

Exploring the Pathways to Improve the Effectiveness of Teaching Supervision in Universities from the Perspective of Total Quality Management

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Abstract—Teaching supervision is the supervision, evaluation and guidance of the educational teaching process and talent cultivation quality by teaching quality managers. As a core component and significant measure in the university quality assurance system, currently, there are a series of problems in university supervision work, such as an imperfect supervision mechanism, a lagging supervision concept, a single supervision method and an unbalanced structure of the supervision team, which have restricted the construction of the university quality assurance system. From the perspective of Total Quality Management (TQM), this paper first explores improvements in teaching supervision through four aspects: refining the teaching supervision system, updating supervisory concepts, innovating supervision methods, and building a diverse supervision team. These measures aim to enhance the working model of teaching supervision in higher education institutions, promote the optimization and upgrading of the quality assurance system, and support high-quality, connotative development. Furthermore, to further improve the effectiveness of supervisory teachers, evaluation indicators and criteria for “Exemplary Teaching Supervisors” have been developed across five dimensions: “Educational Theory Knowledge and Teaching Method Application”, “Effectiveness of Teaching Supervision”, “Professional Competence”, “Development and Innovation”, and “Recognition from Peers and Students”.

Keywords—teaching supervision, Total Quality Management (TQM), higher education, teaching quality improvement

I. INTRODUCTION

In recent years, improving the quality of higher education has become a global concern. With the rapid expansion of higher education and rising societal expectations, universities face increasing pressure to

improve teaching quality and achieve sustainable development. In this context, effective teaching supervision has emerged as a critical component of internal quality assurance systems in higher education institutions.

In China, policies such as the “Double First-Class” initiative and the new round of undergraduate teaching review and assessment have further emphasized the importance of strengthening teaching quality monitoring and evaluation. As a key mechanism, teaching supervision plays a vital role in improving teaching quality and ensuring talent cultivation. However, despite continuous policy support and institutional exploration, current teaching supervision practices in universities still face several challenges, including imperfect supervision mechanisms, outdated supervisory concepts, limited methodological innovation, and an imbalanced structure of supervision teams.

In recent years, the rapid development of Artificial Intelligence (AI) and data-driven technologies has provided new perspectives for educational assessment and teacher development [1]. AI-based approaches, such as learning analytics and intelligent evaluation systems, enable real-time monitoring of teaching effectiveness and more objective and precise feedback [2]. Meanwhile, data-driven methods support evidence-based decision-making and personalized teacher development [3].

The concept of “Total Quality Management (TQM)” was initially proposed by Feigenbaum of General Electric Company and quality management expert Juran, emphasizing comprehensive organization-wide, process-oriented, and all-staff-involved management and control over product quality. Integrating TQM into university supervision systems can assist higher education institutions in enhancing the holistic quality of education. The operational workflow of teaching supervision in higher education institutions under the TQM framework is structured as shown in Fig. 1.

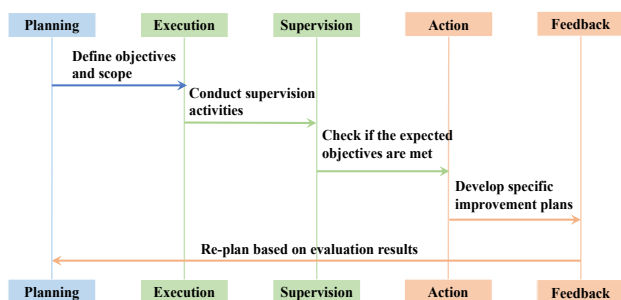


Fig. 1. The operational workflow of teaching supervision in higher education institutions under the TQM framework.

However, existing studies on teaching supervision primarily focus on policy interpretation or fragmented practical experiences, lacking a systematic analytical framework that integrates supervision mechanisms, concepts, methods, and team construction from the perspective of TQM. Moreover, the integration of emerging technologies, such as AI and data-driven approaches, with traditional teaching supervision systems remains insufficient, which limits the effectiveness and scalability of current practices.

Therefore, this paper aims to systematically analyze the existing problems in university teaching supervision from the perspective of TQM and propose targeted improvement strategies. Specifically, this study focuses on improving the supervision mechanism, updating supervision concepts, innovating supervision methods, and constructing a diversified supervision team, so as to promote the construction of the quality assurance system in higher education institutions and achieve high-quality development of teaching supervision.

II. THE VALUE CONNOTATION OF TEACHING SUPERVISION IN HIGHER EDUCATION INSTITUTIONS

A. Teaching Supervision is a Core Element in Building the Quality Assurance System of a Higher Education Institution

In 2019, the gross enrollment rate of higher education in China reached 51.6%. According to Martin Trow's "three-stage" theory of higher education expansion, China has entered the stage of popularized higher education, and high-quality and connotative development is an inevitable choice for universities to survive and develop in the stage of popularized higher education [4]. In 2012, China's "five-in-one" evaluation system was basically established. To adapt to the evaluation requirements, universities gradually strengthened the construction of internal quality assurance systems. However, from the implementation results of the review assessment and engineering education professional certification, there are still significant problems in the internal quality assurance systems of universities in terms of quality awareness, quality standards, quality management, quality evaluation, and quality culture. Based on the development laws of higher education quality management worldwide and the current development status of internal quality assurance systems

in Chinese universities, it is urgent for Chinese universities to establish internal quality assurance systems that are in line with the characteristics of higher education in the popularization stage [5]. As a core component and key link of the internal quality assurance system in universities, teaching supervision plays a critical role in ensuring teaching quality in universities and its position and function need to be continuously strengthened.

B. Teaching Supervision is an Important Way to Promote the Modernization of Higher Education Management

Since the 1990s, governance theories characterized by "polycentricity" and "pluralistic co-governance" have gradually emerged. This governance theory emphasizes that the structure and order it aims to create cannot be imposed from the outside but should rely on the interaction of multiple actors that influence each other [3]. As an organic whole, the internal quality assurance system of universities needs to form a pluralistic governance quality assurance pattern of co-construction and co-governance. Therefore, the formation of a supervision organization form with multiple coexisting subjects within universities, such as university-level, college-level, and department-level supervision, peer supervision, self-supervision, and student supervision, is an important exploration in university management practice and also an important means to achieve the modernization of university management systems and management regulations.

C. Teaching Supervision is an Important Part of Deepening the Reform of Higher Education Evaluation

In October 2020, the Central Committee of the Communist Party of China and the State Council issued the "Overall Plan for Deepening the Reform of Education Evaluation in the New Era", making the quality of talent cultivation an important orientation for the reform of education evaluation. As a quality monitoring activity with an evaluation nature, the improvement of the evaluation content, the optimization of the evaluation mechanism, and the application of the evaluation results of teaching supervision are beneficial supplements and important handles for improving the evaluation of teaching and education in higher education institutions. The key significance of teaching supervision evaluation lies in giving full play to the special function of its "third party within the school" evaluation subject, breaking away from the evaluated subjects such as the management layer, teachers, and students, eliminating the entanglements of various interests, conducting objective evaluations of teaching and education, and truly achieving the development of school teaching and education driven by evaluation.

III. PROBLEMS EXISTING IN UNIVERSITY SUPERVISION WORK FROM THE PERSPECTIVE OF TQM

Based on practical experience and investigation of

teaching supervision in universities, this study analyzes the implementation process of supervision work. Fig. 2 presents the proportion distribution of existing problems in university supervision work from the perspective of TQM.

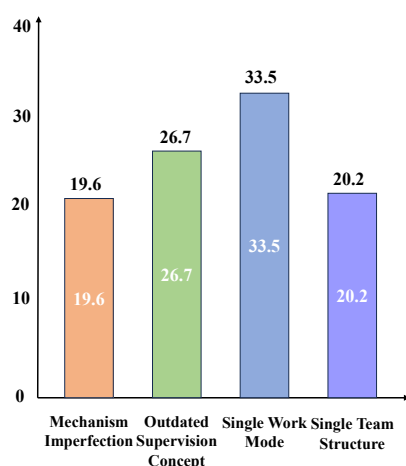


Fig. 2. The proportion distribution of existing problems in university supervision work under the TQM framework.

A. Improper Institutional Setup and Incomplete Supervision Mechanism

The “Measures for Accountability in Education Supervision” issued by the Education Supervision Committee of the State Council in 2021 has clearly stipulated the supervision work of universities at all levels and of various types from a macro perspective. However, there are no clear and specific provisions for guiding universities at all levels and of various types to establish self-supervision systems and optimize internal systems, resulting in the current teaching supervision system in universities still being in the stage of self-exploration, and the effectiveness of supervision has not been fully stimulated. In universities, the phenomenon of imperfect or lacking teaching supervision systems is relatively common.

At present, in some universities that have established supervision mechanisms, there are generally two types of supervision systems: the attached type and the cross-type. From the perspective of practical work, both methods have certain problems. The attached type of supervision is prone to issues such as insufficient “power”, limited “function”, and ineffective “results”, which leads to the failure of the supervision role to be truly exerted [6]; the cross type of supervision is likely to cause problems such as work duplication, mutual shirking of responsibilities, and unclear responsibilities among various functional departments, resulting in management confusion. Many universities have failed to clarify specific goals and responsibilities for supervision, leading to an unclear direction of supervision work.

B. Lapsing Supervision Concept and Poor Effectiveness of Teaching Supervision

The current teaching supervision in Chinese

universities is mostly top-down supervision empowered by administration, focusing more on the supervision, inspection, and evaluation of the supervised by the teaching supervisors. Its universality and influence are relatively low, which to a certain extent reflects the relatively lagging supervision concepts in China. The main participants in school education and teaching, including educational administrative departments, school leaders, teaching administrators, teaching supervisors, teachers, and students, still have their cognitive level of teaching supervision remaining at the level of “supervision”, thereby leading to poor teaching supervision effectiveness in schools. In addition, the teaching supervision teams in most schools are mostly composed of retired teachers, and it is inevitable that there are problems of disconnection between supervision concepts and teaching reality.

C. Single Supervisory Work Mode and Limited Information Level

Most universities mainly carry out supervision work through traditional supervision means, which easily leads to one-sided evaluation of the overall teaching quality. For example, the necessary supervision standards have not been established for key links such as skill training, laboratory facilities, and enterprise cooperation, which will make it difficult to achieve a win-win effect in the cooperation between schools and enterprises. Many universities have obvious shortcomings in informatization construction. Different secondary units use different tools and systems for data management and information exchange, resulting in poor information circulation. In addition, the lack of intelligent data analysis and reporting tools in carrying out supervision and evaluation work, and the failure to establish and improve the supervision data management and supervision information security mechanism will lead to the lag in supervision data analysis and report generation or the lack of privacy and security guarantees.

D. Single Structure of Supervision Team and Obstructed Implementation

Teaching supervisors with a high teaching level and teaching and research literacy are a strong guarantee for the quality and effect of supervision. At present, the problems in the construction of the undergraduate teaching supervision team in Chinese universities mainly focus on aspects such as the quantity structure and personnel selection.

Insufficient number of supervisors and unreasonable age structure make it difficult to fully play the role of supervision. Because the number standard of undergraduate teaching supervisors has not been clearly defined at the current policy level, many schools have the problem of an insufficient number of supervisors, resulting in difficulty in achieving the expected effect of teaching supervision.

Unscientific personnel selection standards and the professional quality of the supervision team need to be improved. From the actual situation, the selection standards of undergraduate teaching supervisors are

limited to basic principled requirements such as teachers' ethics and style, without fully considering the actual needs of professional disciplines. Most supervisors are appointed and recommended by schools or colleges, lacking rigorous condition setting and recommendation procedures. This simplified selection and review process easily leads to the insufficiency of the competence of the supervision team.

IV. IMPROVEMENT STRATEGY OF TEACHING SUPERVISION IN COLLEGES AND UNIVERSITIES FROM THE PERSPECTIVE OF TOTAL QUALITY MANAGEMENT

To break and surpass the traditional concept of monitoring teaching supervision, actively explore the construction of supporting teaching environment, and realize the high-quality development of undergraduate teaching supervision practice, the optimization and improvement strategies of undergraduate teaching supervision are discussed from the following four aspects. The corresponding relationship between existing problems and optimization strategies is shown in Fig. 3.

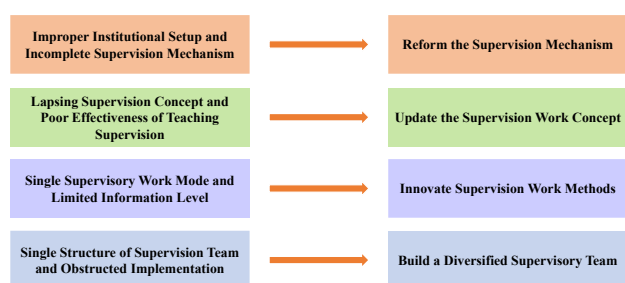


Fig. 3. The corresponding relationship between existing problems and optimization strategies.

A. Reform the Supervision Mechanism

Undergraduate teaching supervision should not only focus on improving internal quality but also draw on external best practices to achieve the integration of internal and external quality assurance systems [7].

Establish a characteristic teaching supervision mode to ensure that the organization is relatively independent. The establishment of the teaching supervision system should combine the characteristics of the school and the rules of education and teaching, fully consider the school philosophy, campus culture, institutional setting and many other factors, and explore the establishment of a set of teaching supervision mode suitable for its own development. In addition, supervisory organizations should be entrusted with other education and teaching management. With the same position of the supervision department, under the unified framework of the school, to promote the development of the supervision work more authoritatively and objectively.

Construct the subject group supervision system, break the supervision discipline barriers. To realize the teaching supervision of the whole discipline, the whole process and the full coverage, the supervision team should be managed in groups according to the subject group to ensure the professionalism of the supervision team [8].

Explore regional teaching supervisory organizations to remove barriers to inter-school communication. With the transformation of higher education into a concomitant development in China, various regional education administrations attach greater importance to the management and evaluation of the quality of education and teaching, and have begun to attempt to establish teaching supervision networks between administrative regions. The organization of inter-regional teaching supervision is helpful to break through the closed data quality monitoring method in universities, break the traditional complacent thinking, abandon the idea of self-development, and create a new mode of interaction and cooperation.

B. Update the Supervision Work Concept

Updating the supervisory work concept is fundamental to promoting the development of teachers' teaching abilities and conducting teaching supervision work. "Student-centered, outcome-based education, and continuous improvement" are modern educational teaching concepts that must be adhered to for the reform and high-quality connotative development of higher education [9]. "Student-centered" regards the quality of talent cultivation as an important basis for evaluating the quality of higher education teaching, and the fundamental goal and core function of teaching supervision is to guide teachers in enhancing their teaching competence to promote student development, which fully embodies the "student-centered" concept. "Outcome-based education", also known as "outcomes-focused" or "goal-oriented", abbreviated as the OBE concept [10], emphasizes that universities should evaluate their educational teaching level based on students' learning outcomes and ability enhancement. "Continuous improvement" emphasizes the need to establish an effective quality monitoring and continuous improvement mechanism to promote the enhancement of talent cultivation quality [11]. Therefore, the supervision content, standards, and evaluations of teaching supervision should be designed categorically, with the emphasis on supervision and guidance adjusted according to the different supervisory objects, fully leveraging functions such as feedback, incentive, improvement, and collaboration, to ensure that teaching supervision truly becomes a driving force for enhancing teachers' professional competence.

C. Innovate Supervision Work Methods

Innovating supervision methods is essential for enhancing teachers' instructional competence; without such innovation, the effectiveness of teaching supervision cannot be fully achieved. It can be achieved in three ways:

1) Combination of supervision and guidance

Teaching supervision involves not only monitoring, inspecting, and evaluating teaching activities, but also providing targeted guidance and support. It is essential to effectively integrate supervision with guidance, ensuring both thorough evaluation and targeted support.

2) Unity of teaching and learning

Teachers design and organize teaching activities based

on student learning objectives, and students acquire knowledge and develop competencies by participating in these activities. Supervision should focus not only on teachers' teaching activities but also on students' learning outcomes.

3) *Integration of supervision methods*

When conducting classroom observations and evaluations, supervisors should not only pay attention to the classroom teaching that reflects teachers' teaching implementation abilities but also consider the validity, objectivity, and practicality of teaching documents. This also helps enhance teachers' abilities in evaluation and reflective practice.

D. *Build a Diversified Supervisory Team*

As the executing body of teaching supervision in universities, the teaching supervision team serves as a crucial component of the institution's quality assurance system. To meet the demands of high-quality development in higher education during the massification

phase, it is essential to establish a comprehensive supervision team that includes teaching management, student affairs, faculty development, and quality assessment. This requires the formulation of specialized teaching supervision regulations based on key considerations such as teaching quality, disciplinary structure, curriculum design, and administrative functions. Accordingly, implementation measures should be developed regarding the selection and appointment of supervision team members, performance evaluation of supervisors, and salary distribution standards, thereby organizing the appointment, assessment, and evaluation of teaching supervisors.

To further enhance the work efficiency of supervisory teachers, evaluation indicators and criteria for the "Exemplary Teaching Supervisor" at Northeastern University have been developed across five dimensions, including "Educational Theory Knowledge and Teaching Method Application", as shown in Table I.

TABLE I. EVALUATION INDICATORS AND CRITERIA FOR THE "EXEMPLARY TEACHING SUPERVISOR"

Primary Indicator	Score	Secondary Indicator	Score	Detailed Evaluation Criteria
1. Educational Theory and Teaching Method Application	30	1.1. Knowledge of Educational Theory	10	Familiarity with higher education regulations; ability to accurately interpret policies related to undergraduate teaching audit assessments and professional certification.
		1.2. Application of Teaching Methods	10	1. Mastery of modern teaching methods; ability to clearly assess the alignment between course teaching methods and talent development objectives, and to precisely analyze the rationality of teaching models. 2. Understanding of the pedagogical principles for different course types (theoretical, practical, training) and ability to provide targeted improvement suggestions.
		1.3. Use of Teaching Evaluation Tools	10	Proficiency in using the undergraduate classroom teaching evaluation system, various assessment scales, and other tools for supervising teaching and learning.
2. Effectiveness of Teaching Supervision	40	2.1. Quality of Teaching Supervision	20	1. Meets the required number of classroom observations with complete records; demonstrates a precise ability to identify teaching strengths and issues. 2. Provides specific, constructive, and actionable classroom evaluations, rather than vague or generic comments. 3. Assists teachers in clarifying improvement directions and offers personalized teaching development plans. 4. Provides clear guidance for young teachers to enhance their teaching quality.
		2.2. Scope of Teaching Supervision	10	Participates in examination invigilation, teaching document reviews, external training exchanges, and various teaching supervision meetings, actively contributing constructive suggestions.
		2.3. Problem-Solving and Improvement Facilitation	10	Capable of leading the creation of analytical reports and driving corrective actions for common issues identified during the supervision process.
3. Professional Competence	15	3.1. Objectivity and Impartiality	5	1. Evaluation is not influenced by factors such as faculty title, age, or personal relationships. 2. Capable of rational communication regarding controversial issues, without showing bias.
		3.2. Responsibility and Dedication	5	Strictly adheres to the university's teaching supervision regulations and work plans; does not interfere with normal teaching arrangements by leveraging the supervisor role.
		3.3. Confidentiality and Communication	5	1.No disclosure of sensitive information encountered during supervision, such as teacher privacy or student feedback. 2.Maintains a respectful and humble attitude when communicating with teachers, avoids negative language, and achieves high acceptance from faculty.
4. Development and Innovation	5	4.1. Summarizing and Sharing Supervision Experience	5	1.Writes supervision case studies or papers and shares experiences in teaching supervision meetings. 2.Applies for specialized supervision projects to effectively address issues in the university's teaching quality monitoring and assessment.
5. Recognition from Peers and Students	10	5.1. Evaluation from Students and Peers	5	Student and peer evaluation scores both rank within the top 40% university-wide.
		5.2. Annual Work Completion	5	Submits the annual supervision summary report on time, having completed the planned tasks.
Total	100	-	100	-

V. CONCLUSION

From the perspective of TQM, this study systematically examined the current challenges faced by teaching supervision in higher education institutions and proposed targeted improvement strategies. Specifically, this paper contributes to three main aspects. First, it constructs a structured analytical framework linking supervision problems with optimization strategies, providing a clearer theoretical perspective for understanding supervision effectiveness. Second, it proposes a set of practical pathways, including mechanism reform, concept updating, method innovation, and team diversification, which offer actionable guidance for universities. Third, it develops a multidimensional evaluation index system for “Exemplary Teaching Supervisors”, enriching existing evaluation practices.

Despite these contributions, several limitations should be acknowledged. The study is primarily based on qualitative analysis and practical experience from a single institutional context, which may limit the generalizability of the findings. In addition, the lack of empirical validation and quantitative analysis restricts the ability to measure the effectiveness of the proposed strategies.

Future research can be conducted in several directions. First, empirical studies using data-driven methods can be employed to validate the effectiveness of the proposed supervision strategies. Second, the integration of artificial intelligence and big data technologies into teaching supervision—such as intelligent evaluation systems and learning analytics—should be further explored. Third, comparative studies across different universities or countries could help refine and generalize the supervision model.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Ce Ji and Lin Xu conducted the research; Xia Zhang analyzed the information; Ce Ji and Simeng Sun wrote the paper; Rong Geng supervised the research; Qiuhua Tan proofread and revised the manuscript; all authors had approved the final version.

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