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The Influence of Learning Quality and School Infrastructure on Student Motivation in Automotive Engineering

Insan Arfani[1], Diding Nurdin[2], Eka Prihatin[3]

[1,2,3]Postgraduate of Education Administration, Indonesia University of Education, Indonesia

Corresponding author, email: insanarfani07@upi.edu

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Abstract

The components of learning quality and infrastructure play a fundamental role in maintaining and forming student learning motivation. This research seeks to analyze the influence of learning quality and infrastructure on student learning motivation. This research uses a quantitative research approach with descriptive correlation methods. The data used in the research is primary data obtained from the results of distributing questionnaires to research subjects, namely 100 students and teachers at SMK Negeri 1 Cilengkrang, Bandung Regency. The results of this research indicate that the quality of learning is in the adequate category, in the context of learning quality it indicates that the quality of learning is at an adequate level, but still has several weaknesses or areas of improvement that need attention, such as ownership of learning media because not all students have it. Furthermore, the infrastructure is known to be in a bad category. The bad category in the context of facilities and infrastructure indicates that the condition or quality of the facilities and infrastructure is below the standards expected to carry out certain functions or activities. Based on the results obtained, it can be understood that the quality of learning and infrastructure play an important role in motivating student learning.

Keywords: school infrastructure; student motivation; quality learning; automotive engineering

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INTRODUCTION

Motivation is generally an impulse within an individual that can cause, direct, or regulate the behavior of the individual. Motivation is closely related to fulfilling the needs felt by humans, whether in the form of spiritual or physical needs. Regarding learning activities, student learning motivation is the driving force within students that can generate, guarantee, and provide direction in learning activities so that the expected learning goals can be achieved. Students' learning motivation can cause them to have intensity and continuity in their learning process (Wardani et al., 2020). In general, motivation itself can be divided into two, namely intrinsic motivation and extrinsic motivation. Intrinsic motivation is motivation that comes from students themselves, such as self-confidence, the desire to

achieve goals, and curiosity. Meanwhile, external motivation comes from stimuli outside the student, such as parents, teachers and peers (Legault, 2020).

One of the external motivations that can influence students is learning facilities (Maheshwari, 2021; Marlina et al., 2021). Several previous studies found that the facilities and infrastructure provided at vocational schools showed that the infrastructure was inadequate to support the learning activities carried out (Cindy et al., 2022; Puspita et al., 2019; Chinyere Shirley et al., 2015). Adequate and well-maintained infrastructure will provide positive long-term benefits for learning (Umar et al., 2023). Schools that have good facilities and infrastructure are also seen as having better quality learning. That undoubtedly demonstrates that infrastructure and facilities are connected to the quality of learning that the school exhibits in addition to being tied to student motivation for learning (Barrett et al., 2019). The ability of a school to conduct instruction effectively and efficiently to develop and meet the established learning objectives is known as learning quality (Bali Sastrawan, 2016).

The quality of learning can be seen from learning input. The teaching staff or teachers are one input supporting the quality of learning (Brown, 2017). It is known that the learning motivation of students at SMK Negeri 1 Cilengkrang is based on the level of attendance or absenteeism of students in the field of Light Vehicle Engineering. Automotive in the 2023/2024 academic year averaged 79%, which fell into the sufficient category. That means that the student's attendance level is considered to have met the standards set by SMK Negeri 1 Cilengkrang. However, on the other hand, an attendance level of less than 100% is considered bad behavior and reflects a problem with the student's learning motivation. Students learning motivation is also influenced by the facilities and infrastructure to support the learning process, which refers to government regulation number 19 of 2005, article 42 paragraph 1, and national education ministerial regulation number 24 of 2007. The facilities and infrastructure supporting education at SMK Negeri 1 Cilengkrang, Bandung Regency, can be seen from the ownership of 18 classrooms and three practical rooms. Even though they have adequate classrooms and practice rooms, the practice equipment is known to be in poor condition and not proportional.

Nuraini et al. (2019) in her study stated that condition of quality of learning and infrastructure has an impact on student learning motivation, because good quality of learning and complete infrastructure can create conducive learning conditions. But, if learning support facilities are lacking and the quality of learning is low, it will cause a decline in students' enthusiasm for learning. The lack of student participation in the learning process shows this decline in enthusiasm for learning. Another study conducted by Sabrina et al. (2017) shows that one of the factors that causes students' low learning motivation in the learning process is the condition of the students' environment, one of which refers to the quality of learning, namely the facilities and infrastructure for students' learning at school. Therefore, based on the background explanation, this research aims to find out how the quality of learning and infrastructure influence student learning motivation at SMK Negeri 1 Cilengkrang in the Automotive Light Vehicle Engineering field, either simultaneously or partially.

METHOD

This research uses a quantitative approach with a descriptive correlation method intended to describe or provide an overview of the object under study through sample or population data as it is, without carrying out analysis and making conclusions that apply to the general public (Sugiyono, 2017). The data used in the research is primary data obtained from distributing questionnaires to research subjects, namely students and teachers at SMK Negeri 1 Cilengkrang, Bandung Regency. The number of samples in this research was 100 people, consisting of 83 students and 17 teachers. Data analysis was carried out through descriptive statistic and inferential analyses, including classical assumption (ANOVA) and multiple regression tests.

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RESULTS AND DISCUSSION

This research was conducted on 100 people, with details of 83 students and 17 teachers. The details of the distribution of respondents in this study are as follows.

Table 1. Distribution of Respondents

Department	Respondents	Gender	Total	Percentage
Automotive Engineering	Teachers	Man	13	13%
		Women	4	4%
	Students	Man	58	58%
		Women	25	25%
Total			100	100%

Sources: Processed by the Author (2024)

Based on the distribution of respondents shown in Table 1, it can be seen that all respondents came from the same major, namely automotive engineering. Of the total teacher respondents, 13 teachers were male, and 4 teachers were female. Meanwhile, among students, 58 respondents were male, and 25 respondents were female students.

The results of the descriptive analysis show that the average quality of learning is 3.50, which, if put into categorization, is in the interval 2.4 - 3.6 in the sufficient category. The adequate category in the context of learning quality indicates that the quality of learning is at an adequate level but still has several weaknesses or areas of improvement that need attention, such as ownership of learning media because not all students have it. Furthermore, infrastructure is known to have an average of 2.11, which, if put into categorization, is in the interval 1 - 2.3 in the not good category. The lousy category in the context of facilities and infrastructure indicates that the condition or quality of the facilities and infrastructure is below the standards expected to carry out certain functions or activities. That means that the facilities and infrastructure may experience significant problems, damage, or deficiencies, so they are no longer effectively used to support the learning process. Meanwhile, motivation is known to have an average of 3.39, which, if categorized, is in the interval 2.4 - 3.6 in the sufficient category. The sufficient category in the context of student motivation indicates that the student desires to learn at an adequate level.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15770.880	2	7885.440	579.127	.000[b]
	Residual	1320.760	97	13.616		
	Total	17091.640	99			

a. Dependent Variable: Y

b. Predictors: (Constant), X2, X1

Based on the table above, it is known that the P-value is 0.000, which is lower than the α or alpha value, which is 0.05, so it can be understood that the variables of educational quality (X1) and facilities/infrastructure (X2) together influence student motivation (Y).

Coefficients[a]

Unstandardized Coefficients		Standardized Coefficients
B	Std. Error	Beta
-4.115	2.156	
.560	.025	.692
.393	.027	.448

a. *Dependent Variable: Y*

The test results show the regression equation as follows: Y (student motivation) = -4.115 + 0.560 (quality of learning) + 0.393 (facilities and infrastructure) + e (distraction)

Based on the table above, it is shown that the variables of learning quality (X1) and infrastructure (X2) have a P-Value of 0.000, where the probability value is below 0.05, so it can be stated that partially the quality of learning and infrastructure affect student learning motivation.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.961[a]	.923	.921	3.690

a. Predictors: (Constant), X2, X1
b. Dependent Variable: Y

The table above shows that the coefficient of determination (R Square) is 0.923. That means that the influence of learning quality (X1) and facilities and infrastructure (X2) on student motivation (Y) is 92.3%.

Model		Standardized Coefficients	Correlations		
		Beta	Zero-order	Partial	Part
1	(Constant)				
	X1	.692	.867	.916	.637
	X2	.448	.719	.829	.413

a. *Dependent Variable: Y*

Based on multiplying zero order by beta on each independent variable, it is known that learning quality (X1) influences 60% and infrastructure (X2) influences 32.3%.

The Influence of Learning Quality on Learning Motivation

The results obtained in this research indicate that the quality of learning in schools has a positive influence on student learning motivation. The quality of learning in the automotive engineering department at SMKN 1 Cilengkrang, Bandung Regency, has an influence on student learning motivation by 60%. The results obtained in this study are in line with the results obtained by Pamungkas et al. (2022), which state that the quality of learning in schools has a positive influence on student learning motivation. That means that the better the quality of learning at school, the more impact it will have on increasing students' learning motivation. Furthermore, the quality of learning at SMKN 1 Cilengkrang, Bandung Regency, was measured in this study by student satisfaction, generally in the fair or adequate category. In the context of this research, the adequate category of learning quality refers to learning quality that meets minimum standards or is only sufficient to meet requirements but does not reach a

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higher level of excellence. These conditions are certainly not ideal, so there is a need to improve the quality of learning at SMKN 1 Cilengkrang, Bandung Regency. Improving the quality of learning should consider the findings in descriptive analysis, which shows that the lowest aspect of learning quality is in fulfilling learning needs, which have not yet become a priority for students.

Students at SMKN 1 Cilengkrang, Bandung Regency, do not yet have complete learning, so this impacts the quality of learning, according to the explanation. That is in line with Sinaga & Manik (2019), who state that improving the quality of learning should be carried out from the lowest aspects that shape the quality of learning, such as ensuring the availability of learning materials, facilitating challenging learning and stimulating students' interest. Apart from that, this research is also in line with the findings of Raisyifa & Sutarni (2016), which state that indicators of learning quality, namely teacher teaching performance, positively affect student learning motivation. Learning quality is a component of school assessment that shows the quality or excellence of the learning process being implemented by teachers, characterized by graduates or output of educational institutions or schools (Afifah & Mufidah, 2023). Learning quality can be determined and evaluated by reviewing the differences between general criteria such as learning design, learning performance, classroom management, infrastructure, and so on (Ofoghi et al., 2016). The quality of learning is also related to student learning motivation because it is one of the indicators used to assess the learning process being implemented. If the quality of learning is not adequate, then students' learning motivation tends to decrease. The results obtained in this research align with this opinion; the results of hypothesis testing show that the quality of learning has a reasonably strong influence on student learning motivation because the quality of learning will provide a stimulus to students, thus triggering changes in students' perceptions and behavior.

The Influence of Infrastructure on Learning Motivation

The results obtained in this research indicate that infrastructure in schools has a positive influence on student learning motivation. The infrastructure in the automotive engineering department at SMKN 1 Cilengkrang, Bandung Regency, has an influence on student learning motivation by 32.3%. The influence of facilities and infrastructure on students' learning motivation at SMKN 1 Cilengkrang, Bandung Regency, can impact students' learning motivation because facilities and infrastructure can influence students' feelings, attitudes, and behavior in the teaching and learning process. The results obtained in this research align with research by Jannah & Sontani (2018), which states that learning facilities strongly and directly influence student learning motivation. Facilities and infrastructure in this research are understood as tools that can support the learning process, both directly and indirectly. Facilities and infrastructure in the educational realm are intended to create a conducive learning environment and an effort to increase students' learning motivation (Dundar et al., 2014; Wang & Degol, 2016).

Other research explains that school facilities and infrastructure are external factors that influence student learning motivation because good facilities and infrastructure will make students feel comfortable and enthusiastic about learning. Apart from that, facilities and infrastructure such as libraries, laboratories, practical tools, and other learning equipment will increase the effectiveness of the learning process so that students do not feel bored when the learning process takes place (Sakdiyah & Fajar, 2020). Referring to research findings and previous research explanations, it can be understood that good facilities and infrastructure can create a supportive learning environment, trigger interest, and increase students' motivation to learn better. On the other hand, the inability to provide adequate facilities and infrastructure can hinder students' motivation and the development of their potential in the educational process.

The government has strengthened the importance of facilities and infrastructure in educational institutions through PP No. 19 of 2005 concerning National Education Standards and Regulation of the Minister of National Education Number 24 of 2007, which states that complete facilities and infrastructure in educational institutions must at least have study rooms, exercise areas, places of

worship, libraries, laboratories, work workshops, play areas, creative areas, as well as other learning resources needed to support the learning process, including the use of information and communication technology. Referring to the explanation of PP No. 19 of 2005 and Permendiknas No. 24 of 2007, it is known that the categories of facilities and infrastructure at SMKN 1 Cilengkrang, Bandung Regency, are not by existing standards. That can be seen from observation findings, which show that classrooms, facilities, and infrastructure in the automotive light vehicle engineering field are still not optimal. The results of this observation are confirmed by descriptive analysis, which shows that the facilities and infrastructure are in the poor category.

The Influence of Learning Quality and Infrastructure on Learning Motivation

The results obtained in this study show that the variables of educational quality (X1) and facilities/infrastructure (X2) together influence student motivation (Y) (0.00 < 0.05). Influence of learning quality (X1) and facilities and infrastructure (X2) on student motivation (Y) is 92.3%. These results show that the quality of learning and facilities and infrastructure in educational institutions have an essential role because they can make it easier for teaching staff to convey learning material and increase students' understanding of the information presented because of the visualization, which can stimulate students' learning motivation. The strong simultaneous influence of learning quality and infrastructure on students' learning motivation provides an understanding that the independent variables in the research have a strong causal relationship so that changes in the independent variables directly influence changes in the dependent variable. Infrastructure and quality of learning are essential in stimulating students' motivation because having infrastructure and quality of learning will facilitate the teaching and learning process (Ayeni & Adelabu, 2011; Metekohy et al., 2022). Nuraini et al. (2019) stated that the lack of learning support facilities and the low quality of learning causes a decline in students' enthusiasm for learning, as indicated by the lack of student participation in the learning process. This condition confirms that the quality of learning and infrastructure have a high causal relationship, so changes in the quality of learning and infrastructure will directly impact students' learning motivation.

CONCLUSION

Referring to research findings, it can be understood that the quality of learning and infrastructure play a crucial role in motivating student learning. The quality of learning is seen by explaining the material enthusiastically, encouraging active student participation, and providing constructive feedback and infrastructure by facilitating learning through libraries, laboratories, and access to technology, which differentiates it from previous studies that discuss the quality of learning in terms of student outcomes or levels of achievement, as well as infrastructure in terms of the ability to provide tools. However, ignoring access to technological developments specifically for the Automotive Light Vehicle Engineering sector is fundamental.

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