Pedagogical Research Journal
Vol. 4 No 2. September 2026, 171-182
P-ISSN 3124-1255 E-ISSN Process, DOI:

THE INFLUENCE OF TEACHERS' PEDAGOGICAL COMPETENCE AND STUDENTS' LEARNING INTEREST ON STUDENTS' LEARNING OUTCOMES AT SMA NEGERI 1 TAMBUSAI UTARA

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ARTICLE INFO

Keywords:

Keywords 1; The Influence of Teachers
Keywords 2; Pedagogical Competence and Students'
Keywords 3; Learning Interest on Students
Keywords 4; Learning Outcomes at SMA Negeri 1 Tambusai Utara

Article history:

Received 2025-07-01
Revised 2026-08-25
Accepted 2026-09-26

ABSTRACT

The study aims to examine the influence of teachers' pedagogical abilities and students' learning interest on the learning outcomes of students at SMA Negeri 1 Tambusai Utara. This research employed a quantitative method with a survey approach. The respondents were 156 students from SMA Negeri 1 Tambusai Utara. Data were collected through questionnaires containing statements related to the variables of teachers' pedagogical abilities, learning interest, and learning outcomes. The collected data were analyzed using multiple linear regression tests to assess the impact of the independent variables on the dependent variable. The results revealed that teachers' pedagogical abilities significantly influence the creation of effective learning processes and the support of students' potential. Additionally, students' learning interest was shown to play a crucial role in learning success, as students with high interest tend to be more active and focused during the learning process. The study also identified a significant relationship between teachers' pedagogical abilities and students' learning interest on students' learning outcomes, indicating that the synergy between these factors can enhance overall learning quality.

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1. INTRODUCTION

Education is a systematic process of acquiring knowledge, skills, and attitudes that shape individuals into civilized and cultured beings. It serves as a primary means of building a civilized and socially integrated society. Education is regarded as the key to overcoming various life challenges and plays a vital role in improving quality of life, individual success, economic prosperity, social well-being, and political stability. A person's social and economic status is greatly influenced by their level of education. The main goal of education is to shape individuals who are ready to work, understand values and morals, and are capable of contributing to society. Education functions as a medium for the dissemination of knowledge and the maintenance of social order. Moreover, it prepares the

younger generation to become mature and capable leaders in the future. (Sukarman Purba, Akbar Iskandar et al. 2021).

The success of education is reflected in students' academic achievement, which is assessed through learning outcomes. According to (Agusti and Aslam 2022), learning outcomes represent the abilities acquired by students after undergoing the learning process, encompassing the affective, cognitive, and psychomotor domains. These outcomes are essential in determining the extent to which students progress in achieving educational objectives. Educators need to understand the level of students' learning outcomes, as these serve as a benchmark for the success of the teaching and learning process. Learning outcomes can be categorized as good or poor, beneficial or not, and they reflect the effectiveness of the instructional methods applied. Evaluation of both the learning process and its outcomes is a crucial means of assessing this success (Rahman and Nasryah 2019). According to (Bunyamin 2021), learning outcomes encompass a wide range of experiences—not only mastery of subject matter but also habits, interests, skills, social adjustment, and students' aspirations.

The primary goal of learning is to achieve optimal student learning outcomes. To assess this success, each school sets specific standards, such as the Minimum Mastery Criteria (KKM). Under the *Merdeka Curriculum*, this standard has evolved into the Learning Objectives Achievement Criteria (*Kriteria Ketercapaian Tujuan Pembelajaran*, or KKTP). Assessment can be conducted using rubrics or tests, with prior determination of score intervals and follow-up actions for students. At SMA Negeri 1 Tambusai Utara, the implementation of KKTP is reflected in the grouping of scores and the guidance steps provided to students.

Table 1. Score Intervals and Learning Actions Based on the Learning Objectives Achievement Criteria (KKTP) of the Merdeka Curriculum

Score Range	Description
0 – 60	Needs Guidance
61 – 70	Sufficient
71 – 80	Good
81 – 100	Very Good

Source: State Senior High School 1 Tambusai Utara.

Based on the assessment scores, ideally, each student should fall into the Good or Very Good category. However, if a student scores below 60, the teacher is expected to provide targeted guidance. Initial observations at State Senior High School 1 Tambusai Utara indicate that there are still issues in student learning outcomes, as reflected in the following assessment data:

Table 2. Student Learning Achievement at State Senior High School 1 Tambusai Utara

NO	Years	Clas			Average Mastery (Good and Very Good)		
		X	XI	XII	X	XI	XII
1	2022	261	258	265	227 (87%)	212 (82%)	215 (81%)
2	2023	260	257	258	224 (86%)	242 (94%)	204 (79%)
3	2025	264	258	257	224 (85%)	214 (83%)	211 (82%)

Source: State Senior High School 1 Tambusai Utara, 2025.

The student learning achievement data at State Senior High School 1 Tambusai Utara from 2022 to 2025 shows fluctuations in both the number of students and the level of mastery. The number of students in Grade X experienced slight changes, Grade XI remained relatively stable, while Grade XII showed a decline. The percentage of learning mastery also

varied; for instance, Grade XI reached 94% in 2023. However, in general, the overall achievement has not yet met the expected standards set by teachers or the school. This indicates that there are still obstacles in achieving optimal student learning outcomes. Therefore, improvements must be made to various factors that influence learning success, including both internal and external aspects. Internal factors include the family environment, school setting, and the surrounding community (Anni, 2021), in which the teacher's role at school is particularly crucial. A teacher is not only an instructor transferring knowledge but also an educator and mentor who creates a conducive learning atmosphere to help students achieve the expected competencies.

As professional educators, teachers carry significant responsibility for improving the quality of education. In practice, teachers are expected to be creative, innovative, and adaptive to the evolving demands of education. Thus, the success of learning is not solely dependent on students, but also on how well teachers can perform their roles optimally as facilitators and motivators in the teaching and learning process. The presence of teachers remains vital in the learning process, and cannot be replaced by modern technology such as computers or other teaching aids. This is because human aspects such as attitude, values, motivation, and emotion can only be conveyed through direct interaction with teachers (Sudjana, 2021). One key factor influencing student learning outcomes within the school environment is teacher competence, particularly professional competence. This competence includes mastery of subject matter, use of technology, understanding of research methodology, and self-development through reflection and continuous learning (Janawi, 2022).

Teachers are also legally regulated under Government Regulation No. 74 of 2008, which emphasizes their role as professional educators tasked with educating, teaching, guiding, and evaluating students (Ruhia, 2019). In the educational field, teacher competence reflects their ability to carry out their professional duties responsibly. This competence is acquired through education or training and is one of the key factors in successful learning. According to Permendiknas No. 16 of 2007, teachers must master four core competencies: pedagogical, personal, social, and professional. However, this study focuses on pedagogical competence, which is the teacher's ability to manage learning. This includes understanding students, designing and implementing instruction, evaluating learning outcomes, and developing students' potential (Asmani, 2021).

Mastery of this competence is crucial because it directly affects the creation of an effective and enjoyable learning process, and it can enhance students' interest and participation in learning. Therefore, the success of the learning process heavily depends on the teacher's pedagogical competence, as it enables teachers to build a conducive learning environment and motivate students to achieve optimal outcomes. However, based on observations of teachers' pedagogical abilities, the following evaluation results were found::

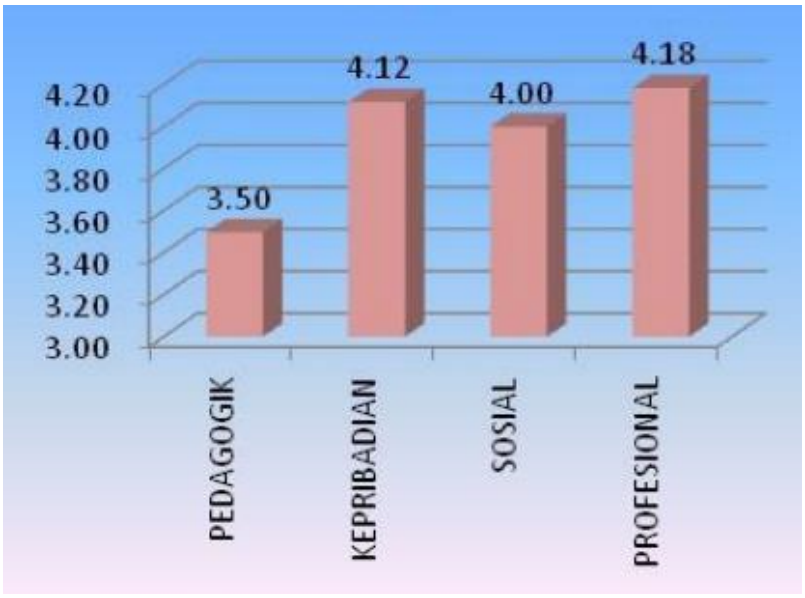


Figure 1. Graph of the Development of Teachers' Pedagogical Competence at State Senior High School 1 Tambusai Utara
Source: SMAN 1 Tambusai Utara

Based on the graph presented, it can be seen that teachers' pedagogical competence is still lower compared to other competencies such as personal, social, and professional competence. In fact, pedagogical competence is essential, as it includes the teacher's ability to design, manage, and evaluate learning to ensure that learning objectives are achieved effectively (Mulyasa, 2020). Teachers are required to master learning strategies, media usage, classroom management, and to understand students' characteristics. This competence enables teachers to develop students' cognitive abilities and create creative learning experiences, allowing students to actively participate in the learning process and achieve optimal results (Rusydi, 2019).

In addition to teacher competence, students' learning interest is also a key factor influencing academic achievement. Interest refers to the inner drive to engage in or enjoy a certain activity. Students with high interest are generally more focused and enthusiastic in learning, which often results in better academic performance (Syah, 2020). According to Harahap et al. (2022), indicators of learning interest include diligence, perseverance, discipline, having a study schedule, and seriousness in completing assignments. However, observation of 10 twelfth-grade students revealed a low level of learning interest, marked by behaviors such as frequent absenteeism, neglecting assignments, passivity in class, lack of preparation, making excuses to leave the classroom, and easily giving up when facing difficulties.

This condition undoubtedly has a negative impact on student learning outcomes and requires serious attention from teachers. Therefore, this study aims to further examine the influence of teachers' pedagogical competence and students' learning interest on their academic achievement. Several previous studies have shown that these two variables have a significant relationship with learning outcomes. For instance, Firdaus and Sulaiman (2022) found that teaching skills and learning interest directly affect student achievement. Mursabdo (2021) also found that students' perceptions of teacher creativity influence both their interest and learning outcomes. Meanwhile, Wiharti, Mahmud, and Fauzi (2022) reported a contrasting finding, showing that pedagogical competence did not have a significant effect in the context of mathematics learning at SDN Modopuro II Mojosari.

2. METHODS

A multiple linear regression test is a statistical method used to examine the relationship between two or more independent variables (predictors) and one dependent variable (outcome). In the context of educational research, this test is often applied to analyze how factors such as teacher competence and student learning interest simultaneously influence student achievement.

Y= a+ b1 x1 + b2 x2 + e

Where:

Y = Student learning outcomes

a = constant

b1, b2, b3 = Koefisien Regresi

X1 = Teacher pedagogical competence

X2 = Student learning interest

e = (eror)

Simultaneous significance test (F test) is used to determine the effect of variables X_1 and X_2 simultaneously on variable Y. The test is carried out by comparing the F count and F table values at a significance level of 0.05. The results are declared significant if F count > F table or p-value < 0.05, and insignificant otherwise.

Partial significance test (t-test) is used to determine the effect of each independent variable (X_1 and X_2) on the dependent variable (Y), assuming the other variables are constant. The test is carried out in two directions at a significance level of 5% and degrees of freedom df = n - k - 1. The results are considered significant if tcount > ttable, and not significant if tcount < ttable.

The correlation coefficient is used to determine the relationship between the dependent variable (predictor/Y) and changes in the independent variables (X1 and X2). To test the closeness of the relationship between the independent variables (teacher pedagogical competence and student learning interest) and the dependent variable (student learning outcomes), the determination coefficient is used to determine the percentage of the influence of the independent variable (X) on changes in the dependent variable (Y). To test the closeness of the relationship between the independent variables (teacher pedagogical competence and student learning interest) and the dependent variable (student learning interest/Y), it is done by looking at the determination coefficient value (R2). According to Ghozali (2020) the determination coefficient test used is the adjusted R2 value which is the adjusted R2. Adjusted R2 is an indicator to determine the effect of adding an independent variable to the equation.

3. FINDINGS AND DISCUSSION

3.1 FINDING

3.1.1 Multiple Linear Regression Test

This study uses multiple linear regression, conducted using the enter method, where all variables are entered to find the effect of independent variables on dependent variables by regressing Student Learning Outcomes as dependent variables and Teacher Pedagogical Ability and learning interest as independent variables. The results of the hypothesis are as listed in the following table:

Table 3. Multiple Linear Regression Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-2.009	.586		-3.430	.001					
	Kp	.247	.033	.476	7.476	.000	.811	.517	.309	.422	2.372
	Mb	.345	.050	.440	6.908	.000	.802	.488	.286	.422	2.372

a. Dependent Variable: Hb

Source: Processed Data, 2025

The regression equation from the statistical calculation results is obtained as follows:

Y= a + b1X1 + b2X2 + e

Y= -2.009+ 0.247X1 + 0.345 X2 + e

1) The constant value (a) is -2.009. This means that if Teacher Pedagogical Ability and Learning Interest are assumed to be zero (0), then Student Learning Outcomes are -2.009.
2) The regression coefficient value of the Teacher Pedagogical Ability variable is 0.247, meaning that every increase in the Teacher Pedagogical Ability variable by 1 unit will increase Student Learning Outcomes by 0.247 assuming other variables remain constant.
3) The regression coefficient value of the Learning Interest variable is 0.345, meaning that every increase in Learning Interest by 1 unit will increase Student Learning Outcomes by 0.345 assuming other variables remain constant.
4) Standard error (e) is a random variable and has a probability distribution. Standard error (e) represents all factors that have an influence on Y but are not included in the equation.

3.1.2 Hypothesis Testing T-Test (Partially)

The T-test (partially) is used in regression analysis to test whether each independent variable in the regression model has a significant effect on the dependent variable individually. This test is done by comparing the calculated t value with the t table value, and checking the significance value (p-value) for each regression coefficient.

Table 4. Hypothesis Test Results T-Test (Partially)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-2.009	.586		-3.430	.001					
	Kp	.247	.033	.476	7.476	.000	.811	.517	.309	.422	2.372
	Mb	.345	.050	.440	6.908	.000	.802	.488	.286	.422	2.372

a. Dependent Variable: Hb

Source: Processed Data, 2025

From the t-test results table, each t-count value and the significance of the independent variables can be seen. The t-table value (2-sided test at 5% significance) is known with the equation n-k-1; alpha / 2 = 77-2-1; 0.05 / 2 = 74; 0.025 = 1.980. Thus the following results are obtained:

1) It is known that t count (7.476) > t table (1.980). This means that the variable of the Principal's Pedagogical Ability has a significant effect on the Learning Outcomes of State Senior High School 1 Tambusai Utara Students.
2) It is known that t count (6.908) > t table (1.980). This means that the variable of learning interest has a significant effect on the Learning Outcomes of State Senior High School 1 Tambusai Utara Students.

3.1.3 Hypothesis Testing F Test (Simultaneous)

The F test (simultaneous) is used to test whether all independent (free) variables simultaneously affect the dependent variable in a regression model. The F test looks at whether the overall regression model can explain the variation in the dependent variable. In other words, the F test is used to find out whether there is a significant relationship between all independent variables and the dependent variable.

Table 5. F-Test Results (Simultaneous)

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	691.169	2	345.584	216.036	.000[a]
	Residual	244.748	153	1.600		
	Total	935.917	155			

a. Predictors: (Constant), Mb, Kp

b. Dependent Variable: Hb

Source: Processed Data, 2025

The table of hypothesis testing results shows that the Fcount value (216.036) > Ftable (2:153) (3.07) with sig (0.000) < 0.005. This shows that Teacher Pedagogical Ability and learning interest together have a significant effect on Student Learning Outcomes at SMP State Senior High School 1 Tambusai Utara.

3.1.4 Correlation Coefficient R and Determination R2

The correlation coefficient is used to determine the relationship between the dependent variable (predictor/Y) and changes in the independent variable (X). Hypothesis testing using the determination coefficient (R2) aims to determine the percentage of independent variables that can jointly explain the dependent variable. The results of the correlation and determination coefficient test calculations are as follows:

Table 6. Correlation Coefficient Test Determination Coefficient

Model Summary[b]

odel		Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					Square Change	F Change	f1	f2	ig. F Change	urbin-Watson
	859[a]	738	735	. 1.265	738	. 216.036		53	000	.831
	a. Predictors: (Constant), Mb, Kp									
	b. Dependent Variable: Hb									

The R value in the table above is 0.859 which shows that there is a very strong influence where the variables of Teacher Pedagogical Ability and learning interest together affect Student Learning Outcomes by 85.9%. This means that there is a very strong relationship between the independent variables (Teacher Pedagogical Ability and learning interest) and the dependent variable (Student Learning Outcomes/Y). From the table above and based on the provisions of the strength of the influence that have been explained in the previous section, it can be explained that the R Square value in the table above is 0.735 which shows that the Student Learning Outcomes Variable is influenced by the Teacher Pedagogical Ability and learning interest variables by 73.5% while the remaining 26.5% is influenced by factors not studied by the researcher. This means that there is a very strong influence between the independent variables (Teacher Pedagogical Ability and learning interest) on the dependent variable (Student Learning Outcomes/Y).

3.2 DISCUSSION

Based on the results of the analysis by conducting regression tests and hypothesis tests, using the SPSS program, it can be seen that:

Based on the results of the hypothesis testing, it can be concluded that the research hypothesis is accepted. This means that there is a significant influence between Teacher Pedagogical Ability and Student Learning Outcomes. This shows that every effort to improve and enhance Teacher Pedagogical Ability directly contributes to improving student learning outcomes. Teacher Pedagogical Ability includes various aspects, such as skills in developing student potential, designing effective learning, and conducting objective and relevant assessments or evaluations. Therefore, improving these indicators is the main key to improving student learning outcomes. For example, developing more optimal student potential can help students understand the material better and explore their abilities to the maximum. Likewise, more focused and comprehensive assessments or evaluations can provide useful feedback for students to improve their academic performance. Improving teacher Pedagogical Ability can be done in various ways, such as ongoing training, implementing innovative learning methods, and strengthening supervision and guidance from the school. Thus, teachers are not only able to carry out their duties as teachers, but also as facilitators who support the holistic development of students.

With the positive relationship between Teacher Pedagogical Ability and Student Learning Outcomes, serious attention is needed from schools and the government in supporting the development of teacher competencies. These strategic steps are expected to create a more effective learning process, increase student learning motivation, and ultimately produce better quality education. As a professional teacher, in addition to having to meet academic qualification standards and having a teacher certificate, teachers must also have competencies that demonstrate teacher professionalism. A professional teacher must have at least four teacher competencies, including pedagogical competence, professional competence, social competence, and personality competence. Pedagogical competence itself is a teacher's ability to carry out the learning process, the ability to master the class, learning strategies, the ability to organize all learning processes from the beginning to the end so that learning activities can run smoothly, and learning objectives can be achieved optimally. In this case, teachers are required to be able to master everything related to technical matters in learning activities, such as mastering learning strategies, mastering various learning media, mastering class conditioning during the learning process, and mastering the characteristics of their students. In this Pedagogical competency, there are several aspects that need to be considered, including assessment and evaluation. Teachers are able to carry out continuous assessment of the learning process and outcomes. Teachers evaluate the effectiveness of the learning process and outcomes and use the information from the assessment and evaluation

results to design remedial and enrichment programs. Teachers are able to use the results of the assessment analysis in their learning process (Siregar et al. 2020). Teachers are the spearheads of efforts to change society. It is assumed that education can influence people's lives. A religious teacher is someone who has a central role in this because religious teachers must be able to train students' mentality to be commendable and noble. A religious teacher is expected to be able to instill and foster strong and true faith in students so that they become ihsan human beings. In order to realize this change, a teacher must have adequate abilities or competencies. The government has provided a direction in this regard, namely in the National Education System Law no. 14 article 10 and translated into the Minister of National Education Regulation No. 16 of 2007, namely teachers must have pedagogical, personality, social, professional competencies (Sukarman Purba, Akbar Iskandar et al. 2021)

Pedagogical Competence is one of the four competencies that teachers must have in order to understand the indicators in measuring the success of carrying out their duties pedagogically, which includes understanding the foundations of education, understanding students, curriculum development, learning design, utilization of learning technology, evaluation of learning outcomes, and understanding of student development to actualize the various potentials they have (Sukarman Purba, Akbar Iskandar et al. 2021). A professional teacher is someone who has the ability and skills in the field of education, or in other words, they have received good education and training. Currently, the duties and responsibilities of teachers in developing their profession appear to be as teachers and class administrators. To analyze the duties of teachers as teachers, teacher abilities or teacher competencies related to efforts to improve the learning process and outcomes can be grouped into four abilities, namely: planning teaching programs, implementing and leading/teaching and learning processes, assessing the progress of the teaching and learning process, and mastering the subject matter being taught (Mustafa 2025). The definition of pedagogical competence is the ability to manage student learning. Furthermore, in the RPP on teachers, it is stated that: pedagogical competence is the teacher's ability to manage student learning, which at least includes: 1. Student understanding 2. Learning design 3. Implementation of educational and dialogical learning 4. Utilization of learning technology 5. Evaluation of learning outcomes (EHB) 6. Development of students to actualize their various potentials. (Mulyasa 2020).

Based on the hypothesis testing, the research hypothesis is accepted, meaning that there is an influence of Learning Interest on Student Learning Outcomes. Every improvement and change in Learning Interest will improve learning outcomes. Learning interest that is done well, such as Having a consistent tendency to pay attention and remember something that is learned continuously There is a sense of liking and enjoyment in a lesson that is of interest.

High learning interest reflects the tendency of students to consistently pay attention, understand, and internalize the material being studied. In addition, liking and enjoyment of the lesson of interest is also an important indicator in increasing student motivation to learn actively. When students have enthusiasm for a lesson, they tend to be more involved in the learning process, both cognitively, affectively, and psychomotorically. To improve Learning Interest, several strategic steps can be taken, including:

1) Creating a fun learning atmosphere: Teachers can use more interactive and interesting learning methods, such as group discussions, educational games, or the use of learning technology.
2) Giving awards for student efforts: Recognition of student efforts and achievements can increase their motivation to continue learning.
3) Linking learning materials to students' interests: Linking learning materials to things that are relevant to students can make them more interested and understand the benefits of what is being learned.

4) Providing guidance and emotional support: Teachers and parents can provide support to students who are less interested in learning, helping them find a learning approach that is more suited to their style and needs.

With these steps, it is hoped that students' Learning Interest can increase, thus directly contributing to improving learning outcomes. The learning process that focuses on students' interests and needs will not only help them achieve better academic achievement, but also build positive skills and attitudes that are useful for the future. Internal factors that influence learning outcomes are (factors from within the student), namely the physical and spiritual condition of the student. Factors that come from within the student themselves include two aspects, namely: a) physiological aspects (which are physical) namely food, drink, sleep patterns and so on. b) psychological aspects (which are spiritual) namely the level of student intelligence, student attitudes, student talents, student interests and student motivation (Zain 2023). Someone who has a great interest in learning tends to produce high achievement, conversely if there is less interest in learning it will result in low achievement. 61 Thus, interest is believed to have an influence on students' learning processes and outcomes (Parnawi 2020).

Based on the results of the hypothesis testing, it can be concluded that the research hypothesis is accepted, which means that there is a significant influence between Pedagogical Ability and Learning Interest on Student Learning Outcomes. This shows that every effort to increase and improve both variables simultaneously can have a positive impact on student learning outcomes. Teachers' Pedagogical Ability includes skills in managing learning, developing student potential, and conducting effective assessments and evaluations. Teachers who have good Pedagogical abilities are able to create a conducive learning environment and support optimal student development. With the right approach, students can understand the material better, participate actively, and maximize their potential. Meanwhile, Learning Interest reflects the enthusiasm and internal drive of students to be involved in the learning process. Students who have a high interest in learning tend to be more attentive, enthusiastic, and committed in following lessons. A liking for certain lessons and a tendency to continue studying the material in depth will encourage student involvement and desire to achieve better results.

The combination of good teacher Pedagogical abilities and high student interest in learning will create a strong synergy in the learning process. To improve these two aspects, various efforts are needed, such as:

1) Teacher training and professional development: Providing ongoing training to improve Pedagogical competency.
2) Innovative learning methods: Teachers can adopt creative and interactive methods to increase students' interest in learning.
3) Supportive learning environment: Providing a comfortable space and interesting learning aids to facilitate the learning process.
4) Support and motivation: Providing emotional support and motivation from both teachers and parents to increase students' interest in learning.

With the improvement in teachers' Pedagogical abilities and students' interest in learning, it is expected that student learning outcomes can increase significantly. An interactive, supportive, and interest-based learning process and adequate teacher abilities will help students achieve their maximum academic potential.

4. CONCLUSION

Based on the research results, it can be concluded that

Teachers' Pedagogical Ability has a significant influence on student learning outcomes. Teachers who have good Pedagogical abilities are able to create an effective learning process and support student potential.

Learning Interest also plays an important role in determining student learning outcomes. Students with high learning interests tend to be more active, enthusiastic, and focused in following the learning process, resulting in better achievement.

There is a significant relationship between teachers' Pedagogical abilities and learning interests on student learning outcomes. The synergy between improving teachers' Pedagogical abilities and students' motivation to learn can improve the overall quality of learning.

ACKNOWLEDGMENTS: The authors would like to express their sincere gratitude to all individuals and institutions that supported the completion of this research. Special thanks are extended to the teachers and staff of State Senior High School 1 Tambusai Utara for their cooperation and participation, which were invaluable for data collection. We also appreciate the guidance and constructive feedback provided by our supervisors and colleagues throughout the research process.

CONFLICTS OF INTEREST: The authors received funding from [funding agency], but declare that the funding source had no role in the study design, data collection, analysis, or publication decisions. No other conflicts of interest are reported.

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