



Analysis of Facilities and Infrastructure Management in Improving Education Quality at SMP Negeri 35 Medan

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Abstract. This study analyzes the management of facilities and infrastructure at SMP Negeri 35 Medan in an effort to improve education quality. The research employs a qualitative descriptive approach, with data collected through observations and interviews conducted at the school. Observations focus on assessing the condition of classrooms, laboratories, libraries, and supporting infrastructure, while interviews with key informants, including a science teacher and the vice principal for facilities, provide deeper insights into the management and challenges of school infrastructure. The findings indicate that although the school meets the minimum facility standards as stipulated in Government Regulation No. 19 of 2005, several challenges remain, including budget constraints, lack of facility maintenance by students, and limited human resources. To optimize facility usage, the school needs to implement strategies such as regular maintenance, budget optimization through external collaborations, enhancement of the digital inventory system, and strengthening Standard Operating Procedures (SOPs). Additionally, integrating technology in learning and increasing student awareness of facility maintenance are crucial solutions. By implementing these recommendations, facility and infrastructure management is expected to become more effective, creating a more comfortable and supportive learning environment for both students and educators.

Keywords: Education Quality, Facilities Management, Facility Maintenance, Infrastructure, School Facilities.

1. INTRODUCTION

Education plays a crucial role in human resource development, where the success of the learning process is influenced by various factors, one of which is the availability of adequate facilities and infrastructure along with their optimal management. Educational facilities and infrastructure are not only supporting tools for teaching and learning activities but also key elements in creating a comfortable, safe, and effective learning environment. Government Regulation No. 32 of 2013 mandates that every educational institution must have facilities and infrastructure that support regular and sustainable learning processes. Additionally, the National Education Standards in Government Regulation No. 19 of 2005 set minimum requirements related to learning spaces, sports facilities, places of worship, libraries, laboratories, and other learning resources to ensure high-quality education.

The management of facilities and infrastructure encompasses several crucial aspects, including planning, procurement, organization, utilization, and disposal of outdated resources. In practice, schools often encounter challenges such as limited funding, lack of awareness among teachers and students regarding facility maintenance, and insufficient human resources dedicated to infrastructure management. Addressing these challenges requires comprehensive

strategies, including coordination between central and local governments, raising awareness among school members, and optimizing the use of available resources. Furthermore, schools must adopt innovative approaches to maximize learning effectiveness, even when faced with constraints in educational infrastructure.

Proper management of facilities and infrastructure positively impacts the effectiveness of learning and enhances educational quality. Well-maintained educational facilities support interactive and engaging learning experiences, ultimately benefiting students and teachers alike. Additionally, the completeness and quality of school infrastructure can serve as an attraction for prospective students. Therefore, schools must continuously improve the quality and quantity of their educational facilities and infrastructure to ensure optimal learning outcomes. A well-managed school environment also aligns with the broader goal of improving national education standards and preparing students for future challenges.

This study aims to analyze the management of facilities and infrastructure at SMP Negeri 35 Medan and its impact on education quality. Specifically, this study aims to: (1) identify the current state of school facilities and infrastructure, (2) identify challenges in their management, (3) explore strategies for optimizing their use, and (4) provide recommendations for improving the effectiveness of infrastructure management in supporting education quality. By examining these aspects, this research is expected to provide valuable insights for policymakers, school administrators, and educators in enhancing school facility and infrastructure management.

2. THEORETICAL REVIEW

Management is the method of utilizing the efforts and thoughts of others to carry out a task with the aim of achieving a specific goal. Management encompasses various techniques and leadership styles, such as directing, influencing, supervising, and organizing all interrelated elements to accomplish that goal. It is a process of collaboration between individuals, groups, and other resources to achieve organizational objectives. The term "management" originates from the word *to manage*, which means to organize. Management is conducted through a process that follows a structured sequence and adheres to its functions (Sutisna & Effane, 2022).

Educational facilities include all infrastructures that directly support the education process, particularly in teaching and learning activities, whether movable or permanent, to ensure that educational goals are achieved smoothly, systematically, effectively, and efficiently. Educational infrastructure refers to facilities that indirectly support the educational

or teaching process, such as school yards, gardens, school parks, and access roads to the school. However, these infrastructures can also be used directly in the learning process, such as a school park for teaching biology or a schoolyard as a sports field, integrating them as educational facilities.

The objectives of educational facilities and infrastructure are: a) to ensure the procurement of educational facilities and infrastructure through a careful and thorough planning and acquisition system so that schools or madrasahs have adequate facilities and infrastructure that meet efficiency requirements. b) to ensure the proper and efficient use of school facilities and infrastructure. c) to ensure the careful and precise maintenance of educational facilities and infrastructure so that they remain in a ready-to-use condition whenever needed.

Regulations regarding the management of educational facilities and infrastructure in schools are outlined in Government Regulation No. 19 of 2005 on National Education Standards and Minister of National Education Regulation No. 24 of 2007 on Facility and Infrastructure Standards. These two regulations collectively form a comprehensive regulatory framework for managing educational facilities and infrastructure in Indonesia. PP No. 19/2005 establishes a general foundation that mandates every educational institution to have adequate facilities (furniture, equipment, educational media, books) and infrastructure (land, classrooms, administrative offices, laboratories, libraries) to support continuous learning processes. Meanwhile, Permendiknas No. 24/2007 provides detailed technical specifications and minimum standards for elementary (SD/MI), junior high (SMP/MTs), and senior high schools (SMA/MA), covering land area requirements, building standards, classroom requirements, laboratories, and libraries, including the minimum types and quantities of equipment that must be available. These two regulations complement each other in providing clear guidelines for schools regarding the procurement, management, and maintenance of educational facilities and infrastructure to achieve optimal learning quality.

Planning is a process of determining objectives and targets to be achieved by adopting strategic methods to accomplish them. Planning includes setting goals, policies, products, services, tools, expenditures, schedules, locations, personnel, and organizational relationships. Organizing refers to a system of cooperation among several individuals, carried out through work specialization and division, by forming work units that consolidate tasks into specific work divisions. Actuating (Implementation) is the execution of previously formulated plans by motivating, leading, and directing organizational members to carry out their duties. Controlling (Supervision) is the process of monitoring, evaluating, and measuring organizational

performance against established standards and taking corrective actions when necessary to ensure that organizational goals are achieved as planned.

3. METHODOLOGY

This study employs a qualitative descriptive approach. Data collection is conducted through observation and direct interviews at SMP Negeri 35 Medan. Observations focus on assessing the available school facilities, including classrooms, laboratories, libraries, and supporting infrastructure. Interviews are conducted with two key informants: a science teacher and the vice principal in charge of facilities and infrastructure. These interviews provide in-depth insights into the management, utilization, and challenges associated with school facilities.

The collected data is analyzed qualitatively through the stages of data reduction, data presentation, and conclusion drawing. Triangulation techniques are applied to validate data by comparing observations with interview findings. This research aims to provide a comprehensive understanding of the current state of school facilities and infrastructure at SMP Negeri 35 Medan, along with recommendations for future improvements and developments.

4. RESULTS AND DISCUSSION

Identification of the Current Condition of School Facilities and Infrastructure

SMP Negeri 35 Medan has various essential facilities that support learning activities, including classrooms, a science laboratory, a library, teachers' room, principal's office, and sports facilities. Additionally, the school is equipped with supporting infrastructure such as toilets, a cafeteria, a schoolyard, and a school health unit (UKS), which contribute to students' comfort and well-being while in the school environment. These facilities play a crucial role in ensuring effective learning, as their availability and quality significantly influence the overall learning atmosphere for students and educators.

Observations indicate that some classrooms have suffered significant damage, such as peeling wall paint, deteriorating desks and chairs, and poor ventilation, which affects air circulation within the rooms. Furthermore, the science laboratory faces limitations in the number of teaching aids and practical materials available. As a result, some experiments or practical activities must be conducted with restrictions or cannot be executed optimally. This condition poses a challenge for both teachers and students in conducting experiment-based learning, which is essential for enhancing conceptual understanding.

Regarding the compliance of facilities with the National Education Standards as stipulated in Government Regulation No. 19 of 2005, the facilities available at SMP Negeri 35 Medan generally meet the minimum standards set by the government. However, in terms of feasibility and infrastructure quality, there are still aspects that need improvement. While the school provides certain facilities, not all of them are in optimal condition to support effective learning. Some deteriorating infrastructure requires urgent attention to ensure its continued usability. Therefore, repairs and facility upgrades are crucial in creating a better learning environment for students.

To ensure the proper utilization of facilities, the school conducts regular evaluations of infrastructure at the beginning of each academic year. These evaluations take place through coordination meetings involving the principal, vice principal for facilities and infrastructure, teachers, and administrative staff. Based on the evaluation results, the school compiles a priority list of facilities that need to be repaired or added, considering the level of urgency and available budget. This effort aims to ensure that school facility management operates efficiently and effectively.

In terms of funding, the school relies on BOS (School Operational Assistance) funds and grants from the local government as the primary sources for facility maintenance and procurement. However, based on an interview with the vice principal for facilities and infrastructure, budget constraints often pose a significant challenge in implementing planned improvements and acquisitions. The limited budget prevents some repairs from being carried out comprehensively, leaving minor damages unaddressed for extended periods. To overcome this issue, the school submits additional funding proposals to the education department and seeks sponsorship from private entities to secure greater financial support for facility improvements and upgrades.

Beyond infrastructure repairs, the school also plans to implement a digital record-keeping system to document facility conditions and schedule maintenance more efficiently. This system is designed to provide more accurate data regarding facility lifespan, repair needs, and maintenance schedules. However, the implementation of this system is still in the planning stage due to limited human resources capable of managing it. Despite this challenge, the school strives to develop a more modern facility management system to ensure that infrastructure management becomes more effective and transparent.

Identification of Challenges in Facility and Infrastructure Management

Although SMP Negeri 35 Medan has a relatively well-structured system for managing facilities and infrastructure, several challenges persist in its implementation. One of the primary challenges is the limited budget available for maintenance and the procurement of new facilities. As previously mentioned, the school heavily relies on BOS (School Operational Assistance) funds and grants from the local government to manage its facilities and infrastructure. However, the allocated budget is often insufficient to cover all necessary repairs and acquisitions. As a result, some damaged facilities remain unrepaired due to financial constraints, ultimately affecting the comfort and effectiveness of the learning process.

Beyond budget limitations, the lack of proper maintenance by teachers and students also poses a significant challenge in managing school facilities. Observations indicate that not all facilities are well-maintained by users, especially students. Some laboratory equipment in the science lab has been damaged due to careless use, and certain facilities are left dirty or broken without being reported for repair. To address this issue, the school has implemented a classroom responsibility system, requiring each class to maintain the cleanliness and condition of their assigned room. Additionally, students are educated on the importance of preserving school facilities to ensure their functionality and longevity.

Another challenge is the limited human resources responsible for managing facilities and infrastructure. Ideally, the school should have dedicated personnel to handle maintenance and facility inventory records. However, at SMP Negeri 35 Medan, the number of available cleaning staff and technicians remains insufficient. Consequently, some facilities cannot be adequately maintained, and repairs are often delayed due to a lack of personnel. The shortage of cleaning staff also leads to certain areas of the school, particularly classrooms, receiving less frequent attention, resulting in suboptimal cleanliness and upkeep.

In addition to internal challenges, administrative and regulatory obstacles also hinder the procurement and repair processes. According to school officials, the administrative process for acquiring new facilities is often lengthy due to strict bureaucratic procedures. Furthermore, delays in government fund disbursement also pose a challenge in executing planned facility improvements. As a result, even though the school has established a priority list for repairs, the actual implementation is frequently delayed due to the prolonged administrative process.

To overcome these challenges, SMP Negeri 35 Medan continues to seek effective solutions, such as improving coordination with the education department, establishing partnerships with external organizations to support facility maintenance, and optimizing the use of available funds to ensure more efficient resource allocation. With proper planning and

strategic approaches, it is expected that facility and infrastructure management at SMP Negeri 35 Medan will improve, ultimately providing better support for the school's learning process.

Strategies for Optimizing the Use of Facilities and Infrastructure

To optimize the use of facilities and infrastructure at SMP Negeri 35 Medan, a comprehensive and sustainable strategy is needed to ensure that the available resources fully support the learning process. One of the key steps that can be taken is implementing a regular maintenance and repair system for facilities that experience damage. Based on the analysis conducted, several classrooms face issues, and the science laboratory also has a limited number of teaching aids. To address this, the school can schedule periodic maintenance involving technical personnel skilled in repairing school facilities. Collaboration with external technicians or contractors is also necessary to ensure repairs are carried out quickly and effectively without disrupting the teaching and learning process.

In addition to maintenance, budget optimization and funding sources play a crucial role in managing facilities and infrastructure. Budget constraints often pose a major challenge in realizing procurement and facility improvement plans. Therefore, the school needs to seek alternative funding sources apart from BOS funds, such as submitting aid proposals to the Department of Education, collaborating with companies through Corporate Social Responsibility (CSR) programs, and securing sponsorships from private entities that are concerned about education. With this strategy, the school can ensure that existing facilities remain in good condition and meet the evolving educational needs.

Inventory management should also be improved so that the school can accurately monitor the condition of facilities and infrastructure. One approach is to implement a digital recording system for school asset inventory. This system enables the tracking of facility usage age, maintenance schedules, and systematic replacement needs. As a result, the school can avoid budget wastage and ensure that every available facility is utilized optimally. Good inventory management also aids in decision-making regarding priorities for repairs or new facility procurement based on accurate data.

Furthermore, facility optimization can be achieved by strengthening Standard Operating Procedures (SOPs) for the use of various school facilities. For example, in the use of the science laboratory and library, the school should enforce clear rules regarding borrowing and usage of equipment. Every student and teacher utilizing these facilities must adhere to established procedures, such as recording equipment loans, using facilities correctly, and

returning them in good condition. With strict SOPs in place, the risk of damage due to improper use can be minimized, ensuring the longevity of facilities.

Enhancing student awareness and participation in maintaining school facilities is another essential strategy. The existing class responsibility program can be reinforced with a clearer reward and punishment system. Classes that maintain cleanliness and take care of facilities properly can be awarded certificates or other incentives, while those that fail to do so will receive warnings and guidance from their homeroom teachers. This program aims to instill a culture of care for the school environment and increase students' sense of ownership of the facilities they use daily.

The use of technology in learning can also be a solution to overcome physical facility limitations. For instance, in science subjects that require numerous teaching aids for experiments, schools can utilize technology-based learning methods such as digital simulations, experiment videos, or interactive educational applications. With these innovations, learning can continue effectively even with limited physical teaching aids.

Better coordination between the facilities management team, teachers, and administrative staff is also a key factor in facility optimization. More frequent evaluation meetings can be implemented to discuss encountered challenges and find solutions together. Additionally, the school can leverage digital applications as a communication platform for the facilities management team to expedite reporting and facility maintenance processes. With a more effective communication system, any issues related to facilities can be promptly addressed before they escalate into more severe damages.

Finally, monitoring and evaluation of facility usage must be conducted regularly to ensure that all available resources are used optimally. This evaluation can include building condition inspections, inventory checks, and assessments of facility effectiveness in supporting the learning process. The school can also develop a digital-based monitoring system to accelerate documentation and reporting processes. Moreover, installing CCTV cameras at strategic points within the school can help maintain facility security and reduce potential vandalism.

By implementing these strategies, SMP Negeri 35 Medan can optimize the use of its facilities and infrastructure, creating a more comfortable and supportive learning environment for students and educators. This optimization will also help the school maintain the quality of education provided and ensure that all available facilities bring maximum benefits to the entire school community.

Recommendations for Improving Infrastructure Management Effectiveness

Based on the analysis of facilities and infrastructure management at SMP Negeri 35 Medan, several recommendations can be implemented to enhance the effectiveness of infrastructure management in supporting a more optimal learning process. One of the main steps that need to be taken is improving the regular maintenance and repair system for infrastructure. Some classrooms have damages such as peeling wall paint and deteriorating desks and chairs. Additionally, the science laboratory has limited teaching aids to support student experiments. Therefore, the school needs to establish a routine maintenance schedule involving professional technical personnel and allocate a dedicated budget for facility repairs to ensure that infrastructure remains in good condition.

Next, budget optimization and funding sources are crucial factors in infrastructure management. Currently, SMP Negeri 35 Medan relies on BOS funds and grants from the local government, but these funds are often insufficient to meet all infrastructure needs. To overcome this challenge, the school can submit funding proposals to the Department of Education, establish partnerships with private entities through Corporate Social Responsibility (CSR) programs, and seek sponsorships from companies or communities concerned with education. With this strategy, the school can secure additional funding to facilitate optimal facility improvements and procurement.

Furthermore, strengthening the digital inventory system is also a key solution for enhancing the effectiveness of facility and infrastructure management. The current manual recording system may lead to inaccurate data regarding facility conditions and availability. By implementing a digital recording system, the school can obtain more accurate data on facility lifespan, maintenance schedules, and replacement needs. This will simplify decision-making regarding procurement and maintenance priorities, making infrastructure management more efficient and organized.

Another recommendation is to improve Standard Operating Procedures (SOPs) for facility usage. To prevent damage due to improper use, every laboratory, library, and sports facility should have standard procedures that students and teachers must follow. For example, in the science laboratory, students should be required to record equipment loans, follow safety procedures, and return equipment in good condition. Similarly, in the library, book borrowing systems should be strictly supervised to prevent loss or damage. With clear SOPs, facility usage will be more organized, and school assets can last longer.

To ensure the involvement of the entire school community, increasing student awareness and participation in maintaining facilities is also an essential step. The existing

classroom responsibility program can be reinforced with a reward and punishment system. Classes that maintain cleanliness and properly care for facilities can be awarded certificates or other incentives, while those that are less disciplined in maintaining cleanliness will receive warnings and guidance from their homeroom teachers. Through this approach, students will develop a greater sense of responsibility and care for their school environment and the facilities they use daily.

Moreover, utilizing technology in learning can also be a solution to overcome physical facility limitations. Currently, the science laboratory has a limited number of teaching aids, so the school can adopt technology-based learning methods such as digital simulations and experiment videos. This way, students can still gain a deep understanding of concepts even if the number of available teaching aids is limited. Technology integration can also be applied in the library by providing access to digital books or e-learning platforms, giving students a wider range of learning resources.

In terms of internal management, improving coordination between the facilities management team and facility users is an important factor to consider. Currently, limited communication between the facilities management team and teachers often hinders the optimal utilization of infrastructure. Therefore, the school should hold more frequent coordination meetings and implement a digital communication system to facilitate reporting on the condition of facilities. This way, any issues can be addressed promptly before they escalate into more severe damage.

Lastly, more systematic supervision and evaluation need to be implemented to ensure that all school facilities are used optimally and remain in good condition. The school can conduct monthly evaluations of facilities through physical building inspections, inventory checks, and assessments of facility effectiveness in supporting the learning process. Additionally, installing CCTV cameras in strategic locations can help maintain facility security and prevent vandalism. The school can also develop a digital reporting system that allows real-time monitoring of facility conditions. With stricter supervision, the school can take faster and more precise actions in addressing infrastructure-related issues.

By implementing these recommendations, SMP Negeri 35 Medan can improve the effectiveness of infrastructure management, creating a more comfortable, safe, and supportive learning environment for students and educators. Optimizing facilities will not only enhance the quality of learning but also improve the efficiency of resource utilization within the school.

5. CONCLUSION

This study analyzes the management of facilities and infrastructure at SMP Negeri 35 Medan in an effort to improve the quality of education. The findings indicate that although the school has met the minimum facility standards as stipulated in Government Regulation No. 19 of 2005, several challenges remain, such as budget constraints, lack of facility maintenance by students, and limited human resources. To optimize the use of facilities, the school needs to implement strategies such as regular maintenance, budget optimization through collaboration with external parties, enhancement of the digital inventory system, and strengthening of Standard Operating Procedures (SOPs). Additionally, integrating technology into learning and increasing student awareness in maintaining facilities are also crucial solutions. By implementing these recommendations, the management of facilities and infrastructure is expected to become more effective, creating a comfortable and supportive learning environment for both students and educators.

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