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Research on the Construction of the Quality Assurance System of the Applied University Based on the OBE: Taking Liuzhou Institute of Technology as an Example

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ABSTRACT

Against the strategic backdrop of accelerating the construction of a strong education nation and deepening the classified development of higher education, the establishment of a scientific, systematic, and efficient teaching quality assurance system in applied undergraduate universities is crucial for achieving connotative development and enhancing the alignment between talent cultivation and societal demands. Guided by the Outcome-Based Education (OBE) philosophy, this paper integrates a "student-centered, continuous improvement" quality culture, a teaching-focused systematic design, and a multi-stakeholder collaborative evaluation mechanism to construct a closed-loop quality assurance system model encompassing conceptual guidance, systematic operation, resource support, monitoring feedback, and continuous improvement. Drawing on the operational practices of Liuzhou Institute of Technology, this study elaborates on the specific construction pathways and operational mechanisms of the system in terms of goal setting, process implementation, multi-dimensional evaluation, and intelligent-driven approaches. The aim is to provide a replicable theoretical framework and practical solutions for similar applied universities, thereby promoting the continuous enhancement of talent cultivation quality.

KEYWORDS

OBE concept; Application-oriented universities; Teaching quality assurance system; Multi-dimensional evaluation; Continuous improvement

1 Introduction

China's higher education has now entered the massification phase. As the mainstay in cultivating high-quality applied talents, applied undergraduate institutions now account for over half of the total, with their teaching quality directly impacting the implementation of the national education strategy and regional socio-economic development. However, many applied universities still face practical challenges such as unclear goal positioning, shallow industry-education integration, fragmented quality assurance, and inadequate continuous improvement mechanisms. The Ministry of Education's new round of undergraduate teaching evaluation emphasizes the OBE (Outcomes-Based Education) philosophy—student-centered, outcome-oriented, and continuous improvement—to guide the construction of internal quality assurance systems in higher education institutions, providing a clear direction for applied universities to overcome development bottlenecks.

2 Core Concepts and Theoretical Foundations: The Logic of System Construction Under OBE Guidance

To build a teaching quality assurance system for application-oriented universities that meets the demands of the new era, it is essential to first establish clear core concepts and a solid theoretical foundation. The OBE philosophy and its derivative systems management theory collectively form the logical cornerstone of this system.

2.1 The Core Connotation and Principles of OBE

The OBE philosophy is built on three core principles: student-centered learning, outcome-based assessment, and continuous improvement.

(1) Student-Centered Approach: This philosophy positions students and their learning outcomes at the core of all educational activities. All resource allocation, institutional design, teaching processes, and evaluation feedback should fundamentally aim to promote the comprehensive development of students' knowledge, skills, and qualities. This requires shifting from the traditional focus on "what to teach" to emphasizing "what students have learned" and "what they can do."

(2) Outcome-based education, also known as results-oriented education, emphasizes starting from societal and industry expectations for students' graduation competencies (i.e., graduation requirements). It involves designing talent development objectives in reverse and constructing supporting curriculum systems and teaching content. The design of training programs, course syllabi, and teaching activities must clearly target and effectively support the ultimate "learning

outcomes".

(3) Continuous Improvement: Establish a routine, evidence-based improvement mechanism. By systematically collecting multidimensional data from teaching processes, learning outcomes, and stakeholder feedback, conduct diagnostic analysis and apply the results to optimize and adjust various aspects such as training objectives, graduation requirements, course instruction, and resource allocation. This forms a closed-loop system of "evaluation-feedback-improvement," driving quality to spiral upward.

2.2 System Theory and Total Quality Management

The teaching quality assurance system is inherently a complex framework. From a systems theory perspective, it requires a holistic understanding of its interconnectedness, hierarchical structure, and dynamic nature. This system is not merely a collection of isolated regulations, but an organic whole where subsystems—decision-making, standardization, implementation, monitoring, evaluation, and improvement—interact and reinforce each other. Drawing on Total Quality Management (TQM) principles, it emphasizes the "all-staff, whole-process, and all-round" approach to quality assurance. This necessitates the active participation of multiple stakeholders, including school administrators, faculty, students, employers, and alumni. It also demands comprehensive oversight of the entire talent development chain, from enrollment to employment, along with robust support for teaching facilities, faculty resources, and administrative services.

2.3 Multiple Intelligences and Collaborative Governance Theory

The evaluation of applied talents must transcend singular academic criteria by incorporating the theory of multiple intelligences, emphasizing students' diverse competencies in tackling complex engineering challenges, teamwork, and innovative practices. This necessitates a multifaceted evaluation framework. Concurrently, the theory of collaborative governance underscores the need to dismantle the administrative-dominated model in modern higher education governance. Instead, it advocates for a participatory governance structure where stakeholders—including government, industry, academia, faculty, and students—share responsibilities. Such an approach is pivotal for ensuring dynamic alignment between talent cultivation and societal demands.

In conclusion, the teaching quality assurance system of applied universities based on OBE philosophy is a complex system engineering which is fundamentally oriented to the development results of students, methodologically framed by systematic thinking and total quality management, and implemented with multi-dimensional evaluation and collaborative governance.

3 Overall Framework of System Construction: A Closed-loop Coupling Model

Based on the above theories, this paper constructs a five-dimensional closed-loop coupled teaching quality assurance system framework applicable to applied universities, which includes "conceptual guidance, systematic operation, conditional support, monitoring feedback, and continuous improvement". The framework emphasizes the organic connection and dynamic circulation of each component.

3.1 Ideological Guidance Layer: Cultivation of Quality Culture

The effective operation of the system is deeply rooted in a quality culture embraced by all members. Applied universities should cultivate a quality culture centered on "self-awareness, self-reflection, self-discipline, self-inspection, and self-correction." Through continuous promotion, training, and seminars, the OBE (Outcomes-Based Education) philosophy should be internalized as a shared value and voluntary action among all faculty and staff. Leadership must set an example by firmly establishing teaching as the core focus; management should enhance service awareness; teachers must deeply understand outcomes-oriented instructional design; and students must clearly recognize their primary responsibility for learning. This cultural atmosphere serves as the spiritual driving force that brings the system to life.

3.2 System Operation Layer: Design and Implementation Centered on Teaching

This constitutes the core operational layer of the system, rigorously adhering to OBE's' reverse design, forward construction' methodology.

(1) Target System: Based on regional industrial development needs and the school's educational positioning, the overall objectives for talent cultivation in each discipline are established. These overarching goals are then broken down into specific, measurable, and assessable graduation requirements (typically corresponding to the 12 criteria or similar

competency indicators of engineering accreditation). Each graduation requirement is further refined into more detailed indicator points.

(2) Standard System: Establish quality standards covering the entire teaching process and all major stages. These include standards for program development, curriculum design, classroom teaching quality, laboratory and practical training, graduation projects (theses), faculty development, and teaching facilities. These standards serve as the fundamental basis for implementing teaching and conducting evaluations.

(3) Implementation System: Conduct specific teaching activities based on training objectives and standards. The syllabus must clearly demonstrate how course objectives support graduation requirement indicators. Teaching content and methods should emphasize practicality and cutting-edge relevance. Practical components (including experiments, internships, course designs, and project-based learning) must constitute a substantial portion of the curriculum while ensuring quality. Actively promote industry-education integration and school-enterprise collaboration by incorporating real-world projects, case studies, and technologies into classroom instruction.

3.3 Supportive Conditions: Resources and Organizational Guarantees

It provides the necessary "people, finance, material" and organization guarantee for the operation of the teaching system.

(1) Organizational Support: Establish a two-tier quality assurance organizational structure at both university and college levels with clearly defined responsibilities. At the university level, this includes the Teaching Guidance Committee (for decision-making consultation), the Academic Affairs Office (for management and implementation), and the Teaching Quality Monitoring and Evaluation Center (for specialized monitoring and assessment). At the college level, the primary responsibility is implemented through the establishment of college-level teaching supervision teams, program directors, and course teams.

(2) Resource Assurance: Establish a dual-qualified faculty team with both profound theoretical expertise and extensive practical experience; ensure adequate and continuously growing teaching funding; develop advanced laboratories, training bases, smart classrooms, and library information resources; collaborate with industries and enterprises to co-build and share practical platforms.

3.4 Monitoring Feedback Layer: Multi-Party Collaborative Evaluation Network

Establish a regular and multi-dimensional teaching quality information collection and evaluation mechanism.

(1) Internal monitoring: including routine teaching inspections (beginning, mid-term, and end-of-term), leadership-led classroom observations, school-level and college-level teaching supervision, peer reviews, student teaching information feedback, student evaluations of teaching, and teacher evaluations of learning. The focus is on monitoring the standardization of the teaching process and the achievement of objectives.

(2) External Evaluation: Engage industry experts in curriculum design, graduation project reviews, and teaching assessments; establish graduate tracking mechanisms and employer satisfaction surveys; actively participate in external quality evaluations such as professional accreditation and audit assessments. External feedback serves as the key benchmark for assessing the social adaptability of talent cultivation.

(3) Specialized Evaluation: Regularly conduct data-driven assessments including course objective attainment, graduation requirement fulfillment, and training goal rationality evaluation to provide precise evidence for continuous improvement.

3.5 Continuous Improvement Layer: Closed-loop Drive and Intelligent Empowerment

This demonstrates the system's vitality. All information (data, feedback, and evaluation results) from the monitoring feedback layer undergo systematic analysis to identify existing issues and improvement opportunities. Improvement measures must be assigned to specific responsible units and individuals, with their effectiveness tracked and validated. This process should form an institutionalized, procedural closed loop. Meanwhile, leveraging technologies like big data and artificial intelligence, we will establish a teaching quality monitoring platform to achieve automated data collection, intelligent analysis, and predictive alerts, thereby enhancing the timeliness and scientific rigor of improvements.

4 Exploration of Practice Path: Taking Liuzhou Institute of Technology as an Example

Liuzhou Institute of Technology, an applied engineering university rooted in Liuzhou, serving Guangxi and facing the nation, has actively explored the construction of a teaching quality assurance system under the OBE concept in the

process of cultivating talents to meet the demands of regional industries such as automotive, machinery, and intelligent manufacturing.

4.1 Strengthen the Consensus of OBE Concept and Cultivate the Characteristic Quality Culture

Through multi-tiered and diverse outreach initiatives, the school has deepened its understanding of the OBE philosophy across all academic units. Annually, it hosts the "Teaching Quality Culture Month" featuring OBE workshops, pedagogical salons, and exemplary teaching case studies. The OBE framework has been incorporated into mandatory induction training for new faculty and included in performance evaluations for teaching administrators at all levels. The institution promotes the cultivation of "engineerly competencies," embedding the spirit of craftsmanship—marked by meticulousness, teamwork, and innovation—into its institutional ethos, teaching practices, and learning culture. This has fostered a quality-oriented environment that prioritizes hands-on experience and excellence.

4.2 Reconstructing the Teaching Operation System of "Output-Oriented"

(1) Reverse Design Training Program: Each discipline conducts large-scale industry surveys and graduate follow-up studies every 2-3 years, inviting corporate experts to participate in talent development plan revision meetings, ensuring alignment between training objectives and regional industrial demands. For instance, the Vehicle Engineering program closely aligns with Liuzhou Auto City's development, integrating cutting-edge knowledge and skill requirements in new energy vehicle technology and intelligent connected vehicles into its training objectives and curriculum system.

(2) Refinement of Standards and Syllabi: The university has established the "Quality Standards for Key Teaching Components," mandating that all course syllabi explicitly outline course objectives, their alignment with graduation requirement indicators, assessment methods, and grading criteria. It has implemented a "project-based, modular" curriculum reform, significantly increasing the proportion of comprehensive and design-oriented experiments and course projects in specialized courses.

(3) Enhancing industry-education integration: Through deep collaboration with local industry leaders including SAIC-GM-Wuling, Liugong Group, and Dongfeng Liuzhou Automobile, we have established industry-academia partnerships to co-develop industrial colleges, customized training programs, and engineer bootcamps. Graduation projects are selected from real-world corporate challenges and technical issues, supported by a dual-mentor system combining academic and industry expertise. This initiative has resulted in the creation of multiple on-campus training bases and industry-academia joint laboratories that closely align with practical production needs.

4.3 Constructing a "Multi-Party Collaboration" Evaluation and Monitoring Network

(1) Enhanced internal supervision and evaluation: A two-tiered teaching supervision system at both institutional and departmental levels has been established, shifting the focus from "teaching supervision" to a balanced approach encompassing "teaching supervision, learning supervision, and management supervision," with particular emphasis on student learning outcomes. The online student teaching evaluation, teacher learning evaluation, and regular feedback system by student information officers have been refined.

(2) Implementation of external evaluation mechanisms: A Professional Development Advisory Committee was established, comprising industry experts and alumni representatives. Regular surveys are conducted among partner enterprises and graduate employers to gather feedback on graduates 'competencies and the school's training programs. Employer satisfaction serves as a key reference for dynamic adjustments to academic programs.

(3) Implementation of data-driven achievement evaluation: All core professional courses are required to conduct quantitative analysis of course objective attainment at the end of each semester and submit analytical reports. The program conducts annual comprehensive evaluations of graduation requirement fulfillment. These evaluation results are directly applied to curriculum improvement and optimization of professional training programs.

4.4 Establish a "Data-driven" Continuous Improvement Closed Loop

The university is actively developing an "Information Platform for Teaching Quality Monitoring and Continuous Improvement. " This platform integrates multi-source data from academic systems, teaching evaluation systems, supervisory feedback, employment statistics, and third-party surveys. Through visual data presentation and intelligent analysis, it helps colleges and departments quickly identify teaching weaknesses (e. g., consistently low course goal achievement rates or insufficient support for graduation requirements). The platform automatically alerts responsible teachers and teaching administrators about issues, tracks the formulation and implementation of improvement measures, and establishes an online closed-loop management system covering "problem identification, analysis, resolution, and

effectiveness verification." This enhances the efficiency and precision of quality improvement efforts.

5 Conclusion

Looking ahead, as industrial transformation accelerates and educational digitalization deepens, applied universities must continue exploring quality assurance systems in three key areas: First, establishing a more robust industry-education collaboration mechanism to dynamically align industry standards with teaching benchmarks. Second, implementing intelligent learning analytics and personalized interventions throughout the educational process. Third, adopting open international quality benchmarks to enhance global competitiveness in talent development. Only through continuous innovation and iterative improvements can applied universities strengthen the foundation of educational quality, fulfilling their mission to serve national education development and regional socioeconomic advancement.

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References

[1] Zheng Lifang, Ma Fei, Kang Yiting, et al. Construction and Practice of Professional Teaching Quality Assurance System under the Background of Engineering Education Accreditation [J]. China Metallurgical Education, 2026, (01):27-31.

[2] Wu Jiening. Strategies for Improving Teaching Quality Assurance Systems in University Schools under the "Double First-Class" Initiative: A Case Study of Southwest University's School of Artificial Intelligence [J]. Science and Technology Wind, 2026, (03):159-161.

[3] Wang Herui. Research on the Construction of Teaching Quality Assurance System in Newly Established Applied Undergraduate Universities under the Background of Accelerating the Building of an Education Powerhouse [J]. Gansu Education Research, 2025, (24):20-24.

[4] Wang Chunli. Research on the Construction of an Educational Quality Assurance System in Applied Universities [J]. Journal of Jilin Institute of Education, 2025,41(12):1-7.

[5] Wang Herui. Innovative Framework for Quality Assurance System in Applied Undergraduate Universities under the Education Power Strategy: A Dual-Dimensional Restructuring Based on Collaborative Governance and Intelligent Drive [J]. Journal of Northwest Institute of Adult Education, 2025, (06):107-112.