The Construction of a Talent Cultivation Quality Evaluation System in Universities under the Perspective of All-round Education

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Abstract: *In the context of the ongoing deepening development of higher education quality, the concept of talent cultivation in universities is undergoing a systemic transformation from being led by a single entity to a collaborative effort involving all members. All-round education, as an important path for the restructuring of educational logic in universities, drives profound changes in the talent cultivation process, from organizational structure to functional mechanisms, and places higher demands on quality evaluation systems. This paper, from the perspective of all-round education, systematically examines its connotative characteristics and structural logic, analyzes the evolutionary trends of university educational mechanisms, and, based on this, proposes a multidimensional indicator system for evaluating talent cultivation quality. The focus is on constructing a hierarchical indicator structure centered on "basic literacy—core competence—extended transferability," emphasizing the coupling mechanisms and dynamic adjustment functions between the indicators. At the same time, the paper designs an adaptive, feedback-oriented, and upgradable evaluation model, focusing on the pathways for full participation, closed-loop operational mechanisms, and systemic evolution strategies, aiming to promote a paradigm shift in universities from static outcome evaluation to dynamic development support. The results provide theoretical and methodological support for constructing a collaborative, efficient, structurally stable, and sustainably evolving talent cultivation quality evaluation system in universities.*

Keywords: *all-round education; university education; talent cultivation; quality evaluation; indicator system; system optimization*

Introduction

Currently, the objectives of talent cultivation in universities are expanding, transitioning from a focus on knowledge acquisition to the enhancement of comprehensive literacy and the generation of diverse capabilities. This shift demands a structural reconfiguration of educational mechanisms and evaluation systems. In this developmental trend, the concept of all-round education is increasingly demonstrating its systemic advantages, emphasizing multi-agent collaboration, full-process involvement, and the integration of multiple dimensions, becoming an important driving force in the evolution of the endogenous mechanisms of higher education. In line with this, traditional evaluation systems generally suffer from insufficient stakeholder participation, fragmented indicator structures, and delayed feedback mechanisms, making it difficult to effectively reflect the true quality of students' holistic development. Therefore, it is imperative to reconstruct the theoretical foundation and systematic path of talent cultivation quality evaluation from the perspective of all-round education, achieving a transition from a result-oriented assessment model to a dynamic model focused on development support. This paper aims to explore how to build a talent cultivation quality evaluation system for universities, based on multi-role coordination, with competence generation as the core and system regulation as the mechanism, to create a system with logical closed loops and evolutionary capacity, providing methodological references and structural models for the innovation of educational evaluation paradigms.

1. Systemic Shift in the Talent Cultivation Mechanism in Universities under the Concept of All-Round Education

1.1 Evolution of the Connotation and Core Characteristics of All-Round Education

All-round education, as an important expansion path for university educational philosophy, emphasizes the introduction of a multi-agent collaborative system mechanism in the talent cultivation system, aiming to transition from a "single-function education" model to a "multi-role integrated education" paradigm. Its fundamental connotation is reflected in the idea that all participants in university operations and management should take on educational roles in different dimensions, with educational activities running through the entire process, space, and stages of student development. This concept centers on a collaborative logic, breaking the structural inertia of the traditional separation between teaching activities and management services, and promoting the integration of curriculum teaching, academic guidance, administrative support, and campus culture in terms of functional goals and behavioral pathways. All-round education not only expands the range of participation of educational entities but also enhances the overall coordination and adaptability of the educational system in resource allocation, educational pacing, and strategy selection[1].

In the dimension of system construction, all-round education emphasizes driving educational effectiveness through collaborative mechanisms, advancing the evolution from a linear, supply-driven educational structure to a network-coupled ecological structure. This philosophy focuses not only on the accumulation of educational power but also on goal coordination, behavioral linkage, and evaluation coupling in organizational relationships, thus achieving structural closure and functional overlay at the system level. In practical operation, various roles such as teachers, counselors, and administrators must engage in nested educational behaviors around a unified developmental goal, utilizing digital platforms, shared mechanisms, and tracking feedback for dynamic scheduling. Through this system transformation based on the pathway of "structural aggregation—functional collaboration—mechanism integration," universities can construct a new educational system characterized by multi-point collaboration, structural flexibility, and high regulatory efficiency, providing multidimensional support and dynamic guidance for students' overall development.

1.2 Structural Transformation of the Talent Cultivation Logic in Universities

As educational functions expand from "knowledge transmission" to "competence shaping—character development—value guidance," the logic of talent cultivation in universities is undergoing a structural transformation from a "teacher-centered" to a "student-centered" model. The traditional boundaries between education and teaching are increasingly weakened, and the educational process is gradually presenting characteristics of goal aggregation, pathway intersection, and resource sharing, forming a composite system logic of "teaching—management—service—guidance." The restructuring of the educational logic not only changes the organizational form of educational activities but also reshapes the evaluation standards and regulatory pathways for educational behavior, allowing student development to no longer rely on a single teaching module but to achieve both stage-wise transitions and long-term development in a multi-dimensional support structure. This transformation essentially transitions from a linear educational model to a complex adaptive system, emphasizing system collaboration and process adaptation in educational functions.

To support this structural transformation, universities need to redesign the task structure and organizational logic of the education system, establishing resource scheduling mechanisms and goal mapping mechanisms between different educational units, thus promoting a system operation logic of "role coupling—task translation—process interconnection." The construction of a systematic educational platform should be student-development-oriented, incorporating curriculum design, space configuration, service resources, and cultural construction into a unified educational structure framework, leveraging information technology to enable the digital identification, process tracking, and intelligent intervention of educational behaviors. This reshaping of educational logic, based on goal isomorphism and pathway collaboration, helps universities achieve a dynamic balance between resource integration and structural stability, enhancing the system's adaptive regulation capacity and sustainable evolution potential in response to changes in the educational ecosystem[2].

1.3 Constituent Elements and Functional Interaction in All-Round Education Collaboration

In the all-round education framework, the composition of educational elements exhibits

characteristics of systematization, networking, and structural nesting. Educational subjects include not only direct participants in classroom teaching but also a variety of supporting roles such as teaching administrators, academic assistants, psychological counselors, life mentors, and campus culture builders. These elements form a multi-layered structure of the educational network through functional collaboration and path nesting. Different roles play differentiated educational functions around the developmental needs of students, offering professional support in areas such as cognitive construction, emotional regulation, value guidance, and behavioral shaping. The core of an efficient collaboration mechanism lies in achieving the organic complementarity of role functions and the alignment of behavioral strategies with goals, constructing a systematic educational map characterized by "clear responsibilities—interconnected pathways—coexisting goals."

Achieving efficient interaction among educational elements requires leveraging technological platforms and data systems to realize the information transparency and precision strategies of educational behaviors. Through intelligent feedback systems and dynamic evaluation mechanisms, all educational roles can track students' learning statuses, behavioral trajectories, and developmental potential in real time, responding promptly and intervening appropriately at critical junctures, thereby enhancing the predictive capacity and regulatory efficiency of the educational system. The platform mechanism not only supports the efficient circulation of educational resources but also provides the underlying logical support for the consistency of educational strategies and the synergy of intervention behaviors. Through openness in mechanism design, flexibility in regulation, and dynamism in goal construction, the educational system can achieve organizational coordination, pathway integration, and functional resonance in a changing educational ecosystem, ultimately building a comprehensive, logically closed, and efficiently operating collaborative educational system.

2. Construction of a Multidimensional Indicator System for Talent Cultivation Quality in Universities

2.1 Redefinition of Quality Connotation and Logical Division of Evaluation Dimensions

Guided by the concept of all-round education, the cognitive dimension of talent cultivation quality has shifted from being outcome-oriented to development-oriented. Traditional static evaluation indicators, such as academic performance and graduation rates, can no longer comprehensively reflect the true growth state of students. The goals of university education focus not only on the acquisition of knowledge and the application of skills but also on the process of ability development and the sustainable potential of individuals. Therefore, it is necessary to systematically redefine the concept of "quality," endowing it with dynamic, developmental, holistic, and ecological characteristics. The quality of talent cultivation in universities should be framed within a composite structure of "knowledge—competence—literacy," highlighting the coordinated evolution of students in cognitive, skill, and value dimensions, and emphasizing the integrated development of academic performance and social adaptability, reflecting the comprehensive educational achievements of the system[3].

To achieve precise evaluation of talent cultivation quality, a multidimensional evaluation dimension system with internal logical consistency and external adaptability must be constructed. From a vertical structure perspective, the evaluation should cover the complete development chain, from basic literacy to professional competence, and from domain transferability to support student advancement from learning—application—innovation. From a horizontal dimension, multiple aspects, such as cognitive ability, behavioral performance, emotional attitude, and value orientation, should be integrated to ensure the evaluation results provide a complete depiction of individual growth. On this basis, process-oriented and generative indicators should be introduced to capture dynamic information such as learning investment, thinking patterns, and growth trajectories, avoiding static indicators that obscure real changes in abilities, and ensuring that the evaluation system serves the optimization of teaching and student development through feedback, guidance, and motivational functions.

2.2 Logical Structure and Hierarchical Framework of Key Indicators

The construction of the talent cultivation quality evaluation indicator system in universities must follow a logical path that combines systematization and layering, ensuring the functional independence of each indicator while enhancing the logical nesting between structures. Under the concept of all-round education, the evaluation indicators should be divided into three levels based on the phased characteristics of student development and the laws of ability formation: basic literacy layer, core

competence layer, and expanded transferability layer. The basic level emphasizes the acquisition of general knowledge, the formation of learning motivation, and psychological adjustment ability, laying the cognitive and emotional foundation for subsequent development; the intermediate level focuses on the integration and application of professional knowledge, problem-solving skills, and the construction of critical thinking, marking the key phase for students to transition into professional competencies; the advanced level focuses on the ability to integrate knowledge across fields, the generation of innovation awareness, and the embodiment of social values, serving as the outward manifestation of educational achievements.

In the system design process, the functional boundaries and logical mappings of the indicators must be clearly defined, with dynamic pathways that are reasonable in content and clear in direction established both within and between layers. The indicators at each level should be observable, operable, and traceable, ensuring that the evaluation tools have efficient feedback and interpretative capabilities. Moreover, the system design should maintain openness and adaptability, supporting different disciplines and types of universities in customizing indicators and making structural adjustments according to their characteristics. The evaluation system should move away from the traditional tendency of relying solely on "final achievements," incorporating multidimensional process variables in the mainstream evaluation indicators, such as learning participation, ability growth rate, and interdisciplinary learning behaviors. This will construct a "process—result—potential" three-dimensional evaluation matrix, providing data support and strategic foundation for scientific monitoring and dynamic management of talent cultivation quality[4].

2.3 Coupling Mechanism and Dynamic Weight Design Between Indicators

In the highly complex educational ecosystem, the quality evaluation indicators exhibit nonlinear, multi-path, and dynamic coupling characteristics. The evaluation dimensions are not independent but interact in multiple ways during different stages of student development, forming a multi-dimensional functional network structure. The essence of indicator coupling lies in the systematic manifestation of ability formation logic, such as the nested relationship between cognitive understanding and problem-solving ability, the causal drive between academic thinking and innovative performance, and the indirect influence of emotional regulation ability on academic performance. Constructing a coupling mechanism between indicators helps to reveal key nodes in student development, core paths for ability transitions, and optimal moments for educational interventions, thereby achieving deep awareness and precise responses to individual growth patterns.

Based on this coupling logic, the evaluation system urgently needs to break away from static weight allocation mechanisms and establish a data-driven dynamic weighting model. Dynamic weights can be automatically optimized based on the growth trajectories, goal adjustments, and feedback results of students at different developmental stages, allowing the evaluation focus to dynamically shift in response to changes in the ability structure. For example, during the early stages of learning, the system can assign higher weight to basic literacy to ensure the stable formation of learning habits and cognitive structures; in later stages, the evaluation of core competencies and cross-domain integration abilities should gradually be reinforced. By integrating learning analytics technologies and artificial intelligence tools, real-time adjustments and personalized allocation of indicator weights can be achieved, enabling the evaluation system to have adaptive regulation capabilities and high-sensitivity response mechanisms, enhancing its adaptability and intelligence in addressing individual differences and the complexity of the educational environment.

3. Evaluation Model Construction and System Optimization under the Orientation of All-Round Education

3.1 Design of Evaluation Pathways within the Mechanism of All-Round Participation

Under the orientation of all-round education, the evaluation of talent cultivation quality in universities must move beyond the limitations of a single evaluator and narrow dimensions, and instead establish evaluation pathways based on multi-role collaboration. Teachers, counselors, academic administrators, and academic support staff should undertake complementary functions within the evaluation system, jointly engaging in the diagnosis, feedback, and optimization of students' development processes. In designing evaluation pathways, horizontal coordination and vertical integration should be emphasized to form a networked operational structure of “multi-agent

participation—multi-dimensional indicator embedding—multi-node feedback," ensuring that evaluation activities cover the entire process of student learning, development, and transformation [5].

The systematic construction of evaluation pathways should rely on information platforms and data models, integrating quantitative analysis with qualitative judgment, and achieving multi-source integration of behavioral data, learning data, and interaction data. Throughout this process, contextual sensitivity and individual differences should be taken seriously, enabling each evaluation node to possess both adjustability and responsiveness. By embedding contextualized and time-sensitive evaluation strategies, educational and assessment activities can be deeply integrated, ensuring that evaluation behaviors function as key triggers for students' cognitive construction, value formation, and competency development. At the same time, in line with the principle of all-round participation, a role-driven evaluation responsibility chain should be established, clearly defining the rights, responsibilities, and data interfaces of all participants, thus enhancing the transparency and coordination of the system's operation.

3.2 Closed-Loop Operation Model and Dynamic Adjustment Mechanism for Quality Evaluation

The evaluation system for talent cultivation quality in universities must operate as a closed-loop to ensure that evaluation results effectively feed back into the educational process, achieving systemic closure from data collection and analysis to strategic response. The closed-loop model follows the basic logical structure of "goal setting—process monitoring—outcome evaluation—system revision," emphasizing real-time capture of process data and effective transformation of outcome data. On this basis, through continuous data feedback and responsive mechanisms, an evaluation decision support system centered on student development can be established, ensuring sustainability and pathway adjustability in quality improvement.

The dynamic adjustment mechanism serves as the key support for the system's flexible response to changing educational contexts. Driven by data logic and integrating learning trajectory analysis, behavioral pattern recognition, and competence growth models, it enables dynamic profiling of students' development states and adjusts evaluation strategies and weight allocations accordingly. The system should be capable of automatically identifying anomalies and conducting targeted interventions, facilitating the shift from static evaluation to dynamic regulation. To ensure accuracy in adjustment, a subsystem focusing on learning diagnostics, risk warnings, and strategy recommendations should be constructed, advancing the evaluation system from outcome presentation to developmental intervention and supporting the effective implementation of personalized education and differentiated support strategies.

3.3 Evolution Strategies for a Continuously Improving Evaluation System

The construction of a talent cultivation quality evaluation system should not remain at the level of structural completion but must possess the capacity for continuous evolution and dynamic upgrading. System evolution involves not only the expansion of evaluation content and indicators but also the ongoing optimization of the technical support environment, data processing methods, and logic control mechanisms. Through iterative updates and structural redesign, the evaluation system can adapt to fundamental changes brought about by shifts in educational philosophy, talent demands, and developments in cognitive science, transitioning from structural stability to functional growth. Evolution strategies should emphasize system adaptability, openness, and scalability to support multi-context transitions and cross-cycle adjustments in long-term operation [6].

In designing evolutionary pathways, the integration of artificial intelligence and learning analytics technologies can enhance the system's precision in identifying student behavioral features, developmental trends, and competence transitions. The system's open architecture should accommodate the flexible embedding of new roles, tasks, and scenarios, enabling the decoupling and recombination of multifunctional modules. By continuously monitoring individual and group growth trajectories, the system can optimize indicator configurations and feedback strategies, ultimately transforming the evaluation system into an intrinsic engine driving innovation in educational mechanisms. The core of system evolution lies in establishing an evaluative ecosystem that is capable of growth, adaptation, and feedback, ensuring that quality evaluation effectively supports the entire process of high-quality talent cultivation.

Conclusion

The construction of a talent cultivation quality evaluation system under the concept of all-round education represents a systematic restructuring of the traditional educational logic, ability structure, and evaluation methods in universities. The research addresses three key aspects: educational mechanisms, indicator systems, and model optimization. It proposes an evaluation pathway based on multidimensional collaboration, multi-level construction, and whole-process regulation, emphasizing the evaluation feedback loop under multi-agent interaction and the dynamic weight mechanism driven by data. This approach effectively enhances the feedback efficiency and adaptability of the system. In terms of model construction, the study clarifies the goal-orientation, process regulation, and outcome applicability of evaluation logic, providing theoretical support for the development of education structures toward personalization, flexibility, and precision. Future research may further explore the integration paths of big data and artificial intelligence technologies in areas such as intelligent assessment, real-time diagnosis, and individual profiling, and investigate the transferability and universality of the evaluation system in multi-disciplinary and multi-type educational settings, continuously driving the intelligent evolution and structural leap of the high-quality talent cultivation system.

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