

# The Effect of Self-Effect on Student Learning Achievement

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## Abstract

This study was designed to determine the effect of self-efficacy, learning activities, and learning independence on biology learning achievement. This type of research is ex-post facto, namely causality which is designed to explain the existence of a causal relationship between variables. The population in this study was 603 high school students in Namlea Regency. The sample in this study amounted to 90 students. The data analysis technique used simple linear regression analysis. The results of the analysis show that self-efficacy has a positive and significant effect on the biology learning achievement of class X SMA Negeri in Namlea District. Judging from the results of simple linear regression calculations, it can be seen that the magnitude of the effect is 0.271, and the R value is 0.036. So it can be seen that the relative contribution of the effect of self-efficacy on learning achievement is 36.0%, while 64% is influenced by other variables not examined in the study.

**Keywords:** Self-Efficacy, Learning, Achievement

## 1. Introduction

In the world of formal education, biology is a compulsory subject that high school students must study so that it becomes one of the subjects tested on the National Final Examination. In everyday life, biology is related by systematically finding out and understanding about nature, so that biology is not only the mastery of a collection of facts, concepts or principles but also a process of discovery (Zakaria et al.; Prafitriyani et al.). Therefore, biology is considered to play an important role in academic interests and in everyday life. The importance of biology is not in line with the learning outcomes obtained by students today. The fact shows that the national average value of biology at UAN 2019 is still below the achievement standards of graduates (Center for Educational Assessment, 2019). The results of observations in class X SMA Negeri in Namlea District also show that the average biology learning outcomes are still low because the average student has not reached the KKM set by the school (Lionardo et al.). The low achievement of students' biology is influenced by many factors. According to Slameto (Rahmania and Ismiyati) the factors that affect learning achievement can be classified into two, namely internal factors, namely

factors originating from within the individual and external factors, namely factors originating from outside the individual.

Learning outcomes in the cognitive domain have two dimensions, namely the knowledge dimension and the cognitive process dimension. The dimension of knowledge consists of four categories, (1) factual knowledge, namely knowledge that is separate and has its own characteristics; (2) conceptual knowledge, namely knowledge of more complex and organized forms of knowledge; (3) procedural knowledge, namely knowledge of how to do something; and (4) metacognitive knowledge, namely knowledge of cognition in general, awareness and knowledge of one's own cognition (Malmia et al.). The self-concept is formed from various environments in which the individual learns, mingles and receives various responses from other people he meets, and this is what causes and affects the stages in the process of forming self-concept, the two stages are primary self-concept and concept. secondary self. The primary self-concept is formed on the basis of individual experiences through their immediate environment, namely their own family environment. The self-concept of a child stems from the experiences he receives based on the various responses and attitudes received from other people in his family, for example his father and mother, grandmother and grandfather, his uncle and aunt, as well as between siblings (Kanto et al.; Mu'adi et al.). The comparison he received in hanging out with his brothers was the first time he could understand how he was. Meanwhile, about how a child lives his role, aspirations and responsibilities in his life, much influenced by parental factors in educating, applying pressure and instilling positive values in the child. Marsh explained that the self-concept refers to students' perceptions and feelings of themselves are related to the academic field, In general, it has three main aspects, namely self-confidence, self-acceptance, and self-esteem (Cho and Shen).

One of the internal factors that influence biology learning process is self-efficacy. According to Bandura (2010), self-efficacy is the belief in one's ability to achieve maximum performance. Students who are not performing well may be because students have the ability but lack self-efficacy to optimize their abilities. Based on the background, it is necessary that researchers conduct research with the title "The Effect of Self-Efficacy on Biology Learning Achievement in Class X Students of State Senior High Schools in Namlea District".

## 2. Method

This research includes research ex-post facto which is causality which is designed to explain the existence of a causal relationship between variables. Samples are used in the study of 90 students, the population was known to be 633 students. Method the sampling used is proportional random sampling.

The research instruments used in this study were questionnaires and documentation. The data analysis technique used in this research is descriptive statistical analysis and inferential statistics (Christenson et al.). Descriptive statistics are intended to provide a natural picture of the research variable data in the form of averages, standard deviation and percentage analysis (Sun and Wu). Inferential statistics are intended for proposed validation and hypothesis testing. For the purposes of testing hypotheses and checking validity and reliability) the research instrument, as a whole used the package assist analysis technique software SPSS 24. Inferential statistics are intended for prerequisite tests and hypothesis testing, prerequisite tests include normality tests, and linearity test

## 3. RESULTS AND DISCUSSION

Based on the calculation of the classification of the self-efficacy questionnaire and learning achievement, it can be seen in the table 1 below:

**Table 1.** Classification of Student Efficacy Scores

No	Interval/Score	Frequency	Percentage (%)	Category
1	87-100	0	0	Very low
2	75-86	2	2,22	Low
3	65-74	31	34,44	Moderate
4	50-64	40	44.44	High
5	30-49	17	18,9	Very high
Total		90	100	

Source: primary data processed in 2020

Based on Table 1, it is known that 17 students (18.9%) have very high self-efficacy, 40 students (44.44%) have high self-efficacy, 31 students (34.44%) have moderate self-efficacy, 2 students (2.22%) had low self-efficacy, and none of the students (0%) had very low self-efficacy. So it can be concluded that the student's self-efficacy is high as can be seen in table 2.

**Table 2.** Descriptive Analysis of Self Efficacy

N	90
Mean	84.0333
Median	84.0000
Mode	84.00
Std.deviation	6.85721
Range	34.00
Minimum	65.00
Maximum	99.00

**Source:** primary data processed in 2020

Table 2 shows that Self-efficacy data were obtained through a questionnaire distributed to a number of respondents. The ideal data ranges from 65.00 (minimum score) to a maximum score of 99.00. Based on the results of data processing carried out, the average value is obtained (*mean*) amounting to 84.03, the standard deviation of 6.85.

The description of the biology learning achievement of 90 students of Class X SMA Negeri in Namlea District can be seen from the descriptive analysis in the table 3 below.

**Table 3.** Classification of Student Achievement Test Scores

No	Score Interval (%)	Frequency	Percentage (%)	Category
1	$90 \leq \text{score} \leq 100$	24	26.67	Very high
2	$75 \leq \text{score} < 90$	36	40	High
3	$55 \leq \text{score} < 75$	30	33.33	Moderate
4	$40 \leq \text{score} < 55$	0	0	Low
5	$0 \leq \text{score} < 40$	0	0	Very low
Total		90	100	

**Source:** Primary data processed in 2020

Based on the table 3 above, it is known that 24 students (26.67%) have very high learning achievement scores, 36 students (40%) have high learning achievement scores, 30 students (33.33%) have moderate student achievement scores, and there are no students. (0%) have high and very high learning achievement scores. So it can be concluded that student achievement is high.

Testing data analysis prerequisites

1. Test data normality

The normality test is done by testing *kolmogrof-smirnov* in (SPSS) version 24. The results of the analysis show the normality test of the variable self-efficacy, learning activities and learning independence on the significant learning achievement of *deviation from linearity*  $0.183 > 0.05$  while learning motivation has a significant value of *deviation from linearity*

2. Test linearitas

The linearity test is used to find out whether the independent variable and the dependent variable have a bound relationship or not. The test results can be seen in table 4 below.

**Table 4.** Uji Linearitas

		sum of square	df	Mean square	F	Sig
prestasi siswa	Linearitas	84.814	1	84.814	2.354	.130
efikasi diri						

**Source:** primary data processed in 2020

Table 4 shows that the linearity test was carried out using the SPSS version 24 program. The results of the analysis showed that the linearity test of the self-efficacy variable on student achievement showed a value of  $p = 0.130 > 0.05$ , thus it could be said that there was an effect of self-efficacy on learning achievement.

The first hypothesis testing was tested using simple linear regression analysis obtained by using the SPSS 24 for windows program can be seen in Table 5.

**Table 5.** Simple linear regression analysis (X1 to Y)  
Coefficients

Model	Unstandardized coefficient		Standard coefficients	t	Sig
	B	Std.error			
constants	72.327	8.967		8.066	.000
Efiasi diri	.047	.103	0.49	.457	.649

**Source:** primary data processed in 2020

Simple linear regression in table 5 shows that the regression coefficient value of the effect of self-efficacy (X1) is 0.047 while the constant value is 72.327. So it can be formulated in the following equation.

$$Y = a + bX_1$$

$$Y = 72.327 + 0.047$$

The equation of the line above shows that the value of the X1 coefficient is 0.047, which means that if the value of the effect of self-efficacy increases by one point, the learning achievement of students in SMA in Namlea district increases by 0.047. This hypothesis testing is done by looking at the p value, if the p value is  $0.000 < 0.05$ , it is stated that there is a significant influence. To see the significance of the regression analysis, it can be seen in table 6 as follows.

**Table 6.** Simple Linear Regression Anova

Model	Sum of square	Df	MeanSquare	F	Sig
Regresi	7.336	1	7.336	.208	.000
Residual	3096.453	88	35.187		
Total	3103.789	89			

**Source:** primary data processed in 2020

Based on the results of multiple linear regression calculations in table 6 that have been stated that we can know the value of F count amounting to .208, the value of sig  $p = 0.000$  is smaller than alpha 0.05 ( $0.130 < 0.05$ ), so it can be said that statistically the effect of self-efficacy has a significant effect on student learning outcomes in high school in the same sub-district.

Namlea. The magnitude of the contribution of the influence of self-efficacy to the learning achievement of Biology in high school in the Namlea district can be seen from the value of the coefficient of determination (*R square*) amounting to 0.052. This means that 52.0% of student learning outcomes are influenced by the self-efficacy variable, while 48% are influenced by other variables not examined in the study. The value of R square can be seen in the table 7 below.

**Table 7.** Model Summary

Model	R	R square	Adjusted Rsquer	Std.error of the estimate
1	.049	.052	.009	5.93186

**Source:** primary data processed in 2020

Table 7 shows the results of testing for hypothesis 1, the findings indicate that self-efficacy has a positive and significant effect on the Biology learning achievement of class X SMA Negeri in Namlea District, as shown in table 1 indicates a significance value of  $0.000 < \alpha 0.05$ . This shows that students who have high self-efficacy can easily accustom themselves to taking lessons, strengthening lessons, reading books, and facing exams. Meanwhile, students who have low emotional intelligence have low self-regulating abilities in their learning activities.

Good self-efficacy can be seen from the ability to recognize one's own emotions, self-control, self-motivation, empathy, and the ability to build social relationships. Therefore, students who have good emotional intelligence will be able to manage and motivate themselves to continue learning so that their learning activities are well controlled. Meanwhile, students who have poor emotional intelligence, lack the motivation to learn, so that it can damage their learning concentration.

The results of testing for hypothesis 3 indicate that the student's self-efficacy has a positive and significant effect on the Biology learning achievement of class X SMA Negeri in Namlea District. as shown in table 6 where the significance value of 0.000 is known. and table 6 shows the effect of self-efficacy on student learning outcomes by 52% (Diep et al.). This means that the better the self-efficacy of students, the better the learning achievement of students in Class X SMA Negeri in Namlea District (Mahasneh and Alwan). The findings of this study are consistent with the results of research by Ogundokun & Adeyemo (2010) which found that there was a significant positive effect between self-efficacy and student achievement (Sha et al.). Students who have good emotional intelligence will succeed in regulating and motivating themselves to continue learning so that their learning activities are well controlled and have an impact on the good learning achievement obtained. Conversely, students who have low emotional intelligence, lack the motivation to learn so that it can damage their learning activities and concentration and lead to poor learning achievement.

This is in accordance with the opinion of Riyanto (Wiliam et al.) who states that one of the factors that can support student learning success is the ability of students to use (manage) their emotions effectively to achieve goals, develop productive relationships with others and achieve success, which is often called emotional intelligence.

#### 4. Conclusion

Based on the results of the data analysis obtained, it can be concluded that there is a significant relationship between the effect of self-efficacy and student learning outcomes of KLS X in SMA in Namlea district. This can be seen from the significant level of 0.000 which is smaller than  $\alpha 0.05$ . Based on the research results and conclusions, the suggestions that can be given from the research results are as follows: Researchers revealed that learning achievement involving self-efficacy variables was informed that self-efficacy contributed to student achievement by 52% and the remaining 48% was influenced by other factors not examined in this study, such as interest factors, psychological factors, family factors and other factors. other. For the school to continue to improve personal quality through self-development by reading and reviewing literature on a good learning process. Teachers are expected to pay more attention and provide good motivation to their students without distinguishing the social status of these students.

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## Biography

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