

The Importance of Educational Facilities and Infrastructure Planning

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Abstract

Educational facilities and infrastructure in schools are highly valued because they are key supporting factors in supporting an effective, efficient, and high-quality learning process. Without adequate facilities and infrastructure, educational goals are difficult to achieve optimally. Therefore, their provision must be a top priority in school management and education policy. The purpose of this study is to explore the planning of educational infrastructure. The method used is qualitative. Data collection techniques using interviews to school principals and teachers. The research was conducted at SD Muhammadiyah Prambanan. The analysis was conducted with the help of Atlas.ti software version 23. The results of the study showed that the planning of infrastructure facilities in elementary schools includes needs analysis, budget allocation, procurement based on priorities, maintenance, and demolition. This research recommendation is addressed to all elementary schools as part of being able to develop infrastructure facilities based on needs.

Keywords: educational quality, facilities, planning, infrastructure

Abstrak

Sarana dan prasarana pendidikan di sekolah sangat tinggi karena keduanya merupakan faktor pendukung utama dalam menunjang proses pembelajaran yang efektif, efisien, dan berkualitas. Tanpa sarana dan prasarana yang memadai, tujuan pendidikan sulit tercapai secara optimal. Oleh karena itu, penyediaannya harus menjadi prioritas utama dalam pengelolaan sekolah dan kebijakan pendidikan. Tujuan penelitian ini adalah untuk mengeksplorasi perencanaan sarana prasarana pendidikan. Metode yang digunakan adalah kualitatif. Teknik pengumpulan data menggunakan wawancara kepada kepala sekolah dan guru. Penelitian dilakukan di SD Muhammadiyah Prambanan. Analisis dilakukan dengan bantuan perangkat lunak Atlas.ti versi 23. Hasil penelitian menunjukkan bahwa perencanaan sarana prasarana di sekolah dasar meliputi analisis kebutuhan, anggaran, pengadaan berdasarkan prioritas, pemeliharaan, dan pemusnahan. Rekomendasi penelitian ini ditujukan kepada seluruh sekolah dasar sebagai bagian untuk dapat mengembangkan sarana prasarana berdasarkan kebutuhan.

Kata kunci: kualitas pendidikan, fasilitas, perencanaan, infrastruktur



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Introduction

Facilities and infrastructure are important instruments in education and they are one of the eight National Education Standards. The relationship between facilities and infrastructure and the eight National Education Standards (SNP) is very close because facilities and infrastructure are the main support for the implementation of quality education. Facilities and infrastructure are the main pillars in the implementation of all SNPs. Without adequate infrastructure, meeting other standards will be hampered. Therefore, investment in and planning of school facilities is the foundation for improving educational quality. The standard for educational facilities and infrastructure is one of the standards developed by the National Education Standards Agency (BSNP). In the Ministerial Regulation, it is stated that facilities and infrastructure are supporting factors for the success of education. Facilities and infrastructure are one of the factors that support the success of an education program. Facilities and infrastructure are part of the resources that are a benchmark for the quality of a school (Kartika et al., 2019).

The importance of the role and function of educational infrastructure, which is one of the resources to support the learning process, necessitates an improvement in its utilization and management. So, the school is striving to compete in meeting these standards of facilities and infrastructure. This effort is made to improve the quality of education through the learning process.

In the implementation of learning in schools, the utilization of facilities and infrastructure becomes one of the indicators as well as a measure of the quality of service provided to customers by the school (Firmansyah et al., 2018; Ikawati, 2018; Huda, 2020). The facilities and infrastructure greatly support learning as a form of service for customers, namely students, parents, and teachers. One of the important stages in management is planning, which serves as the foundation for achieving a goal. Planning is a crucial part of management functions, and in fact, planning activities cannot be separated from any school activities (Sahnan, 2017). Planning is the initial stage that must be undertaken in the management process of institutions, especially in education. This means that planning is one of the very important functions of management in schools, as planning will affect the success or failure of an activity. A good job should be planned and executed according to the plan to provide clarity in the direction of the educational process, so that the educational institution can operate more effectively and

efficiently. In educational institutions, the planning stage plays a very important role in the management of education itself, one of which is infrastructure (Boko, 2020).

Infrastructure becomes a fundamental component when it functions as a means, but if the infrastructure can be utilized independently or separately, it will serve as a support for that means (Herawati et al., 2020). Facilities and infrastructure are often referred to together because many people consider them to be the same, whereas they actually have different meanings. In Permendiknas No. 24 Tahun 2007 is mentioned that the organization of education requires learning tools that are flexible and easy to use, while infrastructure is needed as basic facilities in educational units. PP No. 19 Tahun 2005 also mentioned that every school must have facilities and infrastructure. That is why so that facilities and infrastructure have a very important influence in achieving a specific goal, in this case, education.

The availability of school infrastructure requires a long and complicated process; it is not something that is readily available (Hartoni, 2018). Planning is necessary to realize the infrastructure as support for the implementation of learning, as not everything is already available in a school. Each school has differences in the ownership of facilities and infrastructure, so a process is needed for their procurement. In reality, the facilities and infrastructure in education at schools are managed with knowledge that is not yet optimal, thus requiring management and maintenance. In line with what (Ikawati, 2018) conveyed that every school must manage learning facilities and infrastructure properly and gradually, including maintenance, to meet the standards set by the government. This will have an impact on the facilities and infrastructure so that learning can proceed effectively. The management of educational facilities and infrastructure is utilized to organize and maintain these resources to provide optimal positive contributions to the educational process.

A school institution that lacks understanding of the standards regarding facilities and infrastructure will face several challenges, as stated by (Saryono dan Hutomo, 2016) based on the findings in the field, the school's attention to facilities and infrastructure has not been optimal. Schools are less focused on addressing issues related to the planning of facilities and infrastructure. They are capable of procurement/purchasing but lack in maintenance. From the issues above, the focus will be more on the management of planning for facilities and infrastructure, as well as the management of facilities and infrastructure for school quality.

In previous research, the management of facilities and infrastructure has been discussed, covering aspects such as planning, procurement, storage, distribution, maintenance, inventory, and disposal. However, the advantage of this study is its focus on the planning of school facilities and infrastructure. Although numerous studies have discussed the influence of facilities and infrastructure on educational quality, most research focuses solely on the availability and physical quality of facilities. Strategic planning is often overlooked. Thorough planning ensures that the infrastructure built aligns with curriculum needs and graduate profiles. Planning prevents waste and duplication. With a medium- and long-term planning approach, schools can prioritize: what is most urgent, what can be postponed, and what can be collaborated with external partners. Well-planned facilities can directly improve the effectiveness of the learning process (Process Standards), support computer-based assessment systems (Assessment Standards), and facilitate teacher development (Educator and Education Personnel Standards).

Risk-based planning (disaster risk planning) and adaptive planning for technological change enable schools to be more resilient in the face of disasters (floods, earthquakes) or even pandemics (such as the need for flexible classrooms and digital infrastructure). Documented, measurable planning that involves stakeholders will increase public trust and the school's ability to obtain additional funding. Thus, infrastructure planning is not just technical administration, but an important strategy in fulfilling National Education Standards.

Based on the explanation provided above, the researcher is more interested in focusing on the title regarding the importance of planning for facilities and infrastructure. This study aims to describe the importance of planning educational facilities and infrastructure.

Research Methods

This type of research is qualitative, using a participatory approach. This research is conducted through observation, interviews, and documentation. The method in this research is descriptive analysis. The author begins with systematic and consistent data collection, followed by analysis, selection, and then integration, allowing for conclusions to be drawn using deductive analysis. This research involves three informants: the Principal, the financial coordinator (treasurer), and the facilities coordinator. This

research was conducted in SD Muhammadiyah Prambanan. The data analysis process in this research uses the Miles and Huberman approach. This research began with data collection through interviews with several participants serving as sources, including the Principal, the treasurer, and the facilities coordinator. After the data is collected, the researcher will perform data reduction. This research focuses on relevant data that aligns with the questions presented by the researcher with the aim of effectiveness. The data is presented in the form of words that explain the importance of planning facilities and infrastructure at SD Muhammadiyah Prambanan. After the data is presented, it will be verified so that conclusions can be drawn.

Interviews and documentation will be conducted by recording during the researcher's interviews with participants, as well as observing and analyzing existing documents. The confidentiality and privacy of the participants and documents will be safeguarded by the researcher. The conversation during the interview will flow naturally using the interview guidelines that have been prepared in advance. The willingness of participants to serve as sources is very important for this research, so there needs to be some kind of agreement regarding this interview. Considering that this interview will be beneficial and not detrimental, it will be conducted with pleasure by both the researcher and the participants as sources.

Result and Discussion

Based on the results of field data collection, it can be outlined that essential facilities and infrastructure must be provided in the educational process. This aims to support education in schools. The planning of school infrastructure and facilities involves aspects such as coordination with the financial sector. In the process of planning facilities and infrastructure, it is not only carried out by the facilities and infrastructure department itself but also involves teachers and the school committee. Additionally, the discussion regarding the planning of facilities and infrastructure follows specific procedures implemented by the school.

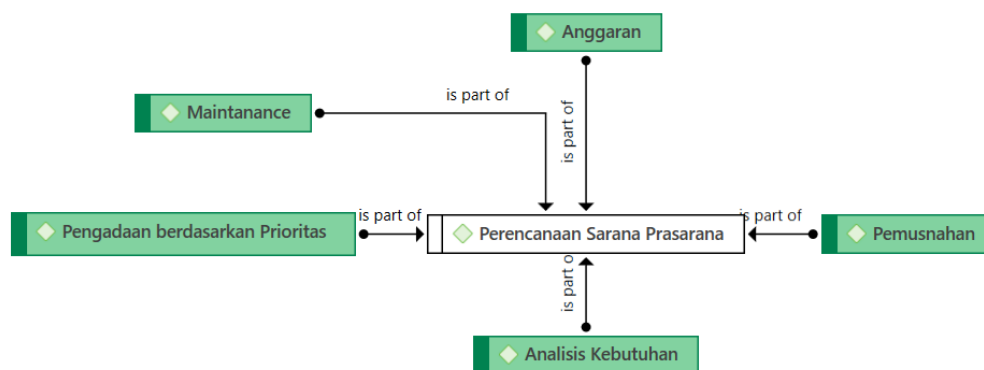


Figure 1 Educational Infrastructure Planning Process

The success of learning in schools is greatly influenced by the utilization of the educational facilities available at those schools. Educational infrastructure requires good management for the smoothness of the learning process. The management of educational facilities and infrastructure is an important activity to undertake, as these facilities and infrastructure significantly support the success of learning. As we know, in our daily lives, we can never be separated from the need for facilities and infrastructure. According to the Great Dictionary of the Indonesian Language (KBBI), facilities are everything that is utilized as a means to achieve a goal, while infrastructure refers to everything that is a key factor in the implementation of a process. Furthermore, the management of facilities and infrastructure according to Gunawan (1982) states that the administration of educational facilities and infrastructure encompasses all processes that have been deliberately and continuously planned and implemented regarding educational resources, so that they are always ready for use in teaching and learning activities, enabling them to operate effectively and efficiently to achieve objectives.

The planning of procurement for facilities and infrastructure is carried out based on a needs analysis (Sinta, 2019). This was done by planning through internal coordination meetings. According to Bafadal (2004), it is stated that "The planning of facilities and infrastructure is a process of thinking about and establishing programs for the procurement of facilities for schools, both in the form of educational means and infrastructure, in order to achieve educational goals." (Kenoret et al., 2019). In planning infrastructure, the first step is to identify all the needs of the school. Identification is

carried out by analyzing various school needs through collaborative coordination. The coordination involves the facilities coordinator, treasurer, teachers and staff, the principal, and the committee. This coordination takes place through internal meetings of the facilities department and is followed by a larger school meeting at the beginning and end of the academic year. The facilities and infrastructure are analyzed according to the needs of the school; educational facilities and infrastructure are one of the important and primary resources and represent the progress of an institution in fully supporting the learning activities (Fauzan, 2018). Considering the importance of infrastructure, continuous efforts must be made to improve its utilization and management, so that the desired goals can be achieved optimally.

According to Barnawi & Arifin (2012:55), it is stated that the procedure for planning educational facilities and infrastructure consists of: (a) compiling a list of needs; (b) estimating costs; (c) establishing a priority scale or level of importance (urgency); (d) preparing a procurement plan. Research results indicate that the school infrastructure planning process consists of: (1) Needs Analysis, the school forms a special team (usually consisting of the vice principal for infrastructure, the treasurer, the principal, and a deputy teacher) to inventory needs based on previous years' experience and current conditions. Needs are assessed based on urgency, relevance to the curriculum (e.g., classrooms, laboratories, libraries), and visibility to the school's vision and mission. (2) Budget and Cost Estimates, the team conducts cost estimates based on price surveys (local/regional). If funds are limited, alternative materials or phased procurement can be considered. General funding sources include BOS allocations, foundations, donations, or collaboration with external partners; (3) Prioritization, Material needs are sorted based on their urgency and impact on learning. The priority-setting process is carried out through a coordination meeting between the principal, vice principal for infrastructure, treasurer, and subject area representatives; (4) Timeframe Division (Short-, Mid-, Long-Term), some schools only prepare short-term plans (once a year at the beginning of the school year). Ideally, schools develop phased programs: annual (urgent priorities), medium-term (capacity development), and long-term (strategic and major investments).

Educational infrastructure is very important because it consists of materials, all equipment, and furniture that are directly used in the educational process at school. Infrastructure includes all the devices that indirectly support the implementation of the

educational process and learning in schools, for example: school buildings, location/places, funding/costs/money, sports fields, etc. In identifying the needs for facilities and infrastructure, they are classified into several types, namely: (1) consumable or non-consumable; (2) movable or immovable; (3) related to the teaching and learning process. Examples of disposable learning materials include: chalk, markers, hand soap, marker ink, printer ink, and floor cleaning liquid. Learning resources can also be durable, for example, materials or tools that are used continuously and for a relatively long time. Examples include school desks and chairs, blackboards, atlases, typewriters, and globes. There are two types of educational facilities, namely movable educational facilities and immovable educational facilities. Mobile learning tools are resources that can be moved or relocated by humans according to the needs of the users, for example: cabinets, school benches, tables, and chairs. The resources related to the teaching and learning process are also very important, for example: learning tools, teaching aids, learning media, worksheets, textbooks, and stationery. In learning, tools in the form of media are necessary, namely audio, visual, and audiovisual media. Especially after the Covid-19 pandemic, with online learning, there is a great need for facilities and infrastructure in the form of electronic media, such as computers or laptops, and internet network equipment. This is done considering the school's need to support learning both at school and at home through online means at present, so it can be prioritized over other needs.

The strategy that is formulated should be aligned with the procurement procedures for goods and services referring to Ministerial Regulation No. 24/2007, which states that the procurement of educational facilities and infrastructure in schools must follow these procedures: (a) analyzing the needs and functions of the facilities and infrastructure; (b) classifying the required facilities and infrastructure; (c) creating a proposal for the procurement of facilities and infrastructure. The funds available at the school are used to meet all school needs, one of which is to fulfill infrastructure requirements. The funds coming from the government, of course, cannot cover all the needs entirely. Thus, an analysis of the use of educational funds is essential to prevent issues in the financing of educational institutions.

The principle that should be applied in developing infrastructure planning strategies according to Bafadal (2004) is : (a) Planning for educational facilities and infrastructure must be based on academic interests; (b) Planning should refer to a needs

analysis considering the school community; (c) Planning for facilities and infrastructure must be in harmony and aligned with the available funding at the school. The planning of infrastructure according to (Alfarisi, 2021) has several stages, including: (a) analyzing needs by examining what is required to support the learning process; (b) analyzing financing to adequately fulfill the needs for purchasing facilities and infrastructure, minimizing the use of funds that do not align with the objectives. At this stage, the treasurer's role is to analyze the school's finances, considering that budget availability is very important. The existing budget can be used to meet the school's needs in terms of facilities and infrastructure; (c) analyzing priorities, which involves determining the proposals from the teaching staff that are then submitted to the principal.

In the planning of facilities and infrastructure, each subject has different characteristics from one another, thus requiring the role of teachers to provide suggestions. The analysis of facilities and infrastructure involves classroom teachers and subject teachers with the aim of obtaining input that aligns with the needs of learning. (Ristianah, 2018).

The organization of learning that involves teachers requires facilities that enable effective and engaging teaching. Adequate and sufficient learning support facilities are necessary so that teachers do not only convey material verbally but also through written means and demonstrations in accordance with the prepared infrastructure. The ability of teachers to conduct learning activities needs support from the school's learning facilities. It can be said that the quality of education must be supported by facilities and infrastructure that meet school standards.

The management of educational facilities and infrastructure is essential for schools to provide services professionally, allowing the educational process to be conducted effectively and efficiently (Nurmaidah, 2018). The relationship between facilities and infrastructure with the educational process can be described as a collaborative effort to utilize all educational facilities and infrastructure effectively and efficiently. This definition indicates that the facilities and infrastructure available in schools need to be utilized and managed for the benefit of the learning process, as their existence will greatly support the success of the educational process.

According to Gunawan in Fauzan, (2018) it is stated that planning is a systematic determination with the appropriate knowledge to control and set the direction of the established goals. In the procurement of certain tools or educational facilities, it is

essential to first follow the correct procedural steps, which include reviewing and rechecking the condition of existing resources and assets to avoid wasteful educational facilities. This requires coordination among school members, including teachers, treasurers, infrastructure coordinators, school principals, and committees. The procurement at the beginning of the new academic year is based on discussions and coordination among the school, teachers, and infrastructure coordinators, relying on realistic information about the school's condition. Making efforts to procure educational facilities and infrastructure in schools in a targeted manner while adhering to the principle of efficiency. Education will face obstacles and challenges if there are no adequate facilities and infrastructure (Maryadi, 2018).

Based on the research findings above, the planning of facilities and infrastructure is very important because planning can accurately control and determine the direction and goals effectively and efficiently to achieve educational objectives. This will result in the quality and standards of education in a school institution, which will become a goal and reference for the community.

Conclusion

This study aims to determine the strategic role of facilities and infrastructure in supporting the achievement of National Education Standards and improving the quality of learning processes and outcomes in elementary education units. The results indicate that facilities and infrastructure play a very significant role in supporting almost all aspects of education, from curriculum implementation (Content Standards), learning effectiveness (Process Standards), assessment quality (Assessment Standards), and graduate competency achievement. Key findings demonstrate that the presence of adequate, relevant, and systematically planned facilities and infrastructure not only contributes to comfortable learning but also has a direct impact on student learning outcomes and educator effectiveness. This study also highlights that the planning aspect of facilities and infrastructure—particularly through needs analysis, budgeting, and prioritization—is often overlooked in school practice, despite its crucial role in optimizing educational resources.

However, this study has several limitations. First, the sample size was limited to elementary education units in a specific region, so the results cannot necessarily be generalized nationally. Second, the approach used is descriptive-qualitative, so it does

not statistically measure the causal relationship between infrastructure variables and learning outcomes. Third, this study has not yet thoroughly explored other external variables such as school management capacity or community involvement, which may also influence the effectiveness of infrastructure utilization.

Based on these limitations, future research is recommended to develop a quantitative or mixed-methods approach to measure the causal relationship between infrastructure and various indicators of educational quality. Furthermore, it is important to examine data-based infrastructure planning models at various levels and types of schools, as well as to examine the relationship between infrastructure management and other dimensions such as school leadership, financing, and community participation. Theory development can also be directed at integrating infrastructure as part of the broader educational ecosystem, not merely as a physical support element but also as part of a learning transformation strategy. Thus, this research contributes to the understanding that infrastructure is not merely an administrative support element, but a strategic factor in improving educational quality as a whole.

Referensi

- Alfarisi, S. (2021). Analisis Perencanaan Sarana dan Prasarana Pendidikan Islam. *Rayah Al-Islam*, 5(1), 189–204. <https://doi.org/10.37274/rais.v5i1.401>
- Boko, Y. A. (2020). Perencanaan Sarana dan Prasarana (SARPRAS) Sekolah. *JUPEK: Jurnal Pendidikan dan Ekonomi*, 1(1), 44–52.
- Fauzan, A. (2018). Manajemen Sarana dan Prasarana Hisbullah Natar Lampung Selatan. *Jurnal Kajian Ilmu Pendidikan*, 3(1), 249–276.
- Firmansyah, T., Supriyanto, A., & Timan, A. (2018). Efektivitas Pemanfaatan Sarana dan Prasarana dalam Meningkatkan Mutu Layanan di SMA Laboratorium. *Jurnal Manajemen dan Supervisi Pendidikan*, 2(3), 179–184. <https://doi.org/10.17977/um025v2i32018p179>
- Hartoni, H. (2018). Impelementasi Manajemen Sarana dan Prasarana di Sekolah Menengah Kejuruan. *Al-Idarah: Jurnal Kependidikan Islam*, 8(1), 178. <https://doi.org/10.24042/alidarah.v8i1.3088>
- Herawati, S., Arafat, Y., & Puspita, Y. (2020). Manajemen Pemanfaatan Sarana dan Prasarana Pembelajaran. *Attractive: Innovative Education Journal*, 2(3), 21. <https://doi.org/10.51278/aj.v2i3.68>
- Huda, M. N. (2020). Inventarisasi dan Penghapusan Sarana Prasarana Pendidikan. *Ta'dibi: Jurnal Manajemen Pendidikan Islam*, 8(2), 25–44.
- Ikawati, A. (2018). Pengelolaan Sarana dan Prasarana Pembelajaran Produktif di SMKN 3 Makassar. *Eprints Universitas Negeri Makassar*, 1–15.

- Kartika, S., Husni, H., & Millah, S. (2019). Pengaruh Kualitas Sarana dan Prasarana terhadap Minat Belajar Siswa dalam Pembelajaran Pendidikan Agama Islam. *Jurnal Penelitian Pendidikan Islam*, 7(1), 113. <https://doi.org/10.36667/jppi.v7i1.360>
- Kenoret, Y., Ratoe, M., & Basri, K. (2019). Optimalisasi Pemanfaatan Sarana Prasarana dalam Meningkatkan Mutu. *PEMBELAJAR: Jurnal Ilmu Pendidikan, Keguruan, dan Pembelajaran*, 3, 102–110. <https://doi.org/10.26858/pembelajar.v3i2.10068>
- Maryadi. (2018). Manajemen Sarana dan Prasarana dalam Pembelajaran SD. *Jurnal Manajemen Pendidikan*, (2), 15–23.
- Nurmaidah. (2018). Manajemen Sarana dan Prasarana. *Jurnal Al-Afkar*, VI(1), 30–50. <https://doi.org/10.48094/raudhah.v4i2.47>
- Ristianah, N. (2018). Perencanaan Sarana Prasarana Pendidikan (Studi di PAUD Darush Sholihin Tanjunganom Nganjuk). *INTIZAM, Jurnal Manajemen Pendidikan Islam*, 2(1), 64–76.
- Sahnan, M. (2017). Urgensi Perencanaan Pendidikan di Sekolah Dasar. *Jurnal PPkn dan Hukum*, 12(2), 142–159.
- Saryono & Hutomo. (2016). Manajemen Pengelolaan Sarana dan Prasarana Pendidikan Jasmani di SMA Negeri Se Kota Yogyakarta. *Jurnal Pendidikan Jasmani Indonesia*, 12(1), 23–33.
- Sinta, I. M. (2019). Manajemen Sarana Prasarana. *Jurnal Islamic Education Manajemen*, 4(1), 77–92. <https://doi.org/10.15575/isema.v3i2.5645>