



Management of Educational Facilities and Infrastructure in Madrasahs and Schools

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ABSTRACT

Keywords:

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This study aims to conceptually examine the management of educational facilities and infrastructure and its role in improving educational quality. The research adopts a qualitative approach using a library research design. Data were collected through a systematic review of relevant literature, including academic books, peer-reviewed journal articles, and educational regulations. The collected data were analyzed using a descriptive-analytical technique with an interpretative approach. The findings indicate that effective and efficient management of educational facilities and infrastructure—encompassing planning, procurement, utilization, maintenance, and disposal—significantly contributes to the creation of a conducive learning environment and the enhancement of instructional quality. Furthermore, school and madrasah leadership plays a strategic role in optimizing the management of educational facilities and infrastructure through professional decision-making and sustainable resource management. This study implies that achieving sustainable educational quality requires synergy between adequate facilities, professional management practices, and effective educational leadership. Strengthening managerial capacity and leadership commitment is therefore essential for improving institutional performance in educational settings.

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INTRODUCTION

The rapid development of education in the era of globalization and digital transformation requires educational institutions to continuously adapt to dynamic and complex changes. Education is no longer understood merely as a process of knowledge transmission but as a systematic effort to develop high-quality human resources who are competitive, adaptive, and responsive to contemporary challenges. In this context, educational institutions are expected to provide learning environments that support innovation, critical thinking, and

meaningful learning experiences. One strategic element that significantly influences the effectiveness of educational processes is the availability and management of educational facilities and infrastructure (Hasanah, Munawwaroh, Hasanah, et al., 2024; Hasanah, Munawwaroh, Qushwa, et al., 2024). These elements serve not only as physical support systems but also as essential components that shape the quality of teaching and learning (Hefniy Hefniy & Alwahedi, 2025). Adequate facilities and infrastructure enable schools and madrasahs to implement curricula effectively, integrate technology into instruction, and create conducive learning environments (Kusumawati et al., 2025). Therefore, understanding educational facilities and infrastructure as integral components of educational quality becomes increasingly important in responding to global educational demands.

Despite the growing recognition of the importance of educational facilities and infrastructure, empirical realities indicate a persistent gap between ideal management standards and actual practices in many schools and madrasahs (Prayoga et al., 2025; Safitri & Lateh, 2024). National education policies and standards explicitly mandate that educational institutions provide adequate facilities tailored to learners' needs. However, numerous institutions continue to face limitations related to the quantity, quality, and relevance of their facilities. These limitations are often exacerbated by weak planning mechanisms, inadequate inventory systems, insufficient maintenance practices, and limited supervision. As a result, existing facilities are frequently underutilized, poorly maintained, or misaligned with pedagogical objectives (Basri et al., 2024; Maulidah et al., 2023). This situation suggests that the problem does not solely lie in resource availability but also in how facilities and infrastructure are managed. Consequently, examining the management dimension of educational facilities becomes essential to understanding why facilities often fail to contribute optimally to educational quality.

The challenges of managing educational facilities and infrastructure have become increasingly complex in the digital era. Educational institutions are now expected to provide not only conventional learning spaces such as classrooms and libraries but also technology-based facilities that support digital learning, collaboration, and innovation (Aini et al., 2024; Fajariyah, 2025; Indayati, 2025; Maisuroh & Jamil, 2024). Facilities such as digital learning media, modern laboratories, information technology infrastructure, and interactive learning spaces have become fundamental requirements for quality education. Inadequate management of these resources may negatively affect teaching effectiveness, reduce student motivation, and hinder learning outcomes. Furthermore, rapid technological changes require adaptive management strategies that emphasize sustainability, efficiency, and relevance. From a

qualitative perspective, these challenges highlight the need for conceptual analysis that explores how educational facilities and infrastructure should be managed systematically to support contemporary educational goals. Such analysis is particularly relevant for schools and madrasahs that operate within diverse institutional and resource contexts.

Previous studies generally acknowledge educational facilities and infrastructure as supporting factors for educational success. However, much of the existing literature remains descriptive, focusing primarily on the availability, classification, or physical conditions of facilities. While these studies provide valuable insights, they often overlook the managerial processes that determine how facilities are planned, procured, utilized, maintained, and evaluated. Moreover, limited attention has been given to the sustainability of facilities management and its long-term impact on educational quality. In addition, research that specifically examines facilities management within the context of schools and madrasahs remains relatively scarce. This gap indicates the need for a more comprehensive and conceptual exploration of educational facilities management. A library-based qualitative approach allows for the synthesis of diverse theoretical perspectives, policy frameworks, and empirical findings to construct a more integrated understanding of this issue.

Another significant research gap lies in the limited integration between educational policy frameworks and managerial practices at the institutional level. National education standards provide normative guidelines for facilities and infrastructure, yet their implementation often varies widely across schools and madrasahs. The effectiveness of facilities management is influenced not only by policy compliance but also by leadership capacity, organizational culture, and stakeholder commitment. In many cases, inadequate managerial competence and weak leadership hinder the optimal use of available resources. From a qualitative library research perspective, examining this gap requires critical engagement with policy documents, leadership theories, and management models. Such an approach enables a deeper understanding of how regulatory frameworks interact with institutional practices. Addressing this gap is crucial, as misalignment between policy and practice frequently results in inefficiencies that undermine the contribution of facilities and infrastructure to educational quality.

Based on these issues, this article offers a conceptual contribution by positioning educational facilities and infrastructure management as an integral component of strategies for improving educational quality in schools and madrasahs. Rather than focusing solely on definitions or classifications, this study systematically examines management processes, including planning, procurement, utilization, maintenance, and disposal. Emphasis is placed on principles of effectiveness, efficiency, and sustainability, which are essential for

long-term educational development. Furthermore, this article highlights the strategic role of school and madrasah leadership in optimizing facilities management. By synthesizing theoretical insights, policy standards, and previous research findings, this library-based study provides a comprehensive and applicable framework for understanding facilities management within contemporary educational contexts.

This study is expected to contribute both theoretically and practically to the field of educational management. Theoretically, it enriches the discourse on facilities and infrastructure management by offering an integrated conceptual framework grounded in qualitative analysis of existing literature. Practically, it provides insights for school leaders, policymakers, and education practitioners seeking to improve facilities management practices. Effective management of educational facilities and infrastructure is expected to create conducive learning environments, enhance instructional quality, and support holistic educational outcomes. By emphasizing the importance of professional management and leadership commitment, this study underscores the role of facilities management in achieving sustainable educational quality. Ultimately, this conceptual analysis serves as a reference for future research and as guidance for educational institutions striving to align facilities management with evolving educational demands.

RESEARCH METHOD

This study employs a qualitative approach with a library research design. The qualitative approach was chosen because the study aims to deeply understand, examine, and analyze the concept of educational facilities and infrastructure management from theoretical and normative perspectives, rather than to measure statistical relationships between variables. Through this approach, the researcher interprets meanings, concepts, and ideas developed in various relevant scholarly sources, providing a comprehensive conceptual understanding of the topic. Library research enables systematic exploration and synthesis of existing knowledge to address research questions and identify gaps in the literature.

The data sources for this study consist entirely of secondary data, including educational management textbooks, national and international peer-reviewed journals, education-related regulations, and scientific articles discussing facilities and infrastructure management in schools and madrasahs. These sources were selected purposively based on their relevance, credibility, and recency to ensure a strong theoretical foundation. Data collection was

conducted through documentation techniques, involving the identification, selection, reading, and critical review of literature. Key concepts, principles of management, stages of facilities and infrastructure management, legal frameworks, and their role in improving educational quality were systematically recorded and categorized according to the research focus.

Data analysis was conducted using descriptive-analytical techniques with a constructive and interpretative approach. The process involved data reduction, data presentation, and conclusion drawing. In the data reduction stage, information relevant to the research objectives was filtered and focused. Data were then presented in a systematic narrative to facilitate understanding of the concepts discussed. Triangulation of sources was applied to ensure the validity and reliability of the findings by comparing information from multiple references. This method provides a comprehensive and in-depth conceptual understanding of facilities and infrastructure management and its relevance to enhancing educational quality in schools and madrasahs.

RESULT AND DISCUSSION

Basic Concepts of Educational Facilities and Infrastructure Management

1. Definition of Educational Facilities and Infrastructure

The literature review indicates that educational facilities and infrastructure are two fundamental and interrelated components that cannot be separated in the implementation of education. Educational facilities are understood as all equipment and tools used directly in the teaching and learning process. These facilities include classrooms, desks and chairs, teaching aids, learning media, textbooks, and other supporting devices that directly interact with teachers and students during instructional activities. The presence of educational facilities plays a strategic role because it directly affects the effectiveness, efficiency, and quality of classroom learning (Suyitno, 2021).

Meanwhile, educational infrastructure refers to facilities that indirectly support the educational process. Infrastructure includes school land, buildings, yards, gardens, administrative spaces, and access roads. Although not always used directly in learning, infrastructure significantly contributes to creating a safe, comfortable, and conducive learning environment (Lutfiyah & Khamidi, 2022). A well-organized physical environment supports the psychological comfort of the school community and positively affects the continuity of the educational process.

The review also shows that the boundary between facilities and infrastructure is contextual and flexible. In certain circumstances, infrastructure can function as a facility if it is utilized directly for learning activities. For example, a school yard used as a sports field or a school garden utilized for

biology lessons functionally transforms from infrastructure to educational facility. This indicates that the function of educational resources is determined by their usage in educational practice.

Based on these perspectives, it can be concluded that educational facilities and infrastructure comprise all physical resources that serve as primary and supporting components in education. Their existence is essential because, without adequate facilities and infrastructure, the educational process cannot operate optimally, both in terms of achieving learning objectives and developing students' potential holistically.

Table 1. Differences between Educational Facilities and Infrastructure

Aspect	Educational Facilities	Educational Infrastructure
Function	Directly supports learning	Indirectly supports learning
Example	Books, learning media, teaching aids, desks and chairs	Land, buildings, school yard, administrative space
Role	Used directly in teaching and learning	Supports the environment and educational continuity

2. Definition of Educational Facilities and Infrastructure Management

Educational facilities and infrastructure management is the systematic, planned, and sustainable process of managing educational resources to support the achievement of educational goals. This management is not merely focused on providing facilities but emphasizes how facilities and infrastructure are planned, procured, utilized, maintained, monitored, and controlled effectively and efficiently to maximize their contribution to the educational process (Kustandi & Bambang, 2011).

The literature shows that the scope of facilities and infrastructure management includes key activities such as planning based on learning needs analysis, procurement, asset inventory and recording, utilization management, maintenance, and disposal of facilities that are no longer suitable or relevant (Hasan, 2019). Proper management is expected to create a clean, orderly, safe, and comfortable school or madrasah environment. A conducive physical environment not only enhances the comfort of the school community but also positively affects student motivation and teacher performance in conducting learning (Prabowo, 2009).

The study also emphasizes that educational facilities and infrastructure should not be regarded as two separate entities but as a unified system supporting education. Therefore, management should be integrated, involving the entire school community, from the principal as the main responsible authority, teachers and staff as facility users, to students and the community as part of the educational ecosystem. A collaborative management approach is key to achieving effective facilities and infrastructure management that enhances educational quality.

Classification of Educational Facilities and Infrastructure

Based on the literature review, educational facilities and infrastructure in schools and madrasahs can be classified into several main groups, as shown in Table 2.

Table 2. Classification of Educational Facilities and Infrastructure

No	Type	Description
1	Land	Land used for buildings and school facilities
2	Space	Classrooms, staff rooms, libraries, laboratories
3	Furniture	Desks, chairs, cabinets, bookshelves
4	Equipment	Teaching aids, learning media, technological devices
5	Practical Materials	Natural and artificial materials for practical activities
6	Learning Materials	Textbooks, modules, references, reading books
7	Sports Facilities	Indoor and outdoor fields and sports equipment

This classification helps educational institutions prioritize the procurement and utilization of facilities according to learning needs and institutional conditions.

Basis and Objectives of Educational Facilities and Infrastructure Management

The study shows that educational facilities and infrastructure management has strong legal and normative foundations within the national education system. Law No. 20 of 2003 concerning the National Education System explicitly mandates that every educational unit, formal or non-formal, must provide facilities and infrastructure appropriate to students' needs and support the learning process optimally. Article 45, paragraph (1) stipulates that the provision of facilities must consider the physical, intellectual, social, emotional, and psychological development of learners (Indonesia, 2003). This regulation highlights that facilities and infrastructure are integral to improving educational quality.

This legal foundation is reinforced by Government Regulation No. 19 of 2005 regarding National Education Standards, particularly Article 42, which specifies standards for educational facilities and infrastructure. Schools must provide furniture, educational equipment, learning media, books, consumables, and infrastructure including land, classrooms, administrative spaces, libraries, laboratories, sports facilities, places of worship, and other relevant facilities (Government Regulation No. 19, 2005). Management must be systematic, planned, and aligned with national education quality standards.

The main objective of facilities and infrastructure management is to create a conducive, safe, and comfortable learning environment. A well-organized physical environment improves students' concentration, academic climate, and

the effectiveness of learning. Another objective is to ensure that all facilities are utilized optimally and sustainably, through careful planning, targeted procurement, continuous maintenance, and effective supervision. Therefore, management is not only regulatory compliance but also a strategic approach to systematically enhancing educational quality.

Management Process of Educational Facilities and Infrastructure

The literature review indicates that facilities and infrastructure management is a systematic process consisting of five main stages: planning, procurement, maintenance and storage, utilization, and disposal. These stages form an interconnected managerial cycle to ensure the availability, functionality, and sustainability of educational resources efficiently (Lutfiyah & Khamidi, 2022).

The planning stage is the initial and most strategic step, involving analysis of needs based on curriculum demands, student characteristics, and existing facilities. Planning includes inventory, gap analysis, and prioritization to avoid budget wastage and ensure relevance to learning needs (Sari et al., 2021). Procurement involves obtaining necessary resources through government assistance, direct purchase, grants, community contributions, or reuse and recycling of still-functional facilities (Setyowahyudi et al., 2025).

Maintenance and storage ensure facilities remain in good condition, with regular preventive maintenance, inventory systems, and detailed records. Proper utilization involves regulating use according to availability, class size, and learning activities to prevent overuse, damage, or conflicts. Disposal involves removing facilities that are no longer functional, relevant, or cost-effective, following legal provisions (Pribadi, 2009). Effective management across all stages ensures facilities become a strategic factor in improving educational quality.

Role of Facilities and Infrastructure in Enhancing Educational Quality

The study demonstrates that educational facilities and infrastructure play a strategic role in determining educational quality in schools and madrasahs. Adequate resources are not only supplementary but essential for effective, efficient, and meaningful learning. Proper facilities allow teachers to deliver diverse, contextualized instruction while helping students achieve optimal learning through direct experiences (Hijriyah et al., 2022).

Well-managed facilities create a comfortable, safe, and conducive learning environment. A clean, organized, and adequately equipped school environment enhances student motivation and fosters a positive learning atmosphere, indirectly improving academic achievement and overall education quality (Safriada & Sugeng Prayoga, 2019).

However, availability alone is insufficient. Without effective management—including planning, procurement, utilization, maintenance, and disposal—facilities may remain underutilized or damaged prematurely. School leadership is critical in prioritizing needs, allocating budgets, and supervising usage. Visionary and responsible principals optimize facilities and engage the school community in maintaining resources (Susanto, 2013).

In conclusion, educational facilities and infrastructure are vital instruments in enhancing education quality when managed professionally and supported by effective leadership. Synergy between resources, management, and leadership creates a learning environment capable of achieving holistic and sustainable educational goals, as mandated by the National Education Standards.

CONCLUSION

Based on the results of the literature review and conceptual analysis, it can be concluded that educational facilities and infrastructure are fundamental components in the implementation of education in schools and madrasahs. Their existence is not merely a technical support for learning, but also serves as a strategic factor that directly and indirectly influences the effectiveness of the learning process and the achievement of educational goals. The management of educational facilities and infrastructure—which includes planning, procurement, utilization, maintenance, and disposal—must be carried out systematically, effectively, and efficiently. Well-planned and sustainable management has been shown to optimize the use of educational resources, prevent budget wastage, and ensure the long-term functionality of facilities.

The legal basis for managing educational facilities and infrastructure in Indonesia is clearly established through the National Education System Law and the National Education Standards. Consequently, every educational unit has a moral and administrative responsibility to meet these standards to guarantee quality and equitable education. In addition, the leadership of principals or madrasah heads plays a critical role in successful facilities management. Visionary, participatory, and accountable leadership encourages optimal utilization of educational facilities and fosters awareness among all members of the school community to maintain and preserve available resources. Thus, improving educational quality relies on the synergy between adequate facilities, professional management, and effective educational leadership—three essential prerequisites for creating a conducive learning environment that supports holistic and sustainable educational outcomes.

REFERENCES

- Aini, T. N., Baharun, H., Wahid, A. H., & Mundiri, A. (2024). Psychological Strategies for Building Quality Human Resources in Madrasah. *Proceeding of International Conference on Education, Society and Humanity*, 2(1), 154–160.
- Basri, H., Zaini, A. W., & Suhermanto, S. (2024). Exploring Charismatic Leadership and Personality Competence: Keys to Fostering Teacher Motivation. *Bidayatuna Jurnal Pendidikan Guru Madrasah Ibtidaiyah*, 7(2), 109–120. <https://doi.org/10.54471/bidayatuna.v7i2.2983>
- Fajariyah, H. (2025). Self Directed Learning: Meningkatkan Kepercayaan Diri Dalam Berbicara Bahasa Arab. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 10(01), 339–353. <https://doi.org/10.23969/jp.v10i04.34609>
- Harahap, O. F. M., Pd, M., Mastiur Napitupulu, S. K. M., & Batubara, N. S. (2022). *Media Pembelajaran: Teori dan Perspektif Penggunaan Media Pembelajaran dalam Pembelajaran Bahasa Inggris*. CV. Azka Pustaka.
- Hasan, S. (2019). Manajemen Pengembangan Tenaga Pendidik di SMA Primaganda Bulurejo Diwek Jombang. *Jurnal Manajemen Pendidikan*, 3(2), 12–19.
- Hasanah, R., Munawwaroh, I., Hasanah, M., & Mundiri, A. (2024). Fostering Inclusivity: Strategies for Supporting Students With Special Needs in Mainstream Classrooms. *Falasifa: Jurnal Studi Keislaman*, 15(1), 73–85. <https://doi.org/10.62097/falasifa.v15i1.1811>
- Hasanah, R., Munawwaroh, I., Qushwa, F. G., & Agus R, A. H. (2024). Pengembangan Career Adaptability Melalui Inovasi Sumber Daya Manusia. *Edukasia: Jurnal Pendidikan dan Pembelajaran*, 5(1), 169–178. <https://doi.org/10.62775/edukasia.v5i1.734>
- Hefniy, A. H. A. R., & Alwahedi, M. A. A. (2025). Virtual School Tours: Boosting Community Interest and Attracting Prospective Students. *Evaluasi: Jurnal Manajemen Pendidikan Islam*, 9(2), 340–353. <https://doi.org/10.32478/3gtzvf72>
- Hijriyah, U., Zulhannan, Z., Nufus, Z., & Aridan, M. (2022). Pengembangan Media Strip Story Bergambar Terhadap Pembelajaran Mahârah Al-Kitâbah. *Arabi: Journal of Arabic Studies*, 7(2), 225–238. <https://doi.org/10.24865/ajas.v7i2.490>
- Indayati, T. (2025). Pengembangan Kemampuan Lisan Berbahasa Arab: Integrasi Operant Conditioning Dalam Lingkungan Pembelajaran Bahasa Yang Holistik. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 10(01), 221–234.
- Indonesia, U. R. (2003). *Undang-Undang Republik Indonesia Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional*. Kloang Klede Putra Timur.
- Kustandi, C., & Bambang, S. (2011). *Media Pembelajaran Manual dan Digital*. Galia

Indonesia.

- Kusumawati, I., Rahman, M., Hikmah, U., Khofsah, S., & Kunta, I. H. (2025). AI-Based Human Capital as a Catalyst for Increasing the Strategic Agility of Educational Organizations. *International Journal of Multidisciplinary Research*, 1(5), 239–245.
- Lutfiyah, P. A. A., & Khamidi, A. (2022). Peran Kepala Sekolah Dalam Menerapkan Kompetensi Manajerial Untuk Mendukung Pelaksanaan Pembelajaran Pasca Pandemi Covid-19. *Jurnal Inspirasi Manajemen Pendidikan*, 10(1), 45–48.
- Maisuroh, S., & Jamil, M. (2024). The Role of Social Media in Enhancing Digital Literacy Among Generation Z: A Social and Psychological Perspective. *Journal of Social Studies and Education*, 1(2), 113–125. <https://doi.org/10.61987/jsse.v1i2.457>
- Maulidah, H. F., Baharun, H., Hefniy, H., Tohet, M., & Zaini, A. W. (2023). Teacher Assistance in the Development of Merdeka Curriculum Learning Devices. *Communautaire: Journal of Community Service*, 2(2), 98–107. <https://doi.org/10.61987/communautaire.v2i2.257>
- Peraturan Pemerintah Republik Indonesia Nomor 19 Tahun 2005. (2005).
- Prabowo, S. L. (2009). *Implementasi Sistem Manajemen Mutu ISO 9001:2008 di Perguruan Tinggi (Guidelines IWA-2)*. UIN Malang Press.
- Prayoga, A. S., Auliyah, F., & Safitri, S. D. (2025). Reviving Dahlan's Vision: Integrating Tradition and Modernity in Islamic Education Today. *TsuRAYA: Jurnal Pendidikan Guru Madrasah Ibtidaiyah dan Pendidikan Dasar*, 1(1), 1–20.
- Pribadi, B. A. (2009). *Desain Sistem Pembelajaran*. Dian Rakyat.
- Safitri, S. D., & Lateh, M. (2024). Authentic Leadership in the Perspective of Islamic Education. *Educare: Jurnal Ilmu Pendidikan*, 3(2), 100–114. <https://doi.org/10.71392/ejip.v3i2.81>
- Safri, Y., & Sugeng Prayoga. (2019). Pengaruh Manajemen Perencanaan Pembelajaran Terhadap Kinerja Guru SMA Negeri di Kota Mataram. *Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang*, 5(2), 133–140. <https://doi.org/10.33394/jk.v5i2.1811>
- Sari, I. A., Atmojo, I. R. W., & Saputri, D. Y. (2021). Analisis Kebutuhan Bagi Guru Dalam Proses Pelaksanaan Pembelajaran Daring Selama Pandemi di Sekolah Dasar. *Jurnal Pendidikan Ilmiah*, 7(1), 1–6. <https://doi.org/10.20961/jpiuns.v7i1.49241>
- Setyowahyudi, R., Terbuka, U., & Ganesha, U. P. (2025). Efektivitas Pendekatan Contextual Teaching Learning (CTL) Dalam Mengasah Kreativitas Anak Melalui Aktivitas Menggambar dan Mewarnai. *Jurnal Pendidikan dan Perkembangan Anak Usia Dini*, 6, 34.
- Sumiharsono, R., & Hasanah, H. (2017). *Media Pembelajaran: Buku Bacaan Wajib*

Dosen, Guru dan Calon Pendidik. Pustaka Ab.

Susanto, A. (2013). *Teori Belajar dan Pembelajaran*. Prenadamedia Group.

Suyitno, S. (2021). Implementasi Manajemen Risiko Dalam Peningkatan Efektivitas Pembelajaran di Sekolah Menengah Kejuruan. *Edukatif: Jurnal Ilmu Pendidikan*, 4(1), 141–153. <https://doi.org/10.31004/edukatif.v4i1.1768>