

Inventory Management of Educational Facilities and Infrastructure: A Study in Muhammadiyah Elementary School

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ABSTRACT: *The purpose of this research is to describe the inventory management of educational facilities and infrastructure at SD Muhammadiyah Ponorogo. This research uses descriptive qualitative research methods. This study used data collection with observation techniques at school and interviews with the teachers concerned. The results of the study prove that the process of managing facilities and infrastructure by the standards, at SD Muhammadiyah Ponorogo the process consists of planning with a joint meeting to analyze the needs as a whole, procurement from the School Operational Assistance budget, grants, muhammadiyah association foundation funds and school cash, inventory is recorded by officers, distribution and maintenance are carried out together, for deletion is done through sorting goods, supervision and accountability by making reports. Good inventory management of infrastructure facilities will have an impact on schools, including students getting optimal learning, teachers can utilize infrastructure facilities to attract the attention of bored students, improve school quality with good administration, and attract public attention and interest in schools.*

Tujuan dari penelitian ini adalah untuk mendeskripsikan manajemen inventarisasi sarana dan prasarana pendidikan di SD Muhammadiyah Ponorogo. Penelitian ini menggunakan metode penelitian kualitatif deskriptif. Pengumpulan data dalam penelitian ini menggunakan pengumpulan data dengan teknik observasi di sekolah dan wawancara dengan guru yang bersangkutan. Hasil penelitian membuktikan bahwa proses manajemen sarana dan prasarana yang sesuai dengan standar, di SD Muhammadiyah Ponorogo prosesnya terdiri dari perencanaan dengan rapat bersama untuk menganalisa kebutuhan secara keseluruhan, pengadaan dari anggaran Bantuan Operasional Sekolah, hibah, dana yayasan persyarikatan muhammadiyah dan uang kas sekolah, inventarisasi dilakukan pencatatan oleh petugas, pendistribusian dan pemeliharaan dilakukan secara bersama-sama, untuk penghapusan dilakukan dengan cara penyortiran barang, pengawasan dan pertanggungjawaban dengan membuat laporan. Pengelolaan inventarisasi sarana prasarana yang baik akan berdampak pada sekolah, antara lain siswa mendapatkan pembelajaran yang optimal, guru dapat memanfaatkan sarana prasarana untuk menarik perhatian siswa yang jenuh, meningkatkan mutu sekolah dengan administrasi yang baik, menarik perhatian dan minat masyarakat terhadap sekolah.

Keywords: *Inventory, Facilities, Infrastructure, Education*

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I. INTRODUCTION

Education is an effort that aims to shape and improve the quality of students towards the golden generation in the age of globalization with various challenges and obstacles. This makes education one of the basic and important things for students to undergo the intense competition that is happening now (Pristiwanti et al., 2022). For this reason, it is necessary to have an education system that contains various kinds of good things for changes that provide good results, with one of them being the existence of quality infrastructure. This infrastructure is an important source of success and supports a more optimal learning process in schools every day (Suranto et al., 2023).

Each school is mandated to manage its own infrastructure management based on the prevailing laws and regulations. In the absence of management or management of infrastructure facilities carried out effectively and efficiently in schools, it is likely that educational objectives cannot be achieved optimally. Based on government regulation number 22 of 2023, the management of infrastructure facilities must meet infrastructure standards which are the minimum criteria for infrastructure facilities that must exist in the implementation of education in each education unit (Kemedikbud-risk, 2023).

Management or management of infrastructure facilities in schools first begins with planning to find out or record all the things needed in learning. Second, procurement is carried out to provide and prepare various kinds of infrastructure facilities needed based on previous planning data. Third, the arrangement contains inventory, distribution, and maintenance activities. Fourth, the use of available infrastructure for learning procedures (Putri, 2023).

This procedure ends with the elimination of infrastructure that is not feasible or no longer needed in the inventory. Facilities and infrastructure from schools are usually sourced from independent school procurement that has been written in the school work plan and comes from various resources such as the government and parties who cooperate with schools to achieve educational goals. Infrastructure equipment should be inventoried to make it easier to know the number and condition from the beginning of entry to the end of the removal process. The purpose of conducting an inventory includes facilitating supervision and maintenance, facilitating the reporting of school equipment, as well as to facilitate the search for information that is useful for planning the next infrastructure facilities which can then be procured or the elimination of educational infrastructure equipment in schools (Samala et al., 2024).

The inventory process finds many damaged goods or equipment, excess goods or equipment that can no longer be used, and goods or equipment that are no longer used or not suitable for use. If the goods or equipment are still stored technically, the use and maintenance costs are quite expensive and ineffective, so they must be removed. Inventory management of infrastructure facilities in schools is a management process in which various activities are carried out to record all school-owned or government-owned goods to be marked in the form of numbers or symbols that are easily recognizable, then reporting and deletion if necessary.

Based on observations carried out by researchers at Muhammadiyah Ponorogo Elementary School which is the place of research, which is located at Jalan Batoro Katong Number 6, Noloagaten Village, Ponorogo Regency which has a land area of

4,777 m² and has quite complete infrastructure facilities including 30 classrooms, computer laboratories, Al-Islam laboratories, MIPA laboratories, principal's room, 2 teacher's rooms, administrative rooms, 20 toilets, mosques, cooperatives, school health unit rooms, counseling guidance rooms, learning tools, and other learning support tools that function to support the learning implementation process at school.

Based on the researcher's observation, although the facilities and infrastructure in the school are adequate, it was found that the level of concern of the school community towards the management and maintenance of infrastructure facilities is still lacking. This causes the efforts to maintain school facilities are not optimal, even though there are already janitors on duty. As part of the school community, all parties still need to show concern to maintain the sustainability of the function of these facilities and infrastructure. In addition, the utilization of facilities and infrastructure owned by the school has not been running optimally. This is due to time constraints and new policies or regulations. Some facilities and infrastructure that are still in a usable condition are no longer utilized according to their function and usability.

II. METHOD

This research uses a qualitative research method that aims to provide a detailed description of the management of educational facilities and infrastructure at SD Muhammadiyah Ponorogo. Qualitative research is based on certain habits or cultures, so it relies heavily on the structure of words and sentences in forming questions (Fadli, 2021). In addition, this research focuses on the meaning of the results as well as the research process itself, by focusing on elements of living things, such as humans, institutions, or a combination of both, to understand phenomena, events, or behavior (Kaharuddin, 2021). The researcher acts as a direct observer during the data collection process, which is carried out by observation in the field and structured interviews with teachers who are in charge of facilities and infrastructure. This approach allows researchers to explore information in depth that cannot be measured quantitatively, providing a detailed description of the process under study (Sulfiani et al., 2023).

The research procedure was carried out by selecting SD Muhammadiyah Ponorogo as the location because this school has a facilities and infrastructure management system that is considered representative. The research subjects included the facilities and infrastructure management teachers who were purposively selected to ensure the relevance of the data. The research instruments were observation and interview guides that covered elements such as planning, procurement, recording, distribution, maintenance, and deletion of goods. Data collection was conducted through direct observation in the field and structured interviews with open-ended questions to explore the process and obstacles faced. Data analysis was conducted through data reduction, data presentation in descriptive narratives, triangulation by comparing various data sources and drawing conclusions based on the pattern of findings. As basic research, this study aims to increase knowledge about the management of facilities and infrastructure without specific practical goals but to enrich scientific insights (Ikhwan & Qomariyah, 2022). The results are expected to be a reference for other educational institutions in managing facilities and infrastructure effectively.

III. RESULT AND DISCUSSION

Based on the findings contained in the research location related to the management of infrastructure inventory for education at SD Muhammadiyah Ponorogo, infrastructure management has been carried out in accordance with the standards of facilities and infrastructure in elementary school-level education. The management process in accordance with the criteria in this school consists of the planning process, procurement, inventory, distribution, maintenance, elimination, supervision, and accountability.

Muhammadiyah Ponorogo Elementary School places teachers or human resources who have competence with the management of infrastructure facilities, at the school the principal and teachers work together in the process of managing existing educational infrastructure to support the learning process to run optimally and with quality.

The principal conveyed that trying to assign human resources has been placed based on the competence of their expertise, one of which is in the process of managing facilities such as goods and equipment for learning. Homeroom teachers work together with subject teachers in managing the overall facilities needed for learning which serves to improve the quality of learning carried out in the classroom and outside the classroom. The infrastructure management procedures that are in accordance with the standards at SD Muhammadiyah Ponorogo include the planning, procurement, inventory, distribution, maintenance, elimination, supervision, and accountability processes that continue to be carried out properly.

The infrastructure management teacher conveyed that the planning process for learning facilities and infrastructure at SD Muhammadiyah Ponorogo held a joint meeting to analyze the overall needs of the school that support learning. The principal and all teachers work together to make a list of needs compile the necessary budget and then procure infrastructure facilities in accordance with educational operational standards (Torismayanti et al., 2023).

For the purpose of improving learning to run optimally, the school submits a budget proposal for learning needs by mapping the needs first. For this procurement, the funds come from the School Operational Assistance (SOS) budget, grants or donations, Muhammadiyah Association Foundation funds, and the school's own treasury. The learning infrastructure obtained through this procurement contains subject books taught at school, reading books, teaching aids, computers, LCD, and various things that are connected to learning at SD Muhammadiyah Ponorogo.

The distribution and inventory process is carried out together with the maintenance of infrastructure facilities by routinely maintaining cleanliness and caring for books, teaching aids, LCD, and computers also after use, turned off and placed back in their original position to prevent damage. If damage occurs, the school checks and repairs first. If it is really damaged and cannot be repaired or is very expensive, the infrastructure facilities are replaced with new ones to support learning. The teacher of the infrastructure management section conveyed that the inventory is carried out by recording and compiling a list of infrastructure facilities periodically in accordance with government regulations and each school must be accountable to the state, community, or users with a record in the inventory book.

The process of eliminating learning facilities at SD Muhammadiyah Ponorogo is carried out in accordance with the operational standards in education. Officers routinely carry out regular checks to determine the continued use of these facilities. If the books, *Al-*

Qur'an, and teaching aids are damaged, the manager records the details and reports it to take action for the removal of the items or tools used in the learning.

Infrastructure Inventory Management

Inventory is a process that carries out activities to count, record, code, and classify infrastructure facilities in the form of fixed and movable goods into a detailed list which can then be used as a management report in accordance with applicable procedures or regulations. Facilities are all things that function as equipment and equipment to obtain the objectives of education (Sinta, 2019).

Facilities in schools consist of learning tools, learning materials, and equipment. Then infrastructure is a basic facility or accommodation needed to carry out or realize the functions of an educational unit. Infrastructure in each school consists of land, space, and buildings (Kemedikbud-risk, 2023). So that the management of infrastructure inventory is a series of activities starting from recording to reporting goods or objects or intangible infrastructure facilities.

Infrastructure facilities are accommodations that must be equipped to facilitate and help organize learning activities that are interesting and not boring, even though they have not been able to fulfill the facilities and infrastructure properly. The elementary school level must at least have infrastructure facilities such as land, space, educational tools and media, furniture, books, or learning materials (Purnomo & Aulia, 2018). SD Muhammadiyah Ponorogo all school residents take part in the management of educational infrastructure according to their respective roles and portions, besides that at SD Muhammadiyah Ponorogo has teachers who are given the mandate to manage and be responsible for the infrastructure in the school.

Based on direct observation, SD Muhammadiyah Ponorogo has adequate infrastructure such as books, teaching aids, tables, chairs, blackboards, cupboards, bookshelves, computers, LCD projectors, classrooms, libraries, computer laboratories, principal's rooms, teacher's rooms, mosques, UKS rooms, bathrooms, warehouses, circulation rooms, playgrounds/sports, fields, libraries, meeting rooms, canteens, cooperatives, and parking lots.

The process of managing infrastructure facilities in accordance with the standards at SD Muhammadiyah Ponorogo consists of a process of planning, procurement, inventory, distribution, maintenance, elimination, supervision, and accountability that continues to be done well. Inventory is one process from other processes that are considered very basic in the series of infrastructure management processes, the main purpose of this inventory is an effort to improve the management and management of infrastructure facilities effectively, otherwise, it is possible that the achievement of learning objectives cannot be done optimally (Boko, 2020). Before inventorying, infrastructure facilities must go through a planning and procurement process.



Figure 1. The process of managing educational infrastructure facilities.

The planning process begins with a meeting between the principal, all teachers, staff, and employees in charge of the school to discuss the needs of facilities and infrastructure that do not yet exist or run out so that they need to be repurchased. Planning in the management of infrastructure facilities is a process that must think about and decide on the formation of a program. Planning for the procurement of facilities and infrastructure at SD Muhammadiyah Ponorogo begins with accommodating all proposals and input regarding school equipment needed by each teacher or other staff and inventorying the lack of school infrastructure equipment.

Matching the needs plan that has been prepared with the equipment that has been available before. Matching the list of tools and materials needed with the available costs. In situations where the costs do not meet the procurement of all the necessary tools and materials, it is necessary to eliminate everything that has been listed by looking at how important the item or tool is needed to be owned now or later and for the long or short term (Mulyadi et al., 2022). All equipment that is very important and that must be available for learning purposes is listed.

The procurement process needs to be carried out with the aim of preparing much-needed educational facilities, procurement must be carried out based on a plan that has previously been designed and compiled, and considering several things must make procurement according to the most important needs first (Romania, 2021). Procurement of infrastructure facilities can be obtained, including from the government providing limited assistance, directly buying or ordering yourself first, submitting proposals to institutions that can be invited to work together and donations from student guardians, or borrowing or renting to other places (Pusparini et al., 2020).

The next most important process is inventorying. Inventory activity is an activity carried out to write and make records in the form of a list of materials, tools, and goods in schools, both self-owned and state-owned, both movable and non-movable items, durable goods and consumables based on applicable provisions and details (Fathurrahman & Putri Dewi, 2019). This inventory process begins with recording all inventory items in the inventory master book, then providing a code or symbol that is easy to remember for items according to their class or classification. The code is written on the part of the item that is easy to read. Giving a code can make it easier to find items that are needed at any time. For now, the data collection of inventory items is carried out electronically, but you still have to make an overall recapitulation list with the help of the goods receipt book, the goods purchase book, the inventory master book, or the book where all state-owned inventory items in the school are recorded, the inventory

class book or the auxiliary book where the inventory items of the goods class are recorded. Stock book then there is a quarterly report on the mutation of goods which means it is a report on the increase or decrease of existing goods during the quarter or year.

The inventory process is followed by several more processes such as distribution, maintenance, deletion, supervision, and accountability. This distribution is a process where schools distribute goods to parts that need them and the utilization of space into places that should be in accordance with their functions at school. The maintenance of infrastructure facilities is a series of efforts carried out by maintaining, caring for, and storing equipment based on different types and categories (Lutfiyah et al., 2023). Maintenance is carried out for Prasanna facilities that minimize very severe damage and the equipment can be used optimally.

Maintenance in it there are several types of maintenance of school education equipment, namely maintenance carried out by checking the good and bad condition of the equipment (Elizasri et al., 2024). Then preventive maintenance is carried out so that the state of the equipment is always in the right condition, if the item or equipment is damaged there needs to be minor repairs and heavy repairs. Maintenance of equipment based on its repair, there is maintenance every day, an easy example is sweeping, mopping, and cleaning furniture which can be done by all school members. While maintenance is not every day or at a certain time span or periodically, for example controlling walls, roof tiles, or things if they need extra repair or maintenance

The supervision process must be routinely carried out in addition to maintenance, schools are required to carry out maintenance activities to provide facilities and infrastructure for learning purposes that can be used properly at any time without significant damage constraints by teachers and students, from these activities is hoped that facilities and infrastructure that have been properly codified will be able to help improve the learning process. So periodic supervision is one way that can be used to minimize the use of additional costs that are sometimes needed in purchasing new learning facilities if they are damaged or need repairs (Marie & Aini, 2021).

The supervision process continues with removal and accountability. The elimination of infrastructure facilities leads to the act of removing, evaluating, and removing certain facilities from the inventory list because they have lost their use value in the context of learning in schools. The elimination of facilities and infrastructure is an activity that serves to remove or eliminate goods or equipment owned by the school from various sources of acquisition from the results of records owned, based on records, and guided by the provisions of procedures or applicable laws (Ibrahim et al., 2022).

This elimination aims to reduce losses or prevent these losses from occurring in schools and there will be no waste of costs if the equipment is no longer needed, but continues to exist or is even used every day. The purpose of educational facilities and infrastructure in schools is to improve and optimize the learning that teachers do with students and reduce the number of students and teachers who experience obstacles or disruptions due to the condition of facilities and infrastructure that are incomplete or do not meet standards (Jannah & Sontani, 2018).

Items and equipment that are no longer usable or have reduced value are the main reasons for deletion. For example, if the school is in poor financial condition, repairs that require a lot of renovations can incur costs that are not in accordance with the needs of the school. Therefore, the benefit of this deletion process is an effort to improve

strategies that are no longer effective. In addition to being an effort to reduce educational space and savings, deletion can reduce the work responsibilities of teachers, employees, and students in the schools that have managed it so far (Kusnan & Ilam, 2021).

The accountability process is the final activity that must be carried out as a form of school responsibility, especially for infrastructure managers at school. This accountability is done by reporting. Reporting can be done with quarterly reports or done once a year during the new school year also called the mutation of inventory items to the Head of the District Education Office and as its own archive. Then there is an annual inventory report by making or filling in the mandatory inventory book and recapitulation of goods (Fauziah & Permana, 2022).

Impact of Infrastructure Inventory Management

Schools are obliged to carry out inventory management of their own infrastructure facilities in an orderly, neatly arranged, and complete manner. At SD Muhammadiyah Ponorogo, the principal actively implements and bears everything for the implementation of the inventory of infrastructure facilities. Inventory is carried out as an effort to complete management and management that affects the good facilities and infrastructure in schools (Bararah, 2020). Muhammadiyah Ponorogo Elementary School has adequate infrastructure, so it is enough to provide a variety of positive impacts received by the school.

The first impact is that with the implementation of good inventory management of infrastructure facilities and utilized optimally, the impact is that students get complete and totality learning so that students' learning achievements continue to increase. The existence of infrastructure facilities will be something that affects the achievement of academic achievements such as student learning or non-academic achievements if infrastructure facilities are not fulfilled (Padlan et al., 2022). Then, the learning process will experience obstacles and learning objectives cannot be achieved optimally.

The second impact is that the process of managing a good inventory of infrastructure facilities can help teaching and learning take place regularly and well. When students feel bored and bored, teachers can take advantage of existing or previously managed infrastructure to attract the attention and interest of students so that learning activities in the classroom can return to normal and run smoothly to achieve the learning objectives that were originally planned to be achieved. If the problems or conditions mentioned are left alone and continue to recur, it is small to cause students to not focus and the learning process does not run normally.

The third impact is that the implementation of a good process in inventorying infrastructure facilities will have an impact not only on students, and teachers but also on schools. Good management of infrastructure inventory will improve the quality and accreditation of schools by having a detailed administration or data collection of facilities and infrastructure. So when the school has good administration, it will help the school save finances in the procurement process for its maintenance.

The fourth impact is based on the effective and efficient inventory management of infrastructure facilities and complete results will attract public attention and interest in schools. In realizing learning is achieved optimally, it needs to be supported by adequate educational facilities. The completeness and feasibility of infrastructure facilities is one of the factors that become the reference and consideration of the community in entrusting students to send their children to school. So it cannot be denied that the

completeness of infrastructure facilities cannot be separated from learning activities that are useful for the success of education in schools (Pamuji, 2022). So it becomes the main support that must be done in promoting schools to prospective students for the completeness of infrastructure facilities.

IV. CONCLUSION

Inventory management of infrastructure facilities is an activity that starts from recording to reporting goods or objects and intangible infrastructure facilities. The process of managing infrastructure facilities in accordance with the standards at SD Muhammadiyah Ponorogo consists of several series of planning actions, then procurement, inventory, distribution, maintenance, deletion, supervision, and accountability which continue to strive to be done well. Inventory becomes a series of processes that are very important in the series of infrastructure management processes, the main purpose of this inventory is an effort to perfect the management and management of infrastructure facilities effectively, otherwise, it is possible that the achievement of learning objectives cannot be done optimally. Good inventory management of infrastructure facilities will have an impact on schools. Among them are (a) students get optimal learning so that achievement increases. (b) teachers can utilize infrastructure to attract the attention of bored students. (c) improving school quality with good administration. (d) attracting community attention and interest in the school.

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