



## Analysis of the Influence of Students' Attitudes on High School Students' Learning Motivation

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### ABSTRACT

**Purpose of the study:** The purpose of this study is to find out how the influence of attitudes on motivation to learn about the problems that occur in learning physics.

**Methodology:** The method used in this study is a quantitative method using survey assessment stages. The sampling technique used simple random sampling with a total sample of 72 high school students. The data collection technique uses a questionnaire on learning motivation and student attitudes. Data analysis used a simple linear regression hypothesis test assisted by SPSS software.

**Main Findings:** The results of the research and testing of the hypothesis can be concluded that there is a significant positive influence on students' learning attitudes towards physics learning motivation. Each increase in one unit of learning attitude will increase learning motivation by 0.91 units significantly.

**Novelty/Originality of this study:** The novelty of this research is the discovery of a positive influence of students' learning attitudes on their physics learning motivation. Where every increase of one unit of students' learning attitudes will increase 0.91 students' motivation to learn physics.

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## 1. INTRODUCTION

Education according to Law Number 20 of 2003 is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential which is needed by themselves, society, nation and state. In fact, our current education is still far from the explanation of Law Number 20 of 2003, so we can argue that the education we are currently implementing is still low [1]. Education plays an important role in national development and education is a determinant in realizing quality human resources [2]-[4]. Besides that education as a place to preserve the nation's cultural values and develop various forms of science and technology [5]-[7]. Therefore education must be carried out as a whole to create an intelligent, responsible, creative and skilled life.

Learning is a very important part of the educational process. Learning should refer to changes in knowledge and skills later as criteria for learning [8]-[10]. One of the things that determines the learning outcomes is the learning process. In the process of learning the process that must be done is to plan, implement, and evaluate [11]-[13]. The purpose of this evaluation process is to find out the results of the learning that has

been carried out in stages and in accordance with established procedures with the results obtained, so that the next follow-up can be determined [14], [15]. So in the evaluation the teacher can analyze the attitudes and motivation of students to get the expected results. In organizing learning that is active, creative and also fun. Teachers play an important role in improving the quality of students in participating in the learning process by implementing effective learning [16], [17]. Teachers need to pay attention to the various influences of attitudes and motivation of students in the learning process [18], [19].

Therefore teachers are required to be able to increase their creativity and also be careful in solving problems faced by students [20], [21]. A process in learning that we do in the world of education does not escape how motivation plays a role, both from outside and from within [22], [23]. Learning is something that can show student activity intentionally and consciously [24], [25]. The point is that students make changes from within themselves psychologically. Based on this, a good measure of learning can be seen from the psychological and physical activity of a high or increasing student. However, if students are active psychologically and physically it decreases, the teaching and learning process is not good in its implementation or is not optimal [26], [27]. These changes must be based on clear reasons why the student can change or how the student changes in the learning process.

Physics is a science that has important benefits in everyday life. With physics, we can also understand various kinds of natural phenomena that occur around us [31]-[33]. Physics is a knowledge related to physics, so to study physics requires direct contact with the things you want to know [31], [32]. In learning physics students do not only hear, record and remember the learning material but more emphasis on students' ability to solve problems [36]-[38]. And also physics is in fact a subject that is considered difficult and is often avoided by students. This happens because in general learning physics is done by memorizing formulas so it is very difficult for students to follow the lesson [36], [37]. The impact that occurs on this learning greatly influences the student's learning process later and influences the student's view of physics so that it will change student behavior every time there is a physics lesson in progress, such as feeling lazy, sleepy and so on [38]. This greatly disrupts the student learning process so that in the future it also affects the goals of the learning so that these goals cannot be achieved. So for that it is very necessary to carry out a sharp assessment and analysis to solve the problems that occur in these students.

The process of learning physics is the main thing that must be done in achieving these learning objectives, but it is no less important in the assessment process [42]-[44]. The learning activities carried out must have an assessment so that the results of the learning that has been carried out can be known. Learning assessment is carried out by the subject teacher directly [42]. In this assessment, it must be in accordance with the 2013 curriculum which develops attitudes, knowledge, and skills. Therefore attitude becomes one of the benchmarks in achieving educational goals. This attitude factor is an important reference for teachers to see student reactions to physics subjects, how students respond to physics lessons and various points of view what students have thought about physics subjects.

The success of mastering physics material does not only depend on the teacher's ability but also factors that are supported by students such as student ability, good facilities and infrastructure and good teaching materials [43]. Therefore, motivation is the ability of students to encourage students to achieve success in mastering the material in physics learning [44]. If the motivation in students is low, then the achievement of mastery of the material will be hampered because there is no encouragement from within the students to master the physics learning material [45]. Likewise, if students have great motivation or encouragement in studying physics, success in mastering the physics material will be easy. Based on previous research, it is known that there is a significant positive relationship between students' level of motivation or encouragement in studying science and their level of success in understanding science material [46]. In contrast to previous research, this research focuses on analyzing the influence of student attitudes on senior high school students' learning motivation.

In previous research, it was found that there was a positive and significant relationship between learning attitudes and learning motivation on the mathematics learning achievement of class VII junior high school students [47]. However, the influence of attitudes on students' learning motivation in physics learning in high schools has not been carried out. So, as a generalization of previous research, this research was conducted to determine the influence of students' learning attitudes on class X students' learning motivation in physics subjects. So this research is important to carry out considering the importance of motivation for students to have. Attitude is a person's mental condition in dealing with various problems [48]. With a variety of students in learning physics the teacher can describe the various problems that arise with students and solve these problems easily with reference to the data obtained from students.

Where the teacher guides students who experience unfavorable attitudes towards learning physics with appropriate methods in solving these problems. And also the teacher can give encouragement to students who have low motivation towards physics subjects. Based on the problems above, this research was conducted to try to find out how attitude influences learning motivation to problems that occur in physics learning. This research proposes a new approach in analyzing the relationship between student attitudes and student learning motivation

in high school. It is hoped that the findings of this research will provide in-depth insight into the complexity of the dynamics between student attitudes and learning motivation, thereby paving the way for more effective and targeted intervention strategies to improve the quality of education at the secondary school level.

## 2. RESEARCH METHOD

The method used in this study is a quantitative method using survey assessment stages. Survey research is a form of activity that has become a common habit, research surveys were developed as a positive form in the social sciences which will later produce statistical natural information, survey research asks several respondents about beliefs, opinions, or behavior later [49]. In this survey research, there are two questionnaires that will be filled in by students to find out how the state of attitudes towards students' learning motivation in physics subjects. The research subjects in this study were high school students who were studying physics, with the sampling technique being simple random sampling. The samples in this study were class X students at SMA Titian Teras H. Abdurrahman Sayoeti and class With each school taking 36 class X students.

This research instrument uses a questionnaire with Google Forms media. There are two questionnaires used, namely the motivational questionnaire and the attitude questionnaire. The motivational questionnaire has 30 valid statement items on this instrument using a Likert scale and has different values depending on the questions in the questionnaire. In this questionnaire there are no answers that are considered wrong, all of which have their respective scores that have been determined. The scale consists of 4 options with strongly agree, agree, disagree and strongly disagree. The attitude questionnaire has 25 valid items to determine honest attitudes. And this instrument also uses a Likert scale, this scale has 4 options, namely always, often, rarely, and never.

Research begins by following the procedure step by step. From obtaining permits to conduct research on schools, the preparatory stage is formulating the problem and its variables. After that, look for supporting theories to complement research materials and deepen the researcher's discussion to obtain the structure of the research to be carried out and create instruments for data collection. At this data collection stage, the instrument was given via Google form to 72 high school students.

The results of student attitude and learning motivation data were processed using statistics with the help of the SPSS application. The statistics used are descriptive statistics and inferential statistics to determine the influence of student attitudes on student learning motivation. The hypothesis test used is a simple linear regression test, with prerequisite tests of normality test and linearity test. Data comes from a normally distributed population and data is linear if the significance value is greater than the alpha value (0.05). Then for the regression test, if the significance value obtained is less than the alpha value (0.05), a decision can be made that there is an influence of variable X (attitude) on variable Y (motivation) for student learning.

## 3. RESULTS AND DISCUSSION

Processing the results of research conducted with the help of the SPSS program results of data processing and statistical analysis and descriptive data as in the following table:

Table 1. Summary of descriptive statistics on student attitudes

Class	Category	Interval	F	%	Mean	Med	Min	Max
X, Senior High School Titian Teras H. Abdurrahman Sayoeti	Very not good	25 – 43.75	0	0	80.61	80.00	60.00	98.00
	Not good	43.76 – 62.50	7	19.4				
	Good	62.51 – 81.25	25	69.5				
	Very good	81.26 – 100	4	11.1				
X, SI Kuala Lumpur School, high school level	Very not good	25 – 43.75	1	2.8	80.25	81.00	40.25	96.00
	Not good	43.76 – 62.50	5	13.9				
	Good	62.51 – 81.25	26	72.2				
	Very good	81.26 – 100	4	11.1				

Based on table 1 above, it was found that the learning attitudes of students in class 10 of Senior High School Titian Teras H. Abdurrahman Sayoeti were dominant in the category of having a good learning attitude, with a percentage of 65%, a maximum score of 98 and an average of 80.61. Then for class 10 of the SI Kuala Lumpur School, high school level is dominant in the category of having a good learning attitude, with a percentage of 72.2%, a maximum score of 98 and an average of 80.25.

Table 2. Summary of descriptive statistics on student learning motivation

Class	Category	Interval	F	%	Mean	Med	Min	Max
X, Senior High School Titian Teras H. Abdurrahman Sayoeti	Very not good	30 – 52.5	1	2.8	85.39	85.50	50.00	99.00
	Not good	52.6 – 75.0	5	13.9				
	Good	75.0 – 97.5	27	75.0				
	Very good	97.6 - 120	3	8.3				
X, SI Kuala Lumpur School, high school level	Very not good	30 – 52.5	0	0	85.22	88.10	70.00	98.00
	Not good	52.6 – 75.0	5	13.9				
	Good	75.0 – 97.5	30	83.3				
	Very good	97.6 - 120	1	2.8				

Based on table 2 above, it is found that the learning motivation of students in class 10 of Senior High School Titian Teras H. Abdurrahman Sayoeti is dominant in the category of having good learning motivation, with a percentage of 75% with a maximum score of 99 and an average of 85.39. Then for class 10 of the SI Kuala Lumpur School, high school level is dominant in the category of having good learning motivation, with a percentage of 83.3%, a maximum score of 98 and an average of 85.22.

The Normality Test was carried out to find out whether the data obtained by the researcher came from a normally distributed population or not. This is done as a condition if the test is carried out with non-parametric statistics. In carrying out the normality test, researchers used SPSS as a tool. In this case the researcher uses Kolmogorov Smirnov in conducting the test.

Table 3. Normality test results

	Unstandardized Residual
N	72
Asymp. Sig. (2-tailed)	.985
a. Test distribution is Normal.	
b. Calculated from data.	

Based on table 3 it is known that the significant value is  $0.985 > 0.05$  so it can be concluded that the data tested is normally distributed. The linearity test was carried out to find out that the relationship between the variables studied had a linear relationship. In carrying out the linear test, the researcher conducted a regression analysis with the help of SPSS with the following criteria:

$H_0$ : There is no linear relationship in testing the attitude variable of physics learning outcomes.

$H_1$ : There is a linear relationship between the attitude variable and the motivation to learn physics.

To find out the linearity of the relationship between the learning attitude variable and the learning outcomes of physics, it was carried out using SPSS. With the criteria  $H_0$  is accepted if the sig. Deviation from linearity  $< 0.05$  and  $H_1$  is rejected if the Sig. Deviation From linearity  $> 0.05$ . The results of the linearity test for the simple regression model can be seen in the following table:

Table 4. Linearity test results

Variabel	Sig. (deviation from Linearity)
Attitude*Motivation	0.986

Based on table 4 of the linearity test results above, it is known that the value of Sig. Deviation From Linearity of 0.986. Because the value of Sig.  $0.986 > 0.05$ , it can be concluded that  $H_0$  is rejected and  $H_1$  is accepted, meaning that there is a linear relationship between the attitude variable and the variable of motivation to learn physics. Hypothesis testing and data analysis were carried out with the help of SPSS. The results of hypothesis testing can be seen in the following table:

Table 5. Simple linear regression test results (model summary)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.844 <sup>a</sup>	.712	.708	1.636

a. Predictors: (Constant), Attitude

Based on table 5, the value of  $R = 0.844$  is obtained which shows that there is a high correlation between learning attitudes and motivation to learn physics. This is supported by the value of R Square = 0.712 or the coefficient of determination is 71.00%. This means that learning attitudes affect learning motivation by 71% and other factors by 29%. Next, the output of the ANOVA table.

Table 6. Results of simple linear regression test (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	450.520	1	450.520	168.265	.000 <sup>b</sup>
	Residual	182.066	68	2.677		
	Total	632.586	69			

a. Dependent Variable: Motivation  
b. Predictors: (Constant), Attitude

Based on table 6, the Sig value. = 0.00 or Sig. <0.05, which means there is a significant influence of learning attitudes on students' physics learning motivation. Then proceed with a simple regression test as shown in the following table:

Table 7. Simple linear regression test results (coefficients)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.809	6.001		.468	.641
	Motivasi	.911	.070	.844	12.972	.000

a. Dependent Variable: Motivation

Based on table 7, Sig. = 0.00 or Sig. < 0.05. This shows that there is a significant influence of learning attitudes on motivation to learn physics. The contribution of learning attitudes to learning motivation is 71% and other factors are 29%. Based on testing the hypothesis that there is an effect of students' attitudes on motivation to learn physics ( $t_0 = 2.505$  and sig. = 0.00 <0.05). Linear regression equation:  $Y = -2.809 + 0.91 X$ , this shows that each increase in one unit of learning attitude will increase learning motivation by 0.91 units significantly. Based on the results of the SPSS statistical calculations and the first hypothesis test that there is a significant positive influence on learning attitudes on physics learning motivation, this can be interpreted as students' learning attitudes will increase their physics learning motivation.

Previous research found that attitudes towards online learning mediate the relationship between intrinsic and extrinsic motivation and educational engagement [19]. Previous research explored the relationship between attitudes toward online learning, intrinsic and extrinsic motivation, and educational engagement. Meanwhile, current research focuses on the influence of student attitudes on motivation to learn physics. On the other hand, the current research found a significant positive influence between students' attitudes towards motivation to learn physics. The implication is the need to design a learning environment that supports the physics learning experience for students.

In line with previous research, it is important to take into account the affective component in teaching science, especially physics. Based on the results of previous research, it was found that competence was the most important predictor of achievement, while the factors Anxiety and, surprisingly, Enjoyment in learning had a significant negative impact [50]. The difference is that the previous study focused on the influence of attitudes on school achievement, while the second research was more oriented towards direct application, namely how students' attitudes can increase motivation to learn physics. The impact of this research is to help teaching staff to find out whether there is motivation to learn in students, especially in learning physics. Then, by knowing the influence of students' learning attitudes on motivation, teaching staff can be wise in carrying out the teaching and learning process. The current research highlights the novelty of discovering the positive influence of students' attitudes on physics learning motivation, providing a new contribution to the understanding of factors influencing learning motivation in the context of physics learning.

On a long-term level, the results of this research can help in designing a more adaptive and supportive curriculum, taking into account student attitude factors to increase learning motivation and interest in studying physics. In addition, this research can provide a basis for the development of innovative learning methods that consider aspects of student attitudes as a key element in the physics education process, which has the potential to increase students' understanding and interest in the long term. This research is limited by the fact that student attitudes and motivation are dynamic and can be influenced by external factors not measured in this research, such as family factors, social environment, or certain events that may influence the results. And the limitations of the statistics used do not take into account other factors that could influence the results.

#### 4. CONCLUSION

Based on the research results and hypothesis testing, it can be concluded that there is a significant positive influence on students' learning attitudes towards physics learning motivation. Each increase in one unit

of learning attitude will increase learning motivation by 0.91 units significantly. For further research, the researcher recommends conducting research related to the development of learning media and tools in order to increase students' motivation and learning attitudes in science learning specifically physics.

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