

DATA-DRIVEN PERFORMANCE EVALUATION AS THE FOURTH PILLAR OF EDUCATIONAL HUMAN RESOURCE MANAGEMENT AT SD NEGERI KARANGREJO 01, SEMARANG

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ABSTRACT

Educational human resource management requires an integrated data-driven evaluation system to continuously enhance teacher capacity. This study aims to analyze the implementation of Data-Driven Performance Evaluation as the Fourth Pillar of Educational Human Resource Management at SD Negeri 01 Karangrejo, Semarang, focusing on its sensory, integrative, and motor functions, alongside its enabling and hindering factors. Employing a qualitative case study design, data were collected through non-participant observation, documentation, and semi-structured interviews with four informants (the principal and three teachers), and analyzed using thematic analysis. The findings reveal that while the sensory function is robustly institutionalized through digital platforms (*e-Kinerja* and *Rumah Pendidikan*) and the integrative function is enriched by organic, informal teacher reflections, the system suffers from "follow-up paralysis" due to a weak motor function that fails to link evaluation data to personalized professional development. Supportive principal leadership serves as the primary enabler, whereas heavy administrative burdens act as the main hindrance. Theoretically, this underscores the functional interdependence within the Five Pillars framework, while practically implying the urgent need for structured follow-up mechanisms and platform simplification to shift from mere administrative compliance to authentic professional growth.

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INTRODUCTION

21st-century education places the quality of human resources as the primary determinant of a nation's competitiveness. In a global landscape marked by technological disruption and rapid social change, educational institutions no longer function merely as vehicles for knowledge transmission, but rather as dynamic ecosystems that

must continuously adapt and enhance their internal capacity (Schleicher, 2018). At the heart of this ecosystem are professional, adaptive, and student-centered educators. Numerous cross-national studies have shown that the quality of student learning is largely determined by the extent to which school management systems are able to systematically manage teacher performance data and translate it into targeted development policies (Gaftandzhieva et al., 2023; Rose, 2025).

In Indonesia, improving teacher quality is a national priority, reflected in transformative initiatives such as the *Rumah Pendidikan Platform*, *e-Kinerja*, and *Ruang Guru dan Tenaga Kependidikan* (GTK). These policies implicitly recognize teachers as professional capital whose investment requires careful management (Hargreaves & Fullan, 2012). While instructional and distributed principal leadership is a crucial prerequisite for managing professional development (Amzat et al., 2022; Istiqomah et al., 2026; Nnorom, et al., 2023), policy implementation faces a fundamental operational challenge: the gap between the availability of performance data and its utilization for managerial decision-making, a widespread phenomenon across various contexts (Ansyari et al., 2022; Gaftandzhieva et al., 2023).

This gap stems from the weak integration of evaluation and development functions. Conceptually, evaluations should provide diagnostic, constructive feedback (Darling-Hammond, 2017). However, in practice, teacher assessments frequently remain impressionistic, subjective, or merely administrative (Ashlan & Akmaluddin, 2021). Equating "data availability" with "data utilization" is a flawed misconception (Mandinach & Schildkamp, 2021), as moving between these stages requires multiple levels of data literacy (Lee et al., 2024). Although structured training improves teacher data literacy (Filderman et al., 2022), this improvement fails to impact classroom practices without integrated follow-up mechanisms.

Addressing this, a conceptual framework of educational human resource management in Indonesia positions Data-Based Performance Evaluation as Pillar 4 (Suryapermana & Rahmatullah, 2025). This pillar serves as the system's nerve center, simultaneously executing sensory (data collection), integrative (processing), and motor (strategic follow-up) functions. Weaknesses in one function can cripple the entire system, reflecting how current data-driven practices in schools remain fragmented (Hebbecker et al., 2022). SD Negeri 01 Karangrejo, Semarang City, was chosen as the research location because, despite its Grade A accreditation and adoption of a digital evaluation platform, it provides an ideal empirical setting to explore the breakdowns within these three functions.

Previous studies have generally examined teacher performance evaluation through fragmented lenses. For instance, Sun et al. (2024) focused on data collection technicalities, Jimerson et al. (2021) and Villeneuve and Bouchamma (2023) emphasized professional learning communities, and Van den Boom-Muilenburg et al. (2023) isolated the role of school leadership. However, these previous studies possess a fundamental weakness: they treat these elements as independent variables rather than a unified system. By failing to examine how the sensory, integrative, and motor functions operate simultaneously, prior research overlooks the operational bottlenecks that prevent data from becoming actionable policies. Moreover, empirical evidence on implementing this integrated model in Indonesian primary schools remains scarce, despite primary schools having unique organizational characteristics that generate distinct implementation dynamics compared to other educational settings (Martínez et al., 2019).

Filling this gap is crucial because the success of educational reform depends not only on the availability of teacher performance data but also on schools' ability to integrate it into a continuous decision-making cycle. Unlike previous studies that examined data collection, leadership, or professional learning communities separately, this study conceptualizes Data-Driven Performance Evaluation as an integrated system of sensory, integrative, and motor functions within Educational Human Resource Management. By examining the interaction among these functions in Indonesian primary schools, this study provides empirical evidence to advance the conceptual model of the Fourth Pillar of Educational Human Resource Management.

Based on this background, this study aims to analyze the implementation of Data-Driven Performance Evaluation as the Fourth Pillar of Educational Human Resource Management by examining its sensory, integrative, and motor functions, as well as the factors that support and hinder its implementation in primary schools. The study is expected to strengthen the conceptual framework of Data-Driven Performance Evaluation and provide evidence-based recommendations for developing more effective and sustainable teacher performance evaluation systems.

METHOD

This research employed a qualitative approach with a descriptive case study design (Yin, 2018). This approach was chosen to gain an in-depth understanding of the implementation of Data-Based Performance Evaluation as the Fourth

Pillar of Educational Human Resource Management in the real-life context of elementary schools, taking into account the interrelationship between the phenomenon under study and its organizational environment. The single-case study design allows for analytical generalizations of the Pillar 4 conceptual model, rather than statistical generalizations (Al Maktoum & Al Kaabi, 2024; Yin, 2018).

The research was conducted at SD Negeri 01 Karangrejo, Semarang City, Central Java, during the even semester of the 2025/2026 academic year. The school was purposively selected because it was accredited A, had implemented the Education House, e-Kinerja, and *Ruang GTK*, and had a school culture that supported the use of data in decision-making. Informants were selected using purposive sampling based on direct involvement in teacher performance evaluation, experience using digital platforms, and willingness to participate in the research. Informants consisted of the principal as the primary informant and three teachers with varying lengths of service, subjects, and levels of digital platform utilization to obtain diverse perspectives. Data collection was stopped after reaching data saturation, that is, when interviews no longer yielded new substantive information (Poulou et al., 2023).

Data was collected through semi-structured interviews, non-participant observation, and documentation studies. A total of 4 interview sessions were conducted with the informants comprising the school principal and three teachers with each session lasting approximately 30 to 45 minutes. The interview guide was developed based on a literature review on data-driven decision-making, teacher performance evaluation, and the Pillar 4 conceptual framework, which encompasses sensory, integrative, and motor functions. It was then reviewed by two education management experts before use. The interviews explored the performance data collection process, data analysis, feedback mechanisms, follow-up on evaluation results, and supporting and inhibiting factors for implementation.

Table 1. Operationalization of Research Focus and Data Collection Techniques

Subfocus	Indicator	Data collection technique
Sensory Function	Types of performance data, data sources, instruments, collection frequency, utilization of <i>Rumah Pendidikan/e-Performance/Ruang GTK</i>	Interviews, documentation studies
Integrative Function	Data analysis and interpretation, reflection forum, use of supervision results, decision making	Interviews, observations, documentation studies
Motor Function	Feedback, follow-up, training, coaching, monitoring	Interviews, documentation studies

Observations were conducted on the use of information technology, the implementation of academic supervision, the culture of teacher professional discussion, and the use of data in school decision-making. Documentation included anonymized Employee Performance Targets/e-Kinerja forms, supervision reports, teacher training schedules, screenshots of *Rumah Pendidikan* and *Ruang GTK*, recapitulations of student learning outcomes, and teacher reflection journals. Data collection began with research permits, followed by interviews, observations, and document reviews according to a schedule agreed upon with informants, allowing for triangulation between data sources (Nkundabakura et al., 2022).

Data analysis used Miles et al. (2014) interactive model, which includes data reduction, data presentation, conclusion drawing, and verification. The analysis was conducted manually through open coding, categorization, and theme development based on the three main functions of Pillar 4: sensory, integrative, and motoric functions. Data validity was maintained through source triangulation by comparing interview results, observations, and documentation, and strengthened through member checking with informants, peer debriefing between research teams, and an audit trail to document the entire analysis process, thereby increasing the credibility and traceability of research findings (Jimerson et al., 2021).

RESULT AND DISCUSSION

RESULT

Sensory Functions in Data-Based Performance Evaluation

Based on interviews, observations, and documentation studies, the school collected various types of teacher performance data as the basis for implementing data-based performance evaluations. The collected data included student learning outcomes in the form of a recapitulation of grades for each class, learning supervision results, teacher attendance data, learning portfolios, teacher self-reflections, and peer assessments. The documentation also showed that all teachers

had active accounts on the *Rumah Pendidikan* and *Ruang GTK* platforms, while employee performance targets were filled in periodically in accordance with applicable regulations.

Interviews with the principal revealed that the data collection process was conducted continuously through various sources. The principal explained:

"Teacher performance data comes not only from supervision results, but also from the Rumah Pendidikan, e-Performance, attendance, learning tools, student learning outcomes, and teacher reflections. All of this data serves as input for teacher coaching," (Principal).

These findings are reinforced by observations showing that classroom supervision is conducted on a regular schedule at least once per semester, accompanied by informal monitoring of learning during daily activities. Furthermore, supervision documents and employee performance target forms on e-Kinerja demonstrate that teacher performance recording is systematically conducted through digital platforms and school administrative documents. Teachers also stated that utilizing digital platforms has become part of their daily tasks. One teacher stated:

"All teachers have used the Rumah Pendidikan and Ruang GTK. Every time there's a competency development activity or performance review, we access the platform so our activities are documented." (Teacher 2).

Observations of school facilities revealed the availability of computers in the teachers' lounge and internet access, which are used to support data entry in the *Rumah Pendidikan* and *Ruang GTK* and e-Performance. Documentation findings also revealed that various performance evaluation documents, supervision reports, teacher portfolios, and student learning outcome summaries are well-maintained and serve as sources of information in the performance evaluation process.

Table 2. Sensory Function Findings of Data-Based Performance Evaluation

Indicator	Findings
Types of performance data	Student learning outcomes, supervision, attendance, portfolio, teacher reflection, peer assessment
Collection frequency	Supervision at least once per semester, informal monitoring every day, and periodic e-Performance
Instrument	Supervision form via e-Performance in the <i>Ruang GTK</i>
Digital platform	All teachers have an active <i>Ruang GTK</i> account on the <i>Rumah Pendidikan</i>

These findings suggest that teacher performance data have evolved beyond mere administrative compliance toward evidence-based professional reflection. The sensory function is robustly institutionalized, demonstrating that comprehensive data collection through integrated digital platforms effectively forms a strong foundation for data-driven evaluation.

Integrative Function in Data-Based Performance Evaluation

Based on interviews, observations, and documentation studies, the processing and utilization of teacher performance data at SD Negeri 01 Karangrejo was conducted through a collaborative process between the principal and teachers. Supervision data, performance achievements, student learning outcomes, and information from digital platforms were discussed in evaluation meetings to identify teacher strengths, weaknesses, and development needs. Observations indicated that the evaluation process was conducted not only through formal forums but also in professional discussions between teachers after learning activities.

The principal explained that the evaluation results were not used immediately as the basis for unilateral decision-making, but were first discussed with the teachers to achieve a shared understanding of the situation. The principal stated:

"After supervising or reviewing the e-Performance results in the Ruang GTK, we don't immediately issue an assessment. We usually discuss it with the teacher first to determine the cause and find a solution together." (Principal)

Interviews with teachers indicated that they had the opportunity to read and understand the results of their performance evaluations before receiving feedback from the principal. One teacher stated:

"We usually review the supervision results or data in the Rumah Pendidikan and Ruang GTK. After that, we discuss it with the principal so we know what needs improvement." (Teacher 1).

Observational findings indicate the practice of professional discussions that take place routinely after teaching and learning activities conclude. In these discussions, teachers share teaching experiences, discuss challenges encountered in class, discuss supervision results, and exchange learning strategies deemed effective. Although these activities lack a written agenda or official minutes, interviews indicate that they have become a consistent practice. One teacher explained:

"After we finish teaching, we usually chat together in the teachers' lounge. We share the day's lessons, any difficulties we've encountered, or solutions we can try tomorrow." (Teacher 3)

Documentation shows that formal evaluation forums are implemented through teacher meetings and supervisory follow-up, while informal discussions occur spontaneously as needed. Both forms of interaction are part of the process of processing and utilizing performance data in data-driven performance evaluations at schools.

Table 3. Findings of the Integrative Function of Data-Based Performance Evaluation

Indicator	Findings
Data analysis	Supervision data, learning outcomes, Education House, and e-Performance in the <i>Ruang GTK</i> are discussed with the principal and teachers.
Data interpretation	Teachers are given the opportunity to understand the evaluation results before receiving feedback.
Reflection forum	Formal discussions through teacher meetings and informal discussions after learning
Use of supervision results	The results of supervision are used as discussion material to identify improvement needs.

These results indicate that the integrative function is most effective when it combines formal evaluation procedures with organic, collaborative sense-making. The presence of informal daily reflections allows teachers to internalize performance data constructively, shifting the evaluation paradigm from a top-down judgment to a shared professional dialogue.

Motor Functions in Data-Based Performance Evaluation

Based on interviews, observations, and documentation studies, follow-up to teacher performance evaluations at SD Negeri 01 Karangrejo is carried out through several forms of professional development activities. The most frequently implemented follow-up activities are teacher participation in webinars, training, and regularly held competency development activities. Documentation shows that the school maintains a weekly webinar schedule attended by all teachers as part of its efforts to improve professional competency.

The principal explained that the results of performance supervision and evaluation are used as considerations in providing guidance to teachers regarding necessary competency development. The principal stated:

"After supervision, we provide feedback to teachers and encourage them to participate in training or webinars tailored to their learning needs. The evaluation results serve as guidance, although not all of them can be directly followed up." (Principal).

Teachers also reported that feedback from the principal is generally provided after supervision is carried out or through discussions at evaluation meetings. One teacher explained:

"Usually, after supervision, we receive feedback on the learning that has been carried out. If there is appropriate training, we are directed to attend it." (Teacher 2).

Observations and documentation indicate that professional development activities are conducted routinely, primarily through weekly webinars and various training sessions facilitated by schools and relevant agencies. However, interviews revealed that the selection of training sessions for teachers was not always based directly on individual

performance evaluations. Furthermore, school documentation does not indicate any changes in teaching assignments or individual coaching programs explicitly based on the analysis of teacher performance data. One teacher stated:

"Training is often held, and we attend, but it's not necessarily based on supervision. We usually follow the schedule or the information provided." (Teacher 1).

These findings indicate that follow-up actions on performance evaluation results have been implemented in the form of feedback and teacher professional development. However, based on interviews and documentation, the mechanism for linking individual performance evaluation results to the follow-up program has not been formally documented in teacher professional development plans.

Table 4. Motor Function Findings of Data-Based Performance Evaluation

Indicator	Findings
Feedback on evaluation results	The principal provides input after supervision and through evaluation meetings.
Follow-up	Teachers participate in webinars and training as a form of competency development.
Professional development	The school hosts weekly webinars and facilitates training.
Follow-up monitoring	No documentation has been found showing systematic monitoring of the follow-up of individual evaluation results.

Key enabling factors include: strong principal support in actively facilitating the evaluation process in line with the finding that principal instructional leadership contributes to successful teacher professional development, the availability of ICT infrastructure including computers in the staff room and adequate internet connectivity, regular weekly training programs and webinars, and an open and collaborative school climate reflected in a culture of afternoon discussions. Conversely, the most consistent inhibiting factors mentioned by informants include high administrative burdens, occasional application errors, technical glitches in the digital platform application, inadequate socialization of platform features, and time constraints due to busy teaching schedules.

Consequently, the motor function emerges as the weakest component of the evaluation cycle. Although general professional development activities exist, the absence of systematic linkages between individual evaluation data and targeted follow-up actions indicates a critical gap. The evaluation process essentially halts at the diagnostic stage, failing to translate data into prescriptive, individualized growth trajectories.

DISCUSSION

The successful establishment of a comprehensive data collection infrastructure at SD Negeri 01 Karangrejo signifies a crucial paradigm shift from input-oriented to outcome-oriented evaluation. By leveraging principal leadership and national digitalization mandates (*e-Kinerja* and *Rumah Pendidikan*), the school has demonstrated that standardized frameworks can effectively institutionalize the sensory function. This progression is not merely procedural but reflects a broader systemic transformation, mirroring data utilization trends in higher education where data collection acts as the foundational baseline for accountability and targeted growth (Gaftandzhieva et al., 2023).

Beyond formal structures, the discovery of informal daily reflection practices highlights a critical, organic dimension of data literacy. These practices substantively embody the core tenets of data-driven reflective dialogue exchanging learning insights and collaboratively exploring problems as recommended by Schildkamp (2019). This reinforces the argument that effective data-driven decision-making often emerges organically from collegial interactions rather than strictly formalized management mechanisms (Hebbecker et al., 2022). However, the tacit nature of these undocumented dialogues poses a significant sustainability risk for organizational memory, confirming warnings that sustained data-driven professional learning communities require deliberate preservation strategies, especially during leadership transitions (Van den Boom-Muilenburg et al., 2023).

The identified weakness in the motor function constitutes a systemic bottleneck that disrupts the ecological connection between performance evaluation (Pillar 4) and capacity development (Pillar 2). While principals may successfully engage in evaluative dialogue, the frequent failure to translate these dialogues into structured, targeted development programs remains a widespread crisis, both locally and internationally (Ashlan & Akmaluddin, 2021;

Nnorom, et al., 2023). Consequently, the critical diagnostic-prescriptive link is severed (Sims et al., 2021). Substituting personalized feedback with generic, generalized training programs (like weekly webinars) fails to address specific competency gaps, thereby neglecting the proven correlation between personalized development support, increased work motivation, and elevated teacher performance (Luo et al., 2026; Suryapermana & Rahmatullah, 2025).

Furthermore, the tension between administrative burdens and principal leadership exposes a fundamental conflict in evaluation implementation. Excessive administrative demands risk reducing evaluations to superficial compliance exercises, driving teachers to prioritize document completeness over substantive reflection, which inevitably compromises data integrity and opens the door to system manipulation (Hill & Brunvan, 2018; Al Maktoum & Al Kaabi, 2024). Conversely, supportive principal leadership acts as the primary mitigating factor. This dynamic underscores that the integrative Five Pillars model urgently requires redefining the principal's identity shifting from an administrative enforcer to a strategic, data-driven Human Resource Management leader capable of navigating these bureaucratic pressures.

Theoretically, this study answers the critical "So what?" question by proving that the success of Pillar 4 implementation cannot be assessed through isolated variables, but must function as a cohesive, interdependent ecosystem. When schools excel in sensory and integrative capacities but lack motor execution, they suffer from "follow-up paralysis" a state where data is abundant and dialogue occurs, yet teaching practices remain stagnant. This empirically addresses the widespread misconceptions about equating data availability with utilization (Mandinach & Schildkamp, 2021) and demonstrates that data literacy without institutional follow-up capacity merely creates untapped potential (Lee et al., 2024). Furthermore, positioning this study within a highly accredited urban elementary school enriches the literature traditionally dominated by secondary and tertiary contexts (Martínez et al., 2019), validating that the true strength of the Five Pillars model lies in the systemic interconnectedness of its functions.

Practically and politically, these findings dictate how teachers' professional identities are cultivated. Without a robust motor function, evaluations devolve into punitive or administrative chores. However, consistent and personalized follow-up transforms evaluations into catalysts for professional growth, strengthening teachers' ownership and perceived procedural justice key elements for effective data-driven leadership (Sun et al., 2024). Practically, schools must develop explicit Standard Operating Procedures (SOPs) that directly link evaluation data to personalized coaching. From a policy perspective, local education authorities must simplify digital platforms to alleviate administrative burdens. Strengthening the motor function transcends technical fixes; it demands a long-term cultural commitment from both school leaders and policymakers to ensure evaluations genuinely enhance educational quality.

CONCLUSION

This study concludes that the implementation of Data-Driven Performance Evaluation as the Fourth Pillar of Educational Human Resource Management at SD Negeri 01 Karangrejo, Semarang, operates as an interdependent yet unevenly developed ecosystem. While the sensory function is successfully institutionalized through digital platforms (*e-Kinerja* and *Rumah Pendidikan*) and the integrative function is enriched by organic, informal teacher reflections, the overall system is severely constrained by a weak motor function. This imbalance creates a state of "follow-up paralysis," where rich performance data and collaborative dialogues fail to translate into personalized, structured professional development. The primary enabling factor is the principal's evolving role as a strategic HRM leader, whereas the chief hindering factor is the overwhelming administrative burden that pressures teachers toward superficial compliance rather than substantive growth. Ultimately, strengthening Pillar 4 requires a systemic shift that formally links diagnostic evaluation data directly to prescriptive capacity-building mechanisms.

Despite its insights, this study possesses certain limitations. As a qualitative single-case study conducted in an urban, Grade-A accredited primary school that enjoys relatively stable digital infrastructure and supportive leadership, the findings may not fully reflect the implementation dynamics in rural, under-resourced, or lower-accredited educational settings. Furthermore, this research relies heavily on cross-sectional qualitative data, which may not capture the long-term behavioral changes or cultural shifts in data utilization over an extended period. Future research should address these limitations by expanding the empirical scope to multi-case or cross-case analyses comparing diverse school typologies to build a more generalized understanding of the Fourth Pillar framework. Longitudinal studies are also recommended to investigate how primary schools successfully transition from rigid administrative compliance to an authentic, sustainable data-driven organizational culture over time. Lastly, future investigations could employ mixed-methods approaches to

quantitatively measure the direct correlation between integrated evaluation functions and actual student learning outcomes.

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