

The Role of Financing Management and Infrastructure In Improving The Quality Of Education In Elementary Schools

Heri Risdiyani¹, Jumintono², Saryanto³

^{1,2,3} Universitas Sarjanawiyata Tamansiswa, Indonesia

Corresponding email: haririsdiyani@gmail.com

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ABSTRACT

This study aims to determine the role of financing management and infrastructure facilities in improving the quality of education at SD Negeri 1 Bumirejo, Mojotengah District, Wonosobo Regency. This type of research is a type of qualitative research with a case study approach. Primary data was obtained directly through observation at SD Negeri 1 Bumirejo, Mojotengah District and interviews with Principals, Teachers, Committees, and students. The source of data comes from school financial documents, inventory lists of facilities and infrastructure, and academic data such as student learning outcomes and school activity reports. Data collection techniques are observation, interviews, and documentation. The data analysis in this study is a qualitative analysis. The results of this study conclude that financing management at SD Negeri 1 Bumirejo is carried out with the principles of transparency, participation, and accountability. The School Operational Assistance Fund (BOS) is the main source that is optimally utilized to support learning activities, procurement of learning facilities, and improve teacher competence. The involvement of school committees and teachers in the preparation of RKAS strengthens the quality of planning and the effectiveness of the use of budgets and facilities and infrastructure in schools plays an important role in improving the quality of learning. Facilities such as decent classrooms, libraries, projectors, and props contribute to increased student interest and understanding. Although not entirely ideal, the use of available facilities has had a positive impact on the educational process.

Keywords : Education Management; quality of education; Quality of Education

1. Introduction

Basic education is the initial and most fundamental stage in the process of developing quality human resources (HR)(Winarti, 2018). At this level, children acquire basic competencies such as reading, writing, arithmetic, and character development, social, and moral which are the foundation in undergoing the next level of education and community life(Nuruliah et al., 2020; Herman et al., 2021). A strong basic education will create a youngster who are intelligent, productive, and highly competitive. According to UNESCO (2021), inclusive and quality basic education contributes significantly to improving literacy, poverty reduction, and achieving the Sustainable Development Goals (SDGs), especially in the aspects of quality education and equality. Furthermore, quality basic education also strengthens the nation's competitiveness in facing global challenges, such as the industrial revolution 5.0 and digital transformation(Herman et al., 2021). Countries with strong basic education systems tend to have higher human development index (HDI) and more stable economies. This is in line with the opinion of Hanushek and Woessmann (2015) who stated that the quality of basic education is closely correlated with long-term economic growth through increased labor productivity. Therefore, investment in strengthening basic education is a strategic step in developing superior human resources that are able to support the nation's progress in a sustainable manner (Hayana et al., 2021; Siddique et al., 2019).

The quality of education in primary schools in developing and disadvantaged areas still faces complex and multidimensional challenges. One of the main challenges is the limited resources, both in terms of educators, infrastructure, and budget support (Rawis et al., 2024). Many primary schools in disadvantaged areas do not have qualified teachers, proper classrooms, and access to adequate learning technology. This condition has a direct impact on the low achievement of student learning outcomes, both in the aspects of basic literacy and numeracy. According to a report by the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek, 2022), the inequality in the quality of education between developed and disadvantaged regions is still a serious problem, which can be seen from the disparity in National Assessment scores and school participation (Baharuddin et al., 2025).

In addition, other significant challenges are socio-economic and geographical factors that affect children's access to and participation in primary education (Husnidar et al., 2024). In many remote areas, access to schools is still difficult due to poor road infrastructure or long distances. Meanwhile, the family's low economic conditions often force children to work to help their parents, thus disrupting the continuity of their education (Rastruc et al., 2011). Research conducted by UNICEF (2021) shows that children in marginalized areas are at higher risk of dropping out of school and falling behind academically due to a combination of poverty, lack of family support, and lack of affirmative policies from the government. Therefore, improving the quality of basic education in disadvantaged areas requires a comprehensive and sustainable approach (Lawal & Lateef, 2025).

Education financing management plays a strategic role in supporting the sustainability of school operations while improving the quality of learning. Through effective, efficient, and accountable financial management, schools can meet basic needs such as the procurement of facilities, curriculum development, teacher competency improvement, and the implementation of innovative learning programs (Paskalia, 2017). Without a planned and transparent financing system, schools will find it difficult to carry out their educational functions optimally. According to the World Bank (2018), a good education financing system allows for a more equitable and targeted distribution of resources, thereby reducing the quality gap between regions and increasing access to quality education (Agustina Muliati et al., 2022).

In addition, education financing management is also closely related to public accountability and the efficiency of the use of the state budget in the education sector. In the context of elementary schools, the allocation of funds such as School Operational Assistance (BOS) requires proper management to support the achievement of national education targets. Principals and management teams need to have the capacity to plan, implement, and evaluate the use of the budget so that every expenditure really has an impact on improving student learning outcomes (Pahwa & Scholar, 2020). A study conducted by the OECD (2017) emphasizes that schools with a structured financial system that is oriented towards the achievement of educational outcomes tend to show higher performance than schools with weak or non-transparent financial management. Therefore, increasing managerial capacity in education financing is crucial in encouraging the transformation of basic education.

Educational infrastructure, which includes school buildings, supporting facilities, and learning technology, is a crucial element in creating a safe, comfortable, and conducive learning environment for students and teachers (Kioni et al., 2023). The availability of proper classrooms, libraries, laboratories, and adequate sanitation facilities contribute directly to student engagement in the learning process (Riswandi et al., 2023). A good physical environment can increase learning motivation, lower absenteeism, and strengthen pedagogical interactions between teachers and students. According to a UNESCO report (2020), the quality of school infrastructure significantly affects student learning outcomes, especially at the primary education level, where children need a space that optimally supports their cognitive, social, and emotional development (Dewanto et al., 2023; T. A. Santosa et al., 2024; W. H. Santosa & Sudirman, 2023; Zulkifli et al., 2022).

Furthermore, the integration of technology in educational infrastructure is becoming increasingly important in today's digital era. Technologies such as computers, internet access, and digital learning devices not only expand learning resources, but also enrich teaching methods through interactive approaches and personalized learning (Ali et al., 2024; Wantu et al., 2024). In many countries, primary schools that have adopted technology have proven to be able to improve students' digital literacy skills early on, which is an important competency of the 21st century. A study by the OECD (2021) shows that investment in the right technological infrastructure can narrow the education gap between developed and disadvantaged regions, as long as it is accompanied by adequate teacher training and policy support. Therefore, the development and strengthening of educational infrastructure cannot be separated from the overall strategy of improving the quality of basic education (Edy Nurtamam et al., 2023; Mulya Putra et al., 2023; Rahman et al., 2023; Uluk et al., 2024).

Empirical facts show that weak financial management and poor infrastructure are significant factors that cause the low quality of education in various regions, especially in developing countries such as Indonesia. A report by the National Development Planning Agency (Bappenas, 2020) noted that many elementary schools have difficulties in preparing budget plans based on real needs due to limited managerial capacity of school principals and lack of supervision from local governments (Gamar et al., 2021). This has an impact on the inefficiency of the use of funds such as School Operational Assistance (BOS), which should be used to improve the quality of learning. As a result, schools fail to meet the minimum standards of educational services, such as the provision of textbooks, teacher training, or the improvement of physical facilities. In addition, data from the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek, 2022) shows that more than 30% of elementary schools in Indonesia still have classrooms that are damaged or unfit for use. In 3T (frontier, outermost, and disadvantaged) areas, limited infrastructure such as access to electricity, clean water, and internet connectivity exacerbates learning gaps (Digdowiseiso, 2022; Riinawati, 2022; Puthaprasert et al., 2023). In conditions like this, the teaching and learning process cannot run optimally and students lose the opportunity to develop basic competencies to the maximum. Research by the World Bank (2020) also reinforces these findings, stating that ill-targeted investments in education infrastructure and weak school financial governance are negatively correlated with student learning outcomes, especially in literacy and numeracy at the primary level (Widyatmike Gede Mulawarman et al., 2022).

Research conducted by Abadzi (2017) shows that weak financing management in the primary education sector contributes significantly to the low efficiency and effectiveness of education services, especially in developing countries. In a cross-country study analyzed by the UNESCO Institute for Statistics, it was found that the allocation of funds that are not based on school needs leads to inequality of resources, waste of budgets, and a lack of support for core learning activities such as teacher training or the procurement of teaching materials. The findings suggest that the quality of learning is not solely determined by the amount of budget allocated, but also by how the budget is managed and used strategically by educational institutions at the grassroots level (Muttaqiin et al., 2024; Oktarina et al., 2021; Zulyusri et al., 2023).

In the aspect of infrastructure, research by Glewwe et al. (2011) confirms that the availability of adequate school facilities, including decent classrooms, access to clean water, electricity, and learning technology, is positively correlated with an increase in the academic achievement of elementary school students (Martani, 2023). This study shows that investing in infrastructure that supports the comfort and safety of the learning environment can directly increase student attendance, engagement in learning, and academic outcomes, especially in the context of basic education in poor and disadvantaged areas. Both studies provide strong evidence that the quality of education cannot be improved without the support of professional financing management and adequate educational infrastructure. Based on this, the research

found out the role of financing management and infrastructure facilities in improving the quality of education in elementary schools.

2. Research Methods

The research method used in this study is a qualitative method with a case study approach, which aims to gain an in-depth understanding of the role of financing and infrastructure management in improving the quality of education at the primary school level. The research location was centered on SD Negeri 1 Bumirejo, Mojotengah District, which was chosen purposively because it represented elementary schools in semi-urban areas with common challenges related to financial management and limited facilities. Primary data was collected directly through participatory observation of school activities as well as in-depth interviews with principals, teachers, school committees, and students as key informants. This approach allows researchers to explore perceptions, experiences, and managerial practices that take place in a contextual and realistic manner (Creswell, 2016).

Secondary data sources are obtained from official school documents, including financial statements, inventory lists of facilities and infrastructure, as well as academic data such as student learning outcomes scores and school activity reports. The data collection techniques in this study include observation, interviews, and documentation, which are carried out triangulatively to increase the validity and validity of the findings. Data analysis was carried out using an interactive qualitative analysis model, which includes the process of data reduction, data presentation, and drawing conclusions as developed by Miles, Huberman, & Saldaña (2014). Through this approach, researchers can identify the pattern of relationships between financial management, infrastructure conditions, and educational quality achievement in basic education units in a holistic and in-depth manner.

3. Result and Discussion

Planning and Management of Education Financing Carried Out at SD Negeri 1 Bumirejo

Based on the results of the interview, the Planning and Management of Education financing at SD 1 Bumirejo is going well. SD Negeri 1 Bumirejo has shown a high commitment in managing education financing through planning and management based on the principles of good governance. The school recognizes that the success of education is not only determined by the curriculum and human resources, but also by professional, planned, and responsible financing management.

SD Negeri 1 Bumirejo applies the principle of flexibility in financing planning by adjusting the budget to the dynamics of student needs, education policies, and environmental conditions. The School Revenue and Expenditure Budget Plan (RAPBS) is prepared with room for adaptation, so as to allow for changes in the allocation of funds in the event of a change in priorities, emergencies, or unexpected urgent needs. This reflects the school's ability to manage funds responsively without sacrificing the primary purpose of education. In the principle of effectiveness, the management of financing at SD Negeri 1 Bumirejo is directed to achieve maximum educational goals. Each expenditure is always based on the needs that have been formulated in the school work plan (RKS) and is intended to support learning activities, improve the quality of teachers, procure infrastructure, and student services. Periodic evaluations are carried out to ensure that each allocation of funds really has an impact on improving the quality of education. Schools manage financing with the principle of efficiency, namely utilizing existing financial resources economically, on target, and without waste. For example, in the procurement of goods and services, schools conduct price surveys, select

competent vendors, and use a collective purchasing system to reduce costs. Every activity is always taken into account so that there is no waste, while maintaining the quality of the results.

The aspect of accountability is highly upheld by SD Negeri 1 Bumirejo. All planning processes and the use of funds are outlined in written documents such as RKS, RKAS, budget realization reports, and activity accountability reports. The school involves a treasurer who has the capacity to finance administration, as well as conduct systematic and organized financial records. In addition, internal audits are carried out periodically to ensure that any funds that come out can be accounted for administratively and morally (M et al., 2024). The principle of transparency is realized through the disclosure of information about the planning and use of funds to all school residents, including school committees and parents of students. Each revenue and expenditure is published through information boards, regular meetings with committees, and public accountability forums. This transparency builds public trust in the management of school funds and encourages active participation from various parties in supporting educational programs (Kahfi et al., 2021).

Management of facilities and infrastructure to support learning at SD Negeri 1 Bumirejo

Based on the results of the interview, the management of facilities and infrastructure at SD Negeri 1 Bumirejo supports optimal learning. SD Negeri 1 Bumirejo shows serious attention in the management of facilities and infrastructure as an important part in supporting a quality learning process. This management is not only concerned with physical fulfillment, but also the arrangement, maintenance, and utilization of existing facilities to support teaching and learning activities to the maximum.

In general, SD Negeri 1 Bumirejo already has adequate facilities and infrastructure to support the implementation of the curriculum. Clean classrooms, good ventilation, adequate lighting, and comfortable seating are available and well functioned. In addition, there are also library rooms, teachers' rooms, principal's rooms, UKS rooms, student and teacher toilets, as well as school grounds used for physical activities and ceremonies (Nurulia et al., 2020). To support digital-based learning, schools have started providing devices such as laptops, projectors, and internet networks, although further development is still needed to reach the entire learning process as a whole.

The management of facilities and infrastructure is carried out with the principles of administrative order, functional, and sustainable. The principal, together with the management team, regularly collects asset data through inventory and classification of facilities based on their type, condition, and use. Each room and equipment is arranged in such a way that it can be used optimally by teachers and students. The school also regulates the use of the space and teaching aids so that their use does not overlap, as well as ensuring that all facilities can be used equally and fairly by each class (Siddique et al., 2019; Rawis et al., 2024).

Maintenance of infrastructure facilities is carried out regularly, both in the form of minor maintenance such as wall painting, repair of chairs-tables, and maintenance of cleanliness and environmental safety. This effort is important so that the facility remains optimally functioning and durable. In addition, SD Negeri 1 Bumirejo also continues to strive for the development of facilities and infrastructure through school budget allocation and support from the local government and school committees (Baharuddin et al., 2025). This includes the procurement of learning aids, supporting books, and information technology equipment. Good management of facilities and infrastructure directly supports the comfort, effectiveness, and smooth learning process. Teachers can teach more interactively thanks to the availability of appropriate learning media. Students are also more enthusiastic about participating in lessons because of the conducive learning environment. Furthermore, the availability of complete facilities encourages the implementation of project-based, exploratory, and collaborative learning, as emphasized in the Independent Curriculum. The open spaces and sports facilities available also support student character development, health, and fitness activities (Husnidar et al., 2024).

Obstacles faced in financing management and management of infrastructure facilities at SD Negeri 1 Bumirejo

Based on the results of the interview, in the implementation of education management, financing and management of facilities and infrastructure are two important components that are interrelated in supporting the achievement of quality education. Although SD Negeri 1 Bumirejo has tried to manage these two aspects in a planned and systematic manner, there are still several obstacles faced in the field, both internally and externally.

The main obstacle in financing management is the limited amount of school operational funds, especially those sourced from regular School Operational Assistance (BOS). The BOS funds received are often insufficient to meet all operational and development needs of schools, such as the procurement of technology-based learning facilities, teacher capacity building, and routine maintenance of infrastructure. Dependence on one source of funds is also an obstacle when the funds arrive late or are cut, thus affecting the implementation of the school program that has been planned (Rastruc et al., 2011).

In the management of facilities and infrastructure, one of the significant obstacles is the lack of budget for maintenance and renewal of facilities. Many buildings or equipment need repairs, but they cannot be handled thoroughly due to budget limitations (Lawal & Lateef, 2025). This causes some facilities to be less than optimal in their function in supporting learning. In addition, the procurement of new facilities such as teaching aids, IT devices, and the latest reference books is also constrained by limited fund allocation, so learning still depends on conventional methods (Solissa et al., 2023).

In terms of school asset management, there are still limitations in terms of technical personnel or special staff who handle the inventory, maintenance, and management of facilities professionally. Teachers and school principals often have concurrent roles, so they lack a focus on managing in detail and strategically. Similarly, in financial management, school treasurers who have dense administrative tasks sometimes experience technical obstacles in digital reporting or system-based financial data management. There is still a need for more systematic and sustainable financing management and infrastructure management training for school principals, treasurers, and related staff. Lack of training or technical guidance makes the management of funds and assets sometimes not fully optimal or lacks the latest principles of efficiency and accountability (Paskalia, 2017). Although the school committee has been involved in several aspects of planning, the level of community participation in supporting education financing and the procurement of facilities is still relatively low. This can be caused by the economic limitations of the surrounding residents or the lack of communication that reaches all elements of society

Contribution of financing management to improving the quality of education at SD Negeri 1 Bumirejo

Based on the results of the interview, financing management plays an important role in supporting the entire educational process in schools. At SD Negeri 1 Bumirejo, planned, directed, and accountable financing management has made a significant contribution to improving the quality of education, both in terms of the learning process, educator competency development, and improvement of facilities and infrastructure.

The initial contribution of financing management can be seen from the planning and preparation of budgets that are adjusted to the school's vision, mission, and goals. Available funds, such as regular BOS funds, are strategically utilized to support the school's priority needs. The budget allocation is carried out based on the School Work Plan (RKS) and the School Activity Plan and Budget (RKAS), which have been studied with all stakeholders.

With good planning, financing is able to direct school activities to focus on improving student learning outcomes, teacher competence, and meeting basic learning needs. Part of the financing funds are used for teacher professional development activities, such as training,

workshops, and Teacher Working Group (KKG) activities. Investment in educator capacity building has a direct impact on the quality of learning in the classroom. Teachers become more competent in designing learning that is creative, fun, and in accordance with the characteristics of students (Hayana et al., 2021).

Financing management is also used to support the provision and procurement of learning facilities, such as teaching aids, textbooks, stationery, and technology support devices (e.g. laptops and projectors). These tools make the teaching and learning process more interactive and contextual, which ultimately increases students' understanding and engagement in learning activities. Funds are also allocated to create a clean, comfortable, and safe learning environment. Minor infrastructure improvements such as classroom painting, sanitation improvements, and environmental cleanliness procurement also support a conducive learning climate (Rawis et al., 2024). This has a positive impact on students' learning motivation and teaching effectiveness. zGood financing management allows the school to run various student development programs such as literacy programs, numeracy, and extracurricular activities. Such programs are important in shaping students' character, creativity, and social skills, which are an integral part of the overall quality of education (Baharuddin et al., 2025; Lawal & Lateef, 2025).

4. Conclusion

Based on the results of the study, it can be concluded that financing management at SD Negeri 1 Bumirejo is carried out with the principles of transparency, participation, and accountability. The School Operational Assistance Fund (BOS) is the main source that is optimally utilized to support learning activities, procurement of learning facilities, and improve teacher competence. The involvement of school committees and teachers in the preparation of RKAS strengthens the quality of planning and the effectiveness of the use of budgets and facilities and infrastructure in schools plays an important role in improving the quality of learning. Facilities such as decent classrooms, libraries, projectors, and props contribute to increased student interest and understanding. Although not entirely ideal, the use of available facilities has had a positive impact on the educational process

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