflections on focusing on core weaknesses, deepening industry-education integration, improving evaluation mechanisms, and strengthening support, providing theoretical and practical support for the high-quality construction of professional clusters.

The new round of the "Double High Plan" involves a long construction cycle and broad scope, and evaluating professional cluster construction effectiveness is a dynamically optimizing process. Future research may validate the universality of the evaluation system across different provinces and types of "Double High Plan" institutions; and, by integrating technologies such as artificial intelligence and big data, develop intelligent evaluation tools to enhance the precision and efficiency of evaluation, providing stronger support for continuously optimizing construction pathways.

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