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Management of School Facilities and Infrastructure Utilization in Improving Learning Quality

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Abstract: This study aims to analyze the management of the use of school facilities and infrastructure in improving the quality of learning at SDN 1 Sinar Banten, Ulu Belu District. This study employed a qualitative approach with a descriptive method. Data collection techniques consisted of observation, interviews, and documentation involving the school principal, teachers, and other relevant stakeholders. The findings indicate that the management of facilities and infrastructure at SDN 1 Sinar Banten has not yet been fully optimized to support the improvement of learning quality. Several obstacles were identified, including planning that is not entirely based on an analysis of the school's actual needs, suboptimal utilization of facilities, irregular maintenance, as well as limited inventory and disposal management. Therefore, increased commitment from all members of the school community is needed to manage educational facilities effectively and sustainably.

Keywords: facilities and infrastructure management, learning quality.

Introduction

Education is a fundamental pillar in the development of human resources and a key determinant of a nation's quality. At the elementary school level, the quality of learning plays a strategic role as it forms the foundation for students' knowledge, attitudes, and skills at subsequent levels of education. High-quality learning is not solely determined by teachers' competence and curriculum design, but is also strongly influenced by the availability and management of educational facilities and infrastructure. Well-planned, adequately provided, and optimally utilized facilities and infrastructure are essential in creating a conducive learning environment, enhancing students' learning motivation, and supporting the effectiveness of the teaching and learning process.

Previous studies have consistently demonstrated a strong relationship between the management of school facilities and infrastructure and the quality of learning. Existing research indicates that needs-based planning, optimal utilization of learning facilities, and sustainable maintenance practices contribute significantly to improving the quality of teaching and learning processes. However, most prior studies have tended to focus primarily on the physical availability of facilities or to examine management practices in a fragmented manner, such as emphasizing procurement or utilization alone. Moreover, comprehensive studies that examine the entire cycle of facilities and infrastructure management—ranging from planning, procurement, distribution, utilization, maintenance, inventory, to disposal—particularly within the context of elementary schools in rural areas, remain limited.

The research problem addressed in this study emerges from empirical conditions observed at SDN 1 Sinar Banten, Ulu Belu District, where the management of school facilities and infrastructure has not yet been fully optimized. Planning processes are not

entirely based on an analysis of the school's actual needs, the utilization of learning facilities remains limited, maintenance activities are not conducted regularly, and inventory and disposal systems are not well organized. These conditions have a direct impact on the learning environment and may hinder efforts to improve learning quality. Therefore, the central issue examined in this article concerns how school facilities and infrastructure management is implemented and the extent to which it contributes to the improvement of learning quality.

Based on these issues, the objective of this article is to conduct an in-depth analysis of the management of school facilities and infrastructure at SDN 1 Sinar Banten, Ulu Belu District, encompassing planning, procurement, distribution, utilization, maintenance, inventory, and disposal processes, as well as to examine their contribution to improving learning quality. The findings of this study are expected to provide both theoretical contributions to the field of educational management and practical references for schools and educational stakeholders in managing educational facilities and infrastructure effectively and sustainably.

Theory

Management is a systematic process involving planning, organizing, implementing, and controlling resources to achieve organizational goals effectively and efficiently. In the educational context, management plays a strategic role because it determines the quality of learning processes and outcomes. Nurcahya et al. (2024) view educational management as a series of integrated activities coordinating human and non-human resources to achieve educational goals. Similarly, Rohaemi et al. (2024) emphasize that management is not only oriented toward planning but also toward leaders' capacity to mobilize all organizational elements optimally. Although some classical references such as Rohaemi et al. (2024) are still used, this is because the management functions they propose—planning, organizing, directing, and controlling—have not undergone substantive changes and remain relevant as a foundational framework for educational management.

Educational facilities and infrastructure are essential components in the implementation of learning. Educational facilities refer to tools used directly in the learning process, such as books, instructional media, teaching aids, and classroom equipment, while educational infrastructure includes indirect supporting facilities such as school buildings, schoolyards, sanitation, and environmental infrastructure (Putra et al., 2025). Law Number 20 of 2003 on the National Education System stipulates that every educational unit is required to provide facilities and infrastructure that support sustainable learning processes. Contemporary perspectives assert that facilities and infrastructure are not merely physical complements but strategic assets that influence the quality of students' learning experiences (Purba, 2024).

The management of educational facilities and infrastructure is an integral part of educational management that focuses on the comprehensive and sustainable management of school facilities. Asyifah Luthfiyah et al. (2024) explain that facilities and infrastructure management encompasses all processes aimed at ensuring educational facilities are used effectively to support learning objectives. Nurafni et al. (2025) add that educational facilities management aims to support learning success both directly and indirectly.

Facilities and infrastructure management is not only oriented toward provision but also toward optimizing utilization and maintenance to ensure sustainable usability (Agustin & Permana, 2020). Thus, facilities and infrastructure management becomes a determining factor in creating a conducive and high-quality learning environment.

The scope of school facilities and infrastructure management includes several interrelated stages: planning, procurement, distribution, utilization, maintenance, inventory, and disposal (Nurmayuli, 2022). Facilities and infrastructure planning is a strategic stage based on an analysis of actual school needs and alignment with learning programs (Hasanah et al., 2025). Procurement is the realization of planning and must be conducted transparently and accountably to ensure that acquired facilities meet educational quality standards (Fathurrochman et al., 2021). Distribution aims to ensure equitable and appropriate use of facilities according to instructional unit needs (Yahya et al., 2023). Utilization becomes the core of facilities management because it directly relates to learning effectiveness (Rahayu et al., 2024). Maintenance is carried out to maintain feasibility and sustainability of educational facilities' functions and to prevent budget inefficiencies (University of Delta Agbor & Mormah, 2023). Inventory serves as a basis for supervision and decision making in school asset management (Nuha, 2024), while disposal represents the final stage of removing facilities that are no longer administratively or functionally feasible (Mulyadi & Rarasati, 2018).

Learning quality refers to the level of success of teaching and learning processes in achieving predetermined educational objectives. Quality is not measured solely by student learning outcomes but also by the quality of learning processes that occur effectively, actively, and sustainably (Ghufron & Hardiyanto, 2017). High-quality learning is characterized by sound planning, student-centered implementation, and objective, continuous evaluation (Atkinson & Bregazzi, 2022). Active, creative, and student-centered learning approaches, such as PAIKEM, have been shown to increase student participation, motivation, and critical thinking skills (Hidayat, 2023). Moreover, learning quality is reflected in comprehensive learning outcomes encompassing cognitive, affective, and psychomotor domains in a sustainable manner (Naro et al., 2023).

Learning quality is influenced by internal, external, and instrumental factors. Internal factors include students' motivation, interest, and prior abilities (Bararah, 2022). External factors encompass family and school environments, as well as teachers' roles and instructional methods (Abidin et al., 2024). Instrumental factors relate to the availability and management of facilities, infrastructure, and instructional media that support learning processes (Frameiliada et al., 2023). Accordingly, school facilities and infrastructure management, as part of instrumental factors, plays a strategic role in creating a conducive learning environment and supporting improvements in learning quality.

Method

Research Design and Approach

This study employed a qualitative approach using a descriptive method. This approach was selected because the study aims to gain an in-depth understanding of the phenomenon of managing school facilities and infrastructure utilization in improving learning quality based

on actual field conditions. The qualitative descriptive method enables researchers to holistically describe managerial processes—from planning to disposal of facilities and infrastructure—without statistical calculations, emphasizing meaning, understanding, and interpretation of empirical data.

Research Site and Subjects

The research was conducted at SDN 1 Sinar Banten, Ulu Belu District, Tanggamus Regency, Lampung Province. Research subjects were selected using purposive sampling based on relevance and depth of information required. Subjects included the principal, teachers, administrative staff, and students directly involved in managing and utilizing school facilities and infrastructure.

Research Instruments

The primary instrument in this study was the researcher (human instrument), responsible for planning, data collection, analysis, and interpretation. Supporting instruments included interview guides, observation sheets, and documentation matrices structured according to research focus and subfocus areas: planning, procurement, distribution, utilization, maintenance, inventory, and disposal of school facilities and infrastructure.

Data Collection Techniques

Data were collected through interviews, observation, and documentation. In-depth interviews were conducted with key informants to obtain information on policies, implementation, and constraints in facilities management. Observations were carried out to directly examine physical conditions and utilization of facilities during learning. Documentation analysis included planning documents, inventory books, maintenance reports, and disposal records as supporting evidence.

Data Trustworthiness

Data validity was ensured through method triangulation by comparing interview, observation, and documentation data; source triangulation by comparing information from principals, teachers, and students; and time triangulation by collecting data at different times to ensure consistency.

Data Analysis Techniques

Data analysis followed Miles and Huberman's qualitative model: data collection, data reduction, and conclusion drawing. This process enabled identification of patterns, relationships, and meanings related to facilities and infrastructure management in improving learning quality.

Result and Discussion

The main findings indicate that managing school facilities and infrastructure has a functional and causal relationship with learning quality, not merely an administrative one. Well-planned, properly utilized, and sustainably maintained facilities contribute to orderly learning processes, increased student engagement, and improved learning outcomes.

However, these contributions have not reached optimal levels due to limitations in long-term planning, budget constraints, and limited variation in facility utilization.

Scientifically, these findings confirm that learning quality is determined not only by the existence of facilities but primarily by the quality of their management.

Needs-Based Planning of Facilities and Infrastructure
Findings show that facilities planning at SDN 1 Sinar Banten is needs-based and participatory. Facilities are positioned as strategic instruments supporting learning rather than mere physical complements. This is reflected in integration with the School Work Plan (RKS) and School Activity and Budget Plan (RKAS), as well as needs analyses considering facility conditions, student numbers, and minimum service standards. However, needs analysis documentation is not yet systematic or sustainable, weakening long-term planning. These findings align with Hasyim (2025) while confirming Septia and Yusran (2024) regarding budget limitations.

Transparent and Accountable Procurement
Procurement processes are transparent, accountable, and aligned with learning priorities and BOS fund regulations. While reflecting good governance principles, budget constraints necessitate selective and gradual procurement.

Utilization in the Learning Process
Facilities utilization contributes to increased student motivation and participation, though still dominated by simple instructional media. Limited media variation restricts maximal engagement. These findings align with constructivist learning theory and prior studies (Siregar & S, 2021; Jamil, 2023).

Sustainable Maintenance
Maintenance is conducted sustainably but remains limited to light and incidental care due to budget and participation constraints. This aligns with Ningsih et al. (2025).

Impact on Learning Quality
Overall, facilities and infrastructure management supports improved learning quality, though at a moderate level, requiring more systematic, sustainable, and innovative management.

Conclusion

This study concludes that school facilities and infrastructure management plays a strategic role in supporting learning quality at SDN 1 Sinar Banten, though its effectiveness depends heavily on management quality. Facilities do not automatically improve learning quality; improvement occurs when facilities are managed functionally, aligned with learning needs, and consistently utilized. The findings indicate that facilities management is moderately effective—supporting basic learning processes but not yet optimal in fostering innovative and student-centered learning. Limitations in long-term planning, media variation, and maintenance constrain optimal learning quality improvement. Accordingly, the initial

assumption that facilities and infrastructure management influences learning quality is accepted. Enhancing elementary learning quality requires not only teacher competence and curriculum quality but also planned, sustainable, and learning-oriented facilities management.

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