



RESEARCH ARTICLE

Implementation of Leadership Style Principal's Impact on Teacher Performance in Increase Performance Students at Kartika 1-2 High School Medan

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ABSTRACT

Keywords

Leadership,
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This study analyzes how the leadership style of school principals plays a role in improving teacher performance and its impact on student achievement at Kartika 1-2 High School in Medan. The researchers used an associative quantitative approach involving all teachers as respondents through saturated sampling techniques. Research data were obtained through questionnaires and processed using the Structural Equation Modeling-Partial Least Squares (SEM-PLS) method. The results of the analysis show that principals who implement effective leadership styles are able to significantly improve teacher performance. In addition, improvements in teacher performance have also been proven to contribute directly to improvements in student achievement. This confirms that the leadership style of the principal and teacher performance are two important interrelated factors in efforts to improve student learning outcomes.

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Introduction

The ability of an individual or group of individuals to influence, motivate, and direct their actions to achieve goals. Leadership is the ability of an individual to influence, direct, and motivate others to work together to achieve specific goals within an organization. In the world of education, leadership plays a crucial role because a school's success is determined not only by facilities and infrastructure, but also by the quality of the principal's leadership in managing all educational resources. According to Hasibuan (2020), performance or work achievement is the work results achieved by an individual in carrying out the tasks and responsibilities assigned to them. This performance can be seen from the quality and quantity of work successfully completed by employees while carrying out their duties. In the context of education, teacher performance is one of the main indicators in assessing the success of the educational process because teachers are the main implementers of learning activities in schools.

Teacher performance can be defined as a teacher's ability to carry out their professional duties in accordance with established objectives. These duties include developing lesson plans, implementing the learning process, and evaluating student learning outcomes. Therefore, teacher performance is not only

related to classroom teaching skills but also reflects their professionalism in managing all learning components effectively and in an integrated manner. Highly performing teachers are able to create a conducive learning environment, increase student motivation, and help students achieve optimal learning outcomes.

Hasibuan (2020) stated that school development and progress are greatly influenced by the quality of the school's leadership. As educational leaders, principals are responsible for organizing, directing, and managing all educational activities to effectively achieve school goals. Principals are also teachers who are given additional duties to carry out leadership functions within the school environment. Therefore, principals are required to possess professional leadership skills, including the ability to understand teacher needs, provide motivation, and create a work environment that supports improving the quality of education.

In an effort to improve the quality of education and student achievement, principals need to be able to enhance teacher performance through the application of appropriate leadership styles. Leadership style reflects how a leader acts in directing and influencing their subordinates. Effective leaders are able to encourage their subordinates to work voluntarily, disciplined, and productively to achieve organizational goals. In educational organizations, good leadership is essential because education is a system consisting of various interrelated components that influence each other in achieving educational goals. Principals and teachers play a strategic role in realizing this educational success.

The principal's behavior and actions will directly impact the behavior of teachers in carrying out their duties. Effective principal leadership can foster positive attitudes in teachers, such as increased self-confidence, work commitment, responsibility, and motivation to complete tasks optimally. Conversely, ineffective leadership can lead to low teacher morale and a decline in the quality of learning in schools.

Based on the results of a pre-survey conducted at SMA Kartika 1–2 Medan, several issues related to principal leadership and teacher performance were identified. These issues include the principal's lack of involvement in the decision-making process through providing suggestions and ideas, some teachers still completing work in a rush, and students not being fully able to apply learning materials in practice. These conditions indicate that efforts are still needed to improve the principal's leadership style and teacher performance so that the learning process can run more effectively and can improve student learning achievement.

Method

The research was implemented through a quantitative approach and used an associative research method to assess how two or more variables are interconnected and influence each other (Sugiyono, 2021:84). The study established one dependent variable, student achievement (Y), and two independent variables, teacher leadership style (X) and teacher performance (Z). As a sample, the researcher took all teachers at SMA Kartika 1–2 Medan, a total of 42 people. Sampling was carried out using a non-probability method through a saturated or census sampling technique. Because the population did not exceed 100 people, all members of the population were included.

Primary data was used as the main source, collected directly from respondents. To obtain the data needed for this study, the researcher distributed questionnaires to teachers as respondents .

Results and Discussion

Convergent Validity

In a measurement model with reflective indicators, researchers assess convergent validity by examining the correlation between the scores of each indicator or component and the construct score, as seen from the factor loading values calculated using the PLS method. The correlation value of the reflective indicators with the construct must exceed 0.70.

The following figure shows the results of the SEM-PLS model calculations.

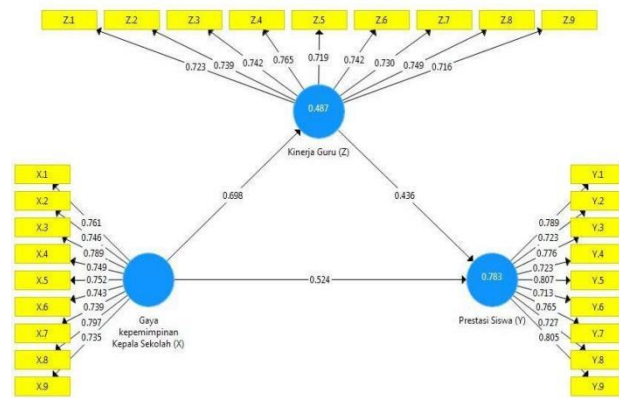


Figure 1. Convergent Validity

All indicators for each variable have external loading values above 0.70, according to data analysis with SmartPLS version 3.0, which is shown in Figure

These results indicate that the relationship between constructs and indicators meets the convergent validity criteria.

Discriminant Validity

The results of the discriminant validity test are presented here. Researchers assessed discriminant validity by looking at the *cross-loading values*. The cross-loading values of indicators on a particular construct are considered to meet the discriminant validity criteria. *The cross-loading values* for each indicator are shown as follows:

Table 1. Convergent Validity

Variabel	Gaya Kepemimpinan Kepala Sekolah (X)	Kinerja Guru (Z)	Prestasi Siswa (Y)
X1	0.761	0.454	0.604
X2	0.746	0.579	0.733
X3	0.789	0.618	0.650
X4	0.749	0.557	0.717
X5	0.752	0.451	0.612
X6	0.743	0.485	0.490
X7	0.739	0.454	0.474
X8	0.797	0.603	0.631
X9	0.735	0.491	0.496
Y1	0.669	0.682	0.789
Y2	0.657	0.704	0.723
Y3	0.595	0.638	0.776
Y4	0.525	0.459	0.723
Y5	0.657	0.564	0.807
Y6	0.704	0.659	0.713
Y7	0.581	0.645	0.765
Y8	0.531	0.469	0.727
Y9	0.650	0.580	0.805
Z1	0.490	0.723	0.659
Z2	0.536	0.739	0.587
Z3	0.546	0.742	0.604
Z4	0.568	0.765	0.716
Z5	0.408	0.719	0.545
Z6	0.515	0.742	0.595
Z7	0.512	0.730	0.548
Z8	0.455	0.749	0.444
Z9	0.558	0.716	0.555

Sumber: Data Diolah, (2025)

Table 1 shows that each research variable indicator exhibits the highest construct *cross-loading value*. These results indicate that all indicators have met the discriminant validity criteria for each variable. In addition to *cross-loading*, researchers can also assess discriminant validity through the AVE value, which is considered met if the value is > 0.50.

Table 2. Average Variant Extracted (AVE)

Variable	Average Variance Extracted (AVE)
Student Achievement (Y)	0.573
Principal Leadership Style (X)	0.542
Teacher Performance (Z)	0.577

Source: Processed Data (2025)

Table 2 shows that the Average Variance Extracted (AVE) values for the variables teacher performance, principal leadership style, and student achievement were all above 0.50. Based on these findings, the researchers concluded that all variables met the criteria for *discriminant validity* well and appropriately.

Composite Reliability

Researchers assess the consistency of indicators in forming a variable using *composite reliability values*. A variable is considered reliable if its *composite reliability value* is >0.70 . The following are the composite reliability values for each variable in this study:

Table 3. Composite Reliability

Variable	Composite Reliability
Student Achievement (Y)	0.924
Principal Leadership Style (X)	0.923
Teacher Performance (Z)	0.914

Source: Processed Data (2025)

All research variables had composite reliability values >0.70 , according to Table 3. These results indicate that each variable met the composite reliability criteria. Therefore, all research variables are considered to have a high level of reliability.

Cronbach's Alpha

In addition to assessing using *composite reliability*, researchers also evaluated the reliability of each variable using *Cronbach's alpha value*, where each variable in the study is presented in a table. A variable is considered reliable if its alpha value is > 0.70 .

Table 4. Cronbach's Alpha

Variable	Cronbach's Alpha
Student Achievement (Y)	0.908
Principal Leadership Style (X)	0.907
Teacher Performance (Z)	0.894

Source: Processed Data (2025)

The results of the study show that each variable has a high level of reliability, as shown by *the Cronbach's alpha values* in Table 4, all of which exceed the minimum limit of 0.70.

Path Coefficient Testing (Multiple Linear Regression)

Researchers conducted path coefficient evaluations to determine the strength and direction of the influence of the independent variables on the dependent variable. Figure 2 shows two important findings, which demonstrate the design of the SEM-PLS structural model:

1. The principal's leadership style variable (X) has a positive impact on teacher performance (Z), with a path coefficient value of 0.698 between the two. The principal's leadership style variable (Y) and student achievement (Y) have a path coefficient value of 0.524.
2. Student achievement (Y) is positively influenced by teacher performance (Z), which has a path coefficient value of 0.436.

Goodness of Fit Testing (R-Square)

Researchers obtained the R-Square value from the results of data processing using the SmartPLS version 3.0 application, which is presented as follows:

Table 5. R- Square

Variable	R-Square
Teacher Performance (Z)	0.487
Student Achievement (Y)	0.783

Source: Processed Data (2025)

Table 5 shows that the principal's leadership style and teacher performance each accounted for 48.7% of the variation in teacher performance (Z), and both also accounted for 78.3% of the variation in student achievement (Y). The remaining percentage was influenced by additional components not included in this study.

Hypothesis Test Results

The following figure shows the results of hypothesis testing obtained through the *bootstrapping method*.

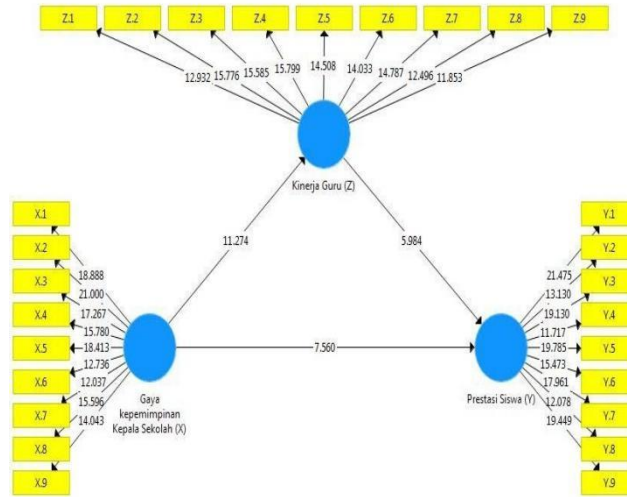


Figure 2. Bootstrapping Test Results

To test the research hypothesis, researchers used *bootstrapping test results*. If the t-statistic value exceeds 1.96 and the p-value is below 0.05, the hypothesis is supported. SmartPLS software version 3.0 generates all data processing outputs.

Table 6. Direct Effect of T- Statistics and P- Values

Path	Original Sampel (O)	T Statistics (T)	P-Values
X → Z	0,698	11,274	0,000
X → Y	0,524	7,560	0,000
Z → Y	0,436	5,984	0,000

Sumber: Data Diolah, (2025)

Based on Table 6, the summary of the results of the hypothesis testing can be explained as follows:

1. The first hypothesis was accepted because the analysis findings confirmed that the principal's leadership style (X) significantly influenced teacher performance (Z). This was demonstrated by the t-statistic of 11.274, which far exceeded 1.96, and the p-value of 0.000, which was below 0.05.
2. The results of data processing also indicate that the principal's leadership style (X) significantly contributes to teacher performance (Z). A t-statistic value of 7.560 > 1.96 and a p-value of 0.000 < 0.05 confirm that the relationship is significant.
3. The third hypothesis was proven valid, where teacher performance (Z) had a significant influence on student achievement (Y). Statistical evidence is seen from the t-statistic value of 5.984—greater than 1.96—and the p-value of 0.000, which is below the 0.05 significance level.

Table 7. Indirect Effect of T- Statistics and P- Values

Path	Original Sampel (O)	T Statistics (T)	P-Values
X → Z → Y	0,304	5,298	0,000

Sumber: Data Diolah, (2025)

The t-statistic value of 5.298 exceeds the critical limit of 1.96, and the p-value of 0.000 is below 0.05, as shown in Table 7. These results indicate that the principal's leadership style (X) has a significant influence on student achievement (Y), through teacher performance (Z) as an intervening variable. Based on these findings, the researcher concluded that the fourth hypothesis was accepted.

1. The Influence of Principal Leadership Style on Teacher Performance: The analysis results show that the principal's leadership style (X) significantly contributes to teacher performance (Z). The t-statistic value of 11.274, which is higher than 1.96, and the p-value of 0.000, which is lower than 0.05, indicate this. Therefore, the first hypothesis is accepted.

2. The Influence of Principal Leadership on Student Achievement: Hypothesis testing shows a t-statistic value of 7.560 which is higher than 1.96 and a p-value of 0.000 which is less than 0.05. The second hypothesis is accepted because this finding indicates that the principal's leadership style (X) has a significant influence on student achievement (Y).
3. Teacher Performance Influences Student Achievement: The results of the study showed a t-statistic value of 5.984, which exceeded the critical limit of 1.96, and a p-value of 0.000, which met the significance criteria. The third hypothesis was accepted because the conditions showed that teacher performance (Z) significantly influenced student achievement (Y).
4. The Influence of Teacher Performance on Principal Leadership on Student Achievement: The indirect effect test found a t-statistic value of 5.298, which is higher than 1.96, and a p-value of 0.000, which is lower than 0.05. These results indicate that the principal's leadership style (X) significantly influences student achievement (Y) through teacher performance (Z) as an intervening variable. Therefore, the fourth hypothesis is also accepted.

Discussions

The results of the study indicate that all indicators in the variables of principal leadership style, teacher performance, and student achievement have met the validity and reliability criteria. The outer loading values of all indicators are above 0.70, thus fulfilling the requirements of convergent validity. This finding indicates that each indicator is able to accurately represent the construct being measured. In addition, the results of discriminant validity through cross-loading and the Average Variance Extracted (AVE) value above 0.50 indicate that each research variable has a good ability to differentiate its construct from other constructs. Composite reliability and Cronbach's alpha values all above 0.70 also indicate that the research instrument has a high level of consistency and reliability. Thus, the measurement model in this study is considered feasible and can be used to test the relationship between variables.

The results of the path coefficient test indicate that the principal's leadership style has a positive and significant influence on teacher performance. The path coefficient value of 0.698 indicates that the better the principal's leadership style, the higher the teacher performance. The results of the hypothesis test support this finding with a t-statistic value of 11.274 and a p-value of 0.000. These findings prove that the principal has a strategic role in improving the quality of teacher work through the ability to lead, direct, provide motivation, and create a conducive work environment. A principal who is able to implement an effective leadership style will encourage teachers to work more disciplined, responsible, and professional in carrying out learning tasks.

This study also found that the principal's leadership style has a positive and significant effect on student achievement, with a path coefficient of 0.524. A t-statistic of 7.560 and a p-value of 0.000 indicate that the relationship is statistically significant. These results indicate that student success is not only influenced by the abilities of individual students or teachers, but also by how the principal manages and leads the school. Good principal leadership can create a positive school culture, increase teacher morale, and support a more effective learning process, thus impacting student achievement.

Furthermore, the results of the study indicate that teacher performance has a positive and significant influence on student achievement with a path coefficient value of 0.436. The results of the hypothesis test showed a t-statistic value of 5.984 and a p-value of 0.000. These findings indicate that the better the teacher's performance in planning, implementing, and evaluating learning, the better the student's learning achievement. Professional teachers are able to create an active, innovative, and enjoyable learning atmosphere so that students more easily understand the learning material and apply it in practice.

The R-square value of 0.487 for the teacher performance variable indicates that the principal's leadership style can explain 48.7% of the variation in teacher performance. Meanwhile, the R-square value of 0.783 for the student achievement variable indicates that the principal's leadership style and teacher performance together can explain 78.3% of the variation in student achievement. These values indicate that the research model has strong explanatory power for the dependent variable.

In addition to the direct effect, this study also found an indirect effect of the principal's leadership style on student achievement through teacher performance as an intervening variable. The t-statistic value of 5.298 and p-value of 0.000 indicate that the indirect effect is significant. This means that improved student achievement can be achieved through improved teacher performance supported by an effective principal leadership style. Therefore, the principal plays a crucial role in creating better quality education through optimal teacher management.

Conclusions and Recommendations

Based on the results of data analysis, several important findings were obtained that the principal's leadership style at SMA Kartika 1-2 Medan has a positive and significant influence on teacher

performance, which indicates that effective leadership can improve the quality of teachers' work in implementing the learning process. In addition, the principal's leadership style also has a positive and significant influence on student achievement, so it can be interpreted that good leadership can create a conducive learning environment and support student academic success. Teacher performance is also proven to have a positive and significant influence on student achievement, which confirms that the quality of teaching and teacher professionalism play an important role in improving student learning outcomes. Furthermore, the results of the study indicate that the principal's leadership style indirectly influences student achievement through teacher performance as a mediating variable, so it can be understood that good leadership will first improve teacher performance, which ultimately has an impact on improving student achievement.

Research result allows a number of recommendation following :

1. Principal Leadership Style

With consider lowest average value of 3.00 on the variable style leadership , parties school expected more give attention to teachers who have not get directions Work in a way clear from head school . Need existence more communication structured so that teachers no longer work based on preference personal , but follow guidelines that have been set .

2. Teacher Performance

Lowest average value of 3.23 on the variable teacher performance shows the need improvement coaching towards teachers who tend to finish task in a way in a hurry . School need ensure that teachers are able operate not quite enough the answer optimally , either through supervision , mentoring , and relevant training .

3. Performance Students (Aspects Understanding of Material)

Based on lowest average value of 3.21, school recommended For give attention more to students who are still difficulty put forward return material that has been studied . Improvement efforts can done through method more learning interactive , evaluation sustainable formative , as well as giving bait effective feedback .

4. Performance Students (Aspects Deepening of Material)

With lowest average value by 3.11, school need improve learning strategies that encourage student For understand and appreciate material in a way more in - depth approach learning based projects , discussions , reflections , and strengthening material can used For help student reach greater understanding comprehensive.

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