Factors Influencing Educational Inspection and Supervision

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ABSTRACT: This paper analyzes the key factors determining the effectiveness of educational inspection and instructional/clinical supervision, encompassing six dimensions: (1) the accountability context and policy framework; (2) the competence of inspection and supervision teams; (3) feedback–improvement mechanisms and school culture; (4) data and ICT infrastructure; (5) resource availability; and (6) teachers' attitudes, motivation, and professional capacity. Drawing on international research and empirical experience from both school and higher education sectors, the paper proposes a research model tested through Structural Equation Modeling (SEM), based on survey data from educational administrators, subject leaders, and teachers. The literature synthesis reveals that the quality of inspection processes, coupled with balanced accountability pressure and developmental supervision, is positively associated with changes in teaching practice and quality enhancement. In contrast, formalistic and compliance-oriented inspections rarely generate sustainable transformation. The paper concludes with policy implications concerning the development of inspection competency standards, the design of evidence–action feedback loops, the integration of Internal Quality Assurance (IQA) with ISO 21001 frameworks, and strategic investment in educational data infrastructure.

Keywords: educational inspection/supervision; external evaluation; accountability; internal quality assurance (IQA); ISO 21001; SEM; quality improvement.

1. INTRODUCTION

In the global context, education is undergoing a profound shift from administrative management toward data-driven quality governance and

accountability. Developing high-quality education coupled with accountability is becoming a priority for many higher education systems around the world. One of the key instruments to ensure transparency and continuous improvement is educational inspection and supervision. This activity is seen as an important regulatory tool of the state to ensure compliance with the law, output standards and equity in access to education, while creating pressure for improvement for educational institutions (De Grauwe, 2007). International research shows that the effectiveness of inspection depends not only on the legal framework, but is also strongly influenced by the way the process is designed, the capacity of the inspection team and the professional culture at the school (Ehren et al., 2013). Supervision inspection helps support teachers, control school activities and allows regular exchanges between schools, can be a powerful tool for improving quality (De Grauwe, 2007). According to Hofer et al. (2020), over three decades of international research indicate that inspection can serve as a lever for quality improvement if it is designed with clear criteria, valuable feedback processes, and post-inspection support mechanisms. Conversely, when inspections are formalistic, compliance-oriented, or lack developmental feedback, they may produce "side effects" such as superficial teaching, increased pressure, and diminished professional motivation among teachers (Penninckx, 2017).

In Vietnam, educational inspection and supervision work is carried out according to the 2010 Inspection Law (Law No. 56, 2010) and especially the 2022 Inspection Law (Law No. 11, 2022), which emphasizes the function of controlling the implementation of policies, laws and public duties. In the field of education, educational inspection has been formalized through regulations such as Circular 39/2013/TT-BGDĐT and guidance on internal review, external evaluation, and institutional quality accreditation. Within the framework of the 2019 Education Law and the orientation toward international standards (e.g., ISO 21001:2018 – Educational Organization Management Systems), there is increasing emphasis on standardization, evidence, and transparency in inspection. These documents show a shift from a purely "compliance inspection" approach to increased risk-based, data-

driven inspections linked to accountability of educational institutions. However, several domestic studies (Pham Ngoc Thanh Tung, 2022; Le Huu Lap, 2021) indicate persistent challenges: processes remain bureaucratic, feedback often lacks substance, and a culture of continuous improvement has yet to be fully established in schools. In addition, case studies at a number of higher education institutions show that the effectiveness of educational inspection activities is limited by both human resources and physical conditions, and inspection methods are still administrative, less based on data analysis and risk assessment (Dao et al., 2025).

From an international perspective, international reviews of school inspections show that the impact of inspections on improving the quality of education does not happen automatically, but depends on many factors: the clarity and consistency of the set of standards/criteria for monitoring; the quality of feedback and recommendations; the level of school participation and acceptance; the organizational learning culture; clear reward and punishment mechanisms (Ehren & Visscher, 2006). Some studies also mention the risk of "side effects" of inspection in the context of high pressure on testing and examinations, such as the tendency to narrow the curriculum, teach "to cope" or increase the administrative burden for teachers if the inspection mechanism is not designed appropriately (Ehren et al., 2015; Klerks, 2013). Most of the empirical evidence to date has focused on European education systems or developed economies; studies on educational inspection and supervision in the context of a socialist-oriented market economy like Vietnam are still quite limited, especially studies that systematically analyze factors affecting the effectiveness and efficiency of inspection at many levels of policy - organization - operation. (Sarah et al., 2020).

From an international perspective, developmental or clinical supervision models are considered a novel approach, emphasizing "mentoring–coaching–feedback" rather than "inspect–punish." Studies by Hoque et al. (2020) and Chaula et al. (2024) confirm that structured classroom observation, coaching, and feedback competence are crucial predictors of teachers' instructional change. Meanwhile, Pham et al. (2022) show that the maturity of internal quality assurance (IQA) systems

in Vietnamese higher education institutions positively correlates with program improvement capacity and accreditation outcomes.

Thus, the effectiveness of educational inspection does not emerge automatically but depends on a combination of factors:

(1) Context and level of accountability – moderate pressure encourages improvement, while excessive pressure induces formality.

(2) Quality of processes and competence of inspection teams.

(3) Feedback–professional support–organizational learning mechanisms.

(4) Resources and data/ICT infrastructure.

(5) Professional culture of teachers and readiness to engage in developmental supervision.

Building on theories of instructional supervision, accountability, and quality management (Fullan, 2019; OECD, 2013), this study aims to:

(1) Systematize the factors influencing the effectiveness of educational inspection.

(2) Propose a research model tested via SEM/PLS-SEM.

(3) Provide policy implications to enhance quality, reduce formalism, and foster a culture of feedback and organizational learning in Vietnamese educational institutions.

2. THEORETICAL FOUNDATIONS

2.1. Theory of Inspection/Supervision

Inspection is a core component of the educational quality assurance system, contributing to accountability and quality improvement. According to Hofer et al. (2020), the effectiveness of inspection strongly depends on the quality of its processes, including the transparency of criteria, reliability of classroom observations, and the value of post-inspection feedback. Penninckx (2017) also noted that inspection may produce “side effects,” such as teaching for exams or increasing bureaucratic workload, if it is overly compliance-oriented. In contrast, developmental

supervision fosters teachers' professional capacity and a continuous improvement mindset.

2.2. Instructional Supervision Theory

The theory of Teaching Supervision focuses on supporting, guiding and improving the quality of teaching through observation, feedback and professional development activities for teachers. In the higher education environment, teaching supervision is no longer a simple inspection-compliance model, but has shifted to a model of development, cooperation and continuous quality improvement (Glickman et al., 2001).

Hoque et al. (2020) emphasize that effective instructional supervision relies on a collaborative model, where the supervisor acts as a coach and learning partner with the teacher rather than solely as an evaluator. Key principles include timely and constructive feedback and structured classroom observation.

Teaching supervision plays an important role in ensuring quality and developing a quality culture in educational institutions. Lorensius et al., (2022) emphasize that constructive feedback in supervision helps teachers to better self-assess, increase professional responsibility, and promote a professional and continuous improvement-oriented school environment. In many countries, supervision is also directly linked to requirements for professional standards, teacher evaluation, and educational quality accreditation.

2.3 Professional Development Goal-Setting (PD Goal-Setting)

From a theoretical perspective, PD goal-setting extends the Feedback Intervention Theory (Kluger & DeNisi, 1996), which asserts that detailed and specific feedback enables recipients to adjust teaching behaviors more effectively than general feedback. PD Goal-Setting is often based on the principles of the SMART model—specifically, goals should be Specific, Measurable, Achievable, Relevant, and Time-bound (Prather, 2005). Setting Professional Development Goals is a strategic tool to help teachers improve their pedagogical competence and create a connection between personal development and organizational goals. An effective PD Goal-Setting system

should ensure clear, evidence-based goals, linked to organizational strategy, and supported by a coaching-mentoring mechanism to promote continuous improvement in teaching. Setting professional development goals is not only personal but also contributes to the development strategy of the organization. When teachers' goals are aligned with the school's overall goals, professional development contributes to improved teaching quality and enhanced system performance (Meng, 2023). Studies of effective schools show that those that maintain a culture of continuous learning have mechanisms for setting individual goals that are closely linked to the organization's development plan (Fullan, 2016).

2.4. Internal Quality Assurance (IQA) System Theory

In the context of Vietnamese higher education, Pham et al. (2022) describe IQA as a PDCA (Plan–Do–Check–Act) feedback loop, in which inspection plays the "Check" role to ensure continuous improvement. Mature IQA systems rely increasingly on data and evidence, effectively linking inspection, feedback, and improvement actions.

According to the theory of total quality management (TQM), IQA is the internal operating mechanism of the quality system, ensuring that all activities, from leadership, program design, teaching methods, student assessment to resource management, are all controlled through the PDCA cycle (Deming, 1986). This cycle creates the foundation for continuous improvement, ensuring that management decisions are always based on evidence rather than emotions.

IQA is also strongly influenced by the Quality Culture Theory. IQA is only truly effective when it does not stop at the structure and process level, but must form common beliefs and values in the organization (Bendermacher et al., 2017). This means that managers, lecturers and students must all be aware of the role of quality and actively participate in the process of maintaining and improving quality. IQA is not only a quality management system but also a cultural system, including factors such as leadership, internal communication and human resource participation, all of which have significant influence. In addition, IQA theory also emphasizes the link

between quality assurance and strategic management. Brennan et al., (2000) argued that IQA is not only to help organizations meet standards, but also a tool for schools to achieve long-term goals of reputation, training effectiveness and competitiveness. Therefore, IQA needs to be integrated into activities such as training program development, human resource strategy, risk management and decision making based on clear evidence.

2.5. Accountability in Education

Accountability is not just about accountability, but also about a commitment to evidence-based improvement, where every decision in education must be based on data on learning outcomes, teaching effectiveness, student satisfaction, and the extent to which professional standards are met. Another important aspect is that accountability must go hand in hand with support for development. If accountability systems focus solely on testing, they will not improve quality. Instead, accountability must be linked to professional support, training, pedagogical supervision, and feedback mechanisms to promote continuous improvement (Darling-Hammond, 2015).

The Accountability Framework (OECD, 2013) posits that inspection pressure only produces positive outcomes when: (1) accountability is moderate (avoiding fear); (2) mechanisms exist for post-inspection support and follow-up; and (3) goals emphasize learning and professional development rather than punishment. Empirical evidence supports a non-linear (U-shaped) relationship between accountability pressure and improvement effectiveness: too little pressure diminishes motivation, while excessive pressure fosters formalism.

Accountability is closely linked to measuring the quality of education. Because of the increasing pressure for accountability, there has been a proliferation of standardized assessment systems, large-scale tests, and school ranking reports (Sellar, 2014). However, accountability is not only based on scores but must be based on multidimensional evidence such as: learning outcomes, learner progress, student feedback, program relevance, faculty professional development, and school

governance effectiveness (Bae, 2018). Accountability in higher education also involves meeting the demands of stakeholders. Students, employers, regulators, society, and the labor market are all subjects to which educational institutions must account (Lauder & Mayhew, 2020). This not only complicates accountability but also pushes schools to improve professionalism, transparency and innovation in training activities.

2.6. Educational Change Theory

Educational Change Theory is concerned with the complexity of educational systems, in which change is not continuous but often cyclical, uncertain, and influenced by many constraining factors (Rosenblum & Louis, 2013). From a policy management perspective, the theory suggests the need for consistency and continuity in reform planning. Countries that have been successful in effective reform often maintain a long-term vision, while giving autonomy to educational institutions to adapt flexibly (OECD, 2015). Recent studies agree that change can only be successful when teachers perceive the relevance of reform initiatives to practical needs and have professional space to experiment with new practices (Nielsen et al., 2008). Therefore, Fullan (2019) argues that changes in teachers' professional behavior cannot be achieved solely through policies or periodic inspections; they require organizational learning mechanisms. Inspection is effective only as part of a learning culture, characterized by dialogue, two-way feedback, and digital capacity support. This aligns with Chaula et al. (2024), who found that structured clinical supervision – including planned observation, in-depth feedback, and post-supervision follow-up – is the strongest predictor of school leadership effectiveness.

In summary, from the theoretical basis, it is possible to identify factors affecting educational inspection and supervision work as shown in Table 1 below:

Table 1. Theoretical Basis of Factors Influencing Educational Inspection

Factor Group	*Related Theory*	*Key Authors (Scopus)*

Accountability & Inspection Pressure	Accountability Theory	Hofer et al. (2020), Pennincx (2017)
Quality of Inspection Processes	Evaluation Theory	Hofer et al. (2020)
Conpetence of Inspection Team	Instructional Supervision Theory	Hoque et al. (2020), Chaula et al. (2024)
Feedback & Improvement Culture	Educational Change Theory	Fullan (2019)
Data Infrastructure & IQA	Quality Management & PDCA	Pham et al. (2022)

3. RESEARCH METHODOLOGY

3.1. Overall Research Design

This study adopts a mixed-method design comprising two phases:

Phase 1 – Exploratory Qualitative Phase: Aimed at identifying, standardizing, and refining the measurement scales for factors influencing educational inspection. Data were collected through semi-structured interviews with 10 – 15 experts, including educational administrators, inspectors, heads of professional units, and lecturers experienced in quality assurance. The qualitative data were analyzed using Thematic Analysis, forming a preliminary conceptual framework and a set of observed variables (items) for the subsequent quantitative survey.

Phase 2 – Confirmatory Quantitative Phase: Focused on testing a structural equation model (SEM/PLS-SEM), measuring relationships among independent variables (E1 – E7), the mediating variable (M1), and dependent variables (O1 – O3).

The mixed-method approach ensures comprehensiveness: qualitative research explores contextual nuances in Vietnam, while quantitative research tests hypotheses and measures the strength of relationships.

3.2. Participants and Sample

Survey Population: Educational administrators (principals, vice principals, heads/deputy heads of departments), heads of professional units, and teaching staff in primary, secondary, high school, and selected universities.

Scope: Five provinces representing the North, Central, and South regions to ensure generalizability.

Sample Size: Minimum 400 valid responses, satisfying SEM requirements with over 30 parameters (Hair et al., 2020).

Stratification: Primary (30%), Lower Secondary (35%), Upper Secondary (25%), Higher Education (10%).

Sampling Method: Stratified–convenience sampling.

3.3. Instruments and Measurement Scale

Measurement scales were developed based on international theory (Hofer et al., 2020; Hoque et al., 2020; Pham et al., 2022) and refined through expert interviews. The survey includes seven groups of independent variables, one mediating variable, and three dependent variables.

Table 2. Groups of Factors in Educational Inspection

Factor Group	***Variable Code***	***Number of Observed Items***	***Reference Source***
Accountability & Policy Framework	E1	5	Hofer et al. (2020)
Quality of Inspection Process	E2	6	Penninckx (2017)
Inspection Competence	E3	5	Hoque et al. (2020)
Feedback & Improvement Culture	E4	4	Fullan (2019)

Data & IT Infrastructure	E5	4	Pham et al. (2022)
Resources & Implementation Support	E6	3	SAGE/Elsevier synthesis
Teacher Attitudes & Professional Competence	E7	4	Chaula et al. (2024)
Quality of Post-Inspection Feedback (Mediating Variable)	M1	4	Hofer et al. (2020)
Outcomes (Practice Change & Quality Improvement)	O1 – O3	6	Pham et al. (2022)

All variables were measured on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

3.4. Data Processing and Analysis Procedures

Step 1: Reliability Testing

Cronbach's Alpha (> 0.7) used to remove low item-total correlated items. Composite Reliability (CR) and Average Variance Extracted (AVE) were evaluated to ensure convergent validity (> 0.5).

Step 2: Exploratory Factor Analysis (EFA)

Conducted using Principal Axis Factoring with Promax rotation to identify latent factor structures. Items with factor loadings < 0.5 were removed.

Step 3: Confirmatory Factor Analysis (CFA)

Tested model fit using $\chi^2/df < 3$; CFI, TLI > 0.9; RMSEA < 0.08; SRMR < 0.08.

Step 4: Structural Equation Modeling (SEM/PLS-SEM)

Assessed causal relationships: E → M → O. Tested direct, indirect, and total effects using bootstrapping. Evaluated model fit (R^2, Q^2, GoF) and mediation effects.

Step 5: Additional Analysis

Compared differences by school level, type, and region using ANOVA. Tested moderation effect of "improvement culture" on the relationship between accountability pressure and inspection outcomes.

3.5. Ensuring Scientific and Ethical Validity

Pilot testing of the questionnaire with 30 participants to refine language and logic.

Participant anonymity and voluntary participation were ensured. Data collection and processing followed social science research ethics and guidelines from the Vietnam Institute of Educational Sciences.

3.6. Research Procedure

Problem identification → Literature review → Expert interviews (qualitative) → Scale development → Quantitative survey → EFA/CFA/SEM analysis → Hypothesis testing → Conclusions & policy implications.

The methodology combines "exploration–confirmation–application," ensuring both academic rigor (SEM, CFA) and practical relevance for educational management in Vietnam, aligned with ISO 21001 and IQA frameworks.

3.7. Research Model

3.7.1. Independent Variables

E1 – Accountability Context & Policy Framework: Moderate accountability pressure stimulates improvement motivation; excessive pressure induces formalism.

E2 – Quality of Inspection Process: Clear objectives and criteria, standardized classroom observation, specific feedback, and post-inspection action plans.

E3 – Competence of Inspectors/Supervisors: Professional expertise, coaching skills, and data literacy.

E4 – Learning Culture & Feedback–Improvement Mechanism: Professional dialogue, professional learning communities (PLCs).

E5 – Data and IT Infrastructure: Evidence documentation, quality dashboards.

E6 – Resources: Time and financial support for implementing improvement plans.

E7 – Teachers' Attitude and Readiness toward Developmental Supervision.

3.7.2. Mediating Variable

M1 – Quality of Post-Inspection Feedback & Professional Support.

3.7.3. Dependent Variables (Inspection Effectiveness)

O1 – Observable Change in Teaching Practice.

O2 – Degree of Implementation and Sustainability of Improvement Plans.

O3 – Quality Indicators (e.g., professional standards, internal evaluation/IQA outcomes).

3.8. Research Hypotheses

Hypothesis H1:

The quality of the inspection process (E2) has a positive effect on instructional improvement outcomes (O1, O2). E2 → O1, O2 (+)

Theoretical Basis: According to Hofer et al. (2020) and Penninckx (2017), the clarity of inspection criteria, structured observation, constructive feedback, and post-inspection support are the strongest predictors of improved teaching practice.

Expectation: Transparent and formative inspection processes help teachers translate evaluation findings into concrete improvement actions, enhancing teaching quality.

Hypothesis H2:

Inspectors' competence (E3) positively influences the quality of post-inspection feedback (M1) and improvement outcomes (O1). E3 → M1 → O1 (+)

Theoretical Basis: Hoque et al. (2020) and Chaula et al. (2024) emphasize that professional supervision competence – encompassing coaching, pedagogical feedback, and evidence-based assessment – determines the developmental value of inspection feedback.

Expectation: Skilled inspectors capable of effective communication and mentoring will provide in-depth, actionable feedback that enables teachers to identify weaknesses and implement feasible improvement strategies.

Hypothesis H3:

The level of accountability pressure (E1) has a non-linear (U-shaped) relationship with inspection effectiveness (O2). E1 ↔ O2 (U-shaped, optimal at moderate level)

Theoretical Basis: Based on the OECD (2013) Accountability Framework and Penninckx (2017), moderate inspection pressure fosters improvement, while excessive pressure leads to compliance-oriented behavior and reduced motivation.

Expectation: Low accountability pressure results in limited motivation; excessive pressure triggers defensive responses; moderate pressure maximizes sustainable improvement outcomes.

Hypothesis H4:

Learning culture and feedback–improvement mechanisms (E4) mediate the relationship between inspection quality (E2) and improvement effectiveness (O2). E2 → E4 → O2 (+, mediation)

Theoretical Basis: Fullan (2019) and Pham et al. (2022) argue that sustainable educational improvement arises within learning organizations characterized by open dialogue and bidirectional feedback. Inspection drives change only when its results are internalized into actionable improvement plans with monitored implementation.

Expectation: High-quality inspections generate meaningful feedback; when schools possess a strong learning culture, such feedback is effectively utilized to foster real improvement.

Table 3. Summary of Hypothesized Relationships

Hypothesis Code	***Relationship***	***Expected Effect***	***Type of Relationship***
H1	E2 → O1, O2	+	Direct
H2	E3 → M1 → O1	+	Indirect via M1
H3	E1 ↔ O2	Nonlinear (U-shaped)	Direct
H4	E2 → E4 → O2	+	Mediated via M4

4. RESULTS

4.1. Description of Sample and Data Collection

The study obtained 412 valid responses from administrators, heads of academic departments, and teachers at 25 general education institutions and 5 universities. Gender distribution: 67.7% female, 32.3% male. Average professional experience: 11.2 years. Educational background: 82% undergraduate, 18% postgraduate. Education levels: Primary (30%), Lower Secondary (35%), Upper Secondary (25%), Higher Education (10%).

The mean self-assessment score for the quality of educational inspection was 3.72/5, reflecting a moderate-to-high satisfaction level; meanwhile, accountability pressure reached 3.91/5, indicating that perceived pressure remains relatively high.

4.2. Measurement Validation Results

Internal Reliability (Cronbach's Alpha & Composite Reliability – CR): All eight measurement groups (E1–E7 and M1) met the reliability thresholds: Cronbach's Alpha: 0.812 – 0.914. CR: 0.86 – 0.93 → High internal consistency confirmed.

Convergent and Discriminant Validity (AVE & Fornell–Larcker Criterion): Average Variance Extracted (AVE): 0.53 – 0.69 (≥ 0.50). The square roots of AVE values exceeded all inter-construct correlations → discriminant validity achieved.

Exploratory Factor Analysis (EFA): KMO = 0.915, Bartlett's Test Sig. = 0.000 → dataset suitable for factor analysis. Eight factors were extracted, accounting for 71.4% of total variance, consistent with the theoretical model.

Confirmatory Factor Analysis (CFA): Goodness-of-fit indices indicated strong model fit: $\chi^2/df = 2.41$, CFI = 0.944, TLI = 0.937, RMSEA = 0.056, SRMR = 0.045 → The measurement model exhibited high goodness of fit with empirical data.

Structural Equation Modeling (SEM/PLS-SEM): Structural Model Testing and Hypothesis Validation. O1 – Change in teaching practices: $R^2 = 0.62$. O2 – Quality improvement outcomes: $R^2 = 0.67$. M1 – Quality of post-inspection feedback: $R^2 = 0.59$ → The independent variables explained 59 – 67% of the variance, indicating strong explanatory power in social research contexts.

Table 4. Estimated Path Coefficients

Relationship	***Standardized β***	***p-value***	***Conclusion***
E2 → O1	0.41	p < 0.001	Support H1
E3 → M1	0.48	p < 0.001	Support H2 (Stage 1)
M1 → O1	0.36	p < 0.01	Support H2 (Stage 2)
$E1^2$ → O2	β = -0.27 (quadratic effect)	p < 0.05	Support H3 (U-shaped nonlinear effect)
E2 → E4	0.45	p < 0.001	Mediation Path
E4 → O2	0.39	p < 0.01	Support H4
E5 → O2	0.21	p < 0.05	Additional Support (Impact of IT Infrastructure)

Mediation Effects (Bootstrapping Results): M1 acts as a partial mediator between E3 and O1 (VAF = 0.42). E4 functions as a full mediator between E2 and O2 (VAF = 0.61) → This indicates that inspectors' competencies influence changes in teaching practices through the quality of feedback, while inspection process quality affects improvement outcomes through a learning and feedback culture.

ANOVA and Moderation Testing: By educational level: The effect of E2 (inspection process quality) was stronger in upper secondary and higher education than in primary schools. By region: Urban institutions demonstrated higher efficiency due to better feedback mechanisms and IT infrastructure. Moderating effect: A strong learning culture (E4) mitigates the negative impact of excessive accountability pressure (E1), thereby sustaining professional motivation.

4.3. Discussion of Findings

(1) The quality of the inspection process as the core determinant

The results support Hypothesis H1, showing that E2 (quality of the inspection process) exerts the strongest influence on O1 (teaching practice improvement) ($\beta = 0.41$). This finding indicates that inspection only generates positive effects when it is goal-oriented, accompanied by constructive feedback and professional support. Such evidence is consistent with Hofer et al. (2020) and Penninckx (2017), reinforcing the assertion that developmental supervision is more effective than administrative supervision in driving sustainable improvement.

(2) Inspectors' competence determines the value of feedback

The confirmation of Hypothesis H2 underscores the pivotal role of inspectors' professional competence (E3) and feedback quality (M1). Inspectors possessing classroom observation skills, coaching abilities, and positive communication approaches tend to deliver feedback capable of transforming teachers' professional behavior, aligning with the findings of Hoque et al. (2020).

(3) Moderate accountability pressure fosters improvement; excessive pressure is counterproductive

The nonlinear relationship postulated in Hypothesis H3 between accountability pressure (E1) and improvement outcomes (O2) was empirically confirmed. Moderate pressure enhances teachers' sense of responsibility and motivation, whereas excessive pressure leads to defensive behavior and symbolic compliance, undermining genuine improvement efforts.

(4) A learning culture bridges inspection and improvement

Hypothesis H4 is strongly supported: E4 (learning culture and feedback mechanism) mediates the link between E2 (inspection process) and O2 (quality improvement outcomes). This means that inspection results are transformed into authentic improvement actions only when institutions cultivate a learning-oriented and feedback-driven culture.

Table 5. Summary of Hypothesis Testing Results

Hypothesis	***Testing Result***	***Remarks***

H1	Fully Supported	E2 → O1, O2 (+)
H2	Fully Supported	E3 → M1 → O1 (+)
H3	Partially Supported	Nonlinear U-shaped relationship
H4	Fully Supported	E4 mediates the relationship between E2 and O2

5. POLICY IMPLICATIONS

Establish and standardize an inspector competency framework focusing on coaching, evidence-based feedback, standardized classroom observation, ethics, and fairness. This framework should align with international inspection standards to professionalize the supervision function.

Design a mandatory feedback–action loop: inspection report → improvement plan with measurable targets and allocated resources → periodic monitoring through the Internal Quality Assurance (IQA) system. This ensures that feedback translates into sustainable organizational learning cycles.

Integrate ISO 21001 and IQA frameworks to standardize processes, data, accountability, and evidence, thereby forming a unified "Quality Operating System" that connects schools with higher administrative levels (districts, departments, or ministries).

Invest in digital infrastructure and data capability, including digital evidence handbooks, feedback-learning repositories, and classroom or faculty-level dashboards to enhance transparency and real-time decision-making.

Reduce procedural formalism by setting a minimum threshold for practical evidence (e.g., walkthroughs and direct observation), limiting redundant paperwork, and publishing standardized templates for essential evidence requirements.

6. CONCLUSION

Educational inspection achieves its highest effectiveness when three essential conditions are simultaneously satisfied: A standardized, transparent, and feedback-oriented inspection process; A team of competent, professionally skilled, and

coaching-capable inspectors; An organizational culture that promotes learning, open feedback, and continuous improvement. In such an environment, inspection ceases to be a mere compliance mechanism and instead becomes a "catalyst for improvement" – a system grounded in accountability, yet infused with humanity and professional growth.

7. LIMITATIONS OF THIS STUDY AND FUTURE RESEARCH DIRECTIONS

Scope and sampling limitations: The survey sample, comprising 412 respondents from several representative provinces – mainly school leaders, heads of subject departments, and teachers at the K–12 level – ensures feasibility but limits the generalizability of findings to the entire Vietnamese education system. Notably, preschool, continuing education, and private higher education sectors were not fully represented → Future studies should expand sampling across regions, school types, and educational levels, while integrating data from inspection and accreditation agencies to enhance representativeness and reliability.

Cross-sectional design limitation: This research employs a cross-sectional design, collecting data at a single point in time. Consequently, it captures correlational rather than causal relationships, which may evolve across academic years or PDCA cycles → Future studies could adopt longitudinal designs or time-series SEM approaches to monitor changes in inspection effectiveness and improvement outcomes over multiple years.

Self-report bias: The dataset was collected via self-assessment surveys, which are inherently susceptible to social desirability bias – participants might overrate their institution's performance → To enhance objectivity, future research should integrate classroom observations, inspection records, professional group documentation, and secondary IQA or ISO 21001 data into the analytical framework.

Limited range of variables: The current model focuses on seven organizational and individual-level factors (E1–E7), excluding macro-level contexts such as

education financing, regulatory frameworks for inspection, or the influence of digital surveillance technologies → A more advanced approach could employ multilevel SEM or system dynamics modeling to examine how policy environment, governance structures, and digital transformation interact to shape inspection effectiveness.

Cultural and behavioral aspects of feedback: Learning culture, feedback mechanisms, and professional attitudes are deeply shaped by organizational culture, regional norms, and teacher psychology, yet this study captures them only at a general measurement level → Future research should include in-depth qualitative interviews or thematic analysis to explore teachers' feedback behaviors, openness, and learning motivation within inspection contexts more profoundly.

Short-term measurement of inspection outcomes: Due to the study's time constraints, the measured outcomes are primarily short-term perceptions and teaching behavior changes, rather than long-term effects on student performance, curriculum quality, or external accreditation results → Subsequent research should conduct impact evaluations combining output–outcome data analysis across multiple academic years or accreditation cycles to assess the sustained impact of inspection on educational quality improvement.

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