



## Management of Learning Facilities and Infrastructure to Enhance Educational Quality in Elementary Schools of Aceh Tamiang Regency

Saipin Ali Muhtaram<sup>1\*</sup>, Munawar<sup>1</sup>, Abdurrahman<sup>2</sup>

<sup>1</sup> Program Studi Magister Administrasi Pendidikan, Universitas Al Muslim, Matang Glumpang Dua, Aceh, Indonesia

<sup>2</sup> Poltekkes Kemenkes Aceh, Banda Aceh, Indonesia

### ARTICLE INFO

#### Article history:

Received: October, 2025

Received in revised from: November, 2025

Accepted: December, 2025

Available online: January, 12, 2026

**Keywords:** *Educational facilities, infrastructure, Elementary school management, Planning and evaluation, Learning environment quality, Qualitative descriptive approach,*

### ABSTRACT

This study investigates the administration of educational facilities and infrastructure as a strategic initiative to enhance the quality of elementary education in Aceh Tamiang Regency. The research used a qualitative descriptive methodology centred on the fundamental managerial activities of planning, organizing, implementing, and evaluating, engaging principals, teachers, and facilities managers from SD Negeri Pusung Kapal, SD Negeri Tangsi Lama, and SD Negeri Tualang. Data were gathered by interviews, observation, and documentation, then analysed through data reduction, data display, and conclusion formulation. The findings indicate that the three institutions have implemented a methodical and cooperative framework for managing buildings and infrastructure. During the planning phase, the needs assessment relies on field data and is consistent with formal documents, including the School Work Plan (RKS) and the School Activity and Budget Plan (RKAS), thereby assuring stakeholder engagement. The organizing phase demonstrates a distinct allocation of roles and duties, bolstered by efficient interdepartmental collaboration. The implementation phase emphasizes that the procurement and exploitation of learning materials are conducted in accordance with instructional requirements, with active engagement from educators and facilities staff. During the evaluation phase, ongoing monitoring facilitates prompt maintenance and enhancement. The study emphasizes a participative, coordinated, adaptable, and context-sensitive management paradigm that fosters educational quality improvement, illustrating that collaborative resource management can enhance learning environments even in resource-constrained situations.

### 1. Introduction

Educational quality is fundamental in Indonesia's national development plan, demonstrating the government's dedication to enhancing student learning results, improving teacher competency, and strengthening accountable school governance (Alwi & Mumtahana, 2023). Nonetheless, enduring regional variations in educational outcomes indicate that policy interventions—such as curriculum reform and competency-based teacher development—have proven inadequate in achieving consistent nationwide enhancements (KURNIAWAN et al., 2023). Although these programs enhance teachers' pedagogical capabilities and update instructional methods, their effectiveness is limited

\* Corresponding author.

E-mail address: [ali.saijin@yahoo.com](mailto:ali.saijin@yahoo.com)

<https://doi.org/10.56806/jh.v6i4.373>

without sufficient learning environments(Sudrajat et al., 2024). In numerous areas, especially beyond big urban centers, restricted availability to vital educational resources undermines the execution of curricular innovations and constrains teachers' capacity to utilize their professional skills effectively(Jannah Siregar et al., 2025). Consequently, educational advancement is inconsistent, underscoring the necessity of addressing structural and environmental determinants that influence daily learning experiences(Siregar & S, 2021).

The efficient management of school buildings and infrastructure is essential for promoting equitable and high-quality education(Latif et al., 2025). The conditions of classrooms, availability of instructional resources, upkeep of learning environments, and access to supports infrastructure directly affect student engagement, instructor effectiveness, and the practicality of implementing novel teaching methods(Goffar & Agustin, 2021). When facilities are inadequately managed or unevenly allocated, even the most sophisticated curriculum remains theoretical and challenging to implement(Istakri et al., 2024). In contrast, schools that implement purposeful, sustained, and collaborative facilities management are more likely to establish safe, inclusive, and engaging learning environments that improve instructional effectiveness(Okta et al., 2024). Improving educational quality necessitates not just pedagogical and curricular reform but also robust administrative practices that ensure learning facilities and infrastructure serve as catalysts rather than impediments to achieving national education objectives(Rohmadi et al., 2024).

In rural and semi-urban regions like Aceh Tamiang Regency, obstacles concerning educational infrastructure persistently impede the attainment of quality education, notwithstanding consistent governmental funding via initiatives such as Bantuan Operasional Sekolah (BOS) and Dana Alokasi Khusus (DAK)(Baharuddin & Burhan, 2025). Although these financial initiatives aim to grant schools increased autonomy and flexibility in infrastructure development, the distribution and use of resources frequently prove inadequate to rectify structural shortcomings(Ugarte et al., 2022). Initial assessments in multiple elementary schools indicate ongoing deficiencies, such as insufficient library facilities, degraded classrooms, and restricted access to digital learning devices(Indra et al., 2022). These deficiencies immediately hinder the execution of active and student-centered learning methodologies that necessitate adaptable, resource-abundant settings to operate efficiently(Ragiel et al., 2024).

As a result, a disparity arises between policy expectations and actual conditions: schools are urged to improve learning quality using contemporary pedagogical methods, yet the necessary infrastructure is inadequately built and poorly managed(Azhar et al., 2024). This phenomenon—target gap—underscores a significant challenge in facility management, wherein managerial practices fail to effectively convert funds and policy directives into concrete enhancements that impact instructional procedures(Osei Assibey Antwi et al., 2025). The inconsistency indicates that enhancing educational outcomes in Aceh Tamiang necessitates more than monetary assistance; it requires strategic, collaborative, and context-sensitive management of facilities and infrastructure to guarantee that investments effectively improve the quality of learning experiences(Hidayat et al., 2024). Current research mostly emphasizes facility availability, frequently employing quantitative evaluations, while inadequately exploring how management procedures convert facilities into enhanced educational quality(Widiastuti, 2025). This indicates a research deficiency, especially in regional situations where resource limitations necessitate strategic and participatory management instead of simple acquisition(Fitriani et al., 2025).

This study investigates the management of school buildings and infrastructure using the four fundamental functions of management—planning, organizing, implementation, and evaluation—to improve the quality of primary education in Aceh Tamiang. The study enhances national and

international dialogue by illustrating how collaborative management techniques can improve learning environments despite resource constraints.

## **2. Methodology**

### **2.1 Research Approach and Design**

This study utilized a qualitative descriptive methodology to investigate the impact of learning facility and infrastructure management on the enhancement of educational quality in elementary schools. The design was chosen to gain a comprehensive understanding of processes, interactions, and contextual factors within educational environments (Stanley, 2023).

### **2.2 Research Setting and Participants**

The study population comprised Three public elementary schools in Aceh Tamiang Regency—SD Negeri Pusung Kapal, SD Negeri Tangsi Lama, and SD Negeri Tualang—were intentionally chosen to capture variances in physical conditions, administrative capabilities, and contextual management approaches. This selection offered comparative insights into the management of learning facilities by various institutional environments to support instructional activities. The research participants included principals, instructors, and facilities managers, who are directly accountable for the planning, organization, utilization, and assessment of educational buildings and infrastructure. Their participation facilitated extensive data gathering on decision-making processes, operational difficulties, maintenance methods, and their effects on teaching and learning.

### **2.3 Data Collection**

Data were grouped via semi-structured interviews, non-participant observations, and document analysis. Interviews examined managerial strategies and stakeholder experiences, observations documented the physical state and usage of facilities, and analyses of documents such as School Work Plans (RKS), School Activity and Budget Plans (RKAS), and maintenance records were conducted to validate managerial practices and resource distribution trends.

### **2.4 Data Analysis**

The data analysis adhered to the qualitative analysis methodology established by Miles, Huberman, and Saldaña, which includes data reduction, data display, and conclusion formulation. Interview transcripts, field notes, and documents were analyzed to discern reoccurring themes concerning the planning, organization, implementation, and evaluation of educational facilities and infrastructure. Findings were systematically compared among schools to discern similarities, differences, and contextual factors influencing effective facility management.

## **3. Results**

### **3.1 Strategic Planning of Educational Facilities and Infrastructure to Improve Learning Quality.**

The planning of educational facilities and infrastructure is a systematic method of finding, analyzing, and determining the resources necessary for effective learning. This approach transcends the fulfillment of fundamental physical requirements—such as classrooms, desks, and chairs—by including supplementary resources that augment teaching and learning activities, including instructional media, laboratory facilities, and information and communication technologies. Consequently, planning focuses not just on the physical existence of facilities but also on their significance, utility, and congruence with educational goals. Effective planning necessitates that schools foresee future educational requirements, guarantee that buildings accommodate many teaching methods, and prioritize resources that significantly enhance the quality of learning. By

amalgamating both fundamental and ancillary requirements, facility design evolves into a deliberate endeavor aimed at establishing learning environments that are not only sufficient in structure yet transformative in their educational impact.

Planning is a systematic process of formulating goals and objectives to be achieved and determining the strategic actions required to realize them. Through effective planning, managers are able to identify priority needs, anticipate potential challenges, and outline coherent steps to guide decision-making and organizational action. In this way, planning functions not only as a roadmap for achieving predetermined targets, but also as a strategic foundation that ensures activities are aligned with institutional goals and carried out efficiently.

In alignment with this methodology, planning at Pusung Kapal Public Elementary School is executed through the methodical assessment of facilities and infrastructure requirements, carried out in collaborative discussions with the principal, educators, and equipment managers. The outcomes of this needs assessment are then codified in institutional documents, including the School Work Plan (RKS) and the School Activity and Budget Plan (RKAS). This approach illustrates that the school has established systematic and data-informed planning protocols based on real conditions and priorities at the operational level.

An analysis of the RKA and LRA documents reveals that most intended operations concerning learning facilities—such as the acquisition of instructional media and the maintenance or repair of physical infrastructure—have been successfully executed. This congruence between intended and executed activities demonstrates a pragmatic planning approach that is operationally viable and attuned to the requirements of the school. The active participation of teachers in the planning process demonstrates a robust participatory culture at SD Negeri Tangsi Lama, where choices are made via collective deliberation and shared accountability. This participation not only improves the relevance of planning results but also bolsters stakeholder commitment to the execution of facility management projects.

The results from the three schools indicate that the design of learning facilities and infrastructure has been executed in alignment with participative, methodical, and needs-based approaches. Essential planning instruments—namely the RKS, RKAS, RKA, and LRA—function as critical references for the design, coordination, and oversight of procurement and maintenance programs. Despite existing limitations, especially concerning public transparency and the accessibility of information media in the educational setting, the planning practices noted indicate an increasing institutional recognition of the strategic significance of facilities and infrastructure management in enhancing educational quality. The results indicate that ongoing improvement of planning procedures, along with enhanced transparency measures, can better match resource management with quality-focused educational objectives.

### *3.2 Organization of Learning Facilities and Infrastructure to Optimize Education Quality.*

Organization is a vital aspect of managing educational buildings and infrastructure, since it determines the effectiveness and efficiency of resource mobilization inside schools. Through highly structured frameworks, each school stakeholder is designated specific duties, responsibilities, and authority, facilitating the management of facilities and infrastructure in a systematic, coordinated, and objective-driven manner. This organizational clarity enhances resource utilization and guarantees that facility-related activities continually promote the effective operation of the teaching and learning process.

The results reveal that Pusung Kapal Public Elementary School, Tangsi Lama Public Elementary School, and Tualang Public Elementary School adopted organizational principles for facility and infrastructure management, albeit with varying degrees of implementation among the institutions.

The principal serves as the chief leader and policy decision-maker, the equipment manager functions as the technical coordinator overseeing operational matters, teachers operate as both users and custodians of educational facilities, and the school committee assumes an external supervisory role representing community interests. This delineation of responsibilities illustrates an organizational framework that fosters responsibility, collaborative governance, and community engagement in maintaining facility efficacy.

The findings indicate that the buildings and infrastructure of the three schools perform effectively and engage various stakeholders, although formal documentation of organizational structures is scarce. In each institution, the principal acts as the primary leader in governance, strategy, and policy development, while the equipment manager serves as a liaison between administrative choices and technical implementation at the operational level. Educators and personnel actively participate as both users and guardians of facilities, ensuring that resources stay operational and matched with educational requirements. Simultaneously, the school committee offers community-oriented supervision, enhancing transparency and accountability in facility administration. This organizational structure exemplifies a participative paradigm that facilitates coordinated resource usage within the educational setting.

Consequently, it can be inferred that the three schools have implemented a relatively effective organizational structure defined by a distinct division of responsibilities and coordinated role performance. However, to guarantee that facilities and infrastructure management is more methodical and sustainable, further administrative fortification is necessary. This entails the creation of a visual organizational framework for facilities and infrastructure inside the educational setting, together with the formulation of written standard operating procedures (SOPs) that clearly define the roles and responsibilities of each stakeholder. These enhancements would promote institutional clarity, facilitate continuity of practice, and strengthen accountability in management.

### *3.3 Implementation of Learning Facilities and Infrastructure to Optimize Education Quality.*

Implementation is a crucial phase in the management of educational facilities and infrastructure, as it embodies the tangible execution of previously devised plans and organizational structures. This phase involves the acquisition, distribution, application, and upkeep of materials that directly facilitate teaching and learning activities inside the educational setting. Research from SD Negeri Pusung Kapal, SD Negeri Tangsi Lama, and SD Negeri Tualang reveals that all three institutions have implemented systematic and coordinated strategies for managing facilities and infrastructure, ensuring resource availability and functional alignment with educational requirements. Despite enduring technological problems and resource limitations, the observed implementation strategies reflect a sustained commitment to maintaining school facilities as essential elements of the educational process.

The execution of facilities and infrastructure management at SD Negeri Pusung Kapal has been conducted in accordance with prescribed protocols and operational frameworks. The institution exhibits proficient collaboration among pertinent stakeholders, encompassing purchase and inventory documentation to the application of learning materials in classroom activities. Notwithstanding these advantages, additional improvements are necessary, especially in augmenting instructors' proficiency in educational technology and increasing digital learning support resources. These enhancements are crucial to guarantee that teaching methods are more effective, interesting, and attuned to modern educational requirements.

Overall, the deployment of learning facilities and infrastructure management across the three schools has been executed efficiently and in strict accordance with established educational management principles. Although challenges remain—such as constrained financial resources and

sporadic technical difficulties—each school has made efforts to maximize the use of available facilities, ensure effective coordination among stakeholders, and foster a collective sense of responsibility for maintaining the facilities. These initiatives demonstrate that the implementation phase plays a crucial role in improving educational quality at the elementary school level, contributing not only to greater instructional effectiveness but also to increased student engagement and motivation. This finding emphasizes the necessity of ongoing enhancement of facility management practices to maintain significant positive effects on the learning environment.

### *3.4 Evaluation of Learning Facilities and Infrastructure to Optimize Education Quality.*

Evaluation represents a vital phase in the administration of learning facilities and infrastructure, as it establishes the basis for appraising the condition, operational status, and efficacy of resources in facilitating teaching and learning processes. Findings from Pusung Kapal Public Elementary School, Tangsi Lama Public Elementary School, and Tualang Public Elementary School reveal that evaluation procedures are carried out regularly; however, the majority of schools have not yet established standardized, documented monitoring and assessment frameworks. Instead, assessments are predominantly conducted through direct field observations, regular reporting, and transparent communication among educators, equipment managers, and school administrators. These practices exemplify a dedication to ongoing supervision, although the lack of formal evaluation tools constrains the ability to systematically monitor facility performance and develop long-term improvement strategies.

The assessment of learning facilities and infrastructure across the three institutions has been carried out systematically and is focused on ongoing enhancement. Although formal documentation and standardized monitoring mechanisms remain limited, existing evaluation practices exemplify the implementation of essential principles of oversight, maintenance, and responsive follow-up measures. These practices, which prioritize engagement and continuous evaluation, have played a role in improving the condition and functionality of facilities, thereby promoting a more conducive learning environment. The findings indicate that continuous evaluative efforts significantly contribute to enhancing the quality of education by maintaining the functionality, relevance, and alignment of facilities with pedagogical requirements across the three schools..

## **4. Conclusions**

This study demonstrates that the improvement of educational quality in elementary schools is determined not only by the availability of facilities and infrastructure but, more importantly, by the efficacy of their management. Data from three elementary schools in Aceh Tamiang Regency indicates that participatory planning, clearly defined organizational structures, adaptive implementation strategies, and systematic evaluation practices together constitute a sustainable management cycle that can enhance instructional quality despite resource constraints. The findings indicate that when schools involve stakeholders in assessing needs, allocating responsibilities, coordinating resource utilization, and consistently monitoring facility conditions, the resulting learning environments are more attuned to pedagogical requirements and more closely aligned with instructional objectives.

Thus, the study presents a contextualized paradigm for facilities and infrastructure management that is collaborative, flexible, and based on actual school requirements. This model emphasizes stakeholder interaction not merely as an administrative obligation, but as a fundamental method for ensuring that facility-related decisions effectively support teaching and learning. The findings underscore that prioritizing managerial processes over mere resource availability can enhance the

strategic control of school buildings, hence optimizing learning environments and maintaining pedagogical efficacy, even in resource-limited educational contexts.

## References

- Alwi, M., & Mumtahana, L. (2023). The Principal's Strategy in Improving the Quality of Teacher Performance in the Learning Process in Islamic Elementary Schools. *Kharisma: Jurnal Administrasi Dan Manajemen Pendidikan*, 2(1), 66–78. <https://doi.org/10.59373/KHARISMA.V2I1.18>
- Azhar, K., Ali, M., Ropo, E., Wahyudin, D., & Hadiapurwa, A. (2024). Balancing control and freedom: Conditional autonomy in curriculum management in an Islamic Private School in Indonesia. *Inovasi Kurikulum*, 21(4), 2021–2036. <https://doi.org/10.17509/JIK.V21I4.75491>
- Baharuddin, & Burhan. (2025). Urban and rural teacher perspectives on Indonesian educational reform: challenges and policy implications. *Cogent Education*, 12(1). <https://doi.org/10.1080/2331186X.2025.2497142;WGROU:STRING:PUBLICATION>
- Fitriani, S., Sari, Y. Y., & Deni, R. (2025). Evaluation of School Facility Management: The Case of a High School Context in Indonesia. *Journal of Education and Learning (EduLearn)*, 19(3), 1574–1582. <https://doi.org/10.11591/edulearn.v19i3.21891>
- Goffar, A., & Agustin, L. (2021). Management Of Facilities And Infrastructure In Improving Quality Of Graduates. *International Journal of High Education Scientists (IJHES)*, 2(2), 36–47. <https://doi.org/10.1234/.V2I2.177>
- Hidayat, N., Andriani, F., & Yoenanto, N. H. (2024). Exploring Challenges and Strategies for Improving the Quality of Education : Integrative Literature Review. *Indonesian Journal of Educational Research and Review*, 7(1), 128–141. <https://doi.org/10.23887/IJERR.V7I1.73824>
- Indra, R., Ritonga, M., Kustati, M., Rini, R., Zulmuqim, Rahmat Iswanto, & Gheisari, A. (2022). High School Education in a Variety of Regional Autonomy: Paradigm and Challenges. *Education Research International*, 2022(1), 9887162. <https://doi.org/10.1155/2022/9887162>
- Istakri, D., Sofyan, H., & Ismail, I. (2024). Infrastructure Management for Improved Learning Outcomes: Insights from Junior High Schools in Southwest Aceh, Indonesia. *Journal of Educational Management and Learning*, 2(1), 20–27. <https://doi.org/10.60084/JEML.V2I1.169>
- Jannah Siregar, K., Annisa, A.-M., Cathy, I., Siregar, E., Dhia, G., Lubis, U., Puandra, E. M., & Ningsih, W. (2025). Analysis of Facilities and Infrastructure Management in Improving Education Quality at SMP Negeri 35 Medan. *Algoritma : Jurnal Matematika, Ilmu Pengetahuan Alam, Kebumihan Dan Angkasa*, 3(2), 86–97. <https://doi.org/10.62383/ALGORITMA.V3I2.450>
- KURNIAWAN, D., MARLAPA, E., SOELTON, M., BUANA, D. R., THOULLON, M. S., YUSSOFF, Y. M., & NAIBAH, M. C. (2023). INCREASE THE POTENTIAL OF QUALITY MANAGEMENT TO EXPAND THE RELATIONSHIP WITH THE PARTIES. *ICCD*, 5(1), 507–513. <https://doi.org/10.33068/ICCD.V5I1.598>
- Latif, A., Andriani, N., Kahfi, S. Al, Khumairah, E. S., Hakim, A. R., & Latif, M. S. (2025). Quality Management of Islamic Educational Facilities Infrastructure: The Key to Improving The Quality of Learning. *Journal of Instructional and Development Researches*, 5(3), 292–301. <https://doi.org/10.53621/JIDER.V5I3.534>
- Okta, U., Enes, R., Asha, L., & Wanto, D. (2024). Optimization of Facilities and Infrastructure Management in Improving the Quality of Learning at Madrasah Ibtidaiyah. *Kharisma: Jurnal Administrasi Dan Manajemen Pendidikan*, 3(2), 149–160. <https://doi.org/10.59373/KHARISMA.V3I2.54>

- Osei Assibey Antwi, A. D., Afful, A. E., Ayarkwa, J., Doodoo, A., Osei-Tutu, S., & Danso, A. K. (2025). Sustainable facilities management in the built environment: a bibliometric review. *Journal of Facilities Management*, 23(2), 352–371. <https://doi.org/10.1108/JFM-05-2023-0056>
- Ragiel, M., Setiawan, Y., & Widiyarta, A. (2024). Challenges and Opportunities for the Surabaya City Government in Infrastructure and Social Development in the Regional Autonomy Era. *Jurnal Dialektika: Jurnal Ilmu Sosial*, 22(3), 326–336. <https://doi.org/10.63309/DIALEKTIKA.V22I3.383>
- Rohmadi, A., Rahmat, & Ardianto, A. (2024). Management of Facilities and Infrastructure in Improving the Quality of Learning. *Journal of Education and Learning Innovation*, 1(2), 161–173. <https://doi.org/10.59373/JELIN.V1I2.55>
- Siregar, N., & S, A. (2021). OPTIMIZATION OF FACILITIES AND INFRASTRUCTURE MANAGEMENT IN IMPROVING THE QUALITY OF LEARNING. *JURNAL TARBIYAH*, 28(1), 30–43. <https://doi.org/10.30829/TAR.V28I1.905>
- Stanley, M. (2023). Qualitative Descriptive: A Very Good Place to Start. *Qualitative Research Methodologies for Occupational Science and Occupational Therapy: Second Edition*, 52–67. <https://doi.org/10.4324/9781003456216-4/QUALITATIVE-DESCRIPTIVE-MANDY-STANLEY>
- Sudrajat, J., Mayasari, A., Arifudin, O., & Ganesha, P. P. (2024). Enhancing the Quality of Learning through an E-Learning-Based Academic Management Information System at Madrasah Aliyah Negeri. *EDUKASIA Jurnal Pendidikan Dan Pembelajaran*, 5(2), 621–632. <https://doi.org/10.62775/EDUKASIA.V5I2.1724>
- Ugarte, C., Urpí, C., & Costa-París, A. (2022). The need of autonomy for flexible management in the fostering of school quality. *International Journal of Leadership in Education*, 25(1), 124–146. <https://doi.org/10.1080/13603124.2019.1708468;WGROUPESTRING:PUBLICATION>
- Widiastuti, I. (2025). Assessing the Impact of Education Policies in Indonesia: Challenges, Achievement, and Future Direction. *AL-ISHLAH: Jurnal Pendidikan*, 17(2), 1955–1964. <https://doi.org/10.35445/ALISHLAH.V17I2.6803>