The Relationship Between Student Learning Motivation and Student Perceptions on Teacher Learning and Science Learning Outcomes at MTS Negeri 2 Surakarta

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ABSTRACT

The purpose of this research is to determine the relationship between student learning motivation and student perceptions of teacher learning with student learning outcomes. The research method used is a survey method with correlational analysis. The population used was students in class VIII of the Special Science Class Program at MTs Negeri 2 Surakarta. The sampling technique is a sample population with a sample of 83 students, data collection techniques are carried out using questionnaires, interviews and documentation. The results of this study show that there is no significant relationship between student learning motivation and learning outcomes and a correlation of 0.000 (0%). There is also no significant relationship between student perceptions of teacher learning and student learning outcomes and the correlation is -0.124 (1.5%). And there is no significant relationship between learning motivation and student perceptions of teacher learning on learning outcomes and the correlation is 0.136. The contribution of learning motivation and student perceptions of teacher learning to student learning outcomes was 1.84% and 98.16% influenced by other factors not researched. The results of this research indicate that student learning motivation and student perceptions of teacher learning do not improve student learning outcomes.

1. Introduction

Education plays a crucial role in achieving national educational goals, which are primarily realized through the learning process (Puspitasari, 2018). Teachers hold a significant position in education as they serve as the primary facilitators of learning. To fulfill their role effectively, teachers must meet established educational standards, including academic qualifications, competencies, physical and mental well-being, and the ability to implement national education policies, as outlined in Article 8 of Law No. 14 of 2005 concerning teachers and lecturers. Additionally, professional teachers must demonstrate essential teaching skills, creativity, and an engaging teaching style to enhance the learning experience. In an era of rapid technological advancement, teachers are also expected to integrate innovative teaching strategies and digital tools to cater to diverse learning needs (Roemintoyo & Budiarto, 2021). The ability to adapt to these changes is crucial in maintaining student engagement and improving learning outcomes.

Effective teaching depends on the ability of teachers to create a conducive learning environment that fosters student engagement and achievement (Sanjaya, 2006). According to Sopian (2016), the teacher plays a crucial role in student learning, particularly in teacher-centered instructional settings, where teacher-student interactions significantly influence student outcomes. Positive teacher-student interactions can enhance students' perceptions of their teachers, making the learning process smoother and more effective. A favorable perception of the teacher encourages student motivation and participation in class activities (Sriyono & Indonesia, 2021). This aligns with the concept of student-

centered learning, where meaningful teacher-student interactions contribute to critical thinking development and deeper understanding of the subject matter (Justino & Rafael, 2021).

Student motivation is a key factor in learning success. According to Astiti et al. (2021), motivation can be stimulated and sustained through external factors such as diverse teaching media, appropriate instructional methods, and dynamic teacher-student communication. Conversely, ineffective teaching strategies can negatively impact student learning outcomes (Hapnita et al., 2017). Teachers who fail to interact sufficiently with students may hinder the learning process, resulting in suboptimal academic performance. Afryansih (2017) also emphasized that student learning outcomes are determined by their engagement in the learning process and their ability to apply acquired knowledge. Furthermore, Deci & Ryan's (2000) Self-Determination Theory highlights that intrinsic motivation, fostered through autonomy-supportive teaching practices, plays a fundamental role in students' academic persistence and success.

Several studies have shown a positive correlation between student motivation, teacher performance, and learning outcomes. Motivation is often cited as a key determinant of student achievement. However, student perceptions of teachers can vary, affecting their level of engagement and academic performance. Effective instructional strategies enhance student motivation and contribute to better learning outcomes, whereas inefficient teaching methods may lead to poor academic performance. Despite the growing body of research on this topic, gaps still exist in understanding how student perceptions of teaching practices interact with motivation to influence academic success, particularly in the context of secondary education in Indonesia.

Based on preliminary observations and interviews conducted with a science teacher and an eighth-grade student at MTs Negeri 2 Surakarta, it was found that several students had unsatisfactory science grades in daily tests and midterm assessments. Students reported that the teaching methods employed were less engaging, with limited hands-on activities in the laboratory, leading to decreased motivation and enthusiasm for learning. The most frequently used instructional method was conventional, primarily lectures and question-and-answer sessions. This lack of variation in teaching strategies suggests the need for a more student-centered approach that actively involves learners in the educational process, such as inquiry-based learning or problem-solving strategies. Given these challenges, this study aims to examine the relationship between student motivation, student perceptions of teacher instruction, and eighth-grade science learning outcomes at MTs Negeri 2 Surakarta. The findings of this study are expected to provide insights into effective pedagogical approaches that can enhance student engagement and achievement in science education.

2. Method

This study employed a mixed-method approach, combining exploratory and quantitative methods. The exploratory method was used to examine lichen diversity by conducting field observations and sampling (Mudjiyanto, 2018). Purposive sampling was applied] to select the research location based on specific criteria to ensure that the collected data were representative of the diversity of lichen species. Lichen samples were taken from tree trunks with a diameter of more than 25 cm at a height of 1.3 meters above the ground. At each sampling station, seven trees with diverse lichen species were selected. Additionally, abiotic factors were measured, including air temperature, humidity, pH of the lichen substrate, and light intensity in the Mongkrang Hill climbing route area. Lichen morphology was observed using a stereo microscope to identify the type of thallus, thallus surface texture, color, and reproductive structures.

In addition to the exploratory approach, this study used a quantitative survey method to examine students' motivation and perceptions of teacher performance in learning. A descriptive survey was conducted with a total of 83 students from three different superior classes at MTs Negeri 2 Surakarta. The study took place at MTs Negeri 2 Surakarta, Jl. Transito, Pajang, District Laweyan, Surakarta City, Central Java, from February until completion.

Data collection utilized two types of questionnaires: 1) A motivation questionnaire, using a 5-point Likert scale with the following options: Always, Often, Sometimes, Rarely, and Never. 2) A student

perception questionnaire, also using a Likert scale with response choices: Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree. Data were processed using the SPSS 23 software. The research instrument was validated by expert judgment and empirical validation. Reliability tests were conducted, showing that the [motivation questionnaire had a high reliability level with a Cronbach's Alpha value of 0.872, while the student perception questionnaire had a reliability level of 0.674.

Prior to hypothesis testing, data were analyzed using prerequisite tests, including normality test, linearity test, homogeneity test, and multicollinearity test. Hypothesis testing was conducted using Pearson's Product-Moment correlation test, multiple correlation tests, and determination coefficient analysis to assess the contribution of independent variables (X_1 = motivation and X_2 = student perception of teacher performance) to the dependent variable (Y = student learning outcomes).

3. Results and Discussion

On study This use instruments questionnaire motivation Study, perception student on learning Teacher And results Study student. Before did it test analysis data and test hypothesis, data Which has accumulated will classified moreover formerly. Data Learning motivation research is divided into three category according to (Azwar, 2015). Following data classification variable motivation Study student analyzed with the help of M.S. Excel. Recapitulation of Learning Motivation Data, Student Perceptions of Teacher Learning and Student Learning Outcomes can be seen in table 1.

Table 1 . Recapitulation of Data on Learning Motivation, Student Perceptions of Teacher Learning and Student Learning Outcomes (N=83)

No.	Data Description	Student's Motivation to Study	Student Perceptions of Teacher Learning	Student learning outcomes
1.	Highest Score	94	99	94
2.	Lowest Score	59	65	42
3.	Mean	74.47 +/- 7.060	81.92 +/-7.879	74.83 +/-10.96
4.	Median	74	84	76
5.	Mode	69	84	80
6.	Biggest Categorization	Currently (70%)	Currently (69%)	Currently (67%)

Based on the Table 1, after calculating each variable from a total of 83 students, it shows that the highest score data for the three variables is 99, 94 and 94 and the lowest score for the three variables is 42.59 and 65. And for the standard deviation value, the spread of data is accurate if the value is below 10 and smaller than the mean. The safe standard deviation results are for the learning motivation and student perception variables of 7.060 and 7.879, while the standard deviation value for the learning outcome variable is quite high, namely 10.96. From the average results of the student learning motivation variable of 74.47 +/- 7.060, meaning the data is greater than the sample or the data is smaller than the mean which indicates deviations in the distribution of the data, the average student perception variable is 81. 92 +/- 7.879 which means that the data is greater than the sample or the data is smaller than the mean which indicates deviations in the distribution of the data and in the average data the learning outcome variable is 74.83 +/- 10.96 which means that the data larger than the sample or data smaller than the mean which indicates deviations in the distribution of the data . And the largest categorization of the three variables based on the average data of the three variables is in the medium category.

To find out the relationship between student learning motivation and student perceptions of teacher learning with student learning outcomes, correlational tests were carried out, namely the Pearson product moment correlation test, partial correlation test and multiple correlation test. Before testing the hypothesis, first carry out a prerequisite test using the normality test, linearity test, homogeneity test and multicollinearity test.

After knowing the categorization results in motivation Study, perception students on teacher learning and results Study student. Then, done test precondition. Test Normality in this study uses a test Kolmogorov-Smirnov. Normality test results from the three variables are normally distributed. That matter The results can be seen from the significance value of 0.200 > 0.05. Based on results normality in

on show that data have spread which is normal to the meaning of the resulting data represent A population. Test homogeneity used For know data used That own variant Which The same, based on results calculation test homogeneity in on X 1 -Y show mark with significance equal to 0, 075 > 0.05 and X 2 - Y has a value significance as big as 0.488 > 0.05. So results This shows that the data comes from homogeneous population because it is more than 0.05. Next, the linearity test is used for know between variable own connection which is linear or straight or not, on variables motivation Study And perception student on learning Teacher with results Study have the significance value of Deviation From Linearity is more big from 0.05. It means mark in on show it that there is connection Which linear between motivation Study with results Study and also has a linear relationship model between variable perception student on teacher learning with student learning outcomes. And the last is the multicollinearity test, based on results calculation show mark with tolerance on the learning motivation variable (X 1) and variable perception student on learning Teacher (X 2) that is as big as 0.837 And mark VIF (Inflation factors) as big as 1,195. In study This second variable have mark tolerance more from 0.1 And mark VIF not enough from 10 with it can be concluded that there is not significant relationship or multicollinearity between variable X.

Test hypothesis in study This use test correlation simple product moments For know connection between variables X 1 and Y and the relationship between X 2 and Y, Then use test correlation double For know connection between motivation learning and students' perceptions of learning Teacher to results Study student in a way together- The same. The results of the correlation between variable X1 and variable Y can be seen in table 2.

Table 2 . Correlation Results between Variable X 1 and Variable Y

Variable	R count	R table	Sig. (2-tailed)	Conclusion
X 1→Y	0,000	0.213	0.997	There is no significant relationship between variables X 1 and Y

Based on the results of the correlation test, it shows that the calculated r value < r table is 0.000 < 0.213 and the significance value obtained is 0.997 > 0.05, so H 0 is accepted and Ha is rejected, which means that the learning motivation variable is not significantly related to student learning outcomes. The correlation coefficient (r) value obtained is 0.000, indicating that the relationship between variables X 1 and Y is in the very low category with the direction of the correlation being positive. The results of the correlation between variable X2 and variable Y can be seen in table 3.

Table 3. Correlation Results between Variable X 2 and Variable Y

Variable	R count	R table	Sig. (2-tailed)	Conclusion
X 2→Y	-0.124	0.213	0.264	There is no significant relationship between variables X 2 and Y

Based on the results of the correlation test, it shows that the calculated r value < r table is -0.124 < 0.213 and the significant value obtained is 0.264 > 0.05, so H 0 is accepted and Ha is rejected, which means that student perception variables are not significantly related to student learning outcomes. The correlation coefficient (r) value obtained is -0.124, indicating that the relationship between variables X 2 and Y is in the very low category with the correlation direction being negative/in the opposite direction.

The results of the multiple correlation test show that the value of r calculated < r table is 0.136 < 0.217, so H 0 is accepted and Ha is rejected. Which means, there is no significant relationship between learning motivation and student perceptions of teacher learning and student learning outcomes. And the significance value is > 0.05, so there is also no relationship between learning motivation and student perceptions of teacher learning and student learning outcomes.

The size donation between variable calculated use formula coefficient determination. In calculating the coefficient of determination, especially First look for the correlation coefficient for each between variables. Correlation coefficient between motivations study with a learning outcome of 0.000, for coefficient correlation between perception student on teacher learning with learning outcomes of -0.124

and motivation correlation coefficient Study And perception student on learning Teacher to results Study as big as 0.1 36 . Following formula from coefficient determination:

$$KD= (r) 2 \times 100\%$$

From results calculation, obtained results coefficient determination show that learning motivation has an influence of 0.0% of student learning outcomes, calculation coefficient determination show that perception student on learning Teacher give influence as big as 1.5% to student learning outcomes. And the calculation results from motivation Study And perception student on learning the teacher has an influence of 1.84% to results Study student And For the remaining 98.16% is influenced by factors other Which No researched.

3.1 Connection Variable Motivation Study with Results Study

The results of the coefficient of determination analysis indicate that learning motivation contributes 0.0% to student learning outcomes, while [students' perceptions of teacher learning contribute 1.5%. The combined influence of learning motivation and student perceptions on teacher learning accounts for only 1.84% of student learning outcomes, leaving 98.16% influenced by other unexamined factors.

Descriptive analysis results show that student learning motivation is in the moderate category, with an average score of 74.47. This suggests that students have adequate motivation levels, but it may not be sufficient to significantly impact learning outcomes. The first hypothesis test, using a Pearson Product-Moment correlation test, revealed that there is no significant relationship between learning motivation and student learning outcomes. The statistical results ($r\_calculated = 0.000 < r\_table = 0.213$, $p = 0.997 > 0.05$) confirm that learning motivation does not significantly influence student learning outcomes.

These findings contradict theoretical expectations that higher learning motivation should lead to better academic performance. However, similar results were found in Herlianto et al. (2018), which reported a negative correlation (-2.120 < 1.987) between learning motivation and student achievement. This suggests that students with lower motivation sometimes achieve higher learning outcomes due to other contributing factors. The low contribution of motivation indicates that student learning outcomes are influenced by multiple external variables beyond motivation alone.

3.2 Connection Variable Perception Student on Teacher Learning with Results Study

The study findings also reveal that students' perceptions of teacher learning fall within the moderate category, with an average score of 81.92. Hypothesis testing results show that there is no significant relationship between students' perceptions of teacher learning and student learning outcomes. The correlation results ($r\_calculated = -0.124 < r\_table = 0.213$, $p = 0.264 > 0.05$) indicate that students' perceptions of teacher learning do not significantly affect their academic achievement.

According to Lestari et al. (2017), effective teaching involves variations in instructional delivery, such as modulating voice tone, adjusting body movements, and engaging students actively. Ideally, these variations should influence students' understanding of the material and subsequently impact their academic performance. However, observations and teacher interviews in this study indicate that traditional lecture-based and question-and-answer methods are still predominantly used, which may explain why students' perceptions of teacher learning do not significantly correlate with learning outcomes.

Furthermore, Sukarjita (2020) emphasized that the 2013 curriculum promotes the use of scientific and inquiry-based methods in science education], integrating problem-based and project-based learning. However, in this study's context, the instructional strategies observed do not fully align with these recommended methods. The results are also consistent with Herlianto et al. (2018), which found that the correlation between professional teacher performance and student learning outcomes is very low. This suggests that while teacher effectiveness is essential, it is not the sole determinant of academic success.

3.3 Connection Student Learning Motivation Variables and Perception Student on Teacher Learning with Results Study.

Descriptive analysis indicates that [student learning outcomes fall within the moderate category, with an average score of 74.83. Multiple correlation test results show no significant relationship between learning motivation, student perceptions of teacher learning, and student learning outcomes ($r\_calculated = 0.136 < r\_table = 0.217$, $p = 0.475 > 0.05$).

These findings align with Handoko & Ghofur (2020), who reported that teacher performance does not significantly impact student learning motivation or academic achievement. In contrast, previous research by Rikizaputra & Wulandari found a positive relationship, suggesting that contextual differences may explain the discrepancies.

One possible reason why teacher learning and learning motivation do not significantly influence student learning outcomes is the lack of close teacher-student relationships. Observations indicate that teachers do not provide enough encouragement, emotional support, or enthusiasm to engage students effectively. According to Guay et al. (2019); Li, Bergin, & Olsen (2022); Mallik (2023), a strong teacher-student relationship enhances student engagement and learning outcomes. Even if a teacher performs well, the absence of a meaningful connection with students may reduce their influence on student learning.

The coefficient of determination analysis further confirms that learning motivation and student perceptions of teacher learning contribute only 1.84% to student learning outcomes, while 98.16% of the variance is explained by other unexamined factors. This suggests that while teacher skills and student motivation play a role, their overall impact is minimal, possibly due to factors such as [student characteristics in superior class programs and instructional delivery methods.

4. Conclusion

Based on the results of data analysis], this study concludes that there is no significant relationship between student learning motivation and student learning outcomes, no significant relationship between student perceptions of teacher learning and student learning outcomes], and no significant combined effect of learning motivation and perceptions of teacher learning on student learning outcomes. These findings suggest that [student learning outcomes are influenced by other factors beyond motivation and perceptions of teacher learning. The low contribution of these variables indicates that elements such as teaching strategies, classroom environment, student engagement, and external influences may play a more crucial role in shaping academic achievement.

Given these results, future research should explore other potential factors affecting student learning outcomes, such as instructional methods, curriculum design, and socio-emotional aspects of learning. Additionally, educators should consider enhancing student-teacher interactions and employing more diverse teaching strategies to better support student achievement.

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