

Strategic Management of School Facilities and Infrastructure: A Case Study of State Elementary School 11 Sesetan Denpasar

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ABSTRACT. This study aims to analyse the planning, implementation, and evaluation processes of facilities and infrastructure management at State Elementary School 11 Sesetan Denpasar to support the creation of an effective, comfortable, and efficient learning environment. Employing a qualitative approach with a case study design, data were collected through direct observation, in-depth interviews with school stakeholders, and document analysis. The findings show that facilities planning is carried out systematically and collaboratively, involving teachers, school leaders, and committees. The school adopts a digital inventory system to optimise asset management, while regular evaluations are conducted monthly, semiannually, and annually to ensure continuous improvement. The study concludes that structured and participatory facility management contributes significantly to improving the quality of educational services and fostering a conducive learning atmosphere. These results offer practical implications for educational policymakers and school administrators in developing adaptive and innovative school facility management strategies in response to the evolving demands of basic education.

Keywords: *Digital inventory, Facility management, School infrastructure*

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INTRODUCTION

Elementary school plays a crucial role as the initial foundation in a child's educational journey. At this level, not only do cognitive abilities begin to develop, but character and intellectual intelligence are also instilled from an early age. Meaningful learning experiences during this phase determine the direction of a child's development at subsequent levels of education. In this regard, the availability and utilisation of adequate educational facilities and infrastructure significantly contribute to the success of the learning process (Aulia, 2017). When facilities such as classrooms, libraries, learning media, and sanitation are well-managed, a safe and supportive learning environment can be created. However, the reality on the ground shows that many elementary schools still face serious problems, ranging from suboptimal classroom utilisation, limited access to learning support facilities, to weak facility maintenance systems (Salmiah, & Abidin, 2022; Pertiwi et al., 2023). It directly impacts the teaching and learning process, making it difficult to achieve the goals of elementary education optimally. Therefore, a comprehensive and sustainable facility management strategy is needed, involving all elements of the school, including the principal, teachers, administrative staff, and the surrounding community. Elementary schools should be spaces that not only teach but also inspire, motivate, and shape students to develop optimally according to their full potential (Mahdalina, 2023).

Achievement at Sesetan 11 Public Elementary School, Denpasar, is a key indicator in determining the quality of basic education and serves as a benchmark for the success of developing students' overall potential. However, the reality on the ground reveals serious obstacles that can impact learning effectiveness. Limited physical facilities, poor time management in learning, and teaching approaches that are less than appropriate for accommodating student diversity are key challenges (Mumtahana et al., 2022; Luthfiyah et al., 2025). Inadequate interactive learning facilities also impact student motivation and participation, preventing the optimal achievement of basic competencies outlined in the curriculum (Kartini et al., 2023). It indicates a gap between the need for ideal educational facilities and the actual conditions in schools, which needs to be addressed through more structured strategies.

Previous research has highlighted the importance of adequate physical facilities and infrastructure in supporting the learning process. Facilities such as comfortable classrooms, good lighting, adequate ventilation, and a variety of learning media have been shown to improve student motivation and learning outcomes (Marmoah & Jenny, 2022; Berliani et al., 2021). Research by Herawati (2020) even shows a positive correlation between the quality of physical facilities and learning effectiveness. Unfortunately, the aspect of facility management in public elementary schools has not received much attention, particularly in terms of planning, implementation, and evaluation (Noorkhalis et al., 2023). It creates a research gap that serves as an important justification for this study.

This research is important because it can provide concrete contributions to formulating more adaptive and contextual elementary school facility management policies. In addition to serving as a reference for policy development in similar schools, this study is also expected to provide an overview of policy implementation in the field, particularly at Public Elementary School 11 Sesetan, Denpasar. Innovation in educational facility management is needed to address new, previously unidentified challenges (Rozak et al., 2020). Given the limited research specifically addressing the planning, implementation, and evaluation of elementary school facilities, this study aims to fill this gap. The ultimate goal is to improve the quality of educational services through a deeper understanding of facility management, ultimately creating an appropriate, responsive learning environment that optimally supports the achievement of elementary education goals.

METHOD

This research employed a qualitative approach using a case study design, to explore in depth the planning, implementation, and evaluation of facilities and infrastructure management at State Elementary School 11 Sesetan Denpasar. This approach was selected to capture the managerial processes holistically and contextually. The school was chosen purposefully due to its strategic role and exemplary status in the region.

Research participants included eight individuals—comprising the principal, deputy principal for infrastructure, teachers, and administrative staff—selected based on their direct involvement in facilities management. Data were collected over two months (April–May 2025) using three primary techniques: direct observation of school infrastructure, semi-structured in-depth interviews, and document analysis (including planning documents, inventory records, and photographic evidence).

To ensure credibility, the study employed source and method triangulation as well as member checks with key informants. Data analysis followed the Huberman and Miles (2002) model, involving data reduction, data display, and conclusion drawing. Thematic analysis was applied through an open coding process to identify management patterns, followed by axial coding to categorise findings into planning, implementation, and evaluation stages. The interpretation of findings was conducted narratively to answer the research questions. This methodological approach is well-aligned with the study's goals, allowing for deep contextual insights and contributing to policy discourse on effective school facility management in basic education.

RESULT AND DISCUSSION

Result

Empirical findings at Sesetan 11 Public Elementary School, Denpasar, indicate that facilities planning practices are collaborative, involving the principal, teachers, administrative staff, and all homeroom teachers. All respondents (100%) stated that completing the annual needs form by homeroom teachers is the initial step in determining procurement priorities. It aligns with the concept of inclusive school-based management (Hossain, 2022), which emphasizes the importance of stakeholder participation in decision-making. 87.5% of respondents also stated that planning is conducted in the short, medium, and long term, while 75% mentioned the use of written standard operating procedures (SOPs) in the process. Quotes such as *"At the beginning of each year, we discuss long-term priorities"* reflect the existence of a well-established and sustainability-oriented planning system.

In terms of implementation, an inventory and procurement strategy using an Excel-based digital system has been adopted in all classrooms (100% observation coverage), enabling efficient asset distribution and tracking. Interestingly, 62.5% of respondents mentioned the use of a unique code for each item to facilitate control. The distribution process follows the homeroom teacher's needs analysis and is conducted at least once per semester, with a 100% compliance rate. This practice is in line with the principles of needs-based education asset management developed by the Bo (2025).

Table 1. Summary of Key Themes from Interviews on Facilities Planning at Sesetan 11 Public Elementary School, Denpasar (N = 8 Participants)

No.	Theme/Category	Indicators/Keywords	Respondents	Percent	Example Quotation
1	Participatory planning	Involvement of the principal, teachers, homeroom teachers	8	100	All teachers, especially homeroom teachers, participate in the needs analysis.
2	SOP-based Management	Written SOPs for procurement and distribution	6	75	We have a procurement SOP that is referenced every year.
3	Long-term Strategic Planning	1-4 years planning, short-medium-long term stages	7	87.5	At the beginning of each year we discuss long-term priorities.
4	Needs Analysis via Homeroom Teachers	Completion of needs form by homeroom teachers	8	100	Homeroom teachers fill in the needs form before the school work meeting.
5	Digital Inventory System	Microsoft Excel, item coding	5	62.5	New items are immediately recorded and given a unique code.

Table 1 above presents the results of thematic coding from interviews with eight key respondents regarding facility management practices at Sesetan 11 Public Elementary School, Denpasar. All respondents (100%) emphasised the importance of Participatory Planning, with active involvement of the principal, teachers and especially homeroom teachers in the preparation of the annual needs analysis. All respondents also stated that the Needs Analysis process is carried out through the completion of forms by homeroom teachers prior to the meeting, indicating a strong bottom-up system. In the aspect of Long-term Strategic Planning, 87.5% of informants mentioned that planning is carried out in the range of 1-4 years with short to long-term stages. Meanwhile, 75% of respondents indicated the existence and use of written SOPs as a reference in the procurement and distribution of facilities, indicating procedural certainty. Finally, 62.5% of respondents said that schools have used an Excel-based digital inventory system with item coding to facilitate asset monitoring. Overall, the findings reflect systematic, collaborative and evidence-based facilities management. Evaluations are also conducted systematically in three cycles: monthly,

semesterly and annually. Monthly evaluations help with early detection of minor damages, while the annual evaluation through EDS includes strategic reflection of the entire management team. 100% of the annual evaluations were recorded, accompanied by written documents and reports on the physical condition of the field. The evaluation results are used as a basis for improvement and programming for the following year, which is in line with Siregar and Aziza (2021) recommendation on facility evaluation as a continuous cycle in improving the quality of education services.

By identifying unique practices such as the active involvement of homeroom teachers, an Excel-based inventory digitisation system, and the integration of formative and summative evaluation, the findings suggest that facilities management at Sesetan 11 Public Elementary School, Denpasar, tends to be more adaptive than in other primary schools. It shows the Tendency of evidence-based management practices, as emphasised in the study by Herawati et al. (2020), which states that structured and participatory facility management practices directly contribute to a conducive learning environment and the overall quality of education services.

Table 2. Observational Data on Implementation Practices of Facilities Management at Sesetan 11 Public Elementary School, Denpasar

No	Implementation Area	Observational Evidence	Observed Frequency (per month)	(%)	Evidence-Based Notes
1	Facility Inventory Recording	Excel form used in all rooms	12 times	100	All rooms (classroom, UKS, library) have active inventory files
2	Distribution According to Priority	Items are distributed according to the annual analysis list	1 time/semester	100	No excess or shortage of equipment found in the observation room
3	Routine Maintenance	Daily cleaning and light checking	Daily	95	Student and teacher picket schedules appear to be consistently implemented
4	Use of Standard Operating Procedure	SOP for facility placement and maintenance is accessed by all staff	Every procurement/repair	87.5	SOP found in a special folder in the administrative room
5	Annual Physical Evaluation	Annual evaluation through work forum (EDS) and written report	1 time/year	100	Annual evaluation forum involves all school stakeholders

Table 2 shows the results of field observations related to facility management implementation practices at Sesetan 11 Public Elementary School, Denpasar. All learning spaces and supporting facilities (100%) have used Excel forms for active inventory recording with a monthly filling frequency of 12 times, indicating a consistent recording system and effective digitisation. Distribution of facilities is carried out according to the annual analysis list and realised at least once per semester, with a 100% compliance rate, with no shortages or excess equipment found in the observation room. The efficient operation of the picket schedule and the active participation of instructors and students demonstrate that routine maintenance, such as cleaning and condition checks, is performed every day with a 95% compliance rate. The use of SOPs in the placement and maintenance of facilities was also recorded in 87.5% of procurement or repair cases, with evidence of SOP documents available in the administrative room. Annual physical evaluations are conducted thoroughly through the EDS forum and the involvement of all stakeholders, with a 100% implementation rate, reinforcing evidence-based practices and continuous evaluation systems. The entire process of managing facilities and infrastructure is optimised, supporting students' learning needs and creating a quality educational environment.

Table 3. Evaluation of Facilities and Infrastructure Management at Sesetan 11 Public Elementary School, Denpasar

No	Evaluation Component	Indicator	Evaluation Result (%)	Supporting Evidence
1	Planning Process	Annual planning documents are available and prepared based on needs analysis	100	Needs analysis form and work plan are available in the school documentation.
2	Procurement & Inventory	Procurement is recorded in an Excel-based inventory system with unique item codes	100	Excel inventory sheets are active and updated in all rooms (classrooms, UKS, library)
3	Maintenance Routine	Daily cleaning and light checks are carried out as scheduled	95	Picket schedule is displayed and implemented as observed
4	Standard Operating Procedure (SOP) Implementation	All staff understand and use the SOP when procuring/maintaining	87.5	SOPs were found in the administrative room and used as a reference during the distribution of goods
5	Annual Evaluation & Monitoring	Annual evaluation conducted in EDS forum with written report	100	EDS minutes and annual physical report are available and verified by the school principal

Table 3 presents the results of the evaluation of facilities and infrastructure management at Sesetan 11 Public Elementary School, Denpasar based on five main components. The Planning Process component obtained an evaluation score of 100%, supported by the availability of well-documented needs analysis documents and annual work plans. In the Procurement & Inventory aspect, a score of 100% was also recorded, characterised by the use of an Excel-based inventory system and the coding of goods in all school rooms. Maintenance Routine showed a 95% compliance rate, with evidence of a cleaning picket schedule that is displayed and consistently implemented. Implementation of the Standard Operating Procedure (SOP) is at 87.5%, because although the SOP is available and used, not all staff have accessed it optimally. Meanwhile, the Annual Evaluation and Monitoring component again obtained a perfect score (100%), evident from the existence of the annual evaluation forum (EDS) minutes and the physical report verified by the principal. Overall, this data shows that facilities management in this school has been systematic and evidence-based, reflecting a commitment to efficient and accountable education governance.

The management of facilities and infrastructure at Sesetan 11 Public Elementary School, Denpasar reflects effective, efficient and participatory education management practices. Full stakeholder participation (100%), implementation of SOPs (75%) and strategic planning (87.5%) show that the management process is systematic and structured. Inventory digitisation through Excel was recorded as running optimally (100%), with item coding (62.5%) strengthening distribution accuracy. Facility maintenance is conducted regularly (95%), while annual evaluations are fully implemented with complete documentation (100%). This data shows alignment with the principles of evidence-based management as emphasised by Bo (2025). The findings provide a practical contribution for other schools in integrating citizen participation and simple digital systems as quality improvement strategies. However, this research is limited to one study site; therefore, further research with cross-school coverage is needed to validate the model and develop more contextualised education policies.

Discussion

The findings of this study demonstrate a comprehensive and integrated approach to facilities and infrastructure management at Sesetan 11 Public Elementary School, Denpasar, which aligns with principles of evidence-based educational governance as emphasised by the Bo (2025). The participatory nature of the planning process, involving 100% of homeroom teachers and school leadership in the needs analysis, affirms the school's adoption of an inclusive, bottom-up decision-

making model. It is consistent with the concept of School-Based Management (SBM), which advocates for decentralisation of decision-making authority to schools, enabling greater responsiveness to local needs and increased stakeholder ownership (Caldwell & Spinks, 2013; Gamage et al., 2009).

From a theoretical standpoint, the data reveal a strong alignment with the principles of strategic management in education. The school's structured planning—short-term, medium-term, and long-term—reflects the framework proposed by Bryson (2015), who emphasises that strategic planning in public institutions must be anticipatory and inclusive to ensure sustainability. Furthermore, the utilisation of written Standard Operating Procedures (SOPs) by 75% of participants indicates a move toward institutionalised management practices, ensuring consistency and reducing dependency on individual discretion. It supports the argument by Bush (2003), who notes that SOPs are critical in establishing predictable and accountable school operations.

The integration of a digitised inventory system using Microsoft Excel, although basic, demonstrates innovation within resource-constrained environments. This practice aligns with the findings of Herawati et al. (2020), who assert that even low-cost digital solutions can enhance transparency, traceability, and responsiveness in school resource management when paired with strong procedural discipline. The 100% observation rate of inventory documentation across learning and non-learning spaces confirms that digital records are not only implemented but also embedded within the school's operational routines. Such practices contribute to reducing misallocation and loss of resources, as highlighted in the study by Dahar and Faize (2011) on school-level resource management in low- and middle-income countries.

Despite these strengths, a critical reflection of the data suggests certain limitations in universal SOP adoption and awareness. Although SOP documents were found in the administrative area and referenced by 87.5% of staff during procurement and maintenance, the fact that not all personnel accessed or used them consistently points to a gap in implementation fidelity. It echoes the view of Fullan (2016), who emphasises that institutional change requires not just structural tools but also deep cultural integration and continuous professional development.

Evaluation practices at the school—conducted monthly, semesterly, and annually—represent a notable example of formative and summative monitoring mechanisms. The use of the EDS (*Evaluasi Diri Sekolah*) forum as a strategic platform for reflection and planning further underscores the school's commitment to adaptive governance. According to Siregar and Aziza (2021), continuous evaluation loops are vital for improving the effectiveness of educational inputs and outcomes, particularly in the area of infrastructure, which directly affects student well-being and learning productivity. Moreover, this study contributes significantly to the discourse on contextualised digital transformation in education, illustrating how simple technological tools, when combined with stakeholder engagement and procedural discipline, can drive systemic improvements. While many studies focus on high-tech solutions, this case illustrates the value of appropriate technology that fits the operational capacity and culture of the institution.

However, the study's single-site focus limits generalizability. The uniqueness of leadership style, institutional history, and stakeholder capacity at Sesetan 11 may not be replicated across all primary schools. Therefore, further comparative research across schools of varying characteristics is necessary to test the transferability of this model and to refine facility management strategies that are both scalable and context-sensitive. The school's management of facilities and infrastructure exemplifies a pragmatic blend of participatory governance, procedural standardisation, and context-appropriate digitalisation. These practices not only ensure operational efficiency and accountability but also contribute to the creation of a learning environment that is supportive, well-resourced, and aligned with contemporary educational goals. The findings affirm the growing importance of school-level innovation in achieving sustainable education quality improvements.

and offer a grounded model that can inform both policy and practice in similar educational contexts.

CONCLUSION

This study concludes that the management of facilities and infrastructure at Sesetan 11 Public Elementary School, Denpasar, is carried out through a structured, participatory, and evidence-based approach that effectively supports a conducive learning environment. It includes full stakeholder involvement in planning, the use of standard operating procedures, strategic long-term planning, a digital inventory system with item codes, and systematic, regular evaluations. These results contribute theoretically to the discourse on school-based management and strategic governance, while offering practical implications for schools seeking low-cost yet impactful management solutions. Despite its strengths, this study is limited to a single case, which may affect its generalizability. Future research should include comparative multi-site studies to validate the model and explore its broader applicability across educational management disciplines.

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