

## THE IMPACT OF INFRASTRUCTURE ON LEARNING OUTCOMES : SURVEY STUDY AT HARVARD MIDDLE SCHOOL

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**Abstract :** *This research is motivated by the fact that one of the factors that can improve student learning outcomes is complete and adequate infrastructure. Infrastructure facilitates and facilitates student learning in the learning process, thus facilitating optimal learning outcomes. This study aimed to determine the effect of infrastructure on improving learning outcomes at Harvard Junior High School, Jakarta. The method used in this study was correlation with a quantitative approach. Simple random sampling was used, with 27 students as respondents. The results showed that the Product Moment coefficient test yielded an "rxy" or "ro" of 0.232, while "rt" at the 5% significance level was 0.388 and at the 1% significance level was 0.496. Therefore, the null hypothesis (Ho) was accepted, while the null hypothesis (Ho) was rejected. Based on these results, it can be concluded that infrastructure does influence learning outcomes.*

**Keywords:** *Impact, Facilities and infrastructure, Learning outcomes.*

**Abstrak:** Penelitian ini dilator belakang oleh salah satu faktor yang dapat meningkatkan hasil belajar peserta didik yaitu sarana prasarana yang lengkap dan memadai. Sarana prasarana dalam proses belajar membantu dan memperlancar belajar peserta didik sehingga akan mudah dalam mencapai hasil belajar yang optimal. Penelitian ini bertujuan untuk mengetahui ada tidak nya pengaruh sarana prasarana



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dalam meningkatkan hasil belajar di SMP Harvard Jakarta. Metode yang digunakan dalam penelitian ini adalah korelasi dengan pendekatan kuantitatif, metode penarikan sampel dilakukan dengan Simple Random Sampling, dengan jumlah responden 27 Peserta didik. Hasil penelitian menunjukkan bahwa jika dilihat dari segi uji koefisien Product Moment menghasilkan “ $r_{xy}$ ” atau “ $r_o$ ” sebesar 0,232, sedangkan “ $r_t$ ” pada taraf signifikan 5% = 0,388 dan taraf signifikan 1% = 0,496. Dengan demikian dapat diterima atau disetujui, sementara Hipotesis Nihil ( $H_o$ ) ditolak atau tidak disetujui. Berdasarkan hasil penelitian ini, maka dapat disimpulkan bahwa terdapat pengaruh pada sarana prasarana dalam meningkatkan hasil belajar.

**Kata Kunci : Dampak, Sarana dan prasarana, Hasil Belajar.**

## **A. Introduction**

Learning outcomes are the abilities students possess after experiencing learning at school. Assessment is the means by which student learning outcomes are achieved. Several types of assessment can be used, one of which is formative assessment. Formative assessment is conducted to determine the extent of learning progress students have achieved in a course. In this case, the results obtained from the assessment serve as feedback to encourage learning and improve the teaching and learning process (Rike Andriani and Rasto 2019).

The learning process experienced by students at school should always be without difficulty. Many students experience difficulties or obstacles in their learning process. These obstacles or difficulties can certainly lead to failure in the process of positive change resulting from learning activities (Lita Izzatunnisa et al 2021). Therefore, achieving even minimal learning outcomes will be difficult for them. This is because the learning process is complex and influenced by many factors. Students' learning difficulties are generally caused by two types of factors: internal factors (those influenced by themselves) and external factors / those influenced by others (Sulaiman and Neviryani S 2021).

If students experience learning difficulties at school, environmental factors, such as infrastructure, could be a contributing factor. Educational infrastructure is a key and crucial supporting component for the learning process. The absence of these infrastructure will result in failure in the learning process and outcomes. This is something that must be avoided by all parties involved in education (Gokul Yenduri et al 2023).

Facilities and infrastructure in Indonesian education are always in line with efforts to improve the quality of education. Article 45, paragraph 1 of the National Education System Law states, "Every formal and non-formal educational unit shall provide

facilities and infrastructure that meet the needs of the growth and development of the physical, intellectual, social, emotional, and psychological potential of students"(Depi Alpina et al 2021). Human philosophy is a servant of Allah SWT who has the task of preaching to command goodness and avoid the prohibitions of Allah as stated in the At-Tahrim Letter verse 6 "Protect yourselves and your families from the fire of hell". Humans as believers or people who believe should ensure the improvement and enhancement of their personal lives. Islam is not a religion that only consists of dogma, worship and ceremonies. Islam is actually a complete way of life, which guides humans according to the guidance given by Allah to His Messenger, Muhammad. Islam is a system and rule of life.the spiritual and moral values taught by sharia. Islamic legal system derived from the Qur'an and Sunnah. Sharia regulates various aspects of human life, from worship, muamalah (social interaction), to social sharia. The philosophy of a knowledgeable or knowledgeable person is an achievement that is in the process of seeking the ultimate truth. This article will discuss the relationship between humans and sharia, and how sharia guides humans towards a blessed life in social society(Fahrany, S et al 2025).

Successful learning at school is supported by the effective and efficient utilization of all educational facilities and infrastructure. These facilities and infrastructure must be utilized and managed for the benefit of the learning process. This management is intended to ensure that the facilities and infrastructure in the school are used effectively and efficiently(TD. Abeng Ellong 2018).

In reality, the learning process experienced by students at school is not optimal, because the educational support tools that should be available are incomplete. The facilities and infrastructure they have are inadequate, for example, there are not enough classrooms, incomplete educational tools or demonstrations, libraries, laboratories, fields and places of worship are not yet available. This of course affects the quality and achievement of student learning(Moh Suhri Rohmansyah et al 2022).

Student learning outcomes are essentially influenced by many factors, both internal and external. Internal factors include individual motivation, interests, and abilities, while external factors include parental support, the school environment, teacher quality, and the availability of facilities and infrastructure. Among these external factors, the existence of facilities and infrastructure plays a crucial role. This is because facilities and infrastructure function as both aids and environments that shape the learning experience. Students will more easily understand subject matter if supported by adequate learning media, well-organized classrooms, and comfortable and appropriate learning facilities(Wa Malmia et al 2019).

The situation at Harvard Junior High School provides an interesting example to study. As an educational institution continually striving to improve the quality of learning, the school certainly faces challenges in providing facilities and infrastructure that meet students' needs. While some schools boast comprehensive facilities such as

science laboratories, computers, and digital libraries, there are still limitations in the utilization and maintenance of these facilities. This raises the question of to what extent the available facilities and infrastructure truly contribute to student learning outcomes at these schools.

Based on these facts, a more in-depth survey study is needed to examine the impact of facilities and infrastructure on student learning outcomes at Harvard Junior High School. This research is crucial to determine whether existing facilities and infrastructure are functioning effectively in supporting the teaching and learning process and how they impact student academic achievement. Therefore, the research findings are expected to provide a concrete picture for schools and educational policymakers to continue to pay attention to the availability and quality of facilities and infrastructure to improve the quality of education(Ricko Jordan Manuputty et al 2023).

## **B. METHOD**

This research is quantitative. The method used in this study is descriptive analytical correlation because this research method aims to determine whether or not there is an influence, and if so, how significant the influence is in infrastructure in improving student learning outcomes at Harvard Middle School (James P 2024).

The sampling technique in this study uses the Probability sampling technique, which is a sampling technique that provides equal opportunities or chances for each element (member) of the population to be selected as a sample member. Therefore, sampling with Probability in this study uses simple random sampling (Simple Random Sampling) because the sampling of population members is done randomly without paying attention to the strata in the population. One method used to determine the number of samples is if the subject is less than 100 people, it is better to take all of them, if the subject is large or more than 100 people, then 10-15% or 20-25% or more can be taken(Suharsimi, Arikunto 2020).

Data collection in this study was conducted from primary and secondary sources. Primary data was collected from Harvard Middle School students in Jakarta through direct observation and through a questionnaire. Secondary data, on the other hand, was collected indirectly from the field(Yujiroh et al 2021).

## **C. RESULTS AND DISCUSSION**

Based on calculations using SPSS, the average value (mean) of the two variables can be known, namely variable X (Infrastructure) with an average value of 85.96 rounded to 86 and variable Y (Learning Outcomes) with an average value of 82.15 rounded to 82. Meanwhile, in using parametric statistical calculations.

Tabel 1 Model Summary

<b>Model Summary</b>
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Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.232 <sup>a</sup>	0,054	0,016	3,839	0,054	1,419	1	25	0,245
a. Predictors: (Constant), IMPACT OF INFRASTRUCTURE									

The R value explains the level of relationship between the independent variable X and the dependent variable Y. Based on the table above, it can be seen that the correlation coefficient value is 0.232. This result is in accordance with the parametric statistical calculation, which means that the influence of Facilities and Infrastructure on Learning Outcomes is 23.2%. The coefficient of determination is a number of variations in Y caused by the variable X. From the table above, it can be read that the square value (R<sup>2</sup>) is 0.054. The determination coefficient value can be produced by squaring the correlation value of  $0.232^2 = 0.054$  or 5.4%.

This means that 5.4% of the variation in the influence of infrastructure is due to student learning outcomes, and the remaining 94.6% (100% - 5.4%) is influenced by other variables not used in this study. In other words, the magnitude of the influence of infrastructure on student learning outcomes is 5.4%. The remaining 94.6% is due to other factors that influence infrastructure on learning outcomes.

Tabel 2 Correlations

Correlations			
		LEARNING OUTCOMES	LEARNING OUTCOMES
Pearson Correlation	LEARNING OUTCOMES	1,000	0,232
	IMPACT OF INFRASTRUCTURE	0,232	1,000
Sig. (1-tailed)	LEARNING OUTCOMES		0,122
	IMPACT OF INFRASTRUCTURE	0,122	
N	LEARNING OUTCOMES	27	27
	IMPACT OF INFRASTRUCTURE	27	27

Based on the data that has been collected and analyzed carefully and thoroughly, further discussion of the data analysis is then conducted. This discussion includes the researcher's opinion after comparing the theory with its application in descriptive form.

Based on the data interpretation, it shows that the Influence of Facilities and Infrastructure in Improving Learning Outcomes is 0.232. These results indicate that facilities and infrastructure have a weak or very low influence in improving learning outcomes at Harvard Middle School Jakarta. The weak or very low correlation level is 0.20 – 0.40. So it is understandable that facilities and infrastructure have a weak or very low influence of 23.2% in improving learning outcomes. With this, it is proven that the Influence of Facilities and Infrastructure in Improving Learning Outcomes has a slight effect.

Infrastructure is equipment and supplies that are directly used and support the educational process, especially the teaching and learning process, such as buildings, classrooms, tables, chairs, and teaching tools and media, while 2. Learning outcomes are the abilities obtained by students through learning activities. In this case, learning outcomes can be seen from three aspects, namely cognitive aspects, affective aspects, and psychomotor aspects. To assess student learning outcomes, it can be reviewed from evaluations or taking PTS (Mid-Semester Assessment) exams, Daily Tests, PAS (End-Semester Assessment) and daily assignments.

To improve student learning outcomes, learning media, motivational learning methods, and adequate infrastructure are required to maximize learning outcomes. Researchers also found that the influence of infrastructure on learning outcomes was minimal, according to the data examined by the researchers. The development of commendable morals is an educational process aimed at developing a generation of the nation that is not only intellectually intelligent but also possesses strong personalities, noble character, and upholds national values. This is a crucial part of sustainable and dignified human resource development (Fahrany, S et al 2025).

Although this study has succeeded in finding out the influence between variable X (Infrastructure) and variable Y (Learning Outcomes), it does not mean that infrastructure alone can improve learning outcomes, but there are other factors that can influence learning outcomes such as the need for teacher teaching methods, student learning motivation, as well as communication and parental attention, and many other factors. These factors also need to be considered so that student learning outcomes improve better by using complete and optimal infrastructure.

## **1. Results of research observations**

Observations at Harvard Junior High School indicate that the school's facilities and infrastructure are quite complete and well-maintained. Each classroom is equipped with ergonomic desks and chairs, a whiteboard, an LCD projector, and

adequate air circulation. The school environment is clean, tidy, and beautiful, supported by a school garden and green areas that create a comfortable learning atmosphere. Furthermore, the school also has a library with a diverse collection of books, a representative science laboratory, and a computer room that supports students in technology-based learning(Ichsan and Arhamudin Ali 2020).

Observations also showed that the availability of these facilities and infrastructure directly impacted student learning activities in the classroom. Students appeared more focused and enthusiastic about participating in lessons when teachers used projectors or technology-based learning media. In the science lab, students were able to conduct experiments independently, thus strengthening their understanding of scientific concepts. This demonstrates that the available facilities can increase student active participation in learning activities.

Furthermore, a clean, well-organized school environment with green open spaces also positively impacts students' psychology. They appear more at home in school, rarely show signs of boredom, and demonstrate good discipline in participating in learning activities. Teachers also find adequate facilities helpful, as they facilitate varied and innovative delivery of materials(Amalia 2020).

Observations also found that not all facilities were being utilized optimally. Some computer rooms were rarely used regularly, and some students were not yet accustomed to using the library as a resource for independent learning. This indicates that even though adequate infrastructure is available, optimal utilization still requires familiarization, motivation, and guidance from teachers to truly impact learning outcomes.

Overall, these observations confirm that the good infrastructure at Harvard Middle School positively contributes to student learning outcomes. Students who study with adequate facilities tend to demonstrate higher academic achievement, have a strong enthusiasm for learning, and are able to develop critical and creative thinking skills. Therefore, it can be said that infrastructure is a crucial factor in supporting the achievement of educational goals at this school.

## **2. Results of research interviews**

Interviews with several teachers at Harvard Junior High School revealed that the availability of complete and well-maintained infrastructure significantly impacts the learning process and student outcomes. Teachers stated that the availability of comfortable classrooms, good lighting, and multimedia facilities such as LCD projectors, speakers, and a stable internet connection significantly assist them in delivering subject matter in a more varied manner. According to one science teacher, the use of adequate laboratories allows students to conduct hands-on experiments, allowing abstract material to be understood more concretely. This has been shown to increase students' absorption of science lessons.

The Indonesian language teacher also added that the library's rich collection of books and reading materials also supports students' interest in reading. Students who diligently utilize the library typically demonstrate better literacy skills, which are then reflected in their learning outcomes. Teachers recognize that the role of infrastructure is not merely complementary, but truly a medium that connects students to meaningful learning experiences (Adriana 2021).

Furthermore, several teachers emphasized the importance of a clean, green, and well-organized school environment. They believe a comfortable school environment has a significant psychological impact on student motivation. Students appear more disciplined, enthusiastic, and rarely feel bored during lessons. This is directly proportional to increased student attendance and consistency in completing schoolwork.

The interviews also revealed challenges. Several teachers stated that despite the complete facilities, they were not being utilized optimally. Some students were still not accustomed to using the laboratory independently, or lacked the initiative to utilize the library as a supplementary learning resource. Teachers felt the need for more intensive encouragement and habituation to ensure the available facilities truly provided maximum benefit.

Teachers at Harvard Middle School agree that adequate infrastructure positively contributes to student learning outcomes. With the support of these facilities, they have more freedom to develop innovative learning methods, while students become more active, creative, and motivated to learn. Therefore, the teachers hope that the school will continue to improve and maintain the existing infrastructure so that the quality of education at Harvard Middle School can continue to grow and have a tangible impact on student achievement.

Interviews with several students at Harvard Junior High School revealed that they directly benefit from the school's facilities and infrastructure. Most students reported that comfortable classrooms with neat chairs and desks, adequate lighting, and fans or air conditioning make them feel more at home studying. They noted that neat and clean classrooms create a more conducive learning environment, enabling them to focus better during lessons (Irawati 2018).

Students also reported that the presence of LCD projectors and speakers in the classroom helped them understand the material more easily, especially when the teacher displayed engaging images, videos, or presentations. They found learning with visual media more enjoyable than simply listening to the teacher's explanations. This helped them grasp the lessons more quickly, especially in abstract subjects like science and mathematics.

On the other hand, interviews also revealed that the laboratory and library are students' favorite facilities. Students who frequently use the laboratory find it helpful in understanding theory because they can directly conduct experiments. Similarly, in

the library, students who enjoy reading report being more motivated to seek additional references beyond the main textbook. They recognize that these facilities provide opportunities to broaden their knowledge and improve academic achievement.

In addition to academic facilities, students also mentioned the importance of a green and beautiful school environment. They feel more refreshed and motivated to learn when taking breaks in the school garden or field. They say a clean and comfortable school environment reduces boredom, making them more disciplined in attending school and participating in learning activities.

Some students also admitted they weren't used to maximizing the use of the facilities. For example, some rarely went to the library because they preferred studying online, or some felt the laboratory was only used for specific practicals. Despite this, most students acknowledged that the school's facilities significantly supported their understanding of the subject matter and improved their academic performance.

Interviews with students confirmed that good infrastructure positively impacts their comfort, motivation, and learning outcomes. Complete facilities not only make the learning process more effective but also foster interest in learning, independence, and a sense of responsibility for schoolwork. Students hope the school will continue to maintain and improve existing infrastructure, so that their learning experience becomes more quality and enjoyable.

#### **D. Conclusion**

Based on observations and interviews with teachers and students at Harvard Junior High School, it can be concluded that facilities and infrastructure play a crucial role in supporting the success of the teaching and learning process and have significant implications for student learning outcomes. The presence of comfortable classrooms, a representative science laboratory, a well-stocked library, a computer room equipped with technological facilities, and a clean and well-organized school environment have been proven to create a conducive learning atmosphere. These facilities not only provide physical comfort but also have a positive impact on students' psychology, making them more motivated, disciplined, and enthusiastic in participating in learning. Teachers benefit from adequate infrastructure because it allows them to implement varied, innovative, and more interactive learning methods. Meanwhile, students report understanding subject matter more easily when supported by visual media, hands-on experiments in the laboratory, or access to additional reading materials in the library. This demonstrates that infrastructure serves as a crucial bridge between the theory taught and real-life learning experiences, ultimately improving students' understanding, skills, and academic achievement. It can be concluded that the better the condition of school facilities and infrastructure, the higher the quality of student learning outcomes. Facilities and infrastructure are not merely complementary, but are a determining factor influencing educational success.

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