



Management of Facilities and Infrastructure in Improving Student Learning Outcomes at State Islamic Elementary School 2 Batang, Indonesia

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Abstract

This study aims to describe the management of facilities and infrastructure in improving student learning outcomes at Madrasah Ibtidaiyah Negeri 2 Batang, Indonesia. The research employs a qualitative descriptive approach with data collection techniques including observation, interviews, and documentation. The study subjects consist of the principal, vice principal for facilities and infrastructure, teachers, and students. The findings reveal that the management of facilities and infrastructure at MIN 2 Batang includes several stages: (1) Planning, carried out by involving the facilities and infrastructure team, teachers, and school committees; (2) Procurement, adjusted to the needs and available budget; (3) Utilization, in which the available facilities and infrastructure are used effectively to support the learning process; (4) Maintenance, performed regularly to ensure the facilities remain in good condition; and (5) Elimination, conducted when facilities are no longer usable. The effective management of facilities and infrastructure positively impacts student learning outcomes, as seen in increased student motivation and achievement. The study concludes that good management of facilities and infrastructure is a critical supporting factor in improving the quality of learning in madrasah environments.

Keywords: *Management; Facilities and Infrastructure; Learning Outcomes; Madrasah; Elementary Education*

Introduction

In carrying out education in an orderly, structured, and directed manner, management is essential. Management is the art of accomplishing tasks through people. It achieves organizational goals by optimally organizing and directing human resources. Management or administration is an integral component that cannot be separated from the overall educational process. Without proper management, educational goals cannot be optimally, effectively, and efficiently achieved (Siagian, 2008; Nasiruddin, Fauzi, & Hidayat, 2024). This concept applies to all educational institutions or organizations that require effective, result-oriented management. Effectiveness and efficiency here refer to achieving objectives while conserving energy, time, and costs (Terry, 2006).

A quality educational process requires adequate facilities and infrastructure, both directly and indirectly. Facilities directly related to the educational process include buildings, classrooms, educational

tools/media, desks, chairs, and so on, while infrastructure includes yards, gardens, playgrounds, and access roads to the school. These must meet the minimum standards stipulated in Permendiknas No. 24 of 2007, Article 1, which outlines the minimum criteria for facilities and infrastructure for primary and secondary education institutions.

Educational facilities are defined as all equipment and supplies directly used in the teaching and learning process, while infrastructure refers to the supportive facilities (Depdiknas, 2007). According to Bafadal (2003), the management of educational facilities and infrastructure is a collaborative process in utilizing all educational facilities effectively and efficiently. The goal is to ensure the educational process runs optimally through the professional provision and use of facilities.

Recent studies show that good facilities and infrastructure management involves systematic and efficient processes of planning, procurement, inventory, maintenance, and disposal (Gentarefori Samala, Giatman, & Ernawati, 2024). Sofiana et al. (2024) emphasize that technology-based management, such as digital information systems and smart cards, significantly improves efficiency, effectiveness, and transparency.

The effectiveness of facilities and infrastructure management has been empirically proven to significantly contribute to the quality of learning. Research by Siwi, Panigoro, and Santoso (2024) found that facilities and infrastructure management influences up to 96% of the effectiveness of social studies learning. This highlights that facilities and infrastructure are fundamental elements of the educational system. Similarly, Thiyyan, Brata, and Parjaman (2023) emphasize the importance of effective management at the elementary school level in creating a conducive learning environment. Sajdah et al. (2023) also underline the significance of technology-based facilities management as a strategy to meet 21st-century learning challenges.

At state Islamic elementary school (MIN) 2 Batang, attention to facilities and infrastructure has been a priority over the past two years. The school strives to meet the standards set by Permendiknas No. 24 of 2007 to support improved learning outcomes. However, based on inventory data, there are still issues in maintenance and procurement. Management has not been optimal, and utilization by all stakeholders is also lacking. These findings align with Samala et al. (2024), who point out that weak maintenance is a common barrier to the optimal use of educational facilities.

Interviews with the Principal of MIN 2 Batang, Hj. Sri Nanik, S.Ag., M.S.I., revealed that limited funding is the main challenge. Since the school is no longer a satker (budget user unit), access to central government funding has been restricted. Currently, funding relies solely on BOS (School Operational Assistance) funds, with no support from donors or special procurement programs such as SBSN, which was once planned but canceled due to budget cuts.

To support the achievement of educational quality, facilities and infrastructure must be managed with careful planning, the recruitment of professional staff, and systematic documentation. Inventory should be accompanied by user records to monitor the condition of each facility (Sofiana et al., 2024). If a facility is no longer in use, it should be removed from the list to avoid burdening the management system.

MIN 2 Batang is an educational institution committed to shaping knowledgeable, skilled, and morally upright students. Currently, the school has 453 students divided into 18 learning groups (rombel), but only 15 classrooms are available, forcing three groups to use rooms at the local Madrasah Diniyah (Madin). There are 18 class teachers, one physical education teacher, one Islamic education teacher, the principal, a librarian, a janitor, a night guard, and one civil servant educational staff member.

Therefore, effective management of facilities and infrastructure is essential to sustaining quality education. Particularly in the context of madrasahs with limited resources, appropriate and sustainable management strategies are an urgent necessity.

Method

The method used in this study is descriptive qualitative. Qualitative methods are chosen because they are appropriate for exploring social phenomena contextually and naturally, as well as exploring the meaning behind the processes, interactions, and experiences of the actors in them (Creswell & Poth, 2018). The strategy used in this study is a case study. Case studies are chosen because they allow researchers to explore phenomena contextually in real-life settings, where the boundaries between phenomena and their contexts are not clearly defined (Yin, 2018). Data collection techniques in this case study include: in-depth interviews, participant observation, and documentation. Data analysis uses an interactive model from (Miles et al., 2018), which includes: (1) data reduction, which is the process of selecting and simplifying information; (2) presenting data in narrative or visual form to support understanding; and (3) drawing conclusions and verifying patterns that emerge in the data. To ensure the validity of the data, triangulation of sources and techniques was carried out, as well as member checking with informants to ensure the conformity between the data and the reality in the field (Nowell et al., 2017).

Finding and Discussion

Based on the results of the study on the implementation of facilities and infrastructure management in improving learning outcomes at MIN 2 Batang, the following results were obtained:

Facilities and Infrastructure Planning

Facilities and infrastructure planning at MIN 2 Batang is a step to determine the needs of facilities and infrastructure for programs that will be implemented based on the conditions of the facilities and infrastructure owned. Planning for program facilities and infrastructure through a series of stages, namely coordination meetings, determining madrasah programs, and determining the needs of educational facilities and infrastructure. After the madrasah coordination meeting is held, the next step in planning facilities and infrastructure is determining the madrasah program. Determination of the program at MIN 2 Batang is carried out during the coordination meeting at the beginning of the semester. Determination of the madrasah program is an agreement of all meeting participants for the program to be implemented in order to improve learning outcomes at MIN 2 Batang.

The last step in planning program facilities and infrastructure is determining needs. Determining the needs of program facilities and infrastructure at MIN 2 Batang is a step to determine the needs of facilities and infrastructure that support the implementation of the agreed school program. Determination of program facility and infrastructure needs is carried out during a coordination meeting at the beginning of the semester. The process of determining the need for program facilities and infrastructure is based on input from teachers, administrative staff, and mutual agreement at the beginning of the semester meeting.

Goods or infrastructure that are urgent or will be held immediately at MIN 2 Batang in 2021 are the procurement of a computer laboratory because now in the digital era, computers have become a non-negotiable learning tool, meaning that students and teachers really need computers in learning. Moreover, MIN 2 Batang, a State Madrasah which is a reference for private madrasahs.

The exam is already computer-based (UMBK: Computer-Based Madrasah Exam). Moreover, there is a program from the education office, namely AN (National Assessment) which is also computer-based for grade 5 MI students. Thus, the computer laboratory is the main infrastructure to be held immediately at MIN 2 Batang.

Planning of facilities and infrastructure can be interpreted as the entire process of carefully estimating the design of purchasing, procurement, rehabilitation, distribution, rental or manufacturing of

equipment and supplies according to needs. Needs planning is a detailed planning function that considers a factor of needs that must be met. In determining the needs, several data are needed, including distribution and composition, type, quantity, and condition (quality) so that it is effective, appropriate, and efficient and the needs are further studied to be adjusted to the amount of financing from the available funds.

The purpose of Planning Facilities and Infrastructure is to avoid unwanted errors and failures and to increase effectiveness and efficiency in its implementation. Planning for the procurement of educational facilities and infrastructure is carried out based on an analysis of needs and determining the priority scale of activities to be implemented which is adjusted to the availability of funds and the level of importance. The benefits of planning educational facilities and infrastructure are that it can help in determining goals, laying the foundations and determining steps, eliminating uncertainty, can be used as a guideline or basis for carrying out supervision, control and even assessment so that later activities run effectively and efficiently. A good plan always leads to previously set targets and objectives, is based on calculations and always contains activities/actions/efforts. The target of planning cooperation to achieve previously set goals.

The function of Planning, includes various activities to determine needs, determine strategies for achieving goals, determine the content of educational programs and others. In the context of management, it is necessary to carry out planning activities, which reach into the future to improve the situation and meet future needs, determine the objectives to be achieved, prepare programs that include approaches, types and sequences of activities, determine the cost plans required, and determine work schedules and processes.

Organizing Facilities and Infrastructure

Organizing facilities and infrastructure is an activity of grouping responsibilities for each management function in the field of educational facilities and infrastructure. If the organization runs according to the functions and tasks given, the organization in facilities and infrastructure will run smoothly and well. Organizing facilities and infrastructure includes arranging the organizational structure of facility and infrastructure managers, dividing work tasks/job descriptions, arranging practical tools and materials, and arranging practical activities.

The role of the person in charge of facility and infrastructure management is administration of facilities and infrastructure, planning educational facilities and infrastructure, planning and managing the need for tools and materials, proposing the need for tools and materials as educational facilities and infrastructure, reporting the condition of facilities and infrastructure to the head of the madrasah. The role of the head of the madrasah is very important and large, namely guiding and motivating his subordinates. The support and positive attention given by the head of the madrasah will greatly assist laboratory managers in carrying out their duties as well as possible and they also feel appreciated in their work.

Organizing is a process of compiling organizational structures and the availability of resources (human resources, finances, infrastructure and facilities) in an organization. There are two important aspects in organizing activities, namely division of labor and departmentalization. The division of tasks in question is the adjustment of work tasks so that each officer in the organization is responsible for carrying out a limited set of activities. The result of organizing work is the formation of a container (entity) or organizational unit in which there are organizational devices so that the tasks entrusted to supporters can be carried out. Organizing is a process that involves the formulation and details of work and tasks and activities based on a formal organizational structure to people who have the ability and capability to carry them out as a prerequisite for creating harmonious and optimal cooperation towards achieving goals effectively and efficiently. This organization includes steps including: (1) Identifying previously set goals and objectives. (2) Reviewing the work that has been planned and detailing it into a number of tasks and describing it into a number of activities. (3) Determining personnel who have the ability and capability to

carry out these tasks and activities. (4) Provide clear information to officers about the tasks and activities that must be carried out, regarding the time and place, as well as working relationships with related parties.

Implementation of Facility and Infrastructure Management

The procurement of household facilities and infrastructure at MIN 2 Batang is carried out to meet the educational facility and infrastructure needs so that teaching and learning activities can run smoothly. The procurement of facilities and infrastructure is funded solely by the school's budget from the government, specifically the BOS (School Operational Assistance) fund. There are no donors to support the procurement of facilities and infrastructure. A few years ago, when the school was an independent unit (satker), it received funding for the procurement of classroom buildings (RKB) and renovations. There were even plans to receive funding from SBSN (State Sharia Securities) for the procurement of a library room, teachers' room, and headmaster's office, but due to a unilateral budget cut, the procurement program at MIN 2 Batang was affected. Until now, no additional funding has been received for the procurement of facilities and infrastructure, especially since the school is no longer an independent unit, making it difficult to request funds directly from the higher authorities (regional office, central government, etc.).

The procurement process of facilities and infrastructure is determined by the headmaster in coordination with the treasurer, and the teachers (facility and infrastructure coordinators) provide the necessary items based on needs. The maintenance of infrastructure at MIN 2 Batang involves ensuring that the existing infrastructure is in good condition and ready for use at any time. Maintenance of the educational infrastructure at the school is carried out through regular checks and repairs based on the building's condition. Regular checks are conducted to prevent serious damage or unwanted accidents. Furthermore, repairs based on building conditions are made to improve the quality and standard of the buildings that are deemed insufficient to support teaching and learning activities.

The maintenance of educational facilities at MIN 2 Batang involves ensuring that the facilities are in good condition for use in teaching and learning activities. The responsibility for the maintenance of facilities at the school falls on the person in charge of each work area and classroom. The maintenance of facilities at MIN 2 Batang still requires a storage warehouse to safely store unused educational equipment.

Maintenance is the activity of preserving or preventing the damage of items, ensuring that they remain in good condition and ready for use. Ongoing maintenance of all inventory items is sometimes considered trivial, yet this process is as important as other stages in the administration of facilities and infrastructure. Expensive facilities and infrastructure, if not properly maintained, will not be usable.

Control of Facilities and Infrastructure

The control of facilities and infrastructure at State Islamic Elementary School 2 Batang is carried out through the inventory of educational facilities and infrastructure. The inventory of educational facilities at MIN 2 Batang is conducted based on the Ministry of National Education's Directorate General of Teacher and Education Personnel Quality Improvement guidelines from 2007, concerning School-Based Educational Facilities and Infrastructure Management.

The current process includes recording the facilities and infrastructure owned by the school. The person in charge of the inventory of facilities is a teacher (responsible for facilities), with the school recently moving to a new building and still in the process of reorganizing. MIN 2 Batang has unique physical facilities and infrastructure. The classroom arrangement and building materials differ from those of typical schools.

Inventory is the initial step in receiving goods, carried out to improve the management of items already owned, ensuring they are well-maintained. The purpose of inventory is to maintain and create orderly administration of the facilities and infrastructure owned by the school, save school funds both in procurement and maintenance, and to aid in the disposal of school facilities and infrastructure. It also serves as a guideline to calculate the school's material assets that can be valued in monetary terms and facilitates the monitoring and control of the school's facilities and infrastructure.

A well-organized and continuous inventory list of items in an organization can provide various benefits, such as providing data and information for determining needs and preparing for the procurement of goods, serving as a guideline for directing procurement, providing data for the distribution of goods, determining the condition of items (whether old, damaged, or excess) as the basis for their disposal, and easing the monitoring and control of items.

Educational facilities administration plays a crucial role in achieving the goals of education. As education personnel, we are required to understand and manage the administration of facilities and infrastructure to increase effective and efficient performance, and respect the work ethics of fellow education personnel, creating harmony and a sense of pride and ownership among school members and the surrounding community. The educational environment will be positive or negative depending on the maintenance of its facilities and infrastructure administration.

Educational facilities are crucial in enhancing learning efficiency. According to Bafadal, educational facilities and infrastructure management is defined as the process of collaborating to utilize all educational facilities and infrastructure effectively and efficiently. Educational infrastructure refers to the basic equipment that indirectly supports the educational process in schools, while educational facilities are the equipment, materials, and furniture directly used in teaching and learning. Bafadal explains that the goal of managing educational facilities and infrastructure is to provide professional services in this area to ensure the educational process is carried out effectively and efficiently.

Conclusion

Based on the results of the study on the Implementation of Facilities and Infrastructure Management in Improving Learning Outcomes at MIN 2 Batang, it can be concluded that the planning of program facilities and infrastructure goes through a series of stages, namely madrasah coordination meetings, determination of madrasah programs, and determination of educational facilities and infrastructure needs. The organization of facilities and infrastructure includes the arrangement of the organizational structure of facility and infrastructure managers, division of work tasks/job descriptions, arrangement of practical tools and materials, and arrangement of practical activities. Implementation of facility and infrastructure management (actuating) through a) procurement of facilities and infrastructure only comes from the madrasah budget from the government, namely BOS funds; b) maintenance of educational infrastructure at MIN 2 Batang is carried out by periodic checks, repairs based on building conditions. Maintenance of facilities at MIN 2 Batang is the maintenance of madrasah facilities so that they can be used in teaching and learning activities in good condition; and c) the removal of educational facilities and infrastructure at MIN 2 Batang is carried out according to the condition of goods that are no longer used so as not to fill the place. The process of removing facilities and infrastructure at MIN 2 Batang goes through a series of stages, namely the selection of goods, the sale of goods. Control of facilities and infrastructure at MIN 2 Batang is carried out by inventorying educational facilities and infrastructure. Inventory of educational facilities and infrastructure at MIN 2 Batang will be carried out based on the Directorate General of Improving the Quality of Educators and Education Personnel of the Ministry of National Education in 2007, concerning the management of school-based educational facilities and infrastructure.

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