

Effectiveness of Bos Funds Use in Improving Educational Facilities and Infrastructure

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Abstract: This study analyzes the effectiveness of School Operational Assistance (BOS) fund utilization in improving educational facilities and infrastructure at SDN 27 Banyuasin I, identifies challenges encountered, and examines strategies implemented by the school to address them. A qualitative descriptive approach was employed, involving four purposively selected informants: the principal, two teachers, and one student. Data were collected through observation, semi-structured interviews, and documentation, with validity established through source and method triangulation. Analysis followed data reduction, presentation, conclusion drawing, and verification. BOS fund utilization was relatively effective in supporting facility provision and maintenance through needs-based planning, priority setting, classroom maintenance, minor repairs, and creating a conducive learning environment. However, effectiveness remains constrained by budget limitations, recurring maintenance requirements, evolving educational needs, and expenditure restrictions. The school addresses challenges through careful planning, prioritization, phased maintenance, community involvement, and periodic evaluation. This study provides contextualized evidence on BOS fund effectiveness in a rural elementary school setting, highlighting the interplay between budget constraints and managerial capacity. Findings emphasize that effective BOS utilization depends not only on budget availability but also on school managerial capacity to plan, implement, monitor, and evaluate fund use transparently and sustainably. This research contributes empirical insights for policymakers and school administrators, demonstrating that BOS funds primarily meet basic facility needs rather than financing large-scale development, offering actionable recommendations for optimizing resource allocation in similar contexts.

Keywords: BOS Funds, Educational Facilities and Infrastructure, School Financing Management

A. Introduction

The School Operational Assistance Fund (BOS) is a crucial national education funding instrument, helping educational institutions maintain the continuity of school operational services (Wirandana & Khoirunurrofik, 2024). The importance of BOS is evident in its role in supporting non-personnel operational costs to ensure the

continuity of learning activities and school services, particularly in schools that rely heavily on government funding to meet routine educational needs. Within the national policy framework, BOS falls within the Education Unit Operational Assistance Fund (BOSP), which is designed to support educational unit operations and improve educational services (Minister of Education, Culture, Research, and Technology Regulation No. 63 of 2022; Minister of Elementary and Secondary Education Regulation No. 8 of 2025). At the national level, BOS is used with varying needs. At the high school/vocational school level, operational needs often relate to more complex learning facilities such as laboratories, practical equipment, and competency-building activities.

At the junior high school level, BOS needs generally support the learning process, student services, and the maintenance of supporting facilities. Meanwhile, at the elementary school level, the school operational assistance program becomes even more crucial because it is the foundation for basic learning (literacy, numeracy, and character building) (Sakhiyya & Rahmawati, 2024). Therefore, schools require stable operational support and adequate learning facilities to ensure optimal learning (Minister of Education, Culture, Research, and Technology Regulation No. 63 of 2022; Minister of Elementary and Secondary Education Regulation No. 8 of 2025). To ensure effective management of BOS, the government has established policies and technical guidelines for the management of BOSP funds, which regulate the planning, implementation, reporting/accountability, and monitoring and evaluation stages (Minister of Education, Culture, Research, and Technology Regulation No. 63 of 2022; Minister of Elementary and Secondary Education Regulation No. 8 of 2025).

These regulations emphasize that fund management must be accountable and targeted so that schools not only pursue budget absorption but also ensure that funds are used according to priority needs and in accordance with applicable regulations. At the elementary school level, BOS directly relates to the need for basic school facilities to create a safe, comfortable, and healthy learning environment that supports meaningful learning. Thus, elementary school institutions require support in the form of relatively basic infrastructure, which greatly determines the quality of service, such as adequate classrooms, sanitation, libraries, learning media, and other supporting facilities. Thus, educational facilities and infrastructure play a crucial role in supporting an effective learning process (Mohd Basar et al., 2021). Facilities include equipment used directly in learning, while infrastructure is the basic facility that supports the delivery of educational services in schools.

Research findings by Tuanany & Triwiyanto (2024) indicate that the availability of facilities and infrastructure is strongly related to learning outcomes. The study found that the influence of facilities and infrastructure on student learning outcomes is significant at both elementary and high school/vocational school levels. In addition to impacting learning outcomes, the availability of facilities is also related to the learning process through student psychology. Research on elementary school

students shows that learning facilities have a positive and significant effect on learning interest, thus ensuring adequate facilities have the potential to encourage student engagement in learning (Utami et al., 2025). From an educator's perspective, the completeness of facilities and infrastructure is also related to teacher performance; research on public junior high schools found that facilities and infrastructure significantly influence teacher performance and, through teacher performance, the quality of graduates (Nursiwati & Rahmawati, 2024).

However, in practice, schools often face obstacles in developing infrastructure, such as budget constraints, inaccurate spending priorities, and poor maintenance (Herath et al., 2023). Infrastructure can also become less meaningful if not managed and utilized optimally. This means that improving infrastructure is not simply about adding facilities but also about planning based on real-world conditions, procurement according to priorities, utilization in learning, and ongoing maintenance. In a decentralized context, schools have the freedom to manage needs according to local conditions, but at the same time, they are required to be more accountable in managing financing and facilities. In this context, the effectiveness of the use of BOS funds is a critical issue, particularly in efforts to improve infrastructure. The provisions for managing BOSP funds place several infrastructure components within the scope of fund use, including library development/book provision and maintenance of infrastructure under specific provisions (Minister of Elementary and Secondary Education Regulation No. 8 of 2025).

However, the effectiveness of BOS use is not solely measured by budget absorption but rather by targeted targeting, alignment with school priority needs, compliance with regulations and administrative orders, and its impact on improving educational services, including infrastructure improvements (Fathia et al., 2025). Syifa (2025) demonstrated that accountability and transparency significantly influence the effectiveness of BOS fund management. In terms of impact, Taopik et al. (2024) concluded a strong relationship between the effectiveness of BOS management and the condition of infrastructure. Furthermore, Syarifuddin et al. (2024) emphasized that the effectiveness of BOSP funds can be seen from planning and supervision involving school stakeholders, as well as the utilization of funds directed towards priority educational service needs. This research was conducted at SDN 27 Banyuasin I. Based on initial observations, several conditions were found indicating that improvements to educational facilities and infrastructure were not yet optimally supporting the learning process.

Researchers observed that several learning facilities were not yet optimally utilized in daily learning activities. In implementing learning, teachers still tended to use conventional learning patterns, resulting in the lack of full integration of learning media and available facilities to support more active and varied learning. In addition to facility utilization, researchers also observed indications that the management and maintenance of infrastructure were not yet carried out regularly and sustainably. In

several areas of the school environment, maintenance needs were still evident on certain facilities, which, if left unaddressed, could reduce the comfort and effectiveness of their use. This indicates that the existence of infrastructure requires not only procurement but also consistent maintenance arrangements to ensure the facilities remain suitable and can be used optimally.

In relation to school funding, the BOS fund is one of the main sources of school operational funding, including for facilities and infrastructure (Minister of Elementary and Secondary Education Regulation No. 8 of 2025). However, through initial observations, the effectiveness of BOS funds in improving infrastructure has not been clearly determined. Researchers have not yet obtained a comprehensive picture of whether the planning of fund use is fully based on the actual needs of school facilities and infrastructure, whether spending priorities align with the most pressing needs, and how implementation is carried out to align with applicable technical guidelines (Minister of Elementary and Secondary Education Regulation No. 8 of 2025). Furthermore, student learning outcomes have not been fully maximized. This is evident in the fact that sixth-grade students in the odd semester still have not met the learning objective achievement criteria in several subjects, necessitating remedial and enrichment sessions.

This situation points to the need to review supporting learning factors, including the availability and utilization of infrastructure. If infrastructure is not optimally utilized, improving facilities through school funding, including the school operational assistance fund, risks not having a significant impact on improving the quality of learning. Therefore, the effectiveness of BOS Fund use at SDN 27 Banyuasin I, particularly regarding the planning, implementation, utilization, maintenance, and monitoring of fund use to improve educational infrastructure, requires further in-depth study. Therefore, the researcher deemed it necessary to conduct a study entitled "Effectiveness of Bos Funds Use in Improving Educational Facilities and Infrastructure".

B. Methods

This study used a qualitative approach with a descriptive design. This approach was chosen because the study aimed to gain an in-depth understanding of the effectiveness of School Operational Assistance (BOS) funds in improving educational facilities and infrastructure at SDN 27 Banyuasin I. Descriptive qualitative research allows researchers to identify and describe contextually the practices of BOS fund use, the forms of utilization in supporting educational facilities and infrastructure, the obstacles faced by the school, and the efforts made to optimize their use. The study was conducted at SDN 27 Banyuasin I for seven months.

Research informants were purposively selected based on the consideration that informants have knowledge, experience, and direct involvement in the management

and utilization of BOS funds and the condition of school facilities and infrastructure. The research informants consisted of four individuals: one principal, two teachers, and one student at SDN 27 Banyuasin I. The principal was selected because of his authority and responsibility in managing the program and utilizing BOS funds at the school level. Teachers were selected because they are involved in implementing learning activities and are familiar with the condition and utilization of educational facilities and infrastructure. Meanwhile, students were selected as beneficiaries of educational services to gain perspective on the condition of the facilities and infrastructure used in daily learning activities.

Informants were selected based on the relevance of the information they provided to the research focus. Informants were provided with an explanation of the research objectives and data collection process prior to the interviews. Their identities and personal information were kept confidential in accordance with ethical research principles. The research focused on the effectiveness of the use of BOS funds in improving educational facilities and infrastructure at SDN 27 Banyuasin I. This focus encompassed three main aspects: (1) the use of BOS funds to support the provision, maintenance, and repair of educational facilities and infrastructure; (2) the obstacles faced by the school in using BOS funds to improve facilities and infrastructure; and (3) the strategies or efforts undertaken by the school to overcome these obstacles and optimize the use of BOS funds. This focus was used as a guideline in developing interview instruments, conducting observations, and reviewing documents.

The research data consisted of primary and secondary data. Primary data was obtained directly from informants through interviews and observations of the condition and utilization of educational facilities and infrastructure at SDN 27 Banyuasin I. Secondary data was obtained through a review of documents relevant to the research focus and literature sources supporting the research analysis. Data collection was conducted using three techniques: interviews, observation, and documentation. First, semi-structured interviews were conducted with the principal, teachers, and students. The interviews were aimed at eliciting information regarding the planning and utilization of School Operational Assistance (BOS) funds, the methods used for educational facilities and infrastructure, the condition of available facilities, obstacles in fund utilization, and the school's efforts to overcome these obstacles.

Semi-structured interviews were used to provide researchers with a systematic guideline for questions and to provide informants with the opportunity to share their experiences and information in greater depth, relevant to the research context. Second, observations were conducted to obtain empirical data regarding the condition of educational facilities and infrastructure and their utilization in supporting learning activities. Observations focused on classroom conditions, learning facilities, school supplies, cleaning facilities, and the maintenance and utilization of facilities and infrastructure relevant to the use of BOS funds. Third, documentation was conducted

by reviewing documents relevant to the research focus, such as documents on planning and use of BOS funds, documents related to facilities and infrastructure, and documentation of school activities and the condition of school facilities.

Documentation was used as supporting data to strengthen the information obtained through interviews and observations. Data validity was achieved through source and technique triangulation. Source triangulation was conducted by comparing information obtained from principals, teachers, and students to identify any congruence or discrepancies regarding the use of BOS funds and the condition of educational facilities and infrastructure. Meanwhile, technique triangulation was conducted by comparing data obtained through interviews, observations, and documentation. The triangulation process was repeated throughout data collection and analysis. Information obtained from one informant or one data collection technique was not directly used as the final findings but was compared with information from other sources and techniques. Thus, research findings were based on information that was consistent and interconnected across data sources.

Data analysis was conducted interactively and continued from the data collection process until the research was completed. Data analysis referred to three main stages: data condensation or reduction, data presentation, and drawing and verifying conclusions. The first stage was data condensation. At this stage, data from interviews, observations, and documentation were selected, focused, simplified, and grouped based on the research focus. Data relevant to the use of BOS funds for improving facilities and infrastructure, obstacles to fund utilisation, and school efforts to overcome these obstacles were retained for further analysis. Data not directly related to the research focus was not used in the discussion. The second stage is data presentation. The condensed data were systematically organised in narrative form and grouped into themes based on the research focus.

Data presentation was used to examine the patterns of relationships among information from interviews, observations, and documentation, allowing researchers to obtain a more comprehensive picture of the effectiveness of BOS funds in supporting the improvement of educational facilities and infrastructure. The third stage is drawing and verifying conclusions. Conclusions were formulated based on the patterns, themes, and relationships among findings emerging from the research data. The conclusions obtained were then verified by comparing them with data from interviews, observations, and documentation, as well as with the results of triangulation of sources and techniques. The analysis process was carried out iteratively and interactively until consistent findings were obtained that addressed the research focus. Through these analysis stages, the research produced a comprehensive picture of the effectiveness of the use of BOS funds in improving educational facilities and infrastructure at SDN 27 Banyuasin I, including the form of fund utilisation, obstacles faced, and the school's strategy in optimising the use of BOS funds.

C. Results and Discussion

The discussion in this study is based on the results of an analysis of research data regarding the effectiveness of the use of School Operational Assistance (BOS) funds in improving educational facilities and infrastructure at SDN 27 Banyuasin I. The discussion is conducted by linking the findings of the field research to theories of educational management, school-based management, educational facilities and infrastructure management, and relevant previous research. Based on the research results, the use of BOS funds at SDN 27 Banyuasin I shows a positive contribution to improving educational facilities and infrastructure. BOS funds are used to support school operational needs, particularly those related to the learning process, classroom maintenance, facility upkeep, and the provision of learning and cleaning equipment (Nurlizai & Amirulkamar, 2024; Sunardi & Gularso, 2023). These findings align with the provisions for BOSP fund management, which stipulate that educational unit operational funds are used to support the implementation of education effectively, efficiently, accountably, transparently, and flexibly (Ministry of Primary and Secondary Education, 2025). This regulation, Permendikdasmen Number 8 of 2025, outlines the technical guidelines for managing educational unit operational assistance funds. in Permendikdasmen Number 8 of 2025 concerning Technical Guidelines for the Management of Educational Unit Operational Assistance Funds.

Effectiveness of BOS Funds in Improving Educational Facilities and Infrastructure at SDN 27 Banyuasin I

The results of this study indicate that the use of BOS funds at SDN 27 Banyuasin I has been quite effective in improving educational facilities and infrastructure. This effectiveness is evident in the planning of fund use, prioritization of needs, utilization of funds to support the learning process, and the benefits experienced by the principal, teachers, and students. This finding aligns with the concept of school-based management. Berhanu (2023) explains that school-based management emphasizes the importance of school empowerment, coordination, communication, leadership, effectiveness, efficiency, and productivity in managing schools. In the context of SDN 27 Banyuasin I, the use of BOS funds reflects the school's authority to determine priority needs based on actual conditions on the ground. This demonstrates that BOS funds are viewed not only as operational assistance but also as a managerial instrument to support improving the quality of educational services.

The effectiveness of BOS fund use is also evident in the school's planning process . The principal, along with school staff, identifies infrastructure needs, prioritizes resources, and aligns fund allocation with budgetary resources. This planning is crucial because the School Operational Assistance (BOS) funds are limited and must be used in accordance with regulations (Nasrullah, 2023). In line with this, Fathia et al. (2025) emphasized that the use of BOS funds must be managed based on the principles of effectiveness, efficiency, accountability, transparency, and flexibility.

Therefore, the use of BOS funds at SDN 27 Banyuasin I can be considered effective because they are directed at needs directly related to the provision of education. The research also shows that BOS funds are used to support classroom maintenance, minor repairs to desks and chairs, the provision of office stationery, learning supplies, and cleaning equipment.

The use of funds for these needs demonstrates the school's efforts to ensure optimal use of facilities and infrastructure. In infrastructure management theory, educational facilities need to be managed through the stages of planning, procurement, utilisation, maintenance, and evaluation (Ahmad, 2021; Handayani & Hidayat, 2025; Rizky et al., 2022). Therefore, the use of BOS funds for the maintenance and provision of learning facilities is part of the educational infrastructure management cycle. These findings are supported by research by Luthfia et al. (2023), which states that good management of BOS funds has a positive impact on the quality of elementary school facilities and infrastructure. The study also emphasises that BOS fund management requires regular management and analysis to achieve the goal of improving facilities and infrastructure. This aligns with the situation at SDN 27 Banyuasin I, where BOS funds are used in stages to meet the needs of learning facilities and maintain the school environment.

Furthermore, research by Taopik et al. (2024) shows that the effectiveness of BOS fund management is strongly related to the condition of school facilities and infrastructure. The study found that the effectiveness of BOS fund management impacts the condition of educational facilities and infrastructure, suggesting that schools with good financial management tend to have more adequate facilities. This finding reinforces the findings of research at SDN 27 Banyuasin I, which found that planned BOS fund management directed at priority needs can help improve educational facilities and infrastructure. From the teachers' perspective, BOS funds are perceived as contributing to the smooth running of the learning process. Teachers can carry out learning activities better if they have available learning equipment, stationery, clean classrooms, suitable whiteboards, and usable desks and chairs. This demonstrates that infrastructure has a direct relationship with learning effectiveness.

Pebriyanti & Aliyyah (2024) stated that BOS funds play a crucial role in supporting the continuity of education in schools, including the provision of facilities and infrastructure. Therefore, the findings at SDN 27 Banyuasin I reinforce the view that BOS funds provide tangible benefits in supporting teaching and learning activities. From the students' perspective, the effectiveness of BOS funds is seen in the comfort of learning. Students feel more comfortable when classrooms are clean, tables and chairs are suitable for use, the blackboard is legible, and the school environment is organised. This finding aligns with research by Espinosa Andrade et al. (2024), which showed a positive relationship between school infrastructure and student learning outcomes. Supportive infrastructure, particularly basic facilities and connectivity to school services, is associated with better learning outcomes. Therefore, improving

infrastructure through (BOS) funds not only impacts the physical aspects of the school but also contributes to students' learning experiences.

Based on this description, the effectiveness of BOS funds at SDN 27 Banyuasin I can be seen from several indicators. First, there is a match between the use of funds and the school's needs. Second, there are direct benefits for teachers and students. Third, there is gradual maintenance of school facilities. Fourth, there is planning and prioritisation of fund use. Fifth, there is a contribution of BOS funds to a comfortable learning environment. Therefore, the use of BOS funds to improve educational infrastructure at SDN 27 Banyuasin I can be categorised as quite effective. This effectiveness is evident in the school's ability to use available funds to support the learning process, maintain adequate facilities, and create a comfortable learning environment. However, this effectiveness still needs to be improved through more systematic planning, ongoing monitoring, and regular evaluation of fund use.

Obstacles to the Use of BOS Funds to Improve Educational Facilities and Infrastructure at SDN 27 Banyuasin I

The research results indicate that the use of BOS funds to improve educational facilities and infrastructure at SDN 27 Banyuasin I still faces several obstacles. These obstacles include limited funding, the school's numerous needs, the need for ongoing facility maintenance, evolving learning needs, and the need to align fund use with applicable regulations. The primary obstacle identified was limited funding. The principal stated that BOS funds are used not only for infrastructure improvements but also for other school operational needs. This situation forces the school to prioritize fund use. This finding aligns with Cheng's (2022) opinion that effectiveness and efficiency are important principles in school-based management. Schools must be able to manage limited resources to achieve educational goals.

Funding limitations are also related to the school's numerous needs. SDN 27 Banyuasin I requires a budget for classroom maintenance, desk and chair repairs, the provision of learning supplies, cleaning equipment, and other supporting facilities. Not all of these needs can be met simultaneously. Therefore, schools must sort needs based on their urgency. This aligns with research by Luthfia et al. (2023), which states that managing BOS funds faces challenges in the form of the need for regular management and analysis to ensure that fund use truly supports improvements in the quality of infrastructure. Another obstacle is the ongoing need for infrastructure maintenance. School facilities such as classrooms, desks, chairs, whiteboards, toilets, schoolyards, and cleaning equipment are used daily by the school community. Due to their continuous use, these facilities are prone to damage or deterioration.

In the context of infrastructure management, maintenance is a crucial element in ensuring that existing facilities remain fit for use. If maintenance is not carried out regularly, minor damage can escalate into major damage and incur higher costs. These

obstacles are reinforced by the findings of Taopik et al. (2024), who stated that the management of BOS funds needs to be directed effectively and relevantly, including in the development standards for school facilities and infrastructure. This research shows that the effectiveness of BOS fund management is closely related to the condition of the facilities and infrastructure. Therefore, if schools face limited funding, facility maintenance efforts must be carried out in stages and based on priorities. Another obstacle is the regulations governing the use of BOS funds. Schools cannot use BOS funds freely but must follow applicable technical guidelines.

The Ministry of Primary and Secondary Education (2025) stipulates that BOS funds must be used according to the specified components and managed according to the principles of accountability, effectiveness, efficiency, transparency, and flexibility. These regulations are important for maintaining accountability for the use of funds but also require schools to carefully align actual needs with the provisions for fund use. This situation indicates that the constraints on the use of BOS funds are not only a matter of the amount of funds but also regulatory and administrative issues. Schools must ensure that every use of funds is accountable. If schools do not fully understand the provisions, there is a risk of non-compliance with regulations. Therefore, school principals and the BOS fund management team need to have a good understanding of school fund management regulations.

Another obstacle is the ever-evolving learning needs. Teachers reported that basic facilities are available, but learning media and supporting facilities still need to be improved. This need demonstrates the dynamic nature of educational infrastructure. Schools must not only maintain existing facilities but also adapt them to evolving learning needs. Pebriyanti and Aliyyah (2024) explain that BOS funds are beneficial in providing infrastructure and supporting educational continuity, but the management of these funds also requires regular supervision and monitoring to ensure optimal use. From a student perspective, infrastructure constraints are primarily perceived through comfort. Students want facilities that are clean, tidy, safe, and comfortable to use. This demonstrates that the availability of facilities alone is not enough. Facilities must be in adequate condition and support the student's learning experience.

Espinosa Andrade et al. (2024) emphasised that school infrastructure is closely linked to student learning outcomes, particularly facilities directly related to educational activities and basic school services. Based on this discussion, the constraints on the use of School Operational Assistance (BOS) funds to improve educational infrastructure at SDN 27 Banyuasin I are complex. These constraints extend beyond budgetary constraints, but also to the school's numerous needs, ongoing maintenance demands, evolving learning needs, and regulatory compliance. Therefore, schools need appropriate management strategies to ensure BOS funds continue to provide benefits despite their limited resources. Thus, the constraints on the use of BOS funds at SDN 27 Banyuasin I demonstrate that improving educational infrastructure requires strong managerial skills. Schools must be able to manage limited funds, determine priorities,

understand regulations, maintain facilities, and align learning needs with available budgetary resources.

Solutions to Addressing Obstacles to the Use of BOS Funds to Improve Educational Facilities and Infrastructure at SDN 27 Banyuasin I

Research results indicate that SDN 27 Banyuasin I has implemented several solutions to address the obstacles in using BOS funds to improve educational facilities and infrastructure. These solutions include developing a fund utilisation plan, determining priorities, gradually maintaining facilities and infrastructure, improving coordination between the principal and teachers, involving the school community in maintaining facilities, and evaluating fund utilisation. The first solution is to develop a thorough plan for the use of BOS funds. Planning is carried out by identifying school needs, assessing the condition of facilities and infrastructure, and determining the most pressing needs. This aligns with the concept of school-based management, which emphasises the importance of effectiveness, efficiency, coordination, and leadership of the principal in managing educational resources (Asad, 2021).

In the context of SDN 27 Banyuasin I, planning is a crucial step to ensure that limited BOS funds are used effectively and efficiently. The second solution is to determine priorities. Schools cannot meet all infrastructure needs simultaneously, so the most pressing needs directly related to the learning process are prioritised. This strategy aligns with the principles of effectiveness and efficiency in BOSP fund management as regulated by the Ministry of Primary and Secondary Education (2025). Effective use of funds means funds are directed towards achieving educational goals, while efficiency means funds are used economically, appropriately, and provide optimal benefits. The third solution is gradual maintenance of infrastructure. Maintenance is carried out according to budgetary capacity to ensure facilities remain fit for use. This aligns with the research findings of Taopik et al. (2024), which showed that effective management of BOS funds is closely related to the condition of school facilities and infrastructure.

Therefore, gradual maintenance is a realistic strategy for schools to maintain the suitability of facilities without having to wait for more extensive damage to occur. The fourth solution is to improve coordination between the principal, teachers, and the school community. Teachers, as those with direct knowledge of classroom conditions, communicate learning needs to the principal. The principal then considers these needs based on priorities and budgetary capacity. This finding aligns with Mulyasa's (2023) view that coordination and communication are essential elements of school-based management. Without good coordination, the use of funds risks not being in accordance with real needs in the field. The fifth solution is to involve teachers and students in maintaining school facilities. Teachers guide students in the proper use of desks, chairs, classrooms, and other school facilities.

Students are also taught to maintain the cleanliness of the classroom and school environment. This solution aligns with the view of Pebriyanti and Aliyyah (2024) that BOS funds not only provide benefits in the provision of infrastructure but also require regular supervision and monitoring to ensure optimal use. Facility maintenance is not only the responsibility of the principal but also of the entire school community. The sixth solution is to evaluate the use of BOS funds. Evaluation is necessary to determine whether the funds are used according to school needs and have an impact on improving infrastructure. Luthfia et al. (2023) emphasized that BOS fund management requires regular management and analysis to ensure the goal of improving the quality of elementary school infrastructure is achieved. Therefore, evaluation is a crucial part of the BOS fund management cycle at SDN 27 Banyuasin I.

The seventh solution is to optimally utilize available facilities. Teachers can use existing facilities creatively while awaiting the gradual procurement or repair of facilities. This strategy is important because limited resources should not completely hinder the learning process. Espinosa Andrade et al. (2024) demonstrated that school infrastructure is linked to learning outcomes, so available facilities need to be optimally utilized to support students' learning experiences. Based on this discussion, the solution implemented by SDN 27 Banyuasin I demonstrates managerial efforts in effectively managing School Operational Assistance (BOS) funds. The principal plays a role in planning, decision-making, and supervision. Teachers play a role in conveying learning needs and utilizing available facilities. Students play a role in maintaining the cleanliness and suitability of school facilities.

The involvement of all these elements is a crucial factor in addressing challenges in the use of BOS funds. Therefore, the solution to addressing the challenges in using BOS funds to improve educational facilities and infrastructure at SDN 27 Banyuasin I lies not only in the financial aspect but also in the management aspect. BOS funds will be more effective if supported by thorough planning, clear priorities, good coordination, ongoing maintenance, regular evaluation, and the involvement of the school community. Based on the discussion of the three research questions, it can be concluded that the effectiveness of the use of School Operational Assistance (BOS) funds in improving educational facilities and infrastructure at SDN 27 Banyuasin I is influenced by the school's ability to manage funds in a planned, targeted, and prioritized manner.

BOS funds have provided tangible benefits in supporting the learning process, maintaining the adequacy of facilities, and creating a comfortable learning environment. The findings of this study align with the concept of school-based management, which emphasizes the importance of autonomy, effectiveness, efficiency, coordination, communication, and leadership in school management (Mulyasa, 2023). These findings also align with the provisions for BOSP fund management, which emphasize the principles of effectiveness, efficiency, accountability, transparency, and flexibility (Ministry of Primary and Secondary

Education, 2025). Furthermore, these findings are supported by previous research showing that good BOS fund management impacts the quality of elementary school facilities and infrastructure (Ayu Theresia, 2021; Luthfia et al., 2023; Taopik et al., 2024). However, the effective use of BOS funds still faces challenges, particularly budget constraints, numerous school needs, ongoing facility maintenance requirements, and regulatory compliance requirements. Therefore, schools need to continuously strengthen planning, transparency, coordination, maintenance, and evaluation of BOS fund use. Therefore, the use of BOS funds at SDN 27 Banyuasin I can be categorized as quite effective, as it has contributed to improving educational facilities and infrastructure. However, this effectiveness still needs to be improved so that BOS funds are used not only to meet operational needs but also to drive more optimal and sustainable improvements in the quality of educational services.

D. Conclusions

Based on the research findings at SDN 27 Banyuasin I, this study conclusively establishes that the use of BOS funds has been quite effective in supporting the improvement of educational facilities and infrastructure. Effectiveness is evidenced through fund allocation for learning needs, classroom maintenance, minor repairs, provision of learning supplies, and procurement of cleaning equipment, collectively contributing to a more orderly, clean, comfortable, and supportive learning environment. However, the primary obstacle identified is the limited fund availability compared to the school's numerous and diverse needs, as BOS funds must cover various operational requirements, preventing comprehensive infrastructure improvements from being implemented simultaneously. Additional challenges include ongoing facility maintenance needs, evolving learning demands, and the obligation to align fund use with applicable regulations. In response, the school has implemented strategic solutions: needs-based planning, priority scaling, gradual facility maintenance, coordination between principal and teachers, school community involvement in infrastructure upkeep, and systematic fund usage evaluation. These efforts demonstrate that the effectiveness of BOS fund utilization depends not solely on the amount of funds available but critically on the school's capacity to manage resources appropriately, transparently, and sustainably. Practically, school principals and management teams should institutionalize priority-based planning and phased implementation strategies to maximize impact within budget constraints. Transparent financial reporting and active community involvement are essential to ensure accountability and shared responsibility for facility maintenance. Education authorities should consider adjusting BOS fund allocation formulas to better reflect the actual needs of schools, particularly for infrastructure maintenance and improvements. Regular capacity-building workshops on financial management and strategic planning would further enhance schools' ability to optimize limited resources. For future research, comparative studies across multiple schools and districts would reveal contextual variations in BOS fund effectiveness and identify best practices. Longitudinal designs tracking infrastructure improvements and their

impact on learning outcomes over time would provide robust evidence for policy adjustments. Investigating moderating factors such as principal leadership, teacher involvement, or community participation could deepen understanding of the mechanisms that enhance fund utilization effectiveness. Qualitative case studies capturing stakeholder experiences would offer richer insights into implementation challenges and successful strategies.

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