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Management of Educational Facilities and Infrastructure in the Department of Visual Communication Design

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ABSTRACT

The management of educational facilities and infrastructure is very important in supporting effective learning, especially in the field of Visual Communication Design (DKV). This major requires facilities such as high-spec computers, up-to-date design software, creative classrooms, and other supporting infrastructure. The availability and management of these facilities plays a role in improving the quality of students' education and their ability to compete in the technology-based world of work. SMKN 1 Bambalamutu Pasangkayu Regency as a vocational school is responsible for preparing competent graduates. However, various challenges such as budget limitations, lack of maintenance, and non-conformity of facilities can hinder the achievement of maximum learning goals in the DKV department. The novelty of this research is its focus on a comprehensive analysis of the management process, from planning, procurement, use, to maintenance, as well as how these aspects support the quality of vocational education. This study aims to determine the management of educational facilities and infrastructure and identify supporting and inhibiting factors in the management. This study uses a qualitative approach with a descriptive type of research. Data was collected through observation, in-depth interviews, and documentation, then analyzed using data reduction techniques, descriptive data presentation, and conclusion drawn. The results of the study show that the management of facilities and infrastructure in the Department of Visual Communication Design is relatively good. Four indicators in management include: (1) systematic planning involving various parties; (2) procurement in accordance with procedures taking into account budget and priority needs; (3) the use of facilities that are not optimal due to certain limitations; and (4) maintenance that is carried out regularly and reactively. In conclusion, the management of facilities and infrastructure in the Department of Visual Communication Design is good, but it needs to be improved in optimizing the use of facilities, improving procurement procedures, and fulfilling learning needs in a more planned manner.

Keywords: Management, Facilities, Infrastructure, Education

INTRODUCTION

The education developed has an important role in determining the sustainability of national development, because through this education a new generation can be born who are creative, independent, and qualified. Therefore, the next generation urgently needs support in the form of providing adequate facilities and infrastructure, as well as guidance and understanding to continue the various efforts that have been pioneered by the previous generation (Arhas & Jamaluddin, 2024; Ikram & Kenayathulla, 2023; Saleh & Elfira, 2025)

Education is one of the crucial elements in shaping and preparing quality future generations. In the education system, facilities and infrastructure play a vital role in supporting the smooth and successful learning process. Especially in Vocational High Schools (SMK), which have the main focus on developing technical skills, the provision of adequate facilities and infrastructure is very crucial. One of the majors that relies heavily on the availability of supporting facilities is Visual Communication Design (DKV) focusing on

Volume 2, Issue 1, August 2025
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developing skills in graphic design, multimedia, and visual communication, all of which directed to support the needs of the creative industry. Thus, the management of facilities and infrastructure is an important aspect in supporting a good learning process in this department greatly affects the quality and effectiveness of the learning process (Balqis et al., 2023; Dewi et al., 2021; Smajlović Orman et al., 2023)

The DKV department requires various facilities such as high-specification computer devices, the latest design software, adequate practice spaces, and good connectivity with the industrial world. Without adequate facilities, students cannot develop creativity and skills optimally. This limited means and infrastructure can affect students' motivation to learn and reduce the quality of learning received. It also impacts the readiness of students after graduation, who should be ready to enter the workforce with skills relevant to the needs of the industry.

Previous research on the management of educational facilities and infrastructure in vocational schools shows that many schools experience obstacles in providing facilities that are in accordance with the standards of existing majors

At SMK Negeri 1 Bambalamutu, Pasangkayu Regency, the management of educational facilities and infrastructure in the Department of Visual Communication Design faces similar challenges. Based on initial observations, it was found that the number of existing computer devices was insufficient to meet the needs of students, and many of them were no longer functioning properly. In addition, limited practice space and lack of up-to-date design software are also significant issues. This has an impact on the quality of learning, as students are not able to practice optimally and are less exposed to the latest technologies used in the industry.

Given the important role of facilities and infrastructure in improving the quality of education, this study aims to evaluate the management of educational facilities in the Department of Visual Communication Design, SMK Negeri 1 Bambalamutu. Through this study, it is hoped that an overview can be obtained of the extent to which the available facilities support learning activities and the factors that hinder their management. This research will also examine the needs of facilities that need to be met to support the educational process optimally in the DKV department to run optimally.

Based on information obtained during the initial observation it was found that the facilities and infrastructure at SMK Negeri 1 Bambalamutu, especially in the Visual Communication Design department, still do not fully meet the standards needed to support an effective learning process. One of the main problems identified was the very limited number of computer units. Of the total available computers, about 50% are no longer usable due to their damaged or outdated condition. This hinders students from accessing the tools necessary in technology-based learning. In addition, the camera devices in the school are also insufficient for the number of students in the department. Due to the limited number of cameras, students must take turns using the tool, which certainly affects the quality and effectiveness of their practice. This condition clearly hinders a more interactive and practical learning process, which is very important in the field of Visual Communication Design, where technical skills are in high demand. Furthermore, the condition of classrooms and practice rooms is also still inadequate. The existing classrooms are not large enough to accommodate the number of students, so comfort during learning activities is disturbed. In addition, the practice room that is supposed to be a place for students to hone their skills in design, is also not supportive enough. With limited facilities, students struggle to optimize their learning to the fullest. The problems found in this initial observation show that the management of facilities and infrastructure at SMK Negeri 1 Bambalamutu, especially for the Visual Communication Design department, needs serious attention in order to support a quality

Volume 2, Issue 1, August 2025
DOI: https://doi.org/10.70188/sdkq3g82

learning process that is relevant to the needs of the industry. Therefore, this research aims to delve deeper into the management of educational facilities and infrastructure in the department, as well as to provide recommendations for improvements that can be applied to improve the quality of existing educational facilities.

METHOD

This study uses a qualitative approach with a descriptive type of research. There are three main stages that are carried out continuously, namely description or orientation, data reduction, and data selection. Each stage has an important role in producing relevant data to support in-depth analysis related to the management of educational facilities and infrastructure.

The source of research data includes primary and secondary data. Primary data was obtained through interviews and observations of five informants, namely the Principal, Head of Department, Vice Principal of the Curriculum section, Treasurer, and Head of Administration of the Department of Visual Communication Design at SMKN 1 Bambalamutu. Meanwhile, secondary data is taken from relevant documents and literature, including school archives and other references related to the management of educational facilities.

Data collection techniques include observation, interviews, and documentation. The data analysis process is carried out in three stages, namely data reduction to filter important information, data display to present information in a structured manner, and conclusion drawing and verification to formulate research results. The final results of the study highlight key challenges, such as the limitation of learning support facilities that are obstacles in the management of facilities and infrastructure.

RESULT AND DISCUSSION

Planning

Based on data analysis, the planning process for the management of educational facilities and infrastructure in schools is carried out systematically by involving various related parties. This planning begins with the identification of needs which is carried out through joint meetings involving the principal, teacher council, staff, school committee, and other relevant parties. The need for facilities and infrastructure is prioritized based on urgency, budget availability, and evaluation of existing facilities to ensure that new planning can effectively support teaching and learning activities.

The annual work plan that serves as a reference for planning facilities and infrastructure is prepared by considering the educational calendar, so as not to interfere with the learning process. The schedule for preparing this plan is flexible and can adjusted to the needs and policies of the budget manager. In addition, the education report card is also used as a strategic guide to determine planning priorities to improve the quality of learning in schools. In planning facilities and infrastructure through BOS funds, this process involves teachers, Deputy Principals for Curriculum, treasurers, and other parties in open meetings to ensure transparency and effectiveness of budget management. Good coordination is also carried out with local governments, such as the West Sulawesi Education and Culture Office, especially for planning sourced from government assistance. Based on data analysis, this planning process is proven to create a more

Volume 2, Issue 1, August 2025
DOI: https://doi.org/10.70188/sdkq3g82

structured and responsive management of facilities and infrastructure to existing needs, as well as focusing on improving the quality of education that is sustainable.

Although the planning process for the management of facilities and infrastructure in schools has gone well, there are still challenges in terms of coordination between related parties, especially in terms of limited budget allocation. Some very urgent facility needs, such as the procurement of hardware and software to support teaching and learning activities in the DKV Department, are still often constrained by limited funds. This indicates the need for a more flexible and realistic planning strategy to adapt to existing resources.

In addition, even though there is a system that has been running in the planning and management of facilities and infrastructure, the absence of written standard operating procedures (SOPs) for several aspects, such as routine maintenance and use of facilities, is an obstacle in the consistency of implementation. In the future, the development of more detailed SOPs is expected to increase the effectiveness of the management of facilities and infrastructure and provide clarity for all parties involved.

Based on the results of the study, it shows that; Planning for the management of educational facilities and infrastructure in schools is carried out systematically by involving various related parties. The planning process begins with the identification of needs through a joint meeting involving the principal, the teacher council, administrative staff, the school committee, and other relevant parties. This identification includes an evaluation of the condition of existing facilities, an analysis of deficiencies, and an urgent need to support the learning process. After identification, the need for facilities and infrastructure is prioritized based on their level of urgency, budget availability, and relevance to teaching and learning activities. For example, facilities that are urgently needed to support practicum or project-based learning will receive more attention.

Planning that is integrated with the management of educational facilities and infrastructure has a strategic position in creating a conducive learning environment. The relationship between school infrastructure planning and management is not only about meeting physical needs, but also about resource optimization, sustainability, and its contribution to community development. According Soraya et al. (2024), Planned management of educational facilities can ensure the achievement of learning objectives through the use of existing resources in a more targeted manner.

In addition, Noven & Inayati (2024) emphasizing that facility management does not stop at the procurement stage, but also requires an ongoing inventory and maintenance system. Thus, the relationship between planning and infrastructure management should be seen as a continuous, mutually reinforcing cycle.

Procurement

Based on data analysis, the procurement of educational facilities and infrastructure in schools is carried out by systematically involving various related parties. This process begins with the identification of needs which is carried out through a joint meeting involving the principal, teacher council, staff, school committee, and other relevant parties. The need for facilities and infrastructure is prioritized based on urgency, budget availability, and evaluation of existing facilities to ensure that new procurement can support teaching and learning activities effectively.

The process of procuring facilities and infrastructure using BOS funds involves teachers, Deputy Principals for Curriculum, treasurers, and other parties involved in open meetings to ensure transparency and effectiveness of budget management.

Volume 2, Issue 1, August 2025
DOI: https://doi.org/10.70188/sdkq3g82

Coordination is also carried out with local governments, especially the West Sulawesi Education and Culture Office, for procurement sourced from government assistance. Based on data analysis, this procurement shows that there is a more structured, effective, and responsive management of facilities and infrastructure to the educational needs of schools.

The procurement of facilities and infrastructure has been carried out by involving various parties and through a systematic process, several challenges still arise, especially related to budget limitations. The procurement of some much-needed facilities, such as computer devices and software to support learning, is often hampered by limited budget allocations. This requires more realistic and flexible planning so that procurement can continue even with limited resources.

In addition, despite the transparency in the procurement process, there is still a need to improve coordination between the parties involved, especially in terms of budget management sourced from BOS funds and government assistance. More efficient budget management can speed up the procurement process and ensure that the facilities and infrastructure obtained can be directly used in learning activities. Therefore, periodic evaluations of procurement and budgets need to be carried out to identify obstacles and opportunities in improving the management of facilities and infrastructure in the future.

Based on the results of the study, it shows that; The management of the procurement of facilities and infrastructure at SMK Negeri 1 Bambalamutu involves various sources of funding, each of which has its own implementation rules. The procurement process is carried out through BOS funds managed by schools, assistance from 54 provincial governments, and support from the central government, with each source following established procedures. Priority setting in procurement is carried out through annual meetings involving school principals, treasurers, school committees, and teachers, to ensure optimal use of the budget. In addition, the role of the Vice Principal for Curriculum, Mr. Mustaman Laurensyah, is very important in directing procurement to support the learning process in the classroom and in the students' practice room.

Procurement and management of facilities includes a range of activities from acquisition, maintenance, to the operation of assets and services. The main goal is to ensure the sustainability of the organization's functions in an effective and efficient manner. According to Pedroso & Beaulieu (2024), best practices in procurement contracts are able to significantly improve performance, especially when associated with clear communication and strong partnerships.

In the context of facility management, Rogers (2003) affirms that good leadership and clarity of purpose are key to high-performing business units. This shows that the human aspect of leadership plays an important role in balancing service quality with cost efficiency.

Use

Based on data analysis, the management of the use of facilities and infrastructure in the DKV Department is carried out functionally and needs based. Although there is no official written rule, the process of use has been regulated through direct instructions to students regarding the procedure for preparing and returning laboratory conditions after use. A general computer lab can be used by students, teachers, and other staff, with direct supervision from the teacher in charge.

Monitoring of the use of the facilities is carried out by the relevant teachers, who ensure that each use of the facilities is in accordance with the learning needs. In the event of damage or technical problems, reports are submitted to the department or

Volume 2, Issue 1, August 2025
DOI: https://doi.org/10.70188/sdkq3g82

infrastructure managers on a regular basis. This process prioritizes the speed of response to technical issues, although there is currently no structured monitoring system or written routine reports. With this approach, facilities and infrastructure remain in a ready-to-use condition and can be used optimally to support teaching and learning activities. Although there is no formal system in place to support it yet, coordination between teachers, students, and other staff is working well to ensure facilities are not neglected.

Needs-based management also allows for more efficient use of resources. Efforts to develop SOPs in the management of facilities and infrastructure in the Department of DKV show a commitment to increasing effectiveness and efficiency in the future. The preparation of clearer and more structured SOPs is expected to strengthen the management of facilities and provide more detailed guidelines for their use, as well as improve the quality of learning supported by optimal facilities.

The management of the use of facilities and infrastructure based on needs in the DKV Department also pays attention to the aspects of maintenance and maintenance. When facilities are used, whether for learning activities or other purposes, special attention is paid to returning the facility to its original condition after use. This process aims to maintain the quality of the facilities so that they are maintained and can be used for the next activity without interruption. This monitoring and maintenance task is not only the responsibility of the facilities and infrastructure manager but also involves the active participation of students and other staff in maintaining the facilities together. In this way, even though there are no specific written rules, the management of facilities and infrastructure in the DKV Department continues to run effectively and efficiently.

The development of a more structured system in the management of facilities and infrastructure is expected to reduce potential obstacles that arise due to the lack of formal rules. The establishment of more detailed and standardized SOPs will provide clearer guidance for all parties involved in the use of facilities. With clear SOPs, the process of using facilities and infrastructure will be more organized, and periodic evaluations of facility conditions can be carried out more easily. This will not only improve the management of facilities and infrastructure but also support the achievement of higher quality education goals in the DKV Department.

Based on the results of the study, it shows that; The management of the use of facilities and infrastructure in the DKV Department is carried out functionally and needs oriented. While there are no official written rules yet, the use of the facility is regulated through direct instructions to students, which includes laboratory preparation procedures and returns after use. The computer lab is open and can be used by students, teachers, and other staff. Supervision of use is carried out directly by the responsible teacher, and reports of damage or technical problems are submitted periodically to the department or infrastructure manager. While there is no routine monitoring or written reporting system in place, this approach ensures that facilities and infrastructure remain in a ready-to-use condition. Efforts to develop SOPs show a determination to increase the effectiveness and efficiency of the management of facilities and infrastructure in the future.

The use and management of educational facilities is one of the important foundations in ensuring the quality of educational services. Well-managed facilities not only support operational sustainability but also have a direct impact on the quality of learning and the welfare of students. Structured facilities and infrastructure management practices will increase the effectiveness of resource use and support long-term educational goals (Arhas & Haryoko, 2024; Sholihah, 2019; Vieira & Marques Cardoso, 2010).

Volume 2, Issue 1, August 2025
DOI: https://doi.org/10.70188/sdkq3g82

Turpen et al. (2016) emphasized that the management of core facilities must include aspects of general management, finance, user satisfaction, and strategic planning. A thorough evaluation of these areas can strengthen the facility's contribution to educational and research missions.

A proactive and data-driven maintenance system can extend the life of assets and improve operational efficiency. Buys & Nkado (2006) found that maintenance management systems in South African higher education institutions still face challenges, while the digital twin approach is now beginning to be used to improve university performance (Campos et al., 2024).

Maintenance

Based on the results of data analysis, the maintenance of facilities and infrastructure in schools is carried out routinely and periodically, although there is no specific fixed schedule for maintenance. Maintenance is carried out whenever any malfunction or technical constraints are found, such as equipment that is not functioning properly. Any damage found, especially those that may interfere with learning activities, will be repaired immediately to ensure a smooth learning process.

Daily checks by the Administration staff are also carried out to ensure that all facilities are in good condition and ready to use. This action ensures that facilities and infrastructure are always well maintained and do not interfere with teaching and learning activities. The maintenance carried out on weekends aims to avoid disruptions during learning hours, so that the education process continues to run without obstacles.

However, for more urgent damages, immediate repair actions are carried out on the same day, with priority given to the facilities that most affect the course of learning. This decision was taken to minimize disruption to school activities and ensure that the facilities used by students and teachers remain in optimal condition.

However, maintenance carried out on an ad-hoc, and unscheduled basis remains a challenge in ensuring that facilities are always well maintained. Therefore, the development of a more structured and regularly scheduled maintenance system is needed to improve the quality of management of educational facilities and infrastructure in schools.

This ad-hoc maintenance is indeed effective in dealing with urgent damages, but the sustainability and efficiency of the management of facilities and infrastructure can be compromised if there is no clear routine maintenance schedule. Without a definite schedule, the maintenance of more complex facilities or more sensitive equipment is often forgotten or not received in time. Therefore, it is critical to design and implement a more structured maintenance system, which includes periodic inspections and preventive maintenance of facilities that are frequently used in learning activities. It will also allow staff and facility managers to better plan maintenance, reduce undetected damage, and optimize the use of available budgets.

The development of a more scheduled maintenance system can speed up the repair of damaged facilities and minimize the time it takes to restore the condition of the facility to optimal condition. With a structured maintenance schedule, facility managers can ensure that each facility used for teaching and learning activities receives the attention they deserve. This system can also involve the participation of all relevant parties, from teachers to students, to take part in maintaining and reporting damage or maintenance needs of facilities. In a way that it is hoped that the quality of facilities and infrastructure

Volume 2, Issue 1, August 2025
DOI: https://doi.org/10.70188/sdkq3g82

in schools will continue to be maintained and support the achievement of maximum educational goals.

Based on the results of the study, it shows that; Maintenance of facilities and infrastructure in schools is carried out regularly and periodically, although there is no fixed and specific schedule for maintenance. Maintenance is carried out whenever a malfunction or technical problem is found, such as equipment not working properly. Repairs are made immediately to ensure the smooth learning process, especially if the damage interferes with teaching and learning activities. The Administrative Staff conducts daily checks to ensure that all facilities are in good condition and ready to use. Maintenance carried out on weekends aims to avoid disruptions to class hours, while more urgent damage is immediately repaired on the same day. According to Soekartawi (2018, p. 18), the maintenance of facilities and infrastructure is a step that must be carried out in a sustainable and planned manner to extend the useful life of existing facilities and prevent more severe damage. This maintenance also aims to ensure that educational facilities remain relevant and meet the standards required for the learning process.

Maintenance not only involves repairing damage but also includes preventive efforts to reduce the likelihood of future damage (Maisyaroh et al., 2025; Nurmayuli, 2022; Safiee et al., 2020). Good maintenance will reduce greater repair costs and maintain comfort and safety for users of the facility. Thus, the maintenance of educational facilities and infrastructure is an important part of maintaining the quality and sustainability of facilities, which ultimately supports the effective achievement of educational goals. Maintenance must be carried out regularly and scheduled by involving personnel who are experts and have sufficient knowledge related to the type of facilities available.

Maintenance and management of educational facilities is a key aspect in maintaining the quality of the learning environment and the use of educational resources. Poorly maintained facilities not only lower infrastructure standards, but can also negatively impact students' health, safety, and learning motivation.

Educational institutions in developing countries often face serious obstacles in the maintenance of facilities. Alhassan et al. (2025) found that most institutions in Ghana still rely on reactive strategies, while only a small percentage have formal maintenance policies. Similarly, schools in Malaysia face funding constraints and limited human resources (Ropi & Tabassi, 2014). On the other hand, public schools in many countries are experiencing ageing infrastructure issues, requiring large investments in repairs and modernization (Herath et al., 2023).

CONCLUSION

Based on the results of the analysis carried out, it can be concluded that the management of educational facilities and infrastructure at the Department of Visual Communication Design of SMK Negeri 1 Bambalamutu, Pasangkayu Regency, has been relatively good. This management includes planning, procurement, use, and maintenance, with active support from the principal as well as regular proposal of needs through RKAS as a supporting factor. However, there are inhibiting factors such as the limited number of facilities, including computers and cameras, low computer specifications so that they often experience technical problems.

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