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| **The Influence of Education Management, Transformational Leadership, and Teacher Performance Effectiveness on Student Learning Outcomes at** **SMAN 1 Dolok Pardamean Simalungun Regency****Mario Asido Sipayung1\*, Innocentius Bernarto2**Universitas Pelita Harapan, IndonesiaEmail:marioasidosipayung@gmail.com1,innocentius.bernarto@uph.edu 2Correspondence: marioasidosipayung@gmail.com |

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| **KEYWORDS** | **ABSTRACT** |
| Education Management; Transformational Leadership; Teacher Performance | This research examines the influence of education management, transformational leadership, and effective teacher performance on student learning achievement at SMAN 1 Dolok Pardamean, Simalungun Regency. Based on observations and interviews, it was found that effective education management, transformational leadership, and optimal teacher performance contribute to improving student learning outcomes. This research used a quantitative approach with the SEM-PLS method to analyze the relationship between variables. The research subjects were 41 SMAN 1 Dolok Pardamean teachers in the odd semester of the 2024/2025 school year. The results of the analysis show that education management, transformational leadership, and teacher performance positively affect student learning achievement. The path coefficients for each variable are 0.312, 0.342, and 0.373, with a p-value <0.05, indicating a significant effect. The model can explain 76.7% of the variance in student learning outcomes. The findings confirm the importance of effective education management implementation and transformational leadership in improving learning quality and student learning outcomes. |
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**Introduction**

In formal education, students play an important role in success. They are not just beneficiaries but also determining factors for the quality of an educational institution. Therefore, schools must manage students effectively so that their potential develops optimally according to their physical and intellectual abilities (Sherly & Nadya, 2022, p. 1).

Student learning outcomes reflect the success of the learning process at school. These learning outcomes show the competencies and skills that students receive after going through a series of learning activities (Pido et al., 2023, p. 23). The learning process is successful if it positively changes students' knowledge, understanding, skills, and attitudes (Angraini et al., 2021, p. 139).

Furthermore, learning outcomes also act as indicators to evaluate the learning process, identify student learning difficulties, and measure the level of mastery of competencies. Thus, analyzing learning outcomes is crucial to improving learning effectiveness (Maharani, 2020, p. 2).

Interviews with the principal of SMAN 1 Dolok Pardamean in Simalungun Regency revealed that teachers are required to plan and implement learning oriented towards achieving optimal student learning outcomes. According to the principal, careful lesson planning is an important foundation for effective learning. Teachers must formulate clear learning objectives, choose appropriate learning methods, and develop accurate assessment instruments. They must also maximize their performance so that learning is of high quality and produces satisfactory output.

Although every educational institution expects students to achieve good learning outcomes, the reality is that there are still students who show learning outcomes below expectations. This is also the case for SMAN 1 Dolok Pardamean, Simalungun Regency students. This problem can be seen from the End of Semester Assessment (PAS) for the odd school year 2023/2024 in class X, where out of 179 students in class X, 82 students (45.8%) obtained scores above the KKM, while 97 students (54.2%) obtained scores below the KKM. The evaluation of student's academic achievement at SMAN 1 Dolok Pardamean, Simalungun Regency, uses the school's standard Minimum Completion Criteria (KKM), which is 70. Students with scores exceeding 70 are considered to have demonstrated satisfactory learning outcomes.

Observations and discussions with teachers at SMAN 1 Dolok Pardamean in Simalungun Regency indicate several aspects that trigger low student learning achievement, including students' lack of willingness and focus, difficulty understanding the subject matter, and lack of discipline in studying at home.

This is in line with Nabillah and Abadi's (2019, 661) view that the low quality of education can be seen in students' inability to apply the knowledge gained despite obtaining high grades. In addition, ineffective learning habits and lack of motivation also contribute to low learning outcomes. Other influential factors are student activeness in the learning process and the teacher's skill in delivering the material.

 Teachers often prioritize learning outcomes over the learning process as an indicator of success. Evaluation that only focuses on learning outcomes can create the impression of blaming students if their learning results are not satisfactory. Education includes both processes and outcomes. Therefore, evaluation should cover both aspects in a balanced manner (Magdalena, 2023, p. 837).

Students ' academic achievement reflects the complex interaction between internal and external factors. Internal factors include individual characteristics such as interests, aptitudes, health conditions, and learning patterns. On the other hand, external factors include family, community, and school environments, which significantly shape students' learning experiences (Nabillah & Abadi, 2020, p. 661).

This study investigates external factors that allegedly influence student learning outcomes at SMAN 1 Dolok Pardamean in Simalungun Regency. These factors include education management, transformational leadership and teacher performance effectiveness. To achieve educational goals effectively and efficiently, educational management requires a cooperative process involving the maximum possible utilization of all available human and material resources as defined by Djam'an Satori in Sherly and Nadya (2022, 3).

High quality education, supported by effective education management and competent teachers, is a crucial factor in improving students' learning motivation. When students feel the real benefits of the education they receive, they will be more motivated to learn and develop their skills and potential (Julaiha et al., 2023, p. 2661). Students' learning drive, which will advance and improve their learning outcomes, can thrive in a positive and supportive learning environment.

Structured learning development, implementation and assessment, and optimal resource management, are some of the important aspects of effective education management. Effective management will foster a supportive learning atmosphere, accommodate the specific needs of each learner, and implement engaging learning designs with accurate delivery strategies (Julaiha et al., 2023, p. 2662). This approach will make students feel valued and understood, increasing their learning motivation.

Despite its important role, implementing effective education management still faces various challenges. Some obstacles faced at SMAN 1 Dolok Pardamean in Simalungun district include a lack of resources, a lack of teachers' knowledge and ability to implement education management, and a lack of support from parents and the community.

Observations and interviews with the principal of SMAN 1 Dolok Pardamean Simalungun Regency show that the implementation of education management in the school has been running quite well. However, there is still room for improvement. The management functions applied at this time are based on the needs, especially in controlling and preventing errors in various school activities. Implementing effective education management is crucial for SMAN 1 Dolok Pardamean Simalungun Regency.

In addition to educational management, transformational leadership is also thought to influence student learning outcomes. An institution's optimal goals or targets greatly impact the effectiveness of the leadership applied. In the context of current global developments, transformational and transactional leadership are seen as two relevant and significant forms of leadership (Yukl, 2009, p. 258).

Teacher performance can be negatively affected by suboptimal transformational leadership of principals (Joen et al., 2022, p. 4). Teachers may teach monotonously, underprepared, and not fully refer to the required curriculum. The dominant lecture method and inconsistency in the implementation of lesson plans can also reduce student learning outcomes. A study conducted by Darlina et al. (2022, p. 117) indicates a relevant correlation between teacher performance and the achievement of student learning outcomes. (Less than optimal planning, implementation, and evaluation of learning will minimize the chances of improving student learning outcomes).

 In SMAN 1 Dolok Pardamean Simalungun Regency, transformational leadership was lacking. This can be observed from several indicators, such as the leader's lack of charisma, inability to provide inspirational motivation, and lack of encouragement and attention to teachers in facing problems. The working atmosphere and communication between leaders and teachers were also observed to be less harmonious.

In addition to education management and transformational leadership, the effectiveness of teacher performance is another factor hypothesized to influence student academic achievement. A teacher's success in the learning process cannot be measured by only one benchmark. One crucial indicator that can be used is the extent to which the educator can integrate various elements of learning support effectively. This includes the ability to apply the right learning media, choose methods based on the characteristics of students and teaching materials, and utilize additional relevant learning resources.

Employee performance in providing services is a crucial parameter in measuring the success of an organization. The main basis for this research is the important role of employees as the main determinant in achieving the effectiveness and efficiency of organizational operations, especially in the implementation of tasks and functions. The organization's ability to meet the needs of stakeholders through systematic efforts and continuous capacity building is highly dependent on employee performance (Mannayong & Djafar, 2018, p. 79).

The performance of all personnel, particularly at SMAN 1 Dolok Pardamean in Simalungun Regency, is vital in achieving education and learning objectives. Performance can be defined as an individual's capacity to carry out a series of activities that directly contribute to advancing key technical aspects. Furthermore, performance also includes patterns of action aligned with organizational goals, which can be measured through their contribution to the level of organizational effectiveness (Yuliansyah & Herman, 2023, p. 275).

Based on the teacher performance assessment results at the end of the 2023 school year at SMAN 1 Dolok Pardamean in Simalungun Regency, there was a decrease in the number of teachers with excellent performance. The number of teachers with excellent performance decreased from 12 teachers in 2021 to only 9 teachers in 2022 and then to 8 teachers in 2023. Similarly, the number of good-performing teachers totaled 20 in 2021 decreased to 19 in 2022 and 17 in 2023. Meanwhile, the number of teachers with good performance increased from 5 in 2021 to 9 in 2022 and 11 in 2023. Although teacher performance is generally satisfactory, some teachers still have not met the required academic qualification standards, namely a minimum education level of Diploma IV or Strata 1 accompanied by teacher certification (at least Akta IV). This indicates the need to improve their competence through formal education to broaden their knowledge of students' characteristics and various learning models. The mismatch between academic qualifications and professional demands can limit teachers' ability to implement effective learning strategies and accommodate the diverse learning needs of students.

Poor teacher performance is characterized by the inability to implement the program that has been set. This condition indicates ineffective performance because it does not match the expected criteria (Mannayong & Djafar, 2018, p. 82).

Based on these problems, research on student learning outcomes at SMAN 1 Dolok Pardamean, Simalungun Regency, needs to be conducted. This study aims to examine some important impacts expected to contribute to the development of education at SMAN 1 Dolok Pardamean, Simalungun Regency. This study aims to examine the positive impact of the implementation of education management on student learning achievement, examine the positive impact of the implementation of transformational leadership on student learning achievement, and identify the positive impact of the effectiveness of teacher performance on student learning achievement at the school. Benefits of the Results This research is expected to contribute to developing theory and practical implementation. Theoretically, this research is expected to significantly contribute to the development of the discipline of organizational behavior, especially educational management, focusing on the relationship between transformational leadership, teacher performance, and student learning outcomes. This research is also expected to be a reference for other researchers and provide new insights into the world of education. Practically, this research aims to optimize the learning process at SMAN 1 Dolok Pardamean by providing information to education stakeholders regarding the relationship between education management, transformational leadership, teacher performance, and the achievement of student learning outcomes. Hopefully, the results of this study can improve the efficiency of educational management, the implementation of optimal leadership, and the effectiveness of teacher performance, with the ultimate goal of improving student learning outcomes and overcoming problems in the school environment.

**Material and Methods**

This research uses positivism-based quantitative methods to test hypotheses through statistical data analysis. The design used is associative quantitative, which aims to analyze the influence or relationship between variables (Sugiyono, 2020: 37). This study involves four variables: transformational leadership, academic supervision, interpersonal communication, and teacher performance. Teacher performance is the dependent variable (endogenous), while the other three are independent variables (exogenous).

This research took place at SMAN 1 Dolok Pardamean Simalungun Regency, located at Jl. Tigaras Sipintuangin, Parik Sabungan, Kec. Dolok Pardamean, Kab. Simalungun,. Prov North Sumatra. It was conducted from August to December 2024. In this study, the subjects were the entire population of 41 teachers at SMAN 1 Dolok Pardamean, Simalungun Regency, in the odd semester of the 2024/2025 school year.

The data collection technique in this study used a questionnaire distributed online via Google Forms. In accordance with Sugiyono's (2020) explanation, the questionnaire consists of a series of written questions that respondents answer. The type of questionnaire used is a closed questionnaire with a Likert scale, which limits responses to predetermined answer choices, facilitating data processing and comparison of results. The Likert scale has five answer choices to measure individual behavior.

Data analysis techniques in this study used SEM-PLS with SmartPLS 3.0 software to test hypotheses and analyze relationships between variables. Three exogenous variables (education management, transformational leadership, teacher performance effectiveness) and one endogenous variable (student learning outcomes) were analyzed. The measurement model tested the validity and reliability of the constructs, with criteria such as composite reliability values and Cronbach Alpha above 0.7 and AVE more than 0.5. The structural model tests the predictive ability between latent variables with R-Square and hypothesis test results based on T-Statistic and P-Value. The hypothesis is accepted if the T-Statistic is more than 1.96 and the P-value is less than 0.05, and is rejected if otherwise...

**Results and Discussion**

**Inferential Statistics**

**Outer Model Test**

1. Convergent Validity Test (Convergent)

The convergent validity test results presented in the following table are analyzed by observing the loading factor value on each statement item.

**Table 1. Convergent Validity Test Results with Outer Loadings**

| **Variables** | **Item** | **Outer Loadings I** | **Outer Loadings II** |
| --- | --- | --- | --- |
| Student Learning Outcomes | Y.1 | 0.757 | 0.760 |
| Y.2 | 0.824 | 0.799 |
| Y.3 | 0.618 | - |
| Y.4 | 0.851 | 0.856 |
| Y.5 | 0.800 | 0.830 |
| Y.6 | 0.821 | 0.842 |
| Education Management | X1.1 | 0.773 | 0.776 |
| X1.2 | 0.684 | - |
| X1.3 | 0.727 | 0.746 |
| X1.4 | 0.792 | 0.794 |
| X1.5 | 0.781 | 0.782 |
| X1.6 | 0.758 | 0.748 |
| X1.7 | 0.812 | 0.802 |
| X1.8 | 0.769 | 0.787 |
| X1.9 | 0.769 | 0.762 |
| X1.10 | 0.780 | 0.806 |
| X1.11 | 0.714 | 0.731 |
| LeadershipTransformational  | X2.1 | 0.835 | 0.832 |
| X2.2 | 0.901 | 0.899 |
| X2.3 | 0.933 | 0.932 |
| X2.4 | 0.914 | 0.914 |
| X2.5 | 0.930 | 0.931 |
| X2.6 | 0.868 | 0.870 |
| X2.7 | 0.846 | 0.849 |
| X2.8 | 0.910 | 0.910 |
| Teacher Performance Effectiveness | X3.1 | 0.691 | - |
| X3.2 | 0.898 | 0.884 |
| X3.3 | 0.878 | 0.872 |
| X3.4 | 0.833 | 0.872 |
| X3.5 | 0.850 | 0.859 |
| X3.6 | 0.832 | 0.860 |

Source: Processing Primary Data (2024)

Although the majority of statement items have values loading factor above 0.70, the table shows that there are three statement items with values below 0.70, namely Y.3 (0.618) on the student learning outcomes variable, X1.2 (0.684) on the education management variable, and X3.1 (0.691) on the teacher performance effectiveness variable. A complete visualization of the  value of  loading factor each statement item is presented in the following figure:



**Figure 1. Convergent Validity Test Results with Outer Loadings I**

Source: Primary Data Processing (2024)

Three statement items that did not meet the validity standards because they had a value loading factor below 0.70 were removed from further analysis. After these deletions, the validity test convergent was re-conducted, and all remaining statement items had a value loading factor above 0.70, as shown in the following figure.



**Figure 2. Results of Convergent Validity Test with Outer Loadings II**

Source: Primary Data Processing (2024)

Analysis of the test convergent validity conducted by looking at the value loading factor on each statement item shows that of the 31 statement items tested, 28 items were declared valid (loading factor> 0.70), and 3 items were declared invalid (loading factor <0.70). The invalid statement items were deleted, and then data processing was carried out to obtain the valueAverage Variance Extracted (AVE).  If the AVE value obtained is below 0.5, the variable does not meet the rule of thumb.

**Table 2. Results of Convergent Validity Test with Average Variance Extracted (AVE)**

|  |  |
| --- | --- |
| **Variables** | **AVE Value** |
| Learning Outcomes | 0.670 |
| Education Management | 0.599 |
| Transformational Leadership | 0.797 |
| Performance Effectiveness | 0.756 |

Source: Primary Data Processing (2024)

Table 2 shows that all research variables have AVE values above 0.50, which indicates the fulfillment of convergent validity requirements.

1. Discriminant Validity Test.

**Table 2. Fornell-Larcker Criterion Discriminant Validity Test Results**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Performance Effectiveness** | **Learning Outcomes** | **Transformational Leadership** | **Education Management** |
| Performance Effectiveness | 0.869 |  |  |  |
| Learning Outcomes | 0.747 | 0.818 |  |  |
| Transformational Leadership | 0.520 | 0.732 | 0.893 |  |
| Education Management | 0.628 | 0.761 | 0.628 | 0.774 |

Source: Primary Data Processing (2024)

The results of the discriminant validity analysis shown in Table 2 show that all variables in this study have met the criteria for discriminant validity. This is reflected in the higher cross loading value of each indicator on the measured variable compared to other variables. For example, on the student learning outcomes variable, the cross loading value (0.818) is higher than the cross loading value on the teacher performance effectiveness variable (0.747). Similarly, the transformational leadership and education management variables have higher cross loading values (0.893 and 0.774, respectively) than their cross loading values on other variables.

1. Reliability Test

**Table 3. Reliability Test Results**

|  |  |
| --- | --- |
| **Variables** | **Composite Reliability** |
| Learning Outcomes | 0.910 |
| Education Management | 0.937 |
| Transformational Leadership | 0.969 |
| Performance Effectiveness | 0.939 |

Source: Primary Data Processing (2024)

Table 3 above shows the results of the reliability test on the four variables studied. The results of the values listed in the table show that the value Composite Reliability is above 0.7. Thus, it can be concluded that the variables of education management, transformational leadership, teacher performance effectiveness, and student learning outcomes have consistent and accurate values.

**Structural Model Test Testing(Inner Model) and Hypothesis**

In order to evaluate the structural model in this study, three main aspects were tested, namely collinearity, the significance of the path coefficient, and the magnitude of the R² value. The test is implemented through the SEM-PLS method with the criteria described below:

**Table 3. Structural Model Evaluation Criteria**

|  |  |
| --- | --- |
| **Criteria** | **Description** |
| Collinearity | VIF < 5 indicates that the model is free of collinearity. |
| Path Coefficient | -1 to 1, the value closest to 1 is the strongest. |
| Coefficient of Determination (R2) | 0.75 = substantial0.50 = moderate0.25 = weak |

Source: Primary Data Processing (2024)

1. Collinearity

**Table 4. Collinearity Statistics (Inner VIF Value)**

|  |  |
| --- | --- |
|  | **Learning Outcomes** |
| Learning Outcomes |  |
| Education Management | 2.081 |
| Transformational Leadership | 1.726 |
| Performance Effectiveness | 1.726 |

Source: Primary Data Processing (2024)

Table 4 above illustrates that all variables in this study have a VIF value <5, which means that this study is free from collinearity symptoms.

1. Path Coefficient

**Table 5. Path Coefficient**

|  |  |
| --- | --- |
|  | **Path Coefficient** |
| Education -> OutcomesManagement Learning  | 0.312 |
| Transformational Leadership -> OutcomesLearning  | 0.342 |
| Performance -> OutcomesEffectiveness Learning  | 0.373 |

Source: Primary Data Processing (2024)

The following are details of the results of the test analysis research hypothesis that has been carried out.

**Hypothesis 1: The Positive Influence of Education Management on Student Learning Outcomes at SMAN 1 Dolok Pardamean, Simalungun Regency.**

The path coefficient value obtained from the hypothesis testing of education management on student learning outcomes is 0.312 with a P Value of 0.027 <0.05. This shows that there is a positive effect of education management on student learning outcomes at SMAN 1 Dolok Pardamean Simalungun Regency.

**Hypothesis 2: Positive Influence of Transformational Leadership on Student Learning Outcomes at SMAN 1 Dolok Pardamean, .Simalungun Regency**

 value The path coefficient obtained from the transformational leadership hypothesis test on student learning outcomes is 0.342 with a P Value of 0.027 <0.05. This shows that there is a positive influence of transformational leadership on student learning outcomes at SMAN 1 Dolok Pardamean Simalungun Regency.

**Hypothesis 3: Positive Effectiveness of Teacher Performance on Student Learning Outcomes at SMAN 1 Dolok Pardamean, .Simalungun Regency**

 value The path coefficient obtained from the hypothesis testing of the effectiveness of teacher performance on student learning outcomes is 0.373 with a P Value of 0.034 <0.05. This shows that there is a positive influence on the on effectiveness of teacher performance student learning outcomes at SMAN 1 Dolok Pardamean Simalungun Regency.

Thus the three independent variables have a positive relationship or correlation with student learning outcomes, where the teacher performance effectiveness variable provides the strongest correlation with student learning outcomes (0.373), followed by the transformational leadership variable variable (0.342) and the smallest education management (0.312).

1. Coefficient of Determination (R2 value)

The results of data processing through SmartPLS obtained the R Square value as follows:

**Table 6. R Square**

|  |  |  |
| --- | --- | --- |
|  | **R Square** | **R Square Adjusted** |
| **Learning Outcomes** | 0.767 | 0.748 |

Source: Primary Data Processing (2024)

Based on the table, the R-square value obtained is 0.767. This indicates that 76.7% of the variance in student learning outcomes can be explained by the variables of education management, transformational leadership, and teacher performance effectiveness  . Meanwhile, the remaining 23.3% variance is explained by other factors outside this research model.

**Discussion**

This analysis examines the influence of education management, transformational leadership, and the effectiveness of educator performance on student outcomes. The focus of the study is SMAN 1 Dolok Pardamean, Simalungun Regency. The following discussion presents the details of the research findings that have been conducted.

**The Positive Effect of Education Management on Student Learning Outcomes at SMAN 1 Dolok Pardamean, Simalungun Regency**

The results of hypothesis testing revealed a positive relationship between education management and student learning outcomes at SMAN 1 Dolok Pardamean, Simalungun Regency. The path coefficient obtained of 0.312 indicates that an increase in education management will be followed by an increase in student learning outcomes. This is reinforced by the T Statistics value of 2.213 and a p-value of 0.027, which is smaller than the significance level (α) of 0.05, indicating that the relationship is significant.

The results of this analysis are based on the research of Wahyudi & Firdaus (2021), which shows that learning management affects student learning outcomes. Careful learning planning, effective implementation, and regular evaluation positively influence student learning outcomes. In addition, research by Setiawan and Nurhadi (2022) shows that education management at the primary school level affects student academic achievement. Researchers found that teachers' curriculum management, classroom management, and time management positively affected student learning outcomes.

Management education, including learning planning, resource management, principal leadership, and learning evaluation, has a positive effect on student learning outcomes at various levels of education. In addition, principal leadership curriculum management and educational facilities management have been shown to have a direct impact on student learning outcomes. Education management in distance education (PJJ) also positively influences student learning outcomes despite the challenges of the online format.

**The Positive Influence of Transformational Leadership on Student Learning Outcomes at SMAN 1 Dolok Pardamean, Simalungun Regency**

Hypothesis analysis shows that transformational leadership positively affects student learning outcomes at SMAN 1 Dolok Pardamean, Simalungun Regency. This finding is supported by the path coefficient of 0.342, the value of T-Statistics 2.225, and the p-value of 0.027, which is significant at the level (of 0α) .05.

The findings of this study reinforce the research results of Oroh and Rotty (2022) which showed a positive correlation between transformational leadership and student learning achievement. This result implies that effective implementation of transformational leadership by school principals can be a catalyst in improving teacher performance. The improvement in teacher performance will in turn have a positive impact on student learning outcomes. In other words, transformational leadership has the potential to optimize student learning achievement in schools.

This study shows that transformational leadership has a significant positive impact on student learning achievement. Effective transformational leadership, including providing inspiration, intellectual stimulation, and attention to individuals, can improve teacher performance and optimize learning quality. This is possible because transformational leadership can increase teachers' work motivation, improving student learning outcomes. This finding is consistent with Syafruddin's research (2024), which states that effective principal transformational leadership, high teacher performance, and a positive learning climate jointly improve student learning achievement.

This study reveals that principals' transformational leadership is positively correlated with improving student learning outcomes through the mediating role of teacher performance and motivation. Implementing a transformational leadership style by principals can build commitment, increase motivation, and stimulate teachers' creativity in developing innovative and effective learning strategies. High teacher motivation, supported by effective leadership, will create a conducive learning atmosphere, improving student understanding and achievement.

**The Positive Effect of Teacher Performance Effectiveness on Student Learning Outcomes at SMAN 1 Dolok Pardamean, Simalungun Regency**

Hypothesis analysis indicated a significant positive effect of teacher performance effectiveness on student learning outcomes at SMAN 1 Dolok Pardamean, Simalungun Regency. The of 0.034, which is smaller than 0.05, confirms the effect. This finding supports previous research by Nurhadian et al. (2020), Angraini et al. (2021), Oroh & Rotty (2022), and Yuliansyah & Herman (2023), which show that teacher performance is positively correlated with student learning outcomes. In other words, increasing the effectiveness of teacher performance will be followed by an increase in student learning outcomes. path coefficient of 0.373,  value of  T-Statistics 2.129, and  p-value

Syafruddin (2024) states that high-performing teachers understand their functions and duties well. To improve performance, teachers must equip themselves with extensive knowledge about their professionalism to understand their tasks well and determine work priorities. High-performing teachers contribute positively to student learning achievement.

Furthermore, teacher performance is a key factor in supporting the development of students' learning abilities and achieving learning objectives. Oroh and Rotty (2022, 4) emphasize the importance of teacher competence in managing collaborative and student-centered learning. Optimal teacher performance not only has a positive impact on organizational development but also improves the quality of interpersonal relationships between teachers and, most importantly, contributes to improved student achievement outcomes.

Based on this statement, the effectiveness of teacher performance is directly positively correlated with student learning outcomes. Teachers who work effectively create meaningful learning, motivate students, and ensure the learning process is optimal. Effective teachers can design structured and relevant learning and use creative methods that encourage student engagement so that students understand the material better. Well-performing teachers provide individual guidance and attention to students. This increases students' motivation to learn more diligently and achieve maximum results. Effective teachers provide constructive evaluation, helping students understand their shortcomings and improve their performance. Overall, good-performing teachers are an important factor in supporting improved student learning outcomes in terms of academic scores and non-academic skills.

**Research Limitations**

The limitations of this study are as follows:

* + - 1. Online distribution of questionnaires using Google Forms can cause Non-Response Bias problems. Respondents' understanding may differ from the researcher's, which can affect the research results.
			2. Respondents were reluctant to answer for reasons of privacy, disinterest, or busyness, and respondents' ignorance of the importance of the survey could reduce participation. Researchers were also unable to directly supervise respondents in filling out the questionnaire.
			3. Time limitations in collecting questionnaires can affect the quality and quantity of data obtained. The impact on response is not optimal, where respondents may rush to fill out the questionnaire, thus providing inaccurate or perfunctory answers.

**Conclusion**

Referring to the results of the analysis that has been presented, it can be concluded as follows: 1) Analysis of the data revealed a positive correlation between education management and students' academic achievement at SMAN 1 Dolok Pardamean, Simalungun district. Improving the quality of education management has an impact on improving student learning outcomes. 2) Transformational leadership is proven to positively impact student learning achievement at SMAN 1 Dolok Pardamean, Simalungun Regency. The more optimal the implementation of transformational leadership, the higher the students' learning achievement. 3) Teacher effectiveness positively influences student learning outcomes at SMAN 1 Dolok Pardamean, Simalungun Regency. This study confirms that optimizing teacher effectiveness is directly proportional to improving student learning outcomes.

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