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Management Of Educational Facilities And Infrastructure To Support The Quality Of Learning In Junior High Schools In Balikpapan

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Abstract

This study aims to analyze the implementation of educational facilities and infrastructure management in supporting the quality of learning at SMP Negeri 9 Balikpapan. A qualitative method with a case study approach was employed. The research informants consisted of the principal, the vice principal for facilities and infrastructure, and teachers selected through purposive sampling. Data were collected through interviews, observations, and documentation, and were analyzed using the interactive model of Miles and Huberman, which includes data collection, data reduction, data display, and conclusion drawing. The findings indicate that facilities and infrastructure management has been implemented regularly through needs-based planning, procurement based on priority scales and budget availability, inventory management using both manual and digital systems, the utilization of technology-based learning facilities, and scheduled maintenance activities. These management practices contribute to improving learning quality by creating a conducive learning environment, enhancing instructional effectiveness, increasing the variety of learning media, fostering teachers' creativity, and promoting more active classroom interactions. However, several challenges remain, including limited financial resources, an inventory system that has not yet been fully integrated, and the uneven utilization of technology-based facilities among teachers. The study concludes that systematic facilities and infrastructure management is a crucial factor in enhancing learning quality and requires a balance between adequate facilities, effective management systems, and the continuous development of human resource competencies.

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Keywords: educational facilities, facilities and infrastructure management, quality of learning

INTRODUCTION

Educational success is fundamentally reflected in the quality of learning produced by educational units. Educational quality essentially reflects the level of achievement of learning objectives, as reflected in the effectiveness of the teaching and learning process and the quality of student learning outcomes. Learning quality is dynamic and highly dependent on the alignment of input, process, and output components. Within the framework of educational management, learning quality is shaped by the integration of various strategic elements, such as educator competence, student characteristics, curriculum relevance, learning climate, and the support of facilities and infrastructure that are systematically and sustainably managed (Purnamaningsih & Purbangkara, 2022). Quality learning is reflected in conducive educational interactions, the use of contextual learning resources, and a physical school environment that enables students to be actively involved, feel comfortable, and motivated in the learning process.

In this context, the availability and management of educational facilities have a causal relationship with the quality of learning, because facilities and infrastructure function as the main medium that supports the effectiveness of learning strategies, variations in teaching methods, and the intensity of student involvement in learning activities (Mustika & Hamidah, 2025). Various empirical findings confirm that schools that are able to manage learning facilities optimally tend to create a more conducive learning climate, increase learning motivation, and have a positive impact on student learning outcomes, so that the quality of learning is not only determined by teacher pedagogical factors, but also by the adequacy of physical facilities and the support of relevant and sustainable learning technology (Dunggio, 2023). Therefore, the existence of educational facilities needs to be understood as a strategic factor that contributes to improving the quality of learning, not just a complement to teaching and learning activities, (Rahma Zhafirah et al., 2024, Hasanah et al., 2023)

Educational facility management is increasingly important as learning demands in the era of globalization emphasize the use of technology and learning innovation. However, various studies show that educational facility management in Indonesia still faces a number of obstacles. Disparities in the availability of facilities between schools are still found, particularly in aspects of learning technology devices, digital learning media, and supporting facilities for teaching and learning activities (Fadillah et al., 2025). Based on official data from the Ministry of Primary and Secondary Education (Kemendikdasmen), the percentage of classrooms experiencing moderate

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to severe damage remains quite high in elementary schools (around 49% moderately damaged and 11% severely damaged), junior high schools (42% moderately damaged and 7% severely damaged), and senior high schools/vocational high schools which also showed significant damage (around 33% moderately damaged and 6% severely damaged in senior high schools), reflecting the continued large need for rehabilitation of basic educational facilities in many regions. Based on the national education budget allocation through the State Budget (APBN) which continues to increase (for example, from around IDR 565 trillion in 2024 to IDR 724.3 trillion in the 2025 Draft State Budget), challenges in implementing the budget for equal distribution of educational facilities and quality, including learning technology facilities, digital media, and other supporting infrastructure, have not yet been fully resolved (Kemendikdasmen, 2025). These empirical findings are reinforced by the Indonesian Legal Institute Foundation, which places unequal facilities and infrastructure as one of the crucial problems in the national education system, which has an impact on the inequality of the quality of educational services and student learning opportunities in various regions (Yayasan Bantuan Hukum Indonesia, 2024).

Furthermore, the main issues related to the quality of educational services, namely budget constraints, an inventory system that is not yet digitally integrated, and suboptimal facility maintenance, are still problems frequently encountered in various educational units (Latifa et al., 2024, Manurung et al., 2020). These conditions indicate that the management of educational facilities is not fully able to meet the growing learning needs. These problems directly impact the quality of the learning process. Limited facilities and low utilization of learning technology can reduce the variety of learning methods used by teachers, so that learning tends to take place conventionally. As a result, student participation in the learning process is less than optimal, learning interactions are reduced, and students' opportunities to gain innovative learning experiences are limited. Thus, the quality of education is not only assessed by input and the learning process, but also by the extent to which educational outputs such as learning outcomes, graduate competencies, and program benefits are able to meet the needs of students and educational stakeholders.

Based on initial observations at SMP Negeri 9 Balikpapan, educational facility management has been implemented through the planning, procurement, inventory, utilization, and supervision stages. However, implementation at each stage has not been fully optimal. Budgetary limitations have resulted in facility needs being met in stages, resulting in a number of learning needs not being met according to school priorities. This situation indicates a gap between actual learning needs and the school's resource capacity to provide adequate supporting facilities.

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In addition to funding, school asset management also faces challenges related to the inventory system. Despite utilizing digital technology, the data collection process is still carried out through a combination of manual and digital recording that is not yet fully integrated. This situation has the potential to lead to administrative inefficiencies, delays in updating asset data, and limitations in providing accurate information for managerial decision-making. Yet, an integrated inventory system is a crucial instrument in supporting the effective planning, control, and maintenance of educational facilities.

Another issue is the utilization of learning technology. The availability of devices such as projectors, smart boards, and digital media has not been followed by optimal utilization by all teachers. This finding indicates that the availability of facilities does not automatically result in improved learning quality if it is not supported by the ability and commitment of users to integrate them into the teaching and learning process. As a result, the use of technology as an interactive learning tool remains limited, thus preventing opportunities to increase student participation, motivation, and learning experiences from being maximized. This situation demonstrates that the main problem lies not only in the availability of facilities, but also in the effectiveness of their management in supporting innovative, adaptive learning that is oriented towards improving the quality of learning.

Various researchers have conducted research on educational facility management. (Rahma Zhafirah et al., 2024) found that educational facility management contributes to improving the quality of learning. (Hasanah et al., 2023) demonstrated that effective facility management supports improvements in learning quality, while (Andayani et al., 2025) examined the influence of facility management dimensions on learning quality at the junior high school level. However, these studies primarily highlight the general relationship between facility management and education, without examining in-depth the implementation of each stage of facility management in specific school contexts.

Furthermore, the issues of budget constraints, asset inventory digitization, and the optimization of learning technology utilization have not been discussed in depth in the context of educational facility management in schools. Thesis research on School Digitalization Management at SD Negeri 2 Patukangan, Kendal, shows that the digitalization of school management is still focused on general administration and has not been integrated with the asset inventory system, resulting in suboptimal utilization of infrastructure. This finding is reinforced by research by R. Fatukaloba (2024), which states that budget constraints and a non-technology-based inventory system are obstacles to optimizing infrastructure management to support the quality of learning

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in schools.

Based on previous research studies, there is still a research gap showing that most studies only focus on certain aspects of facility and infrastructure management, such as planning, procurement, inventory, and more emphasis on administrative aspects without analyzing the relationship between all management functions as a whole with improving the quality of learning. In addition, research conducted at the elementary and high school levels has not been able to describe the implementation of facility and infrastructure management in junior high schools that have different management characteristics. Thus, there are still limited empirical studies that analyze in depth the relationship between planning, procurement, inventory, utilization, maintenance, and supervision of facilities and infrastructure with improving the quality of learning at the junior high school level. Therefore, this study seeks to fill this gap through an in-depth study of the implementation of facility and infrastructure management at SMP Negeri 9 Balikpapan by analyzing the relationship between each management function in supporting the quality of learning.

This study aims to analyze the implementation of facility and infrastructure management at SMP Negeri 9 Balikpapan, which includes planning, procurement, inventory, utilization, maintenance, and supervision. Furthermore, this study aims to identify the relationship between each facility and infrastructure management function in supporting the quality of learning and describe the factors that support and hinder its implementation. The results of this study are expected to contribute to the development of educational management studies, particularly facility and infrastructure management, as well as serve as evaluation material and recommendations for schools in optimizing the management of educational facilities to support the quality of learning.

METHOD

This research was conducted at SMP Negeri 9 Balikpapan in May 2026 using a qualitative method through a case study approach to gain a deep and contextual understanding of the management of educational facilities and infrastructure and its implications in supporting the quality of learning. The selection of SMP Negeri 9 Balikpapan as the location of the research was based on academic considerations that this school has characteristics relevant to the research focus on the management of educational facilities and infrastructure. This school has various learning facilities that support the learning process, including the use of educational technology, and implements facility and infrastructure management that includes planning, procurement,

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inventory, utilization, maintenance, and supervision. These conditions provide an adequate context to examine in depth how the implementation of each facility and infrastructure management function contributes to improving the quality of learning so that it is expected to produce empirical findings in accordance with the research objectives.

The research subjects were determined using a purposive sampling technique, involving three informants who were directly involved in the management of facilities and infrastructure: the principal as the policy maker, the vice principal in charge of facilities and infrastructure as the technical manager of the facilities, and the teachers as the users of the facilities in the learning process. These three informants were selected because they represent all the main functions in the management of facilities and infrastructure, from policy formulation, management implementation, to utilization in learning activities. Thus, the three informants were deemed capable of providing comprehensive data according to the research focus, so that the information obtained could meet the needs of in-depth analysis in qualitative research.

The research data consists of primary and secondary data. Primary data were obtained through in-depth interviews with three informants, namely the principal, the vice principal for facilities and infrastructure, and teachers, as well as non-participatory observation to directly observe the practice of managing facilities and infrastructure and their utilization in the learning process at SMP Negeri 9 Balikpapan. Meanwhile, secondary data were obtained from various supporting documents, such as the inventory of facilities and infrastructure, the School Activity and Budget Plan (RKAS), maintenance reports, organizational structure, school profile, as well as administrative archives and documentation relevant to the research focus.

Data collection was conducted through in-depth interview techniques with the principal, vice principal of facilities and infrastructure and teachers as research informants to dig up information related to planning, procurement, inventory, utilization, maintenance and supervision of facilities and infrastructure. Data were collected through non-participatory observation, and documentation to strengthen and confirm the findings of further research, data reduction was carried out by selecting, grouping, and focusing on relevant data in accordance with the focus of the research on planning, procurement, inventory, utilization, maintenance, and supervision of facilities and infrastructure. The reduced data were then presented in the form of narrative descriptions arranged based on research themes so as to facilitate researchers in understanding patterns and relationships between data. The final stage was drawing conclusions and verification which was carried out repeatedly by comparing the results of interviews, observations, and documentation to ensure the consistency of the findings and obtain valid and

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comprehensive conclusions on the management of facilities and infrastructure in supporting the quality of education at SMP Negeri 9 Balikpapan.

DISCUSSION

The results of the study show that the management of facilities and infrastructurein supporting the quality of education at SMP Negeri 9 Balikpapan.This strategy is implemented from planning, procurement, inventory, utilization, maintenance, supervision in supporting the quality of learning which influences the effectiveness of learning, learning comfort, and the quality of instructional interactions in the classroom.

Facilities and Infrastructure Planning

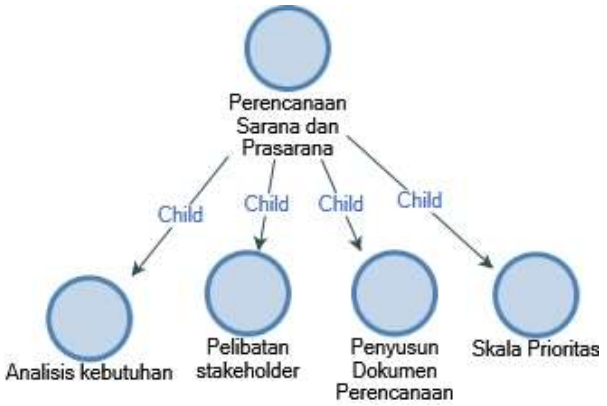


Figure 1. Facilities and Infrastructure Planning Process

Planning for facilities and infrastructure is the initial stage that determines the overall success of school facility management. Research shows that the planning process in schools is carried out systematically through needs analysis, multi-stakeholder engagement, the development of planning documents, and the establishment of priorities. These stages demonstrate that schools do not procure resources based on immediate needs, but rather through an identification process that considers the school's actual conditions and the goal of improving the quality of learning.

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The needs analysis process begins with a plenary meeting at the beginning of the school year involving the school management team and all teachers. The principal explained that:

> *"At the start of each new school year, we at school usually hold a plenary meeting with the school management team and all the teachers. During this meeting, each teacher is invited to share any facility needs they might need to support their classroom learning." [KS-01]*

The participatory needs analysis demonstrated that the school implemented needs-based planning principles, not simply estimates from school management. The involvement of teachers as primary users of facilities and infrastructure enabled more accurate identification of learning needs because they directly understood the constraints and facilities required during the learning process. This explains why the resulting procurement decisions were more relevant to actual classroom needs and potentially reduced underutilization of facilities.

This finding supports the concept of infrastructure and facilities management according to(Rukajat, 2023)which emphasizes that planning must be oriented towards the effective use of resources through needs analysis and priority setting. The results of this study also strengthen research(Anjani et al., 2025)which states that needs-based procurement contributes to increasing the effectiveness of learning because the facilities provided are in accordance with the demands of the teaching and learning process. In addition to conducting a needs analysis, the school also involved various stakeholders in the decision-making process. The principal explained that after all proposals were collected, the management team identified the most pressing needs.

> *"So, in the meeting, each teacher was invited to convey any facility needs they might need to support their learning process in class. After all the teacher suggestions were gathered, our team and I conducted a re-assessment and identified which needs were truly urgent and necessary." [KS-01]*

The involvement of various stakeholders demonstrates that the school applies participatory governance principles in decision-making. This situation may arise because the need for facilities and infrastructure is not fully understood by school management, but also depends on the experience of teachers as the primary users of learning facilities. Teacher involvement allows for more accurate identification of needs based on classroom issues, resulting in more objective decisions that align with learning needs. Furthermore, the school's culture of

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deliberation strengthens coordination among stakeholders, making the planning process more effective and gaining legitimacy from all parties involved. The principal stated that:

> *"...Our school must have an annual facility and infrastructure planning document. This document will serve as our primary compass or guideline for procuring and maintaining all school facilities throughout the year." [KS-01]*

The existence of planning documents demonstrates that the school has implemented a planning function that not only meets administrative needs but also serves as a control instrument that maintains consistency between needs, procurement, maintenance, and evaluation. These results demonstrate that planning administration plays a strategic role in creating effective infrastructure and facilities governance. Prioritization is the final stage in the planning process to ensure optimal utilization of limited resources. The principal explained that:

> *"...first look at which needs have the most direct impact on the children's learning process. " [KS-01]*

Setting priorities based on their impact on the learning process demonstrates that schools are striving to optimize the use of limited resources. This policy is crucial because budget constraints require schools to choose needs that provide the greatest benefit to achieving learning objectives.

The results of this study broaden the understanding of the implementation of the planning function in the management of educational facilities and infrastructure by showing that the success of planning is not only determined by needs analysis, but also by the active involvement of teachers, the preparation of planning documents, and the determination of priority scales in a participatory manner. This finding provides an illustration that a collaborative approach is able to improve the accuracy of decision making in the management of school facilities and infrastructure. Unlike previous studies that generally emphasize needs analysis or the preparation of procurement programs, this study shows that the integration between needs analysis, the involvement of all teachers, the preparation of planning documents, and the determination of priority scales forms an interrelated planning mechanism in supporting the quality of learning.

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Procurement of Facilities and Infrastructure



Figure 2. Procurement of Facilities and Infrastructure

Procurement of facilities and infrastructure is the implementation of previously developed planning. Research shows that procurement is carried out through a mechanism that considers needs planning, implementation oversight, funding sources, and a clear division of responsibilities, ensuring a structured process.

The procurement process begins with compiling a needs list based on the analysis and mutually agreed-upon priorities. The principal explained that:

> *"Based on the planning and priority scale we agreed upon earlier, once the list of major needs was established, we moved on to aligning it with the funding sources available in the school treasury." [KS-01]*

Procurement based on planning documents demonstrates that schools apply systematic management principles, prioritizing needs analysis results and aligning them with funding capabilities, resulting in more effective and sustainable budget use. This finding reinforces the findings of other research.(Sandi et al., 2023)which states that procurement carried out in a planned and accountable manner can support the effectiveness of facility and infrastructure management and improve the quality of learning. To ensure procurement is carried out according to plan, the school implements a periodic monitoring system. The principal stated that:

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"periodic evaluation meetings and direct physical checks of the needs list compiled at the beginning of the year." [KS-01]

Oversight through evaluation meetings and physical inspections demonstrates that the school focuses not only on procurement fulfillment but also on the quality of its implementation. Oversight serves as a crucial mechanism to ensure compliance between planned and received items and the specifications required for the learning process. With regular evaluations, potential deviations and non-conformities can be identified early, thereby minimizing the risk of school losses. These findings demonstrate that the oversight function serves as a control instrument in the infrastructure management cycle, ensuring that all stages are carried out effectively and accountably. The principal stated:

"It still comes from the Regular BOS funds. However, thank God, in 2026, our school also received additional capital assistance through the Regional BOS funds, which we allocated specifically for the procurement of new tents and stretchers for use in children's scouting activities." [KS-01]

The use of more than one funding source demonstrates the school's ability to optimize funding through Regular BOS and Regional BOS funds, allowing for more flexible facility and infrastructure needs, both priority and developmental. This finding suggests that procurement success is determined not only by budget size but also by the school management's ability to effectively manage and allocate various funding sources to support the quality of learning. In practice, procurement responsibility rests with the principal, who collaborates with the facility and infrastructure management team. The principal explained that:

"Full responsibility certainly lies with me as the principal, who on a daily basis coordinates with the school's facilities and infrastructure management team." [KS-01]

Overall, the results of this study indicate that procurement effectiveness is not only influenced by budget availability, but also by the integration between the planning process, supervision, management of funding sources, and clear division of responsibilities. This finding broadens the understanding of procurement of facilities and infrastructure as a managerial process that requires coordination between functions so that it can support continuous

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improvement in the quality of learning. The novelty of this study lies in the finding that the success of procurement does not depend on one management function alone, but on the integration between needs-based planning, implementation supervision, optimization of various funding sources, and the leadership of the principal in coordinating the entire procurement process.

Inventory of Facilities and Infrastructure

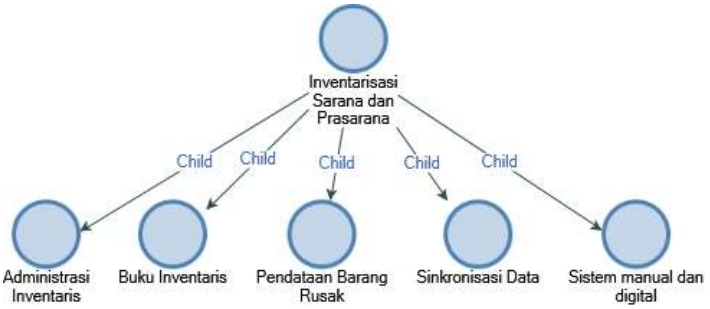


Figure 3. Inventory of Facilities and Infrastructure

Systematic inventory demonstrates that asset administration functions beyond record-keeping and serves as the basis for control, evaluation, and decision-making in school facility management. The use of inventory books, verification of item conditions, and synchronization of manual and digital data demonstrate efforts to maintain the validity of asset information, allowing objective decisions regarding maintenance, replacement, and disposal of items.Inventory administration is carried out regularly so that each item has a clear identity and is recorded. The Deputy for Facilities and Infrastructure explained that:

> *"...the administration of the facilities and infrastructure here is running quite orderly, Ma'am. Thank God, each item has its own inventory and records, so if we want to monitor its location or condition, it's relatively easy." [WSP-01]*

This finding aligns with the inventory concept, which positions asset data as a monitoring and accountability instrument in facility and infrastructure management. The results of this study also support the findings of(Hasliadi & Juwita, 2024)which states that organized inventory administration facilitates schools' sustainable facility management. Thus, inventory quality has direct implications for accurate planning, maintenance efficiency, and subsequent development

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of school facilities.As the primary administrative tool, the school uses an inventory book to record all assets. The Deputy for Facilities and Infrastructure stated that:

> *"...the inventory book of facilities and infrastructure that we use to record all the facilities owned by the school." [WSP-01]*

The inventory book serves not only as an administrative document but also as an accountability tool that allows schools to systematically track asset history. Although schools have begun utilizing digital systems, physical documents are still retained as archives for audits and inspections. This demonstrates that digital transformation in schools still prioritizes the principle of prudence to maintain data validity. The Deputy for Facilities and Infrastructure explained that:

> *"..the process begins with a report, either from a teacher, or from a student or other facility user who discovers damage or loss in a classroom or laboratory. Once the report reaches our desk, my team, along with the facility management team, will immediately conduct a physical inspection. We will check the condition directly to ensure the accuracy of the report. If it is proven that the item is damaged or missing, we will update the data in the inventory book. After that, we will take further action. We will first assess the condition, whether the item can still be repaired internally, needs to be replaced, or if the damage is total, we will submit a request for removal from the school inventory list." [WSP-01]*

The simultaneous use of manual and digital systems demonstrates that the school is implementing a hybrid approach to maintain the accuracy and security of inventory data during the digitization process. While requiring greater precision, this strategy minimizes the risk of data loss and complements previous research, demonstrating that successful digitization is also influenced by the readiness of human resources and a strong administrative system. To maintain data consistency, the school synchronizes manual and digital data. The Deputy for Facilities and Infrastructure explained that:

> *"...the data in the ledger is exactly the same as the data in the computer, and this manual synchronization process sometimes requires extra care to ensure there are no data discrepancies." [WSP-01]*

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Apart from that, he also explained:

".....we actually still use a combination, ma'am, so it's a two-way street between the manual system and the digital system." [WSP-01]

Overall, a systematically managed inventory supports accountability in the management of facilities and infrastructure and serves as a basis for decision-making regarding the procurement and maintenance of school facilities. These findings suggest that other schools could implement a hybrid inventory system as a transition to digitizing asset management. The combination of manual and digital record-keeping ensures data validity while providing flexibility in administrative processes until all human resources are ready to fully implement the digital system.

Utilization of Facilities and Infrastructure

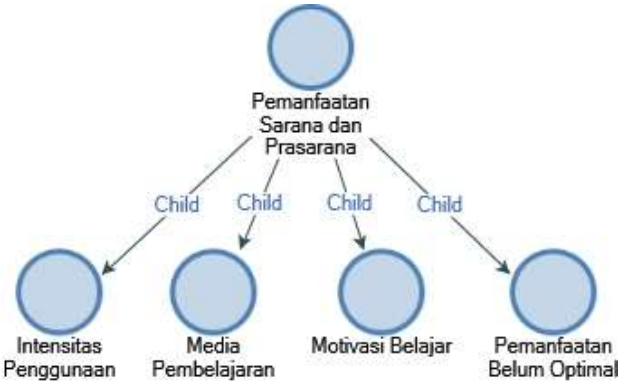


Figure 4. Utilization of Facilities and Infrastructure

The utilization of facilities and infrastructure is an indicator of the extent to which school facilities are optimally utilized to support the learning process. Based on research results, facility utilization at SMP Negeri 9 Balikpapan has led to the use of technology-based learning media, although the level of utilization varies among teachers. This condition indicates that the presence of facilities does not automatically guarantee an optimal learning process if it is not accompanied by the readiness of human resources to utilize them.

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This statement demonstrates that schools have endeavored to utilize technological advancements as learning media. The use of LCD projectors, televisions, and other interactive media provides teachers with the opportunity to present material in a more varied manner, making learning more engaging and easier for students to understand. The frequency of use of learning facilities also indicates that digital media has been routinely used in the learning process. One teacher stated:

> *".....now teachers are starting to get used to using LCD projectors, televisions, and various other interactive learning media." [KS-01]*

This situation indicates that schools have made efforts to integrate technology into the learning process, making material delivery more varied, interactive, and easier for students to understand. The use of digital media also reflects a shift in the learning approach from teacher-centered to more active learning and the use of technology to support the learning process. The frequency of use of learning facilities also indicates that digital media has been routinely used in the learning process. One teacher stated:

> *"...Most teachers use digital media and LCDs about three to four times a week." [G-01]*

This frequency shows that digital media has become part of learning activities, although its use is not yet completely consistent in each subject.This shows that the quality of learning is more influenced by the optimal use of facilities than simply their availability. These results are related to research.(Chusna et al., 2021)And(Anjani et al., 2025)This indicates a positive relationship between the use of learning facilities and the effectiveness of the teaching and learning process. Therefore, improving teacher competency in utilizing learning technology is just as important as providing the facilities themselves, as the two aspects complement each other in supporting improved learning quality.The availability of learning facilities also influences students' motivation to learn. The principal explained that:

> *"Complete facilities will certainly help the smooth transfer of knowledge, increase students' motivation and enthusiasm for learning, and make it easier for teachers to convey complex lesson materials more visually and effectively." [KS-01]*

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This demonstrates that the utilization of facilities and infrastructure not only impacts teachers' ease of teaching but also increases student motivation, attention, and engagement during the learning process. Furthermore, teachers find it easier to explain abstract material through the aid of learning media. However, the utilization of facilities is not yet fully optimal. The principal acknowledged that:

> *"If we were to say it's fully optimized, well... honestly, maybe not yet. We admit there are still some teachers, especially those who may be more senior, who haven't fully utilized the available modern facilities in their daily teaching activities." [KS-01]*

This statement indicates that the main challenge lies not in the availability of facilities, but rather in the readiness of users to utilize them. This situation occurs because teachers' digital competencies are still diverse, resulting in unequal integration of technology into learning. Furthermore, teaching experience, the habit of using conventional learning methods, and the intensity of teacher training also influence the level of school facility utilization. Therefore, the successful utilization of facilities and infrastructure is determined not only by the completeness of the facilities but also by the capacity of human resources to operate and integrate them into the learning process.

The results of this study broaden the understanding that the utilization of facilities and infrastructure is not solely measured by the level of availability of facilities, but also by the ability of teachers to optimize their use to create more interactive, effective, and student-centered learning. Unlike previous research that focused more on the influence of facilities on learning outcomes, this study demonstrates that teacher competence is a determining factor bridging the relationship between facility availability and improved learning quality.

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Maintenance of Facilities and Infrastructure



Figure 5. Maintenance of Facilities and Infrastructure

Maintenance of facilities and infrastructure is a crucial part of the school facilities management cycle because it serves to maintain the condition, function, and lifespan of all school assets. Based on research results, maintenance activities are carried out in a planned manner through the development of a maintenance schedule, regular monitoring, and supervision of facility use by the entire school community. This maintenance pattern indicates that the school is not only oriented towards providing facilities, but also strives to maintain the quality of facilities and infrastructure to continue to support the ongoing learning process.

In line with previous research(Anjani et al., 2025)which states that regular maintenance of facilities and infrastructure contributes to improving the quality of learning by maintaining the facilities' readiness for use. This study both strengthens and expands on these findings by demonstrating that maintenance effectiveness depends not only on the maintenance schedule but also on a continuous monitoring system, a responsive damage reporting mechanism, and the active participation of the entire school community in maintaining the facilities.

Monitoring is carried out routinely to oversee the condition of all school facilities. The principal explained that:

> *"...we do this through a regularly scheduled monitoring system, ma'am. We also always receive periodic reports." [KS-01]*

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This demonstrates that monitoring serves as a control mechanism that allows schools to identify damage early so that repairs can be made before they disrupt the learning process. Continuous monitoring also reflects the implementation of oversight functions in facility and infrastructure management. In addition to monitoring, the school also has a routine maintenance schedule that serves as a guideline for the facility and infrastructure management team in carrying out facility maintenance. The Deputy for Facilities and Infrastructure explained that:

> *"...Our school has a maintenance schedule that we use as the main guideline for the team in checking and maintaining school facilities." [WSP-01]*

The existence of a maintenance schedule demonstrates that maintenance activities are carried out systematically, not simply in response to damage. This supports more effective asset management, as each facility receives maintenance according to its needs and at a predetermined time. The principal stated that:

> *"Starting from routine monitoring by the sarpro team, strict implementation of rules for the use of facilities, the obligation to fill out a book for borrowing goods, periodic physical condition checks every month, as well as the existence of a fast complaint channel or damage report from school residents if they see any problematic facilities" [KS-01]*

Overall, this condition occurs because the school has established a monitoring system involving the principal, the facilities and infrastructure team, teachers, and the entire school community. The involvement of various parties allows for faster identification of facility damage, allowing for prompt repairs. Therefore, successful maintenance is determined not only by a maintenance schedule, but also by the commitment of the entire school community to continuously maintain and report on the condition of the facilities.

The results of this study indicate that the effectiveness of facility and infrastructure maintenance is influenced by collaboration among all school members through monitoring systems, damage reporting, and compliance with facility usage regulations. These findings expand the study of facility and infrastructure management by emphasizing that successful maintenance is a shared responsibility, not solely the responsibility of the facility and infrastructure management team.

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CONCLUSION

Facilities and infrastructure management at SMP Negeri 9 Balikpapan is implemented in an integrated manner through needs-based planning, procurement oriented towards priorities and budget availability, systematic inventory, utilization of learning facilities, and ongoing maintenance. The integration of each stage shows that facility and infrastructure management has supported the effectiveness of the learning process by improving the quality of learning interactions, the comfort of the learning environment, and teacher creativity in managing learning.

This study confirms that the contribution of facilities and infrastructure to improving learning quality is determined not only by the availability of facilities, but also by the effectiveness of their management. Proper planning, accountable procurement, accurate inventory, optimal utilization, and ongoing maintenance are key factors that transform educational facilities into resources that support improved learning quality. Therefore, this study provides empirical evidence that the quality of facility and infrastructure governance is a more crucial aspect in improving learning quality than simply the completeness of a school's facilities.

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