Analysis of Facilities and Infrastructure Management Its Impact on Student Learning Outcomes through Quality of Learning in the Madrasah Working Group (KKM) State Aliyah Madrasah 1 Bulukumba

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Abstract
This study aims to analyze the influence of facilities and infrastructure management on the quality of learning at Madrasah Working Group (KKM) State Aliyah Madrasah (MAN) 1 Bulukumba. b) to analyze the influence of facilities and infrastructure management on learning outcomes at KKM MAN 1 Bulukumba. c) to analyze the effect of learning quality on learning outcomes at KKM MAN 1 Bulukumba. d) to analyze the influence of facilities and infrastructure management on learning outcomes through the quality of learning at KKM MAN 1 Bulukumba. The population in this study amounted to 121 teachers. The minimum sample size is the same as the population of 121 teachers. The sampling technique used is saturated sampling (census). Saturated sampling uses all members of the population as a sample. Saturated sampling allows use for small population sizes (200 or less). Data collection techniques are questionnaires, observations, and interviews—the data analysis technique used validity and reliability tests, descriptive analysis, and path analysis. The results showed that: (a) the management of facilities and infrastructure had a positive and significant effect on the quality of learning. (b) management of facilities and infrastructure has a positive and significant effect on learning outcomes. (c) the quality of education has a positive and significant effect on learning outcomes. (d) management of facilities and infrastructure has a positive and significant effect on learning outcomes through the quality of learning.

Keywords
Management, Facilities, and Infrastructure, Quality of Learning, and Learning Outcomes

1. Introduction
The essence of education is related to students' potential to become human believers and fear of Allah, noble, healthy, knowledgeable, occupied, creative, self-sufficient, and become a democratic community and responsible. The essence of education is sourced on religious norms, Indonesian national culture and always follows the times. National education in Indonesia is still faced with some significant problems, as the opportunity to obtain an education is still low and uneven. The quality and relevance of education are still low. The weakness of education management and the
aside the academics have not shown independence and excellence in science Knowledge and Technology (Kusnandar, 2007).

Learning outcomes are part of the essence of education related to the evaluation of the potential of students. Learning outcomes are considered successful if they have high absorption by the learning objectives (Syafiful and Arwan, 2002: 120). The main objective of learning outcomes is to determine how students achieve the success rate after being given learning actions (Dimyati and Mudjiono. 2004).

Madrasah educational institutions in Bulukumba Regency are objects in this study. Madrasas are often referred to as plus schools for combining pesantren education and public schools. Islamic boarding school characteristics are seen in more Islamic religious studies and religious life among students. In contrast, school characteristics can be seen from the class system, general subjects, and education management. (Daulay, 2006). During the 2015/2016 academic year, the average national exam score until 2018/2019 in the Madrasah Working Group (KKM) MAN 1 Bulukumba.

<table>
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<tbody>
<tr>
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<td>31,66</td>
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<td>51,11</td>
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<td>Minimum completion standard</td>
<td>85,00</td>
<td>85,00</td>
<td>85,00</td>
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</tr>
</tbody>
</table>

Source: Head of MAN 1 Bulukumba

The average national exam score based on the table 1 above has not yet reached the standard, 85.00. This indicates that the learning outcomes achieved from five (5) madrasas in Bulukumba Regency are still low. The phenomenon related to the low learning outcomes achieved can be influenced by two factors: the management of facilities and infrastructure and the quality of learning. Facilities and infrastructure management factors include budget constraints in the procurement of facilities and infrastructure. Meanwhile, the learning atmosphere is not yet conducive to learning quality, such as the physical environment is not comfortable (Ervina et al., 2019; Novitasari et al., 2019; Rumaolat et al., 2019). The delivery of lessons is not clear and systematic, presenting material that is not wise. All work units have not all used learning technology.

The urgency of facilities and infrastructure in supporting the learning process as stipulated in the Law of the Republic of Indonesia No. 20 of 2003 concerning the National education system "Every formal and non-formal education unit provides facilities and infrastructure that meet educational needs by the growth and development of physical potential. Intellectual, social, emotional intelligence, and the obligations of students (Jannah et al., 2019; Lionardo et al., 2020; Yusuf et al., 2019). Optimization about facilities and infrastructure management has a vital role in improving the quality of learning and learning outcomes (Martin and Nurhattati, 2016). Management of learning infrastructure intends to organize and protect learning infrastructure so that it can contribute to improving the quality of learning and learning outcomes in an optimal and meaningful way (Mujamil, 2007).

Research from Engkoswara and Aan Komariah (2015) shows that trust from stakeholders is one indicator of schools that have quality learning and ultimately produce students who have satisfactory learning outcomes. Research from Nirmala (2015) found that the management of facilities and infrastructure has a positive and significant influence on the quality of learning (Nath et al., 2021; Suharyanto et al., 2021; Umanailo et al, 2021). The results of this study support Rahmawati's (2019) findings at Madrasah Aliyah Negeri 1 Mojokerto is showing that the management of facilities and infrastructure has a positive and significant effect on the quality of learning MAN 1 Mojokerto. Meanwhile, the findings of Dayang Murniarti et al. (2016) show that good management of facilities and infrastructure can significantly improve learning outcomes. The findings of this study also explain that the management of facilities and infrastructure can contribute optimally related to the learning process and its estuary on learning outcomes.

2. Literature Review
Management of infrastructure facilities is an activity starting from recording (needs analysis), procurement of goods, distribution or distribution, utilization, maintenance, destruction, and responsibility for movable and immovable objects, school furniture, learning tools, and others. (Mulyasa, 2004). The principles of facilities and infrastructure management are as follows: (1) the principle of achieving goals, (2) the principle of usability, (3) the principle of administration, (4) the principle of clarity of responsibility, (5) the principle of cohesion. (Indrawan, 2015). Facilities and infrastructure management, according to Matin and Nurhattati (2016), has a role related to (a) facilities & infrastructure planning is the planning process of the procurement of infrastructure through purchasing, leasing, borrowing, exchanging, recycling, reconditioning/rehabilitation. Distribution or manufacture of equipment and supplies tailored to the needs of the school. (Barnawi and Arifin, 2007). (b) procurement or provision of facilities and infrastructure are all activities carried out by providing all goods or services needed by considering the data related to the planning intended so that learning activities can run effectively and efficiently by the desired objectives. (c) arrangement of facilities and infrastructure. Activities in the regulation phase are recording, storage, maintenance. (Barnawi and M. Arifin, 2007: 51) (d) the use of infrastructure is discussed as routine use of learning infrastructure in supporting the teaching and learning process to realize learning objectives. (Barnawi and Arifin, 2007). (e) Maintenance of infrastructure facilities is an effort or method to maintain the technical situation, usability and usability of the infrastructure facilities that have been used so far through efforts to maintain, rehabilitate, and perfect them, ultimately making the infrastructure facilities well maintained and durable (Matin and Nurhattati Fuad, 2016: 89-90). (f) supervision of infrastructure facilities is a series of control activities in the use of infrastructure facilities to ensure and ensure that infrastructure is maintained. The utilization of infrastructure facilities within the scope of the school for the success of education in the school, (g) elimination of infrastructure facilities is the activity of liberating infrastructure from liability legal with a justifiable alibi.

The quality of learning can also be interpreted as the relationship between educator behavior, student behavior, learning climate, teaching materials, quality learning media, and learning systems to achieve learning objectives. (Ministry of National Education, 2004, p. 7). Factors can affect the quality of learning, namely: (a) teacher factors, (b) aspects of students. (c) facilities and infrastructure factors. (d) learning method factors. (e) environmental factors (learning atmosphere). Meanwhile, according to Nasruddin (2010), other factors that affect the quality of learning, namely: (a) internal factors (such as physiological and psychological aspects) and (b) external factors, such as family environmental factors, family socioeconomic and parent education. (c) environmental factors for learning, such as infrastructure, syllabus, and teaching methods. The components related to the quality of learning are (1) students and educators. (2) curriculum. (3) educational facilities and infrastructure. (4) school management, (5) learning process management, (6) financing management. (7) evaluation. (8) cooperation (Yamin and Maisah, 2009; 164-166). Indicators of learning quality according to Morrison, Mokashi & Cotter (2006:21), namely: (1) Rich and stimulating physical environment, (2) Classroom climate conducive to learning, (3) Clear and high expectations for all students, (4) Coherent, focused instruction, (5) Thoughtful discourse, (6) Authentic learning, (7) Regular diagnostic assessment for learning, (8) Reading and writing as essential activities, (9) Mathematical reasoning, (10) Effective use of technology.

Learning outcomes are a transformation of behavior in a person that can be observed and measured in knowledge, attitudes, and skills. This transformation can be interpreted as realizing additions and developments that are better than before, and those who do not know become aware (Oemar, 2007:30). A teaching and learning process is considered successful if a large amount of absorption energy either individually or in groups and the attitudes outlined in the learning objectives have been achieved. (Saiful and Arfan, 2002:120). According to Dimyati and Mudijon (2004:201), learning outcomes are functioned and indicated for selection as the basis for grade promotion for placement. Learning outcomes include three domains according to Mulyadi (2010: 3), namely: (1) the cognitive domain (memory, knowledge, understanding, application, analysis, creating, constructing, evaluating), (2) the affective domain (acceptance, welcome, respect, deepening, appreciation), (3) psychomotor domain (movement and action skills, verbal, and non-verbal expression skills). The measurement of latent variables uses indicators, and statements from indicators are written in the form of a questionnaire. The level of measurement used is ordinal, where the numbers used contain the notion of level, very good = 5, good = 4, neutral = 3, not good = 2, very not good = 1.

The operational definitions of variables and indicators of each variable latency are as follows: Independent Variable: Management of Facilities and Infrastructure (X) is an effort to manage facilities and infrastructure efficiently and effectively to produce a quality teaching and learning process. The indicators of the management of facilities and infrastructure refer to the opinion of Niswanto et al. (2016); Matin and Nurhattati (2016), namely: planning (X1), procurement (X2), arrangement (X3), use (X4), maintenance (X5), supervision (X6), and elimination (X7);
Intervening Variable: Learning Quality (Y) reflects the students' good, and bad results indicators of learning quality refer to the opinion of Morrison, Mokashi & Cotter (2006), namely: physical environment (Y1), conducive learning atmosphere (Y2), delivering lessons clearly (Y3), delivering lessons coherently and centrally (Y4), presenting material wisely (Y5), authentic learning (Y6), periodic diagnostic assessment (Y7), rational consideration (Y8), using learning technology (Y9); Dependent Variable. Learning outcomes (Z) are transformations of behavior in a student that can be observed and measured in knowledge, attitudes, and skills. This transformation can be interpreted as an improvement and development that is better than before. The indicators refer to the opinion of Burhan (2008), namely: cognitive shutter (Z1), affective shutter (Z2), psychomotor shutter (Z3).

3. Methods

The type of research design used is survey research. The survey is a measurement process used to collect data using a questionnaire. The type of research approach used in this research is quantitative. The characteristics of the quantitative research approach consist of the type of data (phenomena described numerically), analysis (descriptive and inferential statistics). The research location is in the Madrasah Working Group (KKM) MAN 1 Bulukumba. The data collection sites were Madrasah Aliyah Negeri 1 Bulukumba, Madrasah Aliyah Muammadiyah Palampang, Madrasah Aliyah Sapobonto, Madrasah Aliyah Darul Qalam, and Madrasah Aliyah Guppi Gunturu. The research time required after the proposal to complete the thesis is two months (January – February 2021). The population in the study was 121 teaching staff (MAN 1 Bulukumba: 50 people; Madrasah Aliyah Muammadiyah Palampang: 21 people; Madrasah Aliyah Sapobonto: 21 people; Madrasah Aliyah Darul Qalam: 13 people; Madrasah Aliyah Guppi Gunturu: 16 people). The sampling technique uses a saturated sample where all the population is used as a sample—techniques for collecting data through questionnaires to respondents, observation, interviews, and documentation. While the data analysis techniques used were validity and instrument reliability tests, descriptive statistical analysis, normality testing, Sobel test, path analysis, and t hypothesis testing.

4. Results

Product moment correlation coefficient indicator is > r –table (0.176) or Sig. (1-tailed) 0.05, so it can be stated that all indicators can measure each latent construct (Valid). The indicator of each variable of facilities and infrastructure management, learning quality, and learning outcomes shows a value of 0.6; then, the instrument is declared reliable. The normality test results show the value of Kolmogorov Smirnov = 0.200 0.05, which means that the data is usually distributed (Table 1).

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>23,795</td>
</tr>
<tr>
<td></td>
<td>Facilities &amp; Infrastructure Management (X)</td>
<td>0,450</td>
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</tbody>
</table>

The equation of the first structural model: \( Y = 0.338 \times X \), where the beta coefficient of facilities and infrastructure management (X) is 0.338 with a significance level of 0.000 which means significant (Sig 0.05). The magnitude of the influence of the Infrastructure Management variable (X) on the Learning Quality Variable (Y) can be seen in the standardized coefficients beta value of 0.338, which means that if the management of facilities and infrastructure increases by 1 point, the quality of learning increases by 0.338 points. This means that hypothesis 1 is accepted where facilities and infrastructure management significantly influence the quality of learning. Furthermore, the correlation value \( R = 0.838 \) means that facilities and infrastructure management have a solid and positive relationship to the quality of learning. The determination number of R-Square (R2) shows the number 0.702 or 70.2%. This indicates that infrastructure management influences the increase and decrease in the quality of learning by 70.2%. In comparison, the remaining 29.8% is influenced by other factors not observed in the model (Table 2).

1. Path analysis of the second structural model

Table 2. Second Structure Model Coefficient
Referring to Table 2 above, the second model path equation is $Z = \beta_1 X + \beta_2 Y$. The translation is $Z = 0.142 X + 0.492 Y$. Based on table 2 above, the path coefficient value $\beta_1$ is 0.142 with a significance level of 0.001, meaning that it is significant (Sig 0.05). Thus, the Infrastructure Management variable (X) has a positive and significant effect on the learning outcome variable (Z). The strong influence of variable X on variable Z can be observed from the acquisition rate of its Beta Standard Coefficient of 0.142, which means that every 1-point increase in the infrastructure management variable (X) will increase learning outcomes (Z) 0.142 points. Thus, Hypothesis 2 is accepted.

Furthermore, the path coefficient value $\beta_2$ is 0.492 with a significance level of 0.000 which means it is significant (Sig 0.05). Thus, the variable of Learning Quality (Y) has a positive and significant effect on Learning Outcomes (Z). The magnitude of the variable quality of learning (Y) influences learning outcomes (Z) can be seen from the standardized coefficient beta value, which is 0.492, which means that every one-point increase in the Learning Quality variable (Y) will increase learning outcomes (Z) by 0.492 points. Meanwhile, the correlation value (R) = 0.886 or 88.6% means that the relationship between the management of facilities and infrastructure and the quality of learning-on-learning outcomes is positive and strong. Similarly, the magnitude of the influence or contribution (determination: $R^2$) of facilities and infrastructure management and the quality of learning-on-learning outcomes is 0.785 = 78.5%. The remaining 21.5% is influenced by other factors not observed in the model; The results of the Sobel test show that the significance value of the indirect effect on the quality of learning as mediation is 0.000 0.05. This means that H4 is accepted that the quality of learning can intervene in managing facilities and infrastructure on learning outcomes.

The direct effect of the infrastructure management variable (independent variable) on the quality of learning variable (intervening variable) is $0.338$, meaning that every time there is an increase in the infrastructure management variable by 1 point, it will be able to increase the quality of learning by 0.338. (Proven); The direct effect of the infrastructure management variable (independent variable) on the learning outcomes variable (dependent variable) is 0.142. Every 1-point increase in the infrastructure management variable will increase learning outcomes by 0.142 points. (Proven); The direct effect of the learning quality variable (intervening variable) on the learning outcomes variable (dependent variable) is 0.492, meaning that every 1-point increase in the learning quality variable will be able to increase learning outcomes by 0.492 points (proven).

The indirect effect of the Infrastructure Management variable (X) on the learning outcomes variable (Z) through the Learning Quality variable (Y) is obtained by multiplying $X \times Y$ by $Y \times Z$, so that $X \times Z = 0.338 \times 0.492 = 0.166$. The value of 0.166 means that the indirect effect of the infrastructure management variable (X) on the learning outcome variable (Z) through the learning quality variable (Y) is 0.166 points (Table 3).

**Table 3. Hypothesis Test Results**

<table>
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<tr>
<th>Hypothesis</th>
<th>Value</th>
<th>Sig.</th>
<th>Conclusion</th>
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<tr>
<td>Infrastructure Management has a positive and significant effect on the quality of learning</td>
<td>0.338</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>Infrastructure management has a positive and significant effect on learning outcomes</td>
<td>0.142</td>
<td>0.001</td>
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</tr>
<tr>
<td>Learning quality has a positive and significant effect on learning outcomes</td>
<td>0.492</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>Infrastructure Management has a positive and significant effect on learning outcomes through the quality of learning</td>
<td>0.166</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
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</table>
5. Discussion
The influence of infrastructure management on the quality of learning at KKM MAN 1 Bulukumba, which consists of 5 Madrasah Aliyah seen from the direct influence path analysis, shows a positive and significant impression of learning infrastructure management. The positive and significant influence of infrastructure management on the quality of learning indicates that the better the management of infrastructure facilities in the madrasa environment at KKM MAN 1 Bulukumba, the better the quality of learning in the madrasa the auspices of KKM MAN 1 Bulukumba.

The influence of facilities and infrastructure management on student learning outcomes is positive and significant, meaning that increasing student learning outcomes will follow improvements in infrastructure management by assuming other influencing factors are considered constant. The positive and significant influence of infrastructure management on student learning outcomes at KKM MAN 1 Bulukumba is seen from the direct influence path analysis results, which shows infrastructure management positively and significantly on student learning outcomes.

Quality of Learning shows a positive and significant effect on learning outcomes, meaning that improvements in learning quality will be accompanied by student learning outcomes, assuming that other factors are considered constant. The positive and significant influence of the quality of learning on students' learning outcomes at KKM MAN 1 Bulukumba can be seen from the direct influence path analysis results, which shows a positive and significant influence on the learning quality variable on students' learning outcomes. The positive and significant influence of learning outcomes on student learning outcomes indicates that the better the quality of learning, the higher the students' learning outcomes at KKM MAN 1 Bulukumba. Conversely, if the quality of learning is not good, then student learning outcomes will decrease.

The influence of infrastructure management on learning outcomes through the quality of learning is positive and significant, meaning that improving infrastructure management in madrasas will be followed by an increase in student learning outcomes through the quality of learning, assuming that other influencing factors are considered constant. Management of facilities and infrastructure can, directly and indirectly, support the smooth learning process. A good learning process can improve the quality of learning and student learning outcomes. Students with good learning outcomes have cognitive domains (knowledge, understanding, application, analysis, synthesis, assessment). They are affective domains (attention to lessons, discipline, learning motivation, respect for teachers and classmates, study habits, and social relationships) and psychomotor domain (skills in unconscious movements, skills in conscious movements, perceptual abilities, and abilities related to communication).

6. Conclusion
Based on the results of the study, it can be concluded as follows: Management of facilities and infrastructure has a positive and significant effect on the quality of learning; Management of facilities and infrastructure has a positive and significant effect on learning outcomes; The quality of learning has a positive and significant effect on learning outcomes; Management of facilities and infrastructure has a positive and significant effect on learning outcomes through the quality of learning.

References


Suharyanto, A., Hartono, B., Irwansyah, I., Tuwu, D., Chairul Basrun Umanailo, M., & Morshed Ahmad, M. Marginalization socio farm laborers due to conversion of agriculture land, 2021.


Biographies
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