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Policy for Improving the Quality of Education in Indonesia: Analysis of Dynamics and Implementation from the Perspective of Educational Management

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Abstract

Improving the quality of education in Indonesia still faces challenges not due to the absence or limitations of policy instruments, but rather due to unequal implementation capacity across regions and schools. This study aims to analyze the gap in the implementation of education quality improvement policies between policy design and the system's capacity to translate them into learning changes. The literature review in this study was combined with qualitative policy analysis by reviewing Indonesian policy regulations, education statistics, government documents, theoretical books, international reports, and relevant journal articles searched through Google Scholar, Scopus, ERIC, and other official sources. The theory of policy implementation, educational change, and integrated quality management was used in the thematic analysis. The results of the study indicate that Indonesia has a broad policy architecture, but the implementation gap is still influenced by imbalances in regional and school capacity, inconsistent teacher professional development, limited instructional leadership, organizational culture, and fragmented implementation. This study recommends a Data-Based Quality Improvement and Instructional Leadership System (SPM-DKP) that integrates Education Report Cards, problem diagnosis, principal empowerment, learning communities, coaching, academic supervision, regional mentoring, and impact evaluation. The recommendations are implemented in stages over three years with the principles of differentiated support and continuous improvement. The scientific contribution of this research is in the form of an integrative conceptual framework that connects the use of data and learning leadership with policy implementation and quality improvement at the school level.

Keywords: *education policy, education quality, instructional leadership, data-driven management, continuous improvement*

INTRODUCTION

Education quality is a strategic and public concern because it is closely related to human resource quality, productivity, social mobility, and society's capacity to respond to economic and technological change. Indonesia's National Education System framework recognizes quality improvement, learning relevance, equitable learning opportunities, and the effectiveness of educational governance and management as integral components of educational provision. Law No. 20 of 2003 on the National Education System defines education as a conscious and planned effort to develop learners' potential (RI, 2003). Therefore, education quality should not be narrowly defined in terms of examination scores, academic achievement, or compliance with administrative requirements. Rather, it should be understood as the capacity of the education system to provide effective learning, competent teachers, strong leadership, supportive learning environments, and equitable learning opportunities for all students (RI, 2003; UNESCO, 2024).

The urgency of improving education quality becomes particularly evident when student learning outcomes are considered. According to the OECD's Programme for International Student Assessment (PISA) 2022 report, Indonesia's performance in reading, mathematics, and science declined compared with its PISA 2018 results (OECD, 2023a). The World Bank also estimated that 53% of Indonesian children at the end of primary school had not achieved minimum reading proficiency, including the

consideration of children who were out of school (World Bank, 2022). These conditions indicate that education quality challenges in Indonesia concern not only learning outcomes and compliance with standards but also the capacity of the system to ensure equitable learning opportunities for all students (Innayatun & Wibowo, 2024). Consequently, quality improvement policies need to focus on improving learning outcomes while ensuring more equitable support for schools facing resource constraints and limited educational governance capacity. Such an approach is necessary to reduce disparities in learning opportunities (Fakhridana et al., 2026; Simangunsong et al., 2024; Tanti Rizkya et al., 2025).

At the policy level, Indonesia has developed data-driven instruments to strengthen educational governance and quality assurance. Instruments such as national education standards, curriculum development, education system assessments, and the Education Report Card provide information that schools and local governments can use to identify problems, analyze their root causes, and establish priorities for improvement (Kemendikdasmen, 2025, 2026). However, the availability of comprehensive policy instruments and data does not automatically lead to better decisions for improving education quality. Data must be accompanied by the capacity to interpret findings, leadership support, teacher engagement, reflective forums, and consistent follow-up mechanisms within decision-making processes (Amemasor et al., 2025; Hase & Kuhl, 2024; UNESCO, 2024). This issue reveals a gap between policy design and implementation capacity, particularly when schools differ in their resources, educator competencies, and institutional support (Alonzo et al., 2024; Edwards III, 1980; Zahra & Nugroho, 2025).

Previous studies provide a foundation for understanding the factors that influence the successful implementation of education policies. Policy implementation is influenced by communication, resources, implementers' dispositions, and bureaucratic structures (Edwards III, 1980; Putra & Khaidir, 2019; Zahra & Nugroho, 2025). This framework is relevant to analyzing why formally established policies may be implemented differently across institutions and regions. In the context of educational change, Fullan et al. (2020) emphasize the importance of leadership, organizational capacity, and the management of change processes. The Global Education Monitoring Report 2024/5 highlights four important dimensions of educational leadership: setting direction and expectations, focusing on learning, fostering collaboration, and developing human capacity (UNESCO, 2024). From a Total Quality Management (TQM) perspective, leadership, teamwork, measurement, evaluation, and continuous improvement are interrelated elements of quality management (Billah & Karim, 2021; Sallis, 2002; Verma, 2025). Together, these three perspectives provide a conceptual foundation for understanding that education quality improvement requires integration among policy, implementation capacity, organizational processes, and outcome evaluation.

Other studies have highlighted the importance of teacher professional development, instructional leadership, and data use in improving education quality. Agirdag and Muijs (2023) and Dakir and Umiarso (2023) examine school leadership development and its relationship with academic outcomes, while Huang et al. (2024) investigate the relationship between principals' instructional leadership and disparities in instructional quality through the mechanisms of teacher professional learning. These findings reinforce the importance of positioning school principals as instructional leaders rather than merely administrative managers. Meanwhile, Alonzo et al. (2024) demonstrate that information and communication technology-based data systems can support teachers' decision-making, although their effectiveness depends on system quality and users' capacity. School culture also plays a decisive role in translating the outcomes of teacher professional development into classroom practice (McChesney & Cross, 2023), as does its relationship with teacher leadership (Goh et al., 2023; Triwiyanto & Iriani, 2022). Overall, this literature indicates that the effectiveness of education quality policies is associated with the interaction among professional competence, organizational culture, leadership, and evidence-informed decision-making.

Although various studies have examined policy implementation, teacher professional development, school leadership, and data utilization for improving education quality in Indonesia, an integrated policy analysis framework that synthesizes these dimensions is still needed. Policy analysis should not be limited to examining the existence of policy instruments or the effectiveness of individual programs. It should also investigate how policy implementation translates into consistent improvement actions at the school level while accounting for differences in capacity across regions and educational institutions. This need arises because uniform approaches may produce different benefits when schools have unequal leadership capacity, resources, and professional support (Badan Pusat Statistik Nasional, 2025; Triwiyanto et al., 2025; World Bank, 2022). Therefore, policy analysis requires the integration of policy implementation, organizational change, and quality management

perspectives to explain the relationships among problem diagnosis, decision-making, intervention implementation, and outcome evaluation (Dunn, 2017; Fullerton, 2025; Kurebwa et al., 2020).

The implementation gap emerges when differences in implementation capacity across regions and educational institutions intersect with a relatively comprehensive national policy framework. Variations in teacher quality, infrastructure, school conditions, and professional support may lead to unequal benefits when identical interventions are applied uniformly. Accordingly, the principles of equity and resource equity are more appropriate than simply allocating the same amount of resources to every school (Badan Pusat Statistik Nasional, 2025; Sahlberg & Cobbold, 2021; UNESCO, 2026; World Bank, 2022). In this context, the central policy problem lies in the education system's limited capacity to translate information and policies into consistent improvement actions at the school level, rather than merely in the existence of low education quality (Dwi et al., 2024; Lembong et al., 2023). The chain connecting data, analysis, leadership, capacity, implementation, and evaluation needs to be strengthened to ensure that educational reform does not stop at administrative compliance (Haas et al., 2024; Rojas-Bravo et al., 2024; Sahriah & Arismunandar, 2025; Vázquez-Cano, 2026).

METHOD

This article employs a literature review approach integrated with qualitative policy analysis to examine equity in education quality and formulate data-driven policy alternatives. The sources reviewed include Indonesian education regulations, theoretical books, government policy documents, international reports, education statistics, and journal articles relevant to policy implementation, education quality, school leadership, teacher professional development, and data-driven decision-making. Literature searches were conducted using Google Scholar, Scopus, and ERIC, while official documents were retrieved from the Ministry of Primary and Secondary Education, the National Legal Documentation and Information Network, the UNESCO Institute for Statistics, the OECD, and the World Bank. The review focused on publications from 2021 to 2026, while earlier theoretical literature and regulations were retained when relevant to explaining conceptual foundations and the development of education policies. The literature search was conducted from October 10 to 17, 2026. The keywords included education policy implementation, school leadership, equity in education quality, teacher distribution, and data-driven decision-making, together with their Indonesian equivalents.

Documents were selected based on their relevance to (1) the policy questions, (2) the examination of education quality and equity, (3) policy design and implementation, (4) institutional capacity, (5) education evaluation in Indonesia, or (6) comparative evidence from other education systems. Priority was given to government publications, credible international institutional reports, official regulations, and peer-reviewed journal articles. Documents were excluded if they were unrelated to the focus of the study, merely repeated information already available from more authoritative sources, or lacked adequate bibliographic or methodological information. The selection process involved identifying relevant documents, screening titles and abstracts or executive summaries, assessing their alignment with the policy questions, and extracting information from the selected documents. This approach was chosen because the purpose of the study was to synthesize policy issues and formulate alternative interventions rather than predict the causal effects of a particular program.

Data extraction was conducted using a document analysis matrix containing the author or issuing institution, year of publication, policy issue, document type, geographical context, main findings, implementation barriers, and implications for equity in education quality. The analysis proceeded through six stages: (1) mapping policy problems and establishing their urgency; (2) identifying institutional, structural, and operational root causes; (3) reviewing existing policy instruments and identifying implementation gaps; (4) analyzing stakeholder interests and their respective roles and responsibilities; (5) comparing policy alternatives; and (6) formulating recommendations, an implementation roadmap, and a monitoring and evaluation framework.

The data were analyzed thematically using several complementary analytical frameworks. Communication, resources, implementers' dispositions, and bureaucratic structures were examined using Edwards III's policy implementation framework (Edwards III, 1980; Zahra & Nugroho, 2025). Fullan's perspective on educational change was used to interpret the organizational processes and dynamics involved in implementing education policies (Fullan, 2002; Fullan et al., 2020). Sallis's Total Quality Management (TQM) perspective was employed to analyze leadership, quality measurement, teamwork, and continuous improvement as interconnected elements of an ongoing improvement cycle

(Billah & Karim, 2021; Nining Saputri et al., 2024; Sallis, 2002; Verma, 2025). The interpretation of findings was restricted to patterns supported by the available sources. PISA results, learning poverty estimates, education statistics, and Education Report Card data were treated as complementary evidence describing the conditions of the education system and providing context for policy analysis. Findings from the literature were used to explain implementation mechanisms and gaps. Changes in education indicators, including increases or decreases, were not automatically interpreted as causal effects of a particular policy unless supported by an adequate causal research design. The final synthesis connected the identified problems, available evidence, and alternative policies for an integrated approach to equity in education quality (Banque mondiale, 2023; Kemendikdasmen, 2025; OECD, 2024; OECD, 2023b; World Bank, 2022).

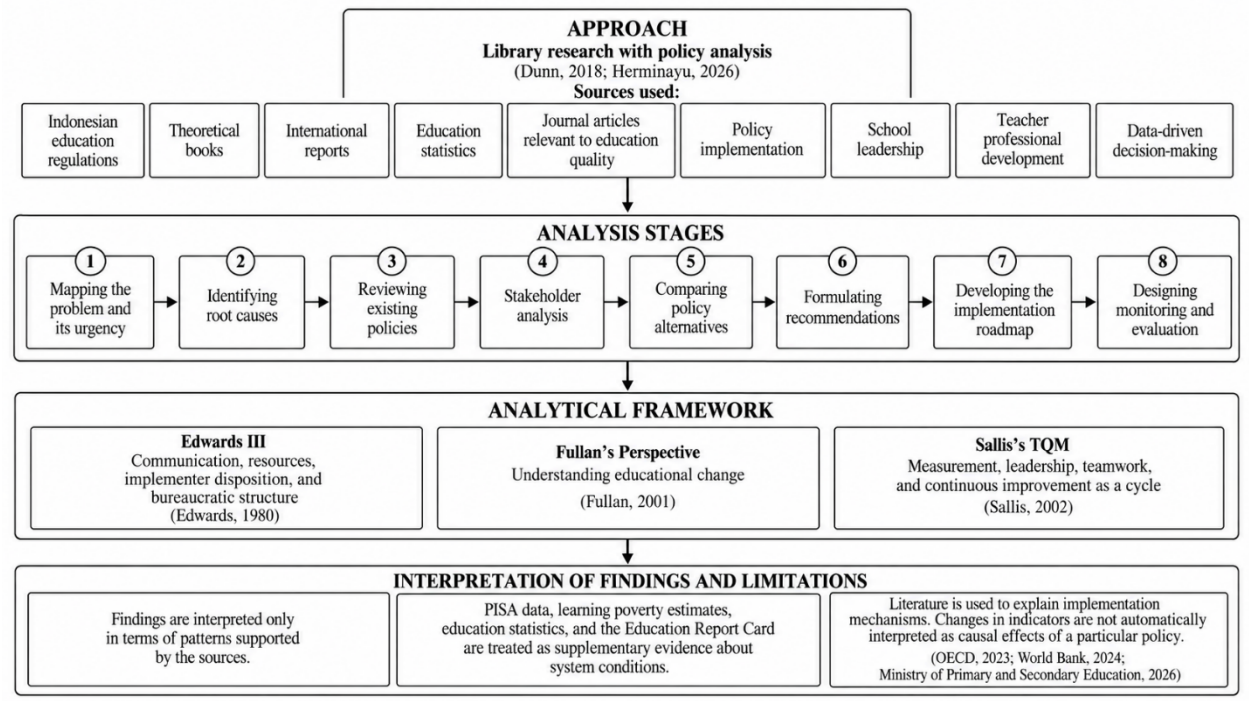


Figure 1. Source selection and synthesis framework

RESULTS AND DISCUSSION

The situational analysis identifies three major symptoms: (1) variations in learning outcomes, (2) disparities in education quality across regions, and (3) differences in the quality of instructional practices. These symptoms are associated with (1) resource availability, (2) teacher quality, (3) school leadership, (4) organizational culture, (5) data utilization, and (6) local government capacity. The Education Report Card (Rapor Pendidikan) is positioned as a tool for diagnosis and reflection rather than merely as a reporting instrument (Kemendikdasmen, 2025).

The first root cause is the disparity in capacity across regions and schools. Schools with greater resources, stronger leadership, better access to technology, and more extensive professional support have greater opportunities to translate education policies into effective instructional practices. In the Indonesian context, the 2025 Education Report Card indicates that equitable teacher distribution remains a challenge in several regions (Kemendikdasmen, 2025, 2026). OECD findings (OECD, 2023b) also reveal disparities in the availability of educational and digital resources across schools. UNESCO (2024, 2026) emphasizes the importance of educational leadership in fostering collaboration, directing learning, and developing educators' capacities. Therefore, analyses of variations in policy implementation need to account for differences in the capacities and support available to individual schools.

The second root cause is teacher professional development that is not always connected to actual instructional needs. The effectiveness of teacher professional development depends not only on participation but also on program design, intensity, coaching, and the capacity to adapt learning to the school context (Badan Pusat Statistik Nasional, 2025; Patfield et al., 2022). A systematic review by Graham et al. (2024) identifies design principles that support the effectiveness of teacher professional

development. Rahmi and Rassanjani (2025) emphasize the importance of sustained professional development and systemic support in promoting changes in teaching practices. Accordingly, professional development programs need to be context-sensitive, continuous, and closely aligned with teachers' needs and the actual conditions of their schools (Graham et al., 2024; Seprudin, 2024).

The third root cause is limited instructional leadership. School principals need to move beyond an administrative orientation toward improving instructional quality through data utilization, teacher development, academic supervision, and the cultivation of a collaborative culture. UNESCO (2024, 2026) emphasizes that effective educational leadership focuses on learning, fosters collaboration, and develops human capacity. Empirical research by Dorukbaşı and Cansoy (2024) finds that instructional leadership is significantly associated with teachers' instructional practices, both directly and indirectly through teacher professional learning. Huang et al. (2024) demonstrate that teacher professional learning mediates the relationship between instructional leadership practices and instructional quality. These findings suggest that effective school leadership depends not only on the execution of managerial responsibilities but also on the ability to create conditions that enable teachers to engage in continuous learning and improve their instructional practices.

The fourth root cause is an organizational culture that does not yet consistently use data for continuous improvement. Data can become a resource for improvement when schools foster reflective practices, trusting relationships, collaboration, and a willingness to use evidence. Ion and López Sirvent (2022) show that important characteristics of schools oriented toward data-informed practices include leadership support and organizational commitment to data use. Rääk and Eisenschmidt (2024) emphasize the importance of sustained collaboration for the long-term improvement of schools. Lee et al. (2025) also indicate that, in certain contexts, trust among staff members is associated with more effective leadership practices in data utilization. Accordingly, strengthening organizational culture should focus on creating an environment in which data can be discussed and interpreted collectively and openly, and then used to improve instructional practices.

The fifth root cause is policy fragmentation, whereby frequent changes in programs, indicators, or procedures can increase adaptation burdens and weaken implementation coherence at the school level. The OECD (2024) identifies implementation challenges and institutional misalignment as barriers to education reform, while the OECD (2023b) emphasizes the importance of clear and coherent implementation strategies that engage relevant stakeholders. Education policy requires consistent medium-term direction while allowing room for local adaptation so that school implementation strategies can respond to students' needs and organizational capacities. In this context, policy consistency does not mean eliminating change. Rather, it means ensuring that changes are guided by clear objectives, effective coordination, and evaluations of previous policies (Fullan et al., 2020; McChesney & Cross, 2023; Nining Saputri et al., 2024; Sallis, 2002; Verma, 2025).

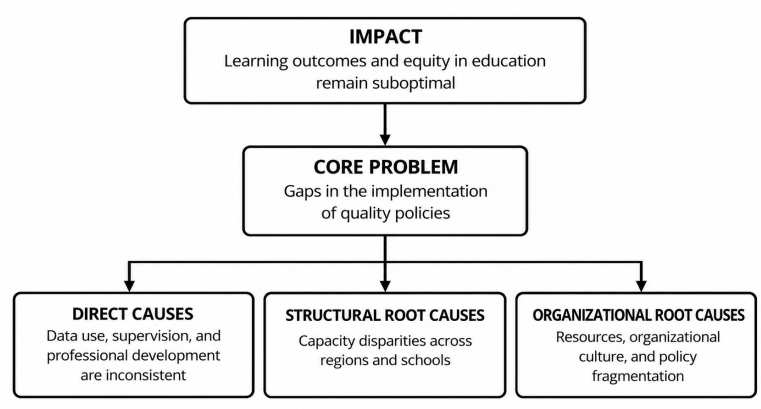


Figure 2. Problem Tree for Education Quality Improvement

Table 1. Synthesis Matrix of the 23 Studies Reviewed

Source	Context / Design	Key Finding	Policy Implications
Agirdag & Muijs (2023)	A study on school leadership development and High Performing Schools programs, examining the relationship between leadership and academic achievement.	Support for school leadership development can improve academic achievement through more effective leadership practices	Quality improvement policies should strengthen school principals' leadership capacity and ensure the consistent implementation of leadership development programs.
Alonzo et al. (2024)	A literature review of ICT-based data systems for supporting teachers' data-driven decision-making (2013–2023)	Data systems can help teachers make instructional decisions by using information more systematically; however, their effectiveness depends on system quality and users' capacity.	Governments should strengthen data infrastructure, system interoperability, teachers' data literacy, and implementation support to ensure that data are used to improve teaching and learning..
Ali & Hermansyah (2024)	A comparative study of education quality assurance policies in Indonesia and Finland.	Quality assurance depends on institutional capacity, a culture of quality, and implementation mechanisms, rather than regulations alone.	Indonesia needs to strengthen the connections among quality policies, evaluation, school and regional capacity, and continuous improvement.
BPS (2025)	National education statistics based on statistical data on education in Indonesia.	The data present various education indicators and reveal differences in educational conditions and outcomes across regions..	Data-driven quality improvement interventions should avoid a one-size-fits-all approach and take regional disparities into account..
Dunn (2017)	A book presenting a framework for public policy analysis through an integrated policy analysis approach.	Policy effectiveness needs to be analyzed in terms of problems, policy alternatives, implementation, and outcome evaluation.	Education policy analysis should go beyond assessing the existence of regulations and connect policy design with implementation processes and achieved outcomes..
Edwards III (1980)	A theoretical framework for policy implementation	Implementation gaps may emerge when key factors influencing policy implementation do not operate effectively..	This framework is highly relevant for identifying and analyzing the factors that influence the successful implementation of education policies.

Indonesia's education quality improvement policy framework encompasses the National Education System, National Education Standards, curriculum policies, education system evaluation, the Education Report Card (Rapor Pendidikan), teacher professional development, and the education quality assurance system. In terms of design, this policy architecture is relatively comprehensive, covering standards, curriculum, evaluation, human resources, and governance (Pemerintah Republik Indonesia, 2022; Peraturan Pemerintah (PP) Nomor 57 Tahun 2021 Tentang Standar Nasional Pendidikan, 2021; RI, 2003). Efforts to broaden the range of indicators used to assess education service quality are reflected in the 2026 update of the Education Report Card, which may also strengthen its role as a basis for educational planning (Kemendikdasmen, 2026). Nevertheless, the

availability of comprehensive policy instruments does not guarantee consistent implementation. The main challenges lie in integrating policy instruments, coordinating across levels of government, strengthening implementation capacity, and ensuring continuity in follow-up actions (Kemendikdasmen, 2024, 2026).

The Education Report Card is an important instrument because it encourages educational planning to move away from assumption-based approaches toward evidence-informed decision-making. The platform supports problem identification, reflection on root causes, and the formulation of improvement measures through the Identification, Reflection, and Improvement approach (Kemendikdasmen, 2025, 2026). However, the availability of data does not automatically lead to corrective action or improvement. Effective data utilization requires the capacity to interpret indicators, establish priorities, implement interventions, allocate resources, and review outcomes. The literature on data-driven decision-making indicates that technology-based data systems require appropriate system characteristics, leadership support, user capacity, and a supportive sociocultural context to generate meaningful decisions (Alonzo et al., 2024). J. Lee et al. (2024) also highlight the importance of data literacy as a set of competencies that enables users to interpret and use educational data. Therefore, the effectiveness of the Education Report Card depends on the quality of the decisions and follow-up actions it generates, rather than merely on the availability of and access to data.

Drawing on Edwards III's framework, four key dimensions can be used to analyze implementation gaps in education quality policies (Edwards III, 1980; Nining Saputri et al., 2024; Putra & Khaidir, 2019; Zahra & Nugroho, 2025). First, policy communication may not be sufficiently clear or consistent, and policy implementers may lack a substantive understanding of policy objectives. Second, resources and implementation capacity may be unevenly distributed. Third, implementers' dispositions may be influenced by administrative workloads and their experiences with previous policy changes. Fourth, bureaucratic structures involving operational procedures, the division of authority, and interinstitutional coordination may lead to fragmentation when coordination among central government, local governments, and schools is insufficient (Edwards III, 1980). In the context of Indonesian education, these four dimensions provide an analytical framework for examining whether policy implementation is consistently supported by effective relationships among central government, local governments, and educational institutions. This framework is intended to identify implementation gaps that require empirical verification rather than assuming that the same conditions apply uniformly across all regions and schools.

The policy implications suggest that existing policies do not necessarily need to be replaced to improve education quality. Instead, improvement efforts should focus on integrating education system evaluation, the Education Report Card, academic supervision, teacher professional development, instructional leadership, and needs-based budgeting into a continuous improvement cycle. This approach is consistent with the Total Quality Management (TQM) perspective, which views measurement, leadership, teamwork, self-assessment, and continuous improvement as interconnected and sustained elements of quality management (Billah & Karim, 2021; Nwabueze, 2011; Sallis, 2002; Verma, 2025). Within this framework, evaluation data provide the basis for establishing priorities; leadership and teamwork translate these priorities into action; and self-assessment and outcome measurement are used to evaluate intervention effectiveness and determine subsequent improvements. Accordingly, policy integration should focus on ensuring continuity across planning, implementation, evaluation, and follow-up while allowing schools and local governments to adapt interventions to their respective needs and capacities

Education quality improvement is a multisectoral policy involving school principals, teachers, students, parents, communities, school supervisors or support personnel, local governments, and central government. Successful education reform requires alignment between system leadership and school leadership. UNESCO (2024) emphasizes that educational leadership needs to be developed across four key dimensions at different levels of government and educational institutions: setting direction, focusing on learning, strengthening collaboration, and developing human capacity. School principals and teachers are key actors because of their roles in translating policies into instructional practices. Local governments serve to strengthen institutional capacity, coordinate support, and ensure alignment between school needs and education policies. The success of reform policies depends on policy design, implementation capacity, coordination, and stakeholder engagement (OECD, 2020; UNESCO, 2024). As presented in Table 1, stakeholder engagement strategies are differentiated according to stakeholders' influence, interests, contributions, and authority in improving education quality. School principals' capacity can be strengthened through coaching, mentoring, and

instructional leadership development. Teachers need professional learning communities, coaching, needs-based professional development, and opportunities to reflect on their instructional practices. School supervisors require instructional support and facilities for improving teaching and learning, rather than focusing solely on monitoring administrative compliance. Local governments need capacity-building support to coordinate across educational institutions and use dashboards to establish priorities for support. Students and parents should be provided with opportunities to offer information and feedback regarding learning experiences, learning outcomes, and educational support needs. These strategies are consistent with UNESCO's (2024) recommendations to strengthen collaborative leadership, develop the capacity of education officials, and engage teachers, students, parents, and communities in educational governance.

Table 2. Stakeholder Analysis of Education Quality Improvement Policies

Stakeholder	Interests	Influence	Engagement Strategies
Ministry of Primary and Secondary Education (Kemendikdasmen)	National education quality, equity, and accountability	High	Regulations, national data, and technical support
Local Governments	Regional performance and public services	High	Capacity building and coordination
School Principals	School quality and instructional leadership	High	Coaching, supervision, and leadership communities
Teachers	Teaching and learning quality and professional development	High	Professional Learning Communities (PLCs), coaching, and needs-based professional development
School Supervisors/ Mentors	Quality improvement support	Medium–High	Instructional support
Students	Learning experiences and outcomes	Medium	Student voice and learning outcome data
Parents/Community	Child development and accountability	Medium	Communication and participation

Table 2 presents three policy alternatives for improving education quality based on nine criteria: effectiveness, efficiency, equity, technical feasibility, administrative feasibility, fiscal feasibility, acceptability, sustainability, and implementation risk. Table 3 presents the results of the analytical assessment, while Figure 3 provides a visual comparison of the total scores for the three alternatives. The first alternative emphasizes compliance and administrative oversight. This approach receives a total score of 30, with its strengths in administrative feasibility and technical feasibility, each scoring 5, followed by efficiency and fiscal feasibility, each scoring 4. These results indicate that the approach relies on existing bureaucratic structures, procedures, and oversight mechanisms. However, according to the assessment, equity and sustainability each receive a score of only 2, indicating relative weaknesses in these dimensions. One risk that warrants attention is that schools may shift their focus from improving instructional quality toward fulfilling administrative documentation requirements. The TQM perspective emphasizes that education quality requires teamwork, leadership, performance measurement, and self-assessment rather than procedural control alone (Billah & Karim, 2021; Sallis, 2002; Verma, 2025).

The second alternative expands centralized teacher professional development. This alternative receives a total score of 31, slightly higher than the compliance-based approach. Its strengths lie in effectiveness and acceptability, each scoring 4. However, efficiency and fiscal feasibility each receive a score of 3, indicating that costs and resource requirements need to be considered during implementation. This approach can disseminate competency standards and good instructional practices, but its impact depends on alignment with teachers' needs, coaching, school context, and classroom application (Patfield et al., 2022; Sallis, 2002; Verma, 2025). Huang et al. (2024) found that professional learning among 2,274 teachers in 181 junior secondary schools in China constituted one of the mechanisms linking principals' instructional leadership to differences in instructional quality between urban and rural schools. This finding supports the importance of connecting teacher professional development in Indonesia with instructional leadership, although it does not directly

evaluate the effectiveness of centralized training. The third alternative is the Data-Driven Quality Improvement System through Instructional Leadership (Sistem Peningkatan Mutu Berbasis Data dan Kepemimpinan Pembelajaran, SPM-DKP). This system connects the Education Report Card with root-cause diagnosis, instructional leadership, academic supervision, teacher professional development, professional learning communities, regional support, and monitoring and evaluation. This alternative receives the highest total score of 37, with strengths in equity, effectiveness, and sustainability, each scoring 5. Efficiency, technical feasibility, administrative feasibility, and acceptability each receive a score of 4. However, fiscal feasibility receives a score of 3, indicating that funding requirements and resource sustainability require further consideration. Its main advantage is the integration of existing instruments and the potential to provide differentiated support to schools according to their needs (Alonzo et al., 2024; Huang et al., 2024).

Table 3 shows that the SPM-DKP alternative, with a total score of 37, exceeds centralized teacher professional development, which scores 31, by 6 points and the compliance-based approach, which scores 30, by 7 points. These differences indicate that SPM-DKP achieves a higher overall analytical assessment based on the nine criteria employed. The third alternative may therefore be prioritized for further development and testing because it offers an approach that connects data utilization, instructional leadership, professional development, and quality evaluation within a single improvement cycle. Nevertheless, these results represent the author's analytical assessment rather than empirical evidence that SPM-DKP has been demonstrated to be more effective in practice. Further validation is required through pilot implementation, cost assessments, and evaluations of implementation across diverse school contexts.

Table 3. Analytical Scores for Policy Alternatives (1–5)

Criteria	Compliance	Training	SPM-DKP
Effectiveness	3	4	5
Efficiency	4	3	4
Equity	2	3	5
Technical Feasibility	5	4	4
Administrative Feasibility	5	4	4
Fiscal Feasibility	4	3	3
Acceptability	3	4	4
Sustainability	2	3	5
Implementation Risk	2	3	3
Total Score	30	31	37

The third alternative, the Data-Driven Quality Improvement System through Instructional Leadership (Sistem Peningkatan Mutu Berbasis Data dan Kepemimpinan Pembelajaran, SPM-DKP), was selected because it provides the strongest connection between educational data and action while strengthening local capacity within a continuous improvement cycle. This system positions the central government as the authority responsible for setting standards and providing policy infrastructure, local governments as capacity builders, school principals as instructional leaders, teachers as professional learners, and schools as the primary units of quality improvement (Kemendikdasmen, 2026; Sallis, 2002; Verma, 2025). This approach aligns with educational leadership principles that emphasize a focus on learning and capacity development. It is also consistent with the Total Quality Management (TQM) perspective, which emphasizes leadership, self-assessment, teamwork, quality measurement, and continuous improvement (Sallis, 2002; UNESCO, 2024; Verma, 2025).

As illustrated in Figure 2, the SPM-DKP mechanism is implemented through a data → action → review cycle. The cycle begins by integrating the Education Report Card (Rapor Pendidikan) with local data to diagnose school quality issues. Each school identifies one to three urgent quality improvement priorities, develops a measurable improvement plan, provides needs-based professional development, conducts academic supervision and coaching, and reviews data periodically. School supervisors and support personnel are positioned as providers of instructional support rather than merely as inspectors of administrative compliance (Huang et al., 2024; UNESCO, 2024, 2026). The implementation of SPM-DKP adopts the principle of differentiated support, whereby support is tailored to the capacity, needs, and challenges of individual schools. Schools do not receive the same level of support; instead, the intensity of support is adjusted to their respective needs, capacities, and challenges. This approach is important to ensure that policy implementation does not widen existing disparities among schools that begin from different starting points (Badan Pusat Statistik Nasional, 2025; World Bank, 2022).

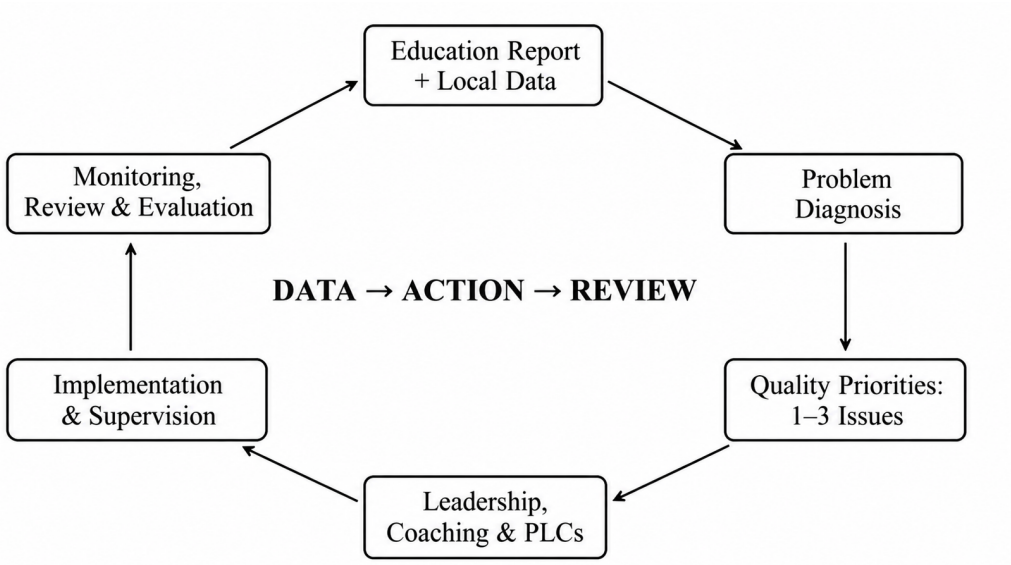


Figure 2. Data-Driven Quality Improvement and Instructional Leadership System Cycle (SPM-DKP)

The SPM-DKP implementation roadmap is designed to span three years and consists of five phases: preparation, piloting, implementation, scaling up, and evaluation. A phased approach is necessary to ensure that policy implementation can adapt to local conditions, build implementers' capacity, and incorporate lessons learned from initial implementation. Each phase has defined activities, outputs, and success indicators that provide a basis for determining readiness to proceed to the next phase. Experiences gained by schools and local governments during implementation can inform an adaptive approach to improving the policy design (Patfield et al., 2022).

During the preparation phase (months 0–6), central and local governments map implementation readiness, establish standards for data utilization, and prepare facilitator training. The main outputs of this phase are a readiness map and a supporting toolkit, with a target that at least 90% of pilot areas have adequate baseline data. The pilot phase (months 6–12) focuses on implementing the data–action–review cycle through professional learning communities (PLCs), coaching, and data-informed academic supervision. Success in this phase is indicated by at least 80% of pilot schools implementing the data–action–review cycle.

From the first to the second year, implementation focuses on expansion, strengthening the capacity of school principals and supervisors, and integrating budgeting processes. During this phase, monitoring assesses whether planned activities have been implemented and whether data utilization and instructional practices have improved. From the second to the third year, the focus shifts to results-based scaling up and differentiated support. The principle of differentiated support is applied by tailoring assistance to each school's capacity, needs, and challenges. Consequently, expansion is measured not only by the number of participating schools but also by the system's ability to reduce disparities in support across schools and regions. The evaluation conducted in the third year assesses outcomes and impacts to inform policy refinement. The main output of this phase is an implementation impact report accompanied by recommendations focused on improving education quality indicators and instructional practices (Kemendikdasmen, 2025, 2026; Patfield et al., 2022).

Monitoring and evaluation need to distinguish between policies that have been implemented and policies that have produced meaningful change. The input–process–output–outcome–impact framework can be used to examine (1) resource availability, (2) implementation quality, (3) activity outputs, (4) changes in capacity and instructional practices, and (5) impacts on education quality and equity. Process indicators include data utilization, coaching, PLC implementation, and academic supervision. Outcome indicators include changes in instructional practices, improvements in leadership capacity, and the quality of follow-up actions. Impact indicators focus on improvements in education quality and reductions in disparities in learning outcomes among the target populations prioritized by the policy. Evaluation during the scaling-up phase should combine quantitative data with qualitative information on the experiences of teachers, school principals, and local governments to explain what changes have occurred and the conditions under which these changes have taken place (Dunn, 2017; Sallis, 2002).

Table 3. Three-Year SPM-DKP Implementation Roadmap.

Phase	Timeline	Key Activities	Outputs	Indicators
Preparation	Months 0–6	Readiness mapping; data utilization standards; facilitator training	Readiness map and toolkit	≥90% of pilot areas have adequate baseline data
Pilot	Months 6–12	Coaching; professional learning communities (PLCs); data-informed supervision	School improvement plans	≥80% of schools implement the data–action–review cycle
Implementation	Years 1–2	Expansion; strengthening school principals' and supervisors' capacity; budget integration	Operational system across participating regions	Increased data utilization and improved instructional practices
Scaling Up	Years 2–3	Results-based scaling up; differentiated support	Gradual expansion toward national coverage	Reduced disparities in support across regions
Evaluation	Year 3	Outcome and impact evaluation; policy revision	Impact report and recommendations	Improvements in education quality indicators and instructional practices

The greatest risk in implementing education quality improvement policies lies not merely in technological limitations but in the limited implementation capacity of the education system and individual schools. Schools may experience implementation overload when they receive excessive instructions, reporting requirements, and performance indicators while having limited time, resources, competencies, and professional support. The OECD (2024) identifies resource constraints and limited stakeholder capacity as barriers to implementing education reforms. UNESCO (2024) also highlights how school principals' administrative workloads restrict the time available for instructional leadership. Therefore, simplification, mentoring, leadership development, and opportunities for local adaptation should be emphasized in risk mitigation strategies (Alonzo et al., 2024; J. Lee et al., 2024; Triwiyanto, 2024; Triwiyanto & Iriani, 2022).

Other risks include budget constraints, limited human resource capacity, stakeholder resistance, the digital divide, administrative burdens, institutional coordination challenges, and the symbolic use of data without resulting improvements in instructional practices. Lee et al. (2024) emphasize that technology provision must be accompanied by user capacity development and organizational support. Risk mitigation strategies include co-design, integration with existing budgets, coaching and train-the-trainer programs, offline or low-bandwidth access options, clear role definitions across governance levels, reduction of duplicated reporting requirements, and audits of data utilization quality (Dunn, 2017; Sallis, 2002; Verma, 2025).

CONCLUSION

The strategic challenge of improving education quality in Indonesia lies not merely in the availability or adequacy of policies, but in the varying capacity of the education system to translate policies into sustainable improvements in teaching and learning processes and outcomes. A synthesis of education indicators and policy documents, including PISA results, education statistics, learning poverty estimates, and the Education Report Card (Rapor Pendidikan), indicates the need for policies that address both outcomes and equity. Meanwhile, relevant research and literature identify leadership, professional development, data utilization, and collaborative school culture as important mechanisms for effective policy implementation. Policy orientation needs to shift from administrative compliance toward evidence-based continuous improvement. This shift does not eliminate standards or accountability; rather, it repositions standards as a foundation for improvement. Schools need to be

positioned as learning organizations, school principals as instructional and change leaders, teachers as professional learners, and governments as both policy stewards and capacity builders. The main contribution of this study is the development of a conceptual framework for the Data-Driven Quality Improvement System through Instructional Leadership (Sistem Peningkatan Mutu Berbasis Data dan Kepemimpinan Pembelajaran, SPM-DKP), which integrates data, instructional leadership, academic supervision, professional development, regional support, and evaluation into a continuous improvement cycle. Theoretically, SPM-DKP contributes to educational policy and quality management scholarship by providing an integrative framework that explains the relationships among data utilization, leadership, professional development, and instructional improvement. This framework seeks to bridge the gap between policy formulation and implementation at the school level. The central principle of education policy is that data must lead to action, action must be guided by leadership, leadership must be strengthened, and every intervention must be evaluated based on the changes it produces. In this way, education policy can move beyond documents toward a tangible, equitable, and sustainable system of quality improvement.

DECLARATION OF GENERATIVE AI

The authors declare that no generative AI or AI-assisted technologies were used in the writing process of this manuscript.

CONFLICTING INTEREST STATEMENT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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