



# Management of Educational Facilities and Infrastructure to Create Effective Schools in Elementary Schools in Lampung Province

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**Abstract.** Schools can be considered effective if there is well-organized management of facilities and infrastructure. This study aims to describe the management of elementary school facilities and infrastructure to create effective schools by using a mixed method. The utilized research design is sequential explanatory. This study employed saturation sampling with a population and sample of 41 people consisting of principals, educator representatives, and administrative staff. Quantitative and qualitative data were gathered through questionnaires, interviews, observations, and documentation. Quantitative data were analyzed by testing the validity and reliability of the instruments. In the meantime, qualitative data were analyzed by adopting the Miles and Huberman approach, which included data reduction, data display, and conclusion drawing. This study has been validated by two management experts who are professionals in their field from the Faculty of Teacher Training and Education at the University of Lampung. The reliability of the instruments was measured using Alpha Cronbach. The findings of this study reveal that the schools already have management of their educational facilities and infrastructure, however it is inadequate. The management of school facilities and infrastructure plays a significant role in the development of effective schools.

**Keywords:** effective school · facilities · infrastructure · management

## 1 Introduction

The key to the prosperity of a generation is a quality education. Education is a crucial investment that plays a pivotal part in the human resource development of a nation [1–4]. The state strives to establish an education system that is sustainable, decent, as well as oriented toward effective and efficient learning [5]. The educational sector demands competent human resources to address contemporary challenges (Jose et al., 2021; Malik, 2018; Thornton, 2021) [6–8]. Therefore, in order to meet educational goals, it is required

to build multiple academic facilities that are managed strategically from kindergarten to college.

Several factors influence the outcome of the learning process, including students, school curriculum, learning objectives, learning methods, facilities and infrastructure, learning assessment, school management, as well as circumstances [9–11]. Gillani (2021) further stated that educational facilities and infrastructure contribute to the enhancement of the learning process [12]. The facilities and infrastructure include classrooms, laboratories, libraries, electricity, tables, chairs, storage rooms, and toilets. The importance of facilities and infrastructure in supporting the educational process is regulated in the Law of the Republic of Indonesia Number 20 the Year 2003 on the National Education System, Chapter XII article 45, namely “Every formal and non-formal education unit shall provide educational facilities and equipment required in accordance with pedagogical criteria for learners’ development and growth for physical, intellectual, social, emotional, and spiritual abilities.” Each school has various educational facilities and infrastructure, which will subsequently facilitate the implementation of learning within the school.

In general, schools have provided the necessary facilities and infrastructure. However, occasionally the available facilities and infrastructure are not managed adequately and are not maintained regularly. Therefore, the existing facilities and infrastructure in schools are relatively short-lived and tends to be easily broken. This hinders the effectiveness of educational institutions. In light of these conditions, it is crucial to manage and supervise school facilities and infrastructure in an organized manner in order to create effective schools [13].

The fact of the present elementary school situation is that schools have been unable to create effective schools. This is evident by the quality of the existing facilities and infrastructure in primary schools, which have not been maintained and are in a condition of disrepair, as seen by leaky school buildings, dilapidated tables, chairs, and other learning equipment. The management of elementary school facilities and infrastructure has not been managed professionally by the school [14, 15]. Currently, the inadequate educational amenities given by the government and society in Indonesia are responsible for the poor quality of education output [16]. As it is well known, schools can be deemed effective if there is regular school management and optimal student learning outcomes [17].

The endeavors that can be done to overcome existing issues and create effective schools begin with the current school management. Schools can commence managing facilities and infrastructure, which includes planning, procurement, inventory, retention, maintenance, utilization, elimination, and arrangement processes. Well-organized management of the facilities and infrastructure is projected to produce an effective, secure, presentable, and comfortable school for all school members.

The previous study by Diannisa et al. (2022) indicates a difference from the current study, that is the type of research in the form of qualitative descriptive to analyze the management of facilities and infrastructure at SMP Al-Azhar 6 Jaka Permai Bekasi [18]. Students and teachers were then engaged as research subjects. In addition, research conducted by Mujahid & Noman (2015) focused on the amenities provided in rural and urban primary and secondary schools in Sindh Province [19]. This study evaluates

the efficient and well-organized allocation and utilization of school resources in 48,865 public schools. Furthermore, a qualitative study has been conducted by Döş & Savaş (2015) on the role of school administrators in effective schools [20]. The study was carried out on 26 teachers and four administrators, and descriptive analysis was employed to examine the data.

Planning for school facilities and infrastructure must be as optimal and appropriate as feasible in order to create an effective school. In the implementation of the learning process, SDN 3 Kampung Baru and SDN 2 Rajabasa have inadequate facilities and infrastructure. It is challenging to construct an effective school under these conditions. It is challenging to establish an effective school under these conditions. Based on the situation, the purpose of this study is to discover how to manage primary school facilities and infrastructure in order to create effective schools.

## 2 Literature Review

### A. *Management of facilities and infrastructure*

Facilities and infrastructure play a vital role in facilitating the learning process in both public and private schools [21, 22]. It is difficult to envision high-quality educational processes and outcomes in the lack of adequate facilities and infrastructure. Educational facilities are any means that includes equipment and tools that are primarily used in the learning process in schools, particularly in learning activities such as buildings, classrooms, laboratory rooms, tables, chairs, books, and supporting objects [23, 24]. Moreover, infrastructure consists of amenities that support the educational process, such as schoolyards, school gardens, and road access to schools [25–27]. Management of facilities and infrastructure can be interpreted as the organization of activities, initiating the planning of needs, procurement, retention, distribution, utilization, maintenance, inventory, and alteration, as well as the arrangement of school buildings and equipment in a strategic manner [28]. The purpose of managing school facilities and infrastructure is to provide professional services to school inhabitants and therefore the teaching and learning process can be performed properly and efficiently [29]. Hence, school activities will work optimally with the management of educational facilities and infrastructure.

### B. *Effective School*

An effective school has a great management system, efficiency, high productivity, and a robust organization in order to produce high-quality output [30]. The efficiency of a school can be assessed and observed at three levels: school, class, and individual pupils [31]. In addition, effective schools are evaluated as having academic achievement and teaching all students regardless of socioeconomic standing or family affiliation [32]. The development of an effective school is expected to have a positive effect on all school members [33].

### 3 Methodology

#### A. *Research Design*

This study employed a mixed methods research design. A mixed-method research design collects and analyzes quantitative and qualitative data simultaneously to identify research findings and outcomes [34]. This study focuses on the management of facilities and infrastructure, comprising planning, procurement, inventory, retention, maintenance, utilization, elimination, and arrangement. The population in this study amounted to 41 people consisting of educators, education staff, and principals at public elementary schools in Lampung Province.

#### B. *Sample and Data Collection*

This study was conducted at primary public schools in Bandar Lampung. The study utilized a saturation sampling technique with a total of 41 participants. The technique employed to collect quantitative data was questionnaires; meanwhile, qualitative data was gathered through interviews and documentation.

#### C. *Data Analysis*

##### 1) *Analysis of quantitative data*

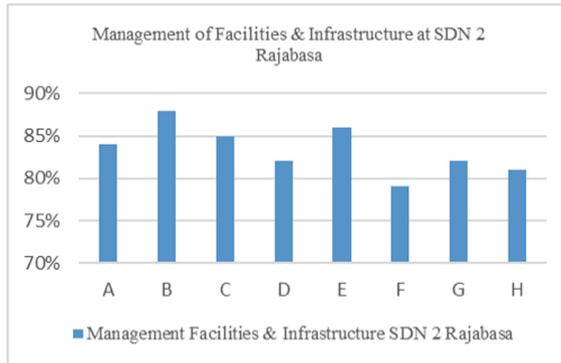
In quantitative data analysis, the optimum score was computed initially. The data to be analyzed pertained to the management of primary school facilities and infrastructure in order to create effective schools. The data collected through the questionnaire was quantitatively analyzed in multiple steps, including editing, scoring, and tabulating. Product moment correlation was employed to examine the validity of the instruments for both variables. In addition, Cronbach Alpha was employed for the reliability test, and the findings obtained for both variables were highly reliable (0.882–0.926). Microsoft Office Excel 2016 was used to assist with this test.

##### 2) *Analysis of qualitative data*

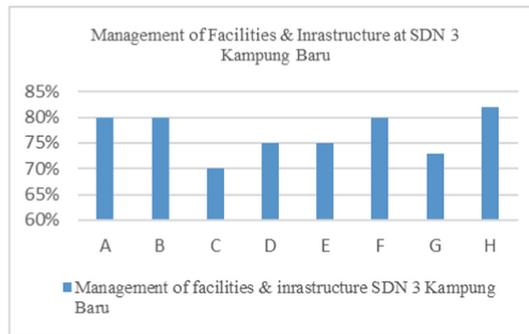
This study utilized the Miles and Huberman model for qualitative data analysis, which included data reduction, data display, and conclusion drawing [35]. Furthermore, interviews were conducted by interviewing principals, education staff, and educator representatives. After interviewing the participants, the researchers performed data analysis by transcribing voice recordings into written sentences without altering the authenticity or originality of the data.

### 4 Results

This study included two variables that were quantitatively and qualitatively examined. Figures 1 and 2 show the outcomes of quantitative study based on questionnaire responses about the management of facilities and infrastructure.



**Fig. 1.** Management of facilities and infrastructure at SDN 2 Rajabasa



**Fig. 2.** Management of facilities and infrastructure at SDN 3 Kampung Baru

Based on Fig. 1, the data from questionnaires on the management of educational facilities and infrastructure answered by 30 respondents reveal that the indicator for planning educational facilities and infrastructure is 84%, procurement of facilities and infrastructure is 88%, inventory of facilities and infrastructure is 85%, retention of facilities and infrastructure is 82%, maintenance of facilities and infrastructure is 86%, utilization of facilities and infrastructure is 79%, elimination of facilities and infrastructure is 82%, and arrangement of facilities and infrastructure is 81%.

Based on Fig. 2, the data from questionnaires on the management of educational facilities and infrastructure answered by 11 respondents reveal that the indicator for planning educational facilities and infrastructure is 80%, procurement of facilities and infrastructure is 80%, inventory of facilities and infrastructure is 70%, retention of facilities and infrastructure is 75%, maintenance of facilities and infrastructure is 75%, utilization of facilities and infrastructure is 80%, elimination of facilities and infrastructure is 73%, and arrangement of facilities and infrastructure is 82%.

Figure 3 illustrates the indicators of effective schools at SDN 2 Rajabasa, which include the following data: professional educators with a value of 85%, conducive learning environment with a value of 83%, student-friendly environment with a value of 83%,

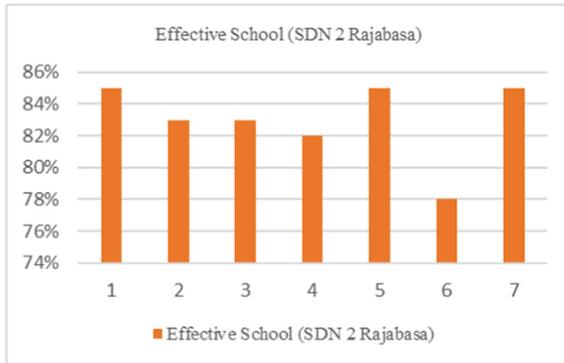


Fig. 3. Effective School at SDN 2 Rajabasa

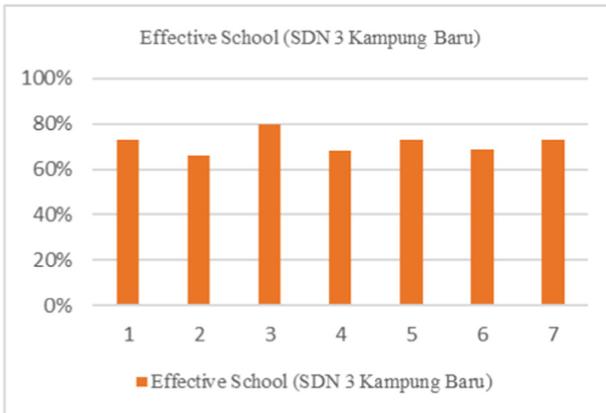


Fig. 4. Effective School at SDN 3 Kampung Baru

effective school management with a value of 82%, quality learning and curriculum-aligned with a value of 85%, meaningful student assessment with a value of 78%, and community involvement with a value of 85%.

Figure 4 illustrates the indicators of effective schools at SDN 3 Kampung Baru, which include the following data: professional educators with a value of 73%, conducive learning environment with a value of 66%, student-friendly environment with a value of 80%, effective school management with a value of 68%, quality learning and curriculum-aligned with a value of 73%, meaningful student assessment with a value of 69%, and community involvement with a value of 73%.

Two primary schools comprise the qualitative findings of the study on the management of facilities and infrastructure, as well as effective schools. As is common knowledge, the list of facilities and infrastructure is compiled in advance by creating a School Activity and Budget Plan (RKAS) at the beginning of the academic year to determine what is required during the year. Each educator is responsible for managing the

facilities, which are then carefully reported by the treasurer of assets. Defective facilities and infrastructure that are no longer appropriate for use are removed or replaced.

In addition, the results of qualitative data on effective schools include the following categories: religious activity programs, available school facilities, schools providing quality learning services, learning objectives delivered in accordance with the established curriculum, educators taking more time to assist students who are academically inferior, educators mastering instructional content, building positive relationships with students, the average learning achievement of students is high, community engagement contributes to the accomplishment of the vision and mission, and student organizations are still functioning.

## 5 Discussion

In order to develop effective schools, adequate facilities and infrastructure must be provided in schools. Moreover, the management of educational facilities and infrastructure must be rigorously considered [36]. The availability of facilities and infrastructure is vital for facilitating the learning process in formal and informal educational institutions. It includes indicators for the management of facilities and infrastructure, involving planning, procurement, inventory, retention, maintenance, utilization, elimination, and arrangement [28]. The success of the management of educational facilities and infrastructure to create effective schools in elementary schools in Lampung Province is observed from the results of quantitative data that have been measured, which is classified as high.

The findings of the study reveal that in terms of educational facilities and infrastructure such as desks, chairs, cupboards, learning equipment, classrooms, and libraries are currently exist, however they seem to be inadequate. Additionally, planning for educational facilities and infrastructure based on what the school requires has been initiated in advance. Educators are also engaged in the planning of educational facilities and infrastructure. Moreover, the procurement of educational facilities and infrastructure is undertaken in stages depending on the number of funds. The inventory of facilities and infrastructure is meticulously maintained by the treasurer of assets, and there is an annual report. Furthermore, the retention of facilities and infrastructure has been performed by storing items in particular cabinets. The maintenance of facilities and infrastructure is performed concurrently, such as cleaning equipment in each classroom and maintaining books and sports equipment. The utilization of facilities and infrastructure in the teaching-learning process is optimized, and diverse learning resources are utilized in accordance with the subject matter. Besides, the elimination of facilities and infrastructure is carried out if any are broken or are no longer proper to use. In addition, facilities and infrastructure have been arranged appropriately; for instance, cleaning supplies have been placed in each classroom.

On the basis of the indicators of effective schools, the first criterion is the presence of professional educators who aid and encourage academically inferior pupils as well as master learning materials in theory and practice, thus enabling students to do their assignments with full responsibility and sincerity. Second, the indicators of a conducive learning environment are known to be fairly decent, however the school amenities such as the prayer room and practice room are unavailable. On the third indicator, student-friendly, educators and students have a positive relationship. As the fourth indicator

of effective school management, it is known that only one school activity program, karate, is running during the pandemic. On the fifth indicator of quality learning and curriculum-aligned, schools have made every attempt to provide quality learning. Sixth, an indicator of meaningful student assessment reveals that not all pupils have a high level of learning achievement; some still possess a low level. Lastly, the indicator of community involvement indicates a sufficient level of participation.

## 6 Conclusion

According to the results of data analysis, facilities and infrastructure in elementary schools have been managed despite being inadequate. Generally, it is known that the availability and adequacy of amenities are crucial to achieving the intended effective school. It is difficult to attain academic success if school facilities and infrastructure are inadequate. Therefore, organized management of educational facilities and infrastructure is required to create an effective school.

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