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The Influence of the Learning Process Quality on the Learning Outcomes of West Sumatra High School Students: Student Engagement and Charismatic Leaders as Moderators

Nailil Fiza*[1], Perengki Susanto[2]
[1] Magister Manajemen Institut Teknologi dan Bisnis Haji Agus Salim, Bukittinggi
[2] Fakultas Ekonomi, Universitas Negeri Padang
E-mail: nfizanailil@gmail.com

Article Info	Abstract
	This study aims to determine the effect of Student Engagement and Charismatic Leaders in moderating the relationship between the quality of the learning process and the learning outcomes of students at Senior High School N 1 West Sumatra. The sample was 273 students of Senior High School N 1 West Sumatra who were taking the teaching and learning process at that time. This study used a census sample technique. This type of research is quantitative research. The data collection technique used a questionnaire with a Likert scale model with 5 alternative answers. Data analysis was carried out using Sem-PLS 4. The results of the study showed that The Quality of the Learning Process had a significant effect on the learning outcomes of students at Senior High School N 1 West Sumatra. Furthermore Student Engagement had a positive and significant effect in moderating the relationship between the Quality of the Learning Process and learning outcomes. Finally Charismatic Leaders had a positive and significant effect in moderating the relationship between the Quality of the Learning Process and the learning outcomes of students at Senior High School N 1 West Sumatra.

INTRODUCTION

Learning is said to be of quality if it involves all the main components of the teaching and learning process, namely teachers, students, and the interaction between the two. This is supported by various learning elements, such as learning objectives, selection of subject matter, supporting facilities and infrastructure, conducive learning situations and conditions, a learning environment that supports teaching and learning activities, and evaluations that are in accordance with the curriculum (Siswa et al., 2023).

Student engagement is essential for learning and refers to the time, thought, effort, and energy that students invest in their learning (Dixson, 2015). Many studies have explained that student engagement is a concept that includes several dimensions such as cognitive, emotional, and behavioural engagement (Henrie et al., 2015). According to Fredericks et al. (2004), cognitive engagement highlights the focused effort that students invest in their learning, including self-regulation and metacognitive behaviors. For example, cognitively engaged students read additional materials, study even when they do not have a test, search for information related to the subject using other sources, ask themselves questions to ensure that they understand the material, and do things to better understand the material and concepts that they do not know while in class (Sun & Rueda, 2012).

Since 2022, the government has recommended that every school implement a new curriculum, namely the independent curriculum. This curriculum is very good, focussing on providing comprehensive learning services to students. Not only smart students, not only students who are less smart, but all students in the class have the right to receive good and enjoyable learning services. In addition, this curriculum also develops student creativity and independence through

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learning and projects. There is a section on learning reflection and teacher reflection that must be carried out at all times so that learning improves day by day. One by one, the learning problems so far will be revealed with this reflection so that teachers are guided to prepare new plans that are more complete and consistent in implementing them until learning goals are achieved.

Based on the results of observations and interviews with several teachers at SMAN 1 West Sumatra on Tuesday, February 6, 2024, it was stated that with the current changes in the curriculum in schools, most teachers are overwhelmed in preparing teaching materials, implementing the teaching and learning process, and carrying out learning assessments. This is felt by teachers who have not participated in training either independently or from the ministry. This teacher training from the ministry is called the driving teacher training. Meanwhile, independent training can be followed on the Merdeka pengajar platform.

From the current school document data, data on the participants of the driving teacher for each period can be seen. The number of teachers who take part in the training and education is called prospective driving teachers (CGP). Meanwhile, those who have graduated from the driving teacher education and training are called driving teachers (GP). Of the 30 teachers, only a small number of teachers have taken part in teacher training for the independent curriculum. As described in Table 1 below:

Table 1. Data on the Number of Leading Teachers and the Number of Teachers Who Are Not Leading Teachers

No	Total of Teachers	Driving Teacher	Undergoing Training for Prospective Teachers	Passed the Selection of Prospective Teacher Activators
1	29	5	2	5

Source: School Documents, 2024

From the table above, there are still 17 teachers who have not participated in the training for prospective moving teachers. In the past 2 years, not many teachers have been able to participate in independent training at PMM; this is due to the dense activities and bills that must be completed by teachers. Meanwhile, to become a leader in learning, teachers have various ideas for making learning more active, innovative, and interesting. Charismatic leaders are able to create an environment that motivates students to be actively involved in learning. They are able to foster students' enthusiasm for learning and interest in the subject matter. This cannot be realised if the teacher's preparation for entering the classroom is very lacking; there is no preparation, so that the learning process has not been able to make students happy in the classroom.

Other assessments can also be seen from the Senior High School N 1 west Sumatra education report card application. The following data illustrates changes in school assessments for several items that have decreased, namely:

Table 2. Education Report of Senior High School 1 West Sumatra in 2024

No	Description	2023 Report Card Scores	2024 Report Card Scores	Information
1	Quality of Learning Process	79,64	67,03	Down 12,612
2	Character	79,21	64,85	Down 14,36

Source: Education Report of Senior High School 1 West Sumatra 2024

Education Report Card is the overall school score taken from a learning environment survey filled out by all school stakeholders, namely teachers, students, principals, administration, security guards, dormitory supervisors, and others. In the Quality of the Learning Process, the root of the problem is found in learning methods, classroom management, reflection on learning

practices, learning about learning, implementation of the school's vision and mission, and support for teacher reflection.

For character, the root of the problem is found in student creativity, independence, learning methods, class management, reflection on learning practices, learning about learning, implementation of the school's vision and mission, and support for teacher reflection. This means that a learning leader has not been able to develop student creativity optimally and has not been able to develop learning strategies according to the vision and mission of learning. This character formation takes place in the learning process. In addition to the data above, the author also presents student learning outcomes taken from student value documents at the school, namely:
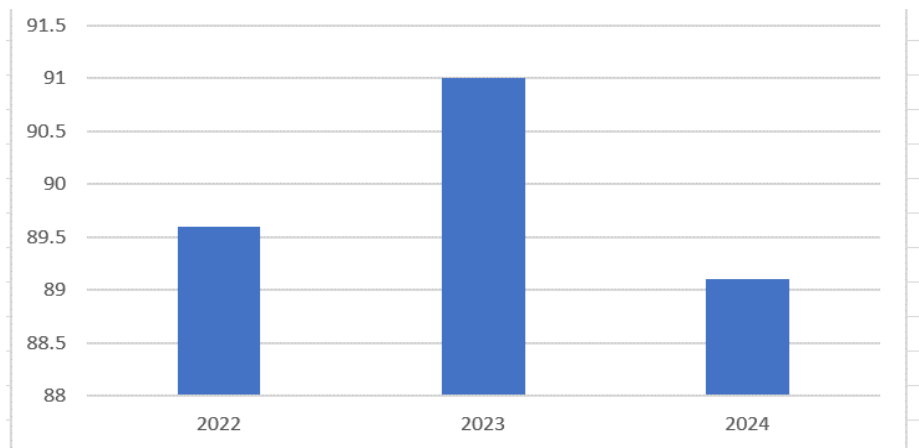

Figure 1. Average grades of students' report cards at SMAN 1 West Sumatra
Source: school documents for 2022, 2023, 2024

The data above illustrates that there is no significant increase in learning outcomes. Based on previous research, it is said that the quality of the learning process and charismatic leadership have a significant influence on student learning outcomes. This study can also provide a clearer picture of how the quality of the learning process affects student learning outcomes at Senior High School 1 West Sumatra and how student engagement activities led by a charismatic leader affect the relationship between the quality of the learning process and student learning outcomes.

In addition, the study can also help schools in evaluating and improving the quality of the learning process provided to students and provide a basis for the development of more effective policies and practices at the school level. Therefore, this study analyses the influence of the learning process quality on the learning outcomes of West Sumatra High School Students: student engagement and charismatic leaders as moderators.

METHODS

The research approach used in this study is quantitative. This study is a field study with a population of all students at SMAN 1 West Sumatra who were studying at that time, namely class X totalling 118 people and class XI totalling 155 people. So that the population in this study was 273 people. The sample was selected using the non-probability sampling method, namely saturated samples or total sampling. According to Sugiyono (2016), saturated samples are a sampling technique by taking all members of the population as respondents or samples. Thus, the sample in this study was 273 students at SMAN 1 West Sumatra who were still studying in class at that time.

This study uses SEM PLS data analysis techniques which have several tests as follows:

1. Model Measurement (Outer Model)

a. Convergent Validity

According to Ghozali (2018) in Fahmi Idham (2021), convergent validity is assessed based on the loading factor (correlation between item scores or component scores with construct scores).

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An indicator is considered valid if it has an AVE (average variance extranced) value above 0.5 or shows that all outer loadings of the variable dimensions have a loading value > 0.5 so that it can be concluded that the measurement meets the convergent validity criteria.

b. Discriminant Validity

According to Jogiyanto (2018), discriminant validity is assessed based on cross-loading; the model has sufficient discriminant validity if the cross-loading value between constructs is greater than the cross-loading value between constructs and other constructs in the model (Idham Fahmi 2021).

c. Uji Reliabilitas

According to Jogiyanto (2018), reliability tests use Cronbach's alpha and composite reliability values. Cronbach's alpha is used to measure the lower limit of the reliability value of a construct, while composite reliability measures the actual value of the reliability of a construct. However, composite reliability is considered better in estimating the internal consistency of a construct. A construct or variable is said to be reliable if it provides a Cronbach's alpha value > 0.7 and composite reliability > 0.7.

2. Model Structure Evaluation (Inner Model)

According to Abdillah and Jogiyanto (2018), the structural model (inner model) is a structural model to predict causal relationships between latent variables (Fahmi Idham 2021). According to Jogiyanto (2018), in evaluating the model structure in this study, the Coefficient of Determination (R2) and Path Coefficient (β) were used. This is used to see and confirm the relationship between the constructs created (I Fahmi dham2021).

a. Coefficient of Determination (R2)

A Q-square value of 52 greater than 0 (zero) shows that the model has a predictive relevance value, while a Q-square value of less than 0 (zero) shows that the model has less predictive relevance. According to Ghozali (2018), if the calculation results show a Q-square value of more than 0 (zero), then the model can be said to have a relevant predictive value (Fahmi Idham 2021).

b. Path Coefficient (β)

Path Coefficient (β) is the value of the path coefficient or the magnitude of the relationship or influence of the latent construct, carried out using the bootstrapping procedure. Path coefficients are a research method used to test the strength of direct and indirect relationships between various variables.

3. Pengujian Hipotesis

According to Herani (2018), the constructs and dimensions to be studied from the theoretical model have been developed in theoretical studies and hypothesis development (Fahmi Idham 2021).

RESULTS AND DISCUSSION

A. Result

a. Outer Model (Measurement Model)

1. Validitas Konvergen (Convergent Validity)

In this study, convergent validity is proven through the achievement of criteria. In the SEM-PLS approach, a confirmation has met convergent validity if it has met the requirements, namely having a loading factor of at least 0.7. The results of the loading factors can be seen in Table 3 and Figure 1 below:

Table 3. Outer Loading Results

	Learning Outcome (Y)	Quality of Learning Process (X)	Charismatic Leader (Z1)	Student Engagement (Z2)
HB11	0.914			
HB12	0.939			
HB13	0.903			

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HB14	0.937		
HB15	0.849		
KP11		0.754	
KP12		0.793	
KP13		0.806	
KP21		0.739	
KP22		0.744	
KP23		0.759	
KP24		0.761	
KP25		0.737	
KP31		0.746	
KP32		0.763	
KP33		0.787	
KP34		0.752	
KP41		0.780	
KP42		0.779	
KP43		0.838	
KP44		0.758	
KP45		0.791	
KP51		0.743	
KP52		0.738	
KP53		0.764	
KP54		0.746	
KP55		0.807	
PK11			0.940
PK12			0.925
PK13			0.869
PK14			0.883
PK15			0.862
PK16			0.939
PK17			0.954
PK21			0.948
PK22			0.953
PK23			0.947
PK31			0.834
PK32			0.868
PK33			0.913
PK41			0.825
PK42			0.942
PK43			0.944
PK51			0.951
PK52			0.942
PK53			0.946
PT11		0.747	
PT21		0.843	
PT22		0.828	
PT23		0.805	
PT24		0.812	
PT25		0.810	
PT26		0.809	
SE11			0.811
SE12			0.791
SE13			0.830
SE14			0.808

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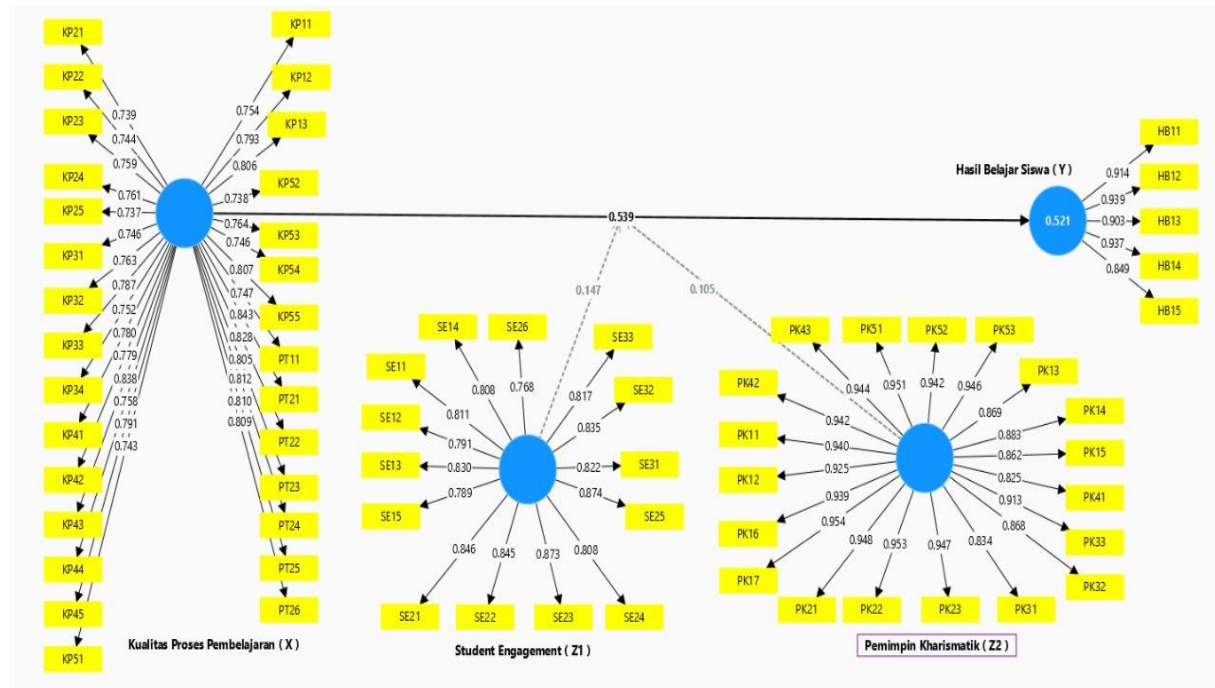|	
SE15	0.789
SE21	0.846
SE22	0.845
SE23	0.873
SE24	0.808
SE25	0.874
SE26	0.768
SE31	0.822
SE32	0.835
SE33	0.817

Source: PLS Data Processing 2024

Figure 1. Path Diagram
Source: PLS Data Processing 2024

Based on the outer loading validity test in Table 3 and Figure 1, it is known that all outer loading values are > 0.7, which means that they have met the validity requirements based on the loading value.

2. Diskriminan Validity

The discriminant validity test is conducted to determine how far the difference in the validity value of a variable is when compared to other variables. The following are the output results of the discriminant validity test:

Table 4. Validity Testing based on Average Variance Extracted (AVE)

	Average Variance Extracted (AVE)
Learning outcomes	0.826
Quality of Learning Process	0.605
Charismatic Leader	0.839
Student Engagement	0.678

Source: PLS Data Processing 2024

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The recommended AVE value is above 0.5. It is known that all AVE values are > 0.5, which means that they have met the validity requirements based on AVE. Furthermore, reliability testing is carried out based on the composite reliability (CR) value.

Table 5. Reliability Testing based on Composite Reliability (CR)

	Composite Reliability (rho_c)
Learning outcomes	0.960
Quality of Learning Process	0.978
Charismatic Leader	0.990
Student Engagement	0.967

Source: PLS Data Processing 2024

The recommended CR value is above 0.7. It is known that all CR values are >0.7, which means that they have met the reliability requirements based on CR. Furthermore, reliability testing is carried out based on the Cronbach's alpha (CA) value.

Table 6. Reliability Testing based on Cronbach's Alpha (CA)

	Cronbach's Alpha
Learning outcomes	0.947
Quality of Learning Process	0.977
Charismatic Leader	0.989
Student Engagement	0.963

Source: PLS Data Processing 2024

The recommended CA value is above 0.7. It is known that all CA values are > 0.7, which means that they have met the reliability requirements based on Cronbach's alpha. Furthermore, discriminant validity testing was carried out using the Fornell-Larcker approach. Table 7 presents the results of discriminant validity testing.

Table 7. Discriminant Validity Testing: Fornell & Larcker

	Learning outcomes	Quality of Learning Process	Charismatic Leader	Student Engagement
Learning outcomes	(0.909)			
Quality of Learning Process	0.656	(0.778)		
Charismatic Leader	0.171	0.153	(0.916)	
Student Engagement	0.540	0.609	0.064	(0.823)

Source: PLS Data Processing 2024

In discriminant validity testing, the AVE square root value of a latent variable is compared with the correlation value between the latent variable and other latent variables. It is known that the AVE square root value for each latent variable is greater than the correlation value between the latent variable and other latent variables. So it is concluded that it has met the requirements of discriminant validity.

Table 8. Discriminant Validity Testing: HTMT

	Learning outcomes	Quality of Learning Process	Charismatic Leader
Quality of Learning Process	0.676		
Charismatic Leader	0.170	0.154	
Student Engagement	0.563	0.626	0.077

Source: PLS Data Processing 2024

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Based on the results of the discriminant validity test using the HTMT approach, it is known that all values are <0.9, which means that it is concluded that the discriminant validity requirements based on the HTMT approach have been met.

b. Significance Test of Influence (Boostrapping) (Hypothesis Testing)

Table 9. Path Coefficient Test & Significance of Influence

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Quality of Learning Process -> Learning Outcomes	0.539	0.541	0.083	6.507	0.000
Charismatic Leader x Quality of Learning Process -> Learning Outcomes	0.105	0.103	0.057	1.857	0.032
Student Engagement x Quality of Learning Process -> Learning Outcomes	0.147	0.143	0.057	2.565	0.005

Source: PLS Data Processing 2024

Based on the results in Table 9, the following results were obtained:
a. The quality of the learning process affects learning outcomes, with a path coefficient value (original sample column) = 0.539, and is significant, with T-statistics = 6.507 > 1.647 and P-values = 0.000 < 0.05 (hypothesis accepted).
b. Charismatic leaders significantly moderate the positive effect of learning process quality on learning outcomes, with T-statistics = 1.857 > 1.647 and P-values = 0.032 < 0.05 (moderation hypothesis accepted).
c. Student engagement significantly moderates the positive effect of learning process quality on learning outcomes, with T-statistics = 2.565 > 1.647 and P-values = 0.005 < 0.05 (Moderation Hypothesis Accepted).

Table 10. R-Square

	R-square
Learning outcomes	0.521

Source: PLS Data Processing 2024

It is known that the R-Square value of learning outcomes is 0.521, which means that the quality of the learning process is able to explain or influence learning outcomes by 52.1%; the remaining 47.9% is influenced by other factors.

Table 11. Q-Square

	Q^2 (=1-SSE/SSO)
Learning outcomes	0.414

Source: PLS Data Processing 2024

It is known that the Q-Square (Q2) value of learning outcomes is 0.414 > 0, which means that the quality of the learning process has predictive relevance to learning Outcomes.

Table 12. F-Square

	Learning Outcomes
Quality of Learning Process	0.342

Source: PLS Data Processing 2024

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It is known that the F-Square (F2) value of Learning Outcomes is 0.342 > 0.15, which means that the Quality of the Learning Process is able to influence Learning Outcomes classified as medium.

Table 13. Goodness of Fit Model Testing

	Estimated model
SRMR	0.066

Source: PLS Data Processing 2024

It is known that based on the results of the SRMR goodness of fit test, the SRMR value = 0.066 < 0.1, so it is concluded that the model is FIT.

B. Discussion
The influence of the quality of the learning process on student learning outcomes at Senior High School N 1 West Sumatra

Based on the results of the study with statistical calculations, the quality of the learning process has a positive and significant effect on student learning outcomes at SMAN 1 West Sumatra. These results explain that the better the quality of the learning process, the better the student learning outcomes at SMAN 1 West Sumatra. In the study (Hazzam & Wilkins, 2023), the quality of the learning process is influenced by student involvement and can state how much the quality of the learning process and interaction between teachers and students impact student learning outcomes. High student involvement can increase learning effectiveness, learning motivation, and understanding of the material.

The role of student engagement in moderating the relationship between learning quality and student learning outcomes at Senior High School 1, West Sumatra.

Based on the results of the study by looking at statistical calculations, student engagement has a positive effect on the relationship between the quality of learning and student learning outcomes at SMAN 1 West Sumatra. These results explain that the better student engagement in learning, the relationship between the quality of learning and learning outcomes will also increase. This condition is in accordance with research conducted by Hazzam & Wilkins (2023), which states that student engagement is an important factor in understanding that interactions between teachers, educational technology, and students can affect learning outcomes. Understanding the role of student engagement as a moderator can help design more effective learning strategies and improve student learning outcomes. Student engagement acts as a moderator between the quality of the learning process (such as charismatic teacher leadership and the use of educational technology) and student learning outcomes.

Therefore, when student engagement acts as a moderator, this shows that the level of student engagement can strengthen or weaken the relationship between the quality of the learning process (such as charismatic teacher leadership and the use of educational technology) and student learning outcomes. With high student engagement, student learning outcomes also tend to increase.

The Role of Charismatic Leaders in Moderating the Relationship between Learning Quality and Student Learning Outcomes at Senior High School N 1 West Sumatra

Based on the results of the study with statistical calculations, it was found that charismatic leaders have a positive moderating effect on the relationship between the quality of the learning process and the learning outcomes of students at SMAN 1 West Sumatra. This explains that the better the charismatic leader of the teacher in learning, the greater the relationship between the quality of the learning process and student learning outcomes at SMAN 1 West Sumatra.

According to research conducted by Hazzam & Wilkins (2023), charismatic leaders can improve the quality of the learning process by creating an inspiring learning environment,

facilitating positive interactions between teachers and students, and encouraging active student participation. The quality of the learning process improved by charismatic leaders can affect student learning outcomes. Students who are involved in quality learning tend to achieve better learning outcomes, such as deeper understanding, higher academic achievement, and stronger learning motivation.

In the context of moderation, charismatic leaders can moderate the relationship between learning quality and student learning outcomes by:
1. Improving learning quality through inspiring and motivating leadership.
2. encouraging student engagement in learning by creating a supportive and motivating environment.
3. Facilitating positive interactions between teachers and students to improve student understanding and achievement.

Thus, charismatic leaders can act as moderators who strengthen the relationship between learning quality and student learning outcomes through their influence in creating a learning environment that is inspiring, motivating, and supportive of student learning growth.

CONCLUSIONS AND SUGGESTIONS
A. Conclusion
Based on the results of the analysis and discussion, it can be concluded that the quality of the learning process is able to explain or influence learning outcomes by 52.1%; the remaining 47.9% is influenced by other factors not explained in this study. Then the quality of the learning process has a positive effect on learning outcomes, with a path coefficient value (original sample column) = 0.539, and is significant, with T-statistics = 6.507 > 1.647 and P-values = 0.000 <0.05 (hypothesis accepted). Furthermore, charismatic leaders significantly moderate the positive effect of the quality of the learning process on learning outcomes, with T-statistics = 1.857> 1.647 and P-values = 0.032 <0.05 (Moderation Hypothesis Accepted). Finally, student engagement significantly moderates the positive effect of the quality of the learning process on learning outcomes, with T-statistics = 2.565 > 1.647 and P-values = 0.005 < 0.05 (Moderation Hypothesis Accepted).

B. Suggestion
Based on the results of the research and analysis conducted, the author provides suggestions to the principal of SMAN 1 West Sumatra and the West Sumatra provincial education office, namely:
1. Teachers must encourage more active interaction between students and subject matter through discussions, questions and answers, and collaborative projects.
2. Teachers must use a variety of learning methods, such as project-based learning, case studies, and simulations, to increase student interest and engagement.
3. Teachers must utilise technology to create engaging and interactive learning experiences, such as the use of educational applications, e-learning, and online collaborative platforms.
4. Provide leadership training to principals and teachers to develop charismatic leadership skills, such as the ability to inspire, motivate, and build positive relationships with students and staff.
5. Implement mentoring and coaching programs for teachers to improve their competence in creating an inspiring and supportive learning environment.
6. Provide awards and recognition to leaders and teachers who have succeeded in improving the quality of the learning process and student learning outcomes.
7. Provide ongoing training programs that focus on effective and innovative learning strategies to improve the quality of the learning process.

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