

# Infrastructure Management in Learning at SMK Krian 1 Sidoarjo

## [Manajemen Sarana Prasarana dalam Pembelajaran di SMK Krian 1 Sidoarjo]

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**Abstract.** *Quality education determines the quality of the nation's next generation. Therefore the management of facilities and infrastructure is vital for every school. The purpose of this research is to photograph the extent to which the implementation of management of facilities and infrastructure supports the teaching and learning activities process at SMK Krian 1 Sidoarjo. The stages of planning, organizing, implementing, and supervising the management of existing facilities and infrastructure were examined using descriptive qualitative methods. The data collection technique used in this study was data triangulation, namely observation, planning, and documentation. As for the results of this study, the management of facilities and infrastructure at SMK Krian 1 Sidoarjo has been well implemented by management theory, according to Robert George Terry.*

**Keywords** – facilities, infrastructure, educational facilities, and infrastructure

**Abstrak.** *Pendidikan yang berkualitas menentukan kualitas generasi penerus bangsa. Maka dari itu pengelolaan sarana dan prasarana menjadi penting bagi setiap sekolah. Tujuan penelitian ini adalah memotret sejauh mana pelaksanaan manajemen sarana dan prasarana sebagai penunjang proses kegiatan belajar mengajar di SMK Krian 1 Sidoarjo. Tahap perencanaan, pengorganisasian, pelaksanaan, dan pengawasan manajemen sarana dan prasarana yang ada diteliti menggunakan metode kualitatif deskriptif. Teknik pengumpulan data yang digunakan pada penelitian ini adalah triangulasi data yaitu observasi, perencanaan, dan dokumentasi. Adapun hasil dari penelitian ini sudah terlaksananya dengan baik manajemen sarana dan prasarana di SMK Krian 1 Sidoarjo sesuai dengan teori manajemen menurut Robert George Terry.*

**Kata Kunci** – sarana, prasarana, sarana dan prasarana pendidikan

## I. INTRODUCTION

One of the factors supporting the implementation of the teaching and learning activities properly is the availability of suitable facilities and infrastructure.[1] The progress of a nation is very dependent on the implementation of the teaching and learning activities process.[2] Education that has good quality, the country's next generation will also have the same rate.[3] Therefore the quality of education needs to be considered by educational actors.[4] Civilization will continue to develop, and the quality of a nation depends on the quality of the next generation.[5] So the learning process needs to be supported by educational facilities in school.[6] Therefore the management of facilities and infrastructure is vital for every school.[7]

Educational facilities are all equipment, materials, and furniture directly used during teaching and learning.[8] Examples include buildings, classrooms, tables, chairs, and learning media.[9] While learning infrastructure is all devices that indirectly benefit the continuity of the teaching and learning process.[10] Examples include courtyards, gardens, school gardens, and access to get to school.[11]

Management of educational facilities and infrastructure is a process of collaboration between procuring, maintaining, and destroying all existing tools in a school effectively and efficiently.[12] The task of managing educational facilities and infrastructure is to manage and maintain facilities and infrastructure so that they can function appropriately in teaching and learning activities.[13]

In detail, the standards for facilities and infrastructure are listed in Government Regulation no. 19 of 2005, chapter VII, article 42, which reads: (a) each education unit is required to have facilities which include furniture, educational equipment, educational media, books and other learning resources, consumable materials, and other equipment needed to support the learning process regular and sustainable.[14] (b) each education unit is required to have infrastructure that includes land, classrooms, education unit leadership rooms, teaching rooms, administrative rooms, library rooms, laboratory rooms, workshop rooms, production unit rooms, canteen rooms, power, and service installations, places for sports, places of worship, places to play, places to be creative, and other spaces or places needed to support an orderly and continuous learning process.[15]

Based on these definitions and regulations, each educational unit must implement facilities and infrastructure management to support the ongoing teaching and learning activities process.[16] According to George Robert Terry, management functions consist of planning, organizing, implementing, and supervising.[17] SMK Krian 1 Sidoarjo is one of the favorite schools in Sidoarjo, where the number of mechanical engineering students is 1,080 out of a total of 2,500 students. So the purpose of this study was to photograph the extent to which the implementation of facilities and infrastructure management as support for teaching and learning activities in the mechanical engineering expertise of SMK Krian 1 Sidoarjo.

## II. METHOD

This research uses a descriptive qualitative method. This method was chosen because the researcher wanted to take a picture of the overall implementation of the facilities and infrastructure management functions naturally.[18] Data collection techniques used triangulation, namely observation, interviews, and documentation.[19] Researchers observed related to the maintenance of facilities and infrastructure that was carried out.[20] Interviews were conducted with school principals, deputy principals in facilities and infrastructure, and heads of expertise competency departments. The documentation stage is to collect documents on implementing facilities and infrastructure management, where the data obtained will be described descriptively. [21]

## III. RESULTS AND DISCUSSION

SMK Krian 1 Sidoarjo has five areas of expertise offered to students. The areas of expertise provided include electrical power installation engineering, mechanical engineering, software engineering, welding engineering, and logistics engineering. Each area of knowledge has a department head who regulates all the facilities and infrastructure needed in their respective areas of expertise under the supervision of the vice principal for facilities and infrastructure and the school principal.

At the beginning of the 2022/2023 school year, the vice principal for facilities, infrastructure, and staff made plans for five years until the 2026/2027 school year. The first plan is planning for using, maintaining, and procuring learning places and public facilities at SMK Krian 1 Sidoarjo. The planning includes classrooms, leadership rooms, educators' rooms, educators' rooms, counseling guidance rooms, laboratory rooms, library rooms, mosques, bathrooms, ablution areas, student and employee parking, school grounds, parks, sports venues, music rooms, multimedia room, extracurricular office, and professional certification agency office.

Infrastructure standards at Krian 1 Vocational High School Sidoarjo refer to Minister of National Education Regulation Number 40 of 2008 concerning Standards for Facilities and Infrastructure for Vocational High Schools; the following is the standard for practice room engineering expertise programs in the following table:

**Table 1. Infrastructure Standards**

No	Type	Description
1	Benchwork area	Capacity for eight students The minimum area is 64 m <sup>2</sup>
2	Metal measuring and testing room	Capacity for four students The minimum size is 24 m <sup>2</sup>
3	Lathe work area	Capacity for eight students The minimum size is 64 m <sup>2</sup>
4	Milling machine work area	Capacity for four students The minimum size is 32 m <sup>2</sup>
5	Grinding machine work area	Capacity for four students The minimum size is 32 m <sup>2</sup>
6	Fitting workspace	Capacity for four students The minimum size is 24 m <sup>2</sup>
7	Storage space and infrastructure	The minimum size is 48 m <sup>2</sup>

The second plan is the use, maintenance, and procurement of supporting facilities, including learning media, extracurricular activities support, sports equipment, electrical, water, and cleaning installations, and furniture for offices and study rooms. The third plan is planning for care and providing the beauty and comfort of the school; this is intended to make the learning atmosphere comfortable for students at SMK Krian 1 Sidoarjo.

Procurement of school facilities and infrastructure must be carefully planned so that the procurement meets the school's needs.[22] The procurement of goods at SMK 1 Krian is carried out if the goods are needed or the existing goods cannot be repaired. Budi Sutrisno, S.Pd., as the school's deputy head for facilities and infrastructure, explained that there was no specific timeframe specified for the procurement of facilities and infrastructure due to the needs of each. We carry out procurement of goods as the head of the expertise competency department, where later the proposal

that has been made is known by the vice principal for facilities and infrastructure, which is then approved by the advanced school principal Fajar Rismantoro, S.Pd., M.Pd., head of the skills competency department Electrical Installation Engineering.

The school principal and vice principal in the field of facilities and infrastructure communicate actively with the head of the expertise competency department at SMK Krian 1 Sidoarjo. The process for maintaining facilities and infrastructure is regulated by each director of the expertise competency department. If there are facilities and infrastructure that cannot be used and cannot be repaired, new goods can be procured.

Samsul Yudi Prabowo, S.Pd., M.Pd., head of the Mechanical Engineering competency department, said that the maintenance of facilities and infrastructure for each expertise competency department is different. For example, cleaning a lathe is done every time it is used. However, maintenance of the precision of the lathe is carried out once a week. If the procurement of new goods is to be held, then each old facility and infrastructure will be carried out in the minutes of deletion of continued goods, Budi Sutrisno, S.Pd., vice principal for facilities and infrastructure.

The implementation stage of facilities and infrastructure management is executing the planning and organizing made by SMK Krian 1 Sidoarjo. In organizing, it is stated that the needs of the department of competence of each expertise carry out the process of maintaining and procuring new goods. For example, the requirements for facilities and infrastructure for electric power installation techniques and the demands for mechanical engineering are different, as are the majors of other competency skills, so the treatment provided by all skill competency departments owned by SMK Krian 1 Sidoarjo is based on the provisions of the facilities and infrastructure they have.

The infrastructure size must also be adjusted based on the standard for facilities and infrastructure for vocational high schools in the Regulation of the Minister of National Education Number 40 of 2008. The following is the result of a comparison between the area of engineering work area and the standard for facilities and infrastructure for vocational high schools:

**Table 2.** Comparison Results of the Area of Mechanical Engineering Work Area at Krian 1 Vocational School

No	Type	Permendiknas No. 40 of 2008	Area of Work Area at SMK Krian 1 Sidoarjo	Information
1	Benchwork area	Capacity for eight students The minimum area is 64 m <sup>2</sup>	50 m <sup>2</sup>	Not up to standard
2	Metal measuring and testing room	Capacity for four students The minimum size is 24 m <sup>2</sup>	32 m <sup>2</sup>	Meet the standards
3	Lathe work area	Capacity for eight students The minimum size is 64 m <sup>2</sup>	50 m <sup>2</sup>	Not up to standard
4	Milling machine work area	Capacity for four students The minimum size is 32 m <sup>2</sup>	50 m <sup>2</sup>	Meet the standards
5	Grinding machine work area	Capacity for four students The minimum size is 32 m <sup>2</sup>	50 m <sup>2</sup>	Meet the standards
6	Fitting workspace	Capacity for four students The minimum size is 24 m <sup>2</sup>	50 m <sup>2</sup>	Meet the standards
7	Storage space and infrastructure	The minimum size is 48 m <sup>2</sup>	50 m <sup>2</sup>	Meet the standards

Based on the comparison results in Table 2, two of the seven work areas at SMK Krian 1 need to meet the standards for vocational high school facilities and infrastructure in the Regulation of the Minister of National Education Number 40 of 2008. The bench work areas are according to standards, namely having a minimum size of 64 m<sup>2</sup>, while in SMK, Krian 1 is only 50 m<sup>2</sup>. Then for the working area of the lathe, the minimum space is also 64 m<sup>2</sup>, but only 50 m<sup>2</sup> is available. Therefore, it is necessary to expand the bench and lathe areas at SMK Krian 1 Sidoarjo.

The vice principal for facilities and infrastructure and the principal as a regulator supervise all facilities and infrastructure owned by SMK Krian 1 Sidoarjo. Treatment has been carried out according to the procedure by the head of the respective competence competency department. If facilities and infrastructure are damaged beyond repair, then the facilities and infrastructure are known to the vice principal for facilities and infrastructure and the school principal. So that if damaged facilities and infrastructure cannot be repaired, then procurement of new goods is carried out. The condition that is taking notes on removing damaged facilities and infrastructure, then destroying them, then submitting new items by the head of the expertise competency department is known by the vice principal for facilities and infrastructure, which the school principal then approves. This procedure must be carried out for the procurement of new facilities and infrastructure to be carried out.

#### IV. CONCLUSION

Management of facilities and infrastructure at SMK Krian 1 has been done well. Four management functions, according to George Robert Terry, have been implemented. At the beginning of the 2022/2023 academic year, facilities and infrastructure planning has been carried out for the next five years. The goal is to support the learning process by each competency expertise department.

Facilities and infrastructure owned by SMK Krian 1 Sidoarjo are maintained according to the procedures for the needs of each item. The treatment given to one facility and infrastructure is different from another. If a facility and infrastructure is damaged that cannot be repaired, minutes of the disposal of the item must be made. So that the procurement of new goods can be carried out, but if all of these procedures are not carried out, then the procurement of new goods cannot be carried out.

However, two work areas out of the seven owned by SMK Krian 1, namely the bench work area and the lathe work area, must meet the standards. Therefore it is necessary to expand the work area for the two work areas to support the teaching and learning activities optimally.

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**Conflict of Interest Statement:**

*The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.*