



International Journal of Research Publications

Self Efficacy, Self Esteem, and Biology Learning Outcomes of High School Students

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Abstract

Based on the theory and results of previous studies, show that correlation between self efficacy and self esteem with learning outcomes are very significant. Research has been carried out in various sample characteristics, including students, junior high school students, and senior high school students. Therefore, this study aims to examine whether there is a relationship between self efficacy and self esteem with the biology learning outcomes of senior high school students of class XI. Sampling was by purposive sampling technique, the number of respondents in this study are 97 students. This research uses four instruments, there are student biology learning outcomes instruments, consist by two tests on different material, self efficacy, and self esteem instrument present in Likert scale. Hypothesis in study, uses multiple regression techniques, obtained by the correlation coefficient of 0.314, with the significance level $\alpha = 0.01$, then the correlation coefficient is very significant. Based on the multiple correlation coefficient value of 0.314, it means that the closeness of the relationship between self efficacy and self esteem together with the learning outcomes is still relatively low. Based on the coefficient of determination between self efficacy and self esteem together with learning outcomes is 0.099. This means that learning outcomes are affected by 9.90% by self-efficacy and self-esteem factors. .

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Keyword : Self Efficacy, Self Esteem, Learning Outcome, Student

INTRUDUCTION

Education is the main pillar in the development of human and community resources of a nation that is the main concern of the government and society. The government is always trying to improve the education system in Indonesia, curriculum changes continue to be developed from time to time in an effort to improve the quality of education.

One indication of the achievement of the goals of education and learning in schools or educational institutions can be seen from the results of learning. According to Dimiyati and Mudjiono (2006), learning outcomes are a better level of mental development than when they have not studied. The level of mental development is manifested in the cognitive, affective and psychomotor domains. Learning outcomes can be interpreted as the maximum results achieved by a student after experiencing the teaching and learning process in learning certain subject matter.

Darmadi (2017), there are 3 factors that influence student learning outcomes, namely internal factors (internal factors), external factors (factors outside the self), and learning approach factors. As is known, curriculum changes and the development of learning methods have been carried out in an effort to improve learning outcomes and the quality of education. However, the attention of the government and educational institutions focuses more on external factors and learning approaches, there are still not many that focus on internal factors, while all of these factors are equally important.

Based on the opinion of Darmadi (2017), internal factors that influence the first learning outcome are physiological aspects, to obtain good learning outcomes, physical fitness and the five sensory conditions need to be maintained by means of consuming nutritious foods and drinks, adequate rest and exercise. Many cases of children whose performance has declined because they are not physically fit. This factor has clearly seen its influence.

Other internal factors are psychological aspects which include intelligence, attitudes, interests, motivation and personality (Darmadi, 2017). There is one main psychological component that can influence individual attitudes, interests, motivations and personalities, namely self. Self affects individuals in behaving in daily life, including in learning activities, self includes all aspects in the existence and experience of someone who is aware (although not always accurate) by the individual (Rogers in Feist & Feist, 2011).

There are several self concepts that influence learning activities and learning outcomes, such as self efficacy and self esteem. According to Bandura (1997) self efficacy is an individual's belief in his ability to perform tasks or actions needed to achieve certain results, to succeed in doing a task, besides being required to have the knowledge and skills to perform tasks successfully, individuals must also have confidence that success will be achieved.

According to Rosenberg (1995) self esteem is a positive and negative evaluation of oneself (self), self esteem is related to specific dimensions, such as academic ability, social skills, physical appearance, or collective self-esteem. This is supported by several results of previous studies. The results of the research of Tuhardjo, Juliardi and Rafsanjani (2016), show that self efficacy has a positive relationship and has a significant effect on learning outcomes. The results of other studies conducted by Rambood, Sharif and Khademian (2018), found that self efficacy and learning outcomes have a significant relationship.

Komaraju and Dial (2014), found the results of research that self esteem and self efficacy had a positive relationship to student learning outcomes. Aydogan (2016), also conducted research that obtained results that self esteem and learning outcomes have a positive relationship. In addition, Nuryanti, Rochani and Rohmad (2017), also obtained research results that there is a very significant relationship between self esteem and learning outcomes.

SELF EFFICACY

Santrock (2009), defined self efficacy as individual belief about their ability. Santrock (2009), defines self efficacy as an individual's belief in his ability to master the situation and produce something positive. Baron and Byrne (2004), suggest that self efficacy is an individual's assessment of his ability or competence to perform a task, achieve a goal, and produce something.

Alwisol (2009), states that self efficacy as self-perception regarding how good ones themselves can function in certain situations, relates to the belief that self has the ability to take actions that are expected. Someone who has high self efficacy tends to do something with a big and challenging effort, whereas individuals who have low self efficacy will tend to avoid tasks and give up easily when problems arise (Retno, 2013).

Based on the description above, it can be concluded that self efficacy is an individual's belief in his or her own ability to deal with or accomplish a task, achieve goals, and overcome obstacles to achieve an outcome in certain situations. Students who are able to realize their potential will be able to optimize and direct their abilities in the learning process, so that students can be encouraged and try to get better learning achievements.

According to Bandura in Santrok (2012), self efficacy has four kinds of functions, namely determining behavior choices, second is determining how much level of commitment, effort is made, and perseverance of business, third is influencing mindset and emotional reaction, and the fourth is determine the standard that will be done next.

Bandura (2006), states that there are three dimensions that are most accurate to explain one's self efficacy. These three dimensions include:

- Level

This dimension relates to the degree of difficulty of the task when the individual feels capable of doing so.

- Strength

This dimension relates to the level of strength of an individual's beliefs or expectations regarding his abilities.

- Generality

This dimension relates to the area of behavior in which individuals feel confident in their abilities. Individuals can feel confident about their abilities in certain activities and situations or in a variety of activities and situations.

SELF ESTEEM

Santrock (2012) defines self esteem as the overall view of the individual about himself. self-esteem is also sometimes called self-worth or self-image. Whereas according to Branden (2007) self esteem is a belief in oneself, that individuals have the ability to think and face life's challenges, and the belief in the right to achieve success, happiness and obtain needs or desires.

Dariuszky (2004) argues that self esteem is someone's judgment that he is able to face the challenges of life and get happiness. Atwater in Dariuszky (2004) suggests that actually self esteem is the way a person feels himself, where someone will judge him so that it affects behavior in his life a day -day..

Based on some definitions of self esteem according to the figures above, it can be concluded that self esteem is a broader representation of self so that it covers cognitive, behavioral and affective aspects of individuals who provide subjective judgments about themselves, such assessment includes self-ability, worth self, self-worthiness, valuable and meaningful or overall self-image, it can affect individual behavior in everyday life.

LEARNING OUTCOME

According to Sudjana (2010), learning outcomes are abilities acquired by students after receiving their learning experiences. The results of learning in a broader sense include the cognitive, affective, and psychomotor domains .inkel explains that learning outcomes are a change that results in changes in attitude and behavior (Purwanto, 2011). Learning outcomes are various patterns of actions, values, understanding, attitudes, appreciation, and skills (Suprijono, 2016). According to Anderson & Krathwohl (2001), learning outcomes are students' abilities that are measured after going through the learning process. These abilities include the cognitive, affective, and psychomotor domains that show a change in a better direction.

From some of the opinions above, it can be concluded that learning outcomes are a result obtained by students after these students carry out learning and learning activities as well as evidence of success

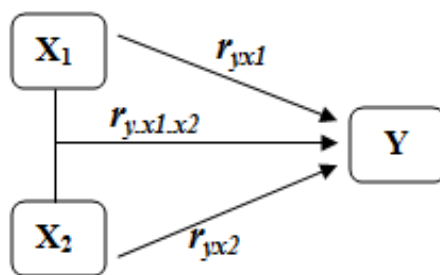
achieved by someone involving cognitive, affective and psychomotor aspects, expressed in symbols, letters and sentences. The learning outcomes studied in this study are Biology cognitive learning outcomes which include five levels, namely remembering (C1), understanding / understanding (C2), applying (C3), analyzing (C4), evaluating (C5), and creation (C6). The instrument used to measure student learning outcomes on cognitive aspects is a multiple choice test.

Learning outcomes as one indicator of the achievement of learning objectives in the classroom can not be separated from the factors that influence the learning outcomes themselves. Sugihartono, et al. (2007), mentioning the factors that influence learning outcomes, as follows:

- Internal factors are factors that exist within individuals who are learning. Internal factors include: physical factors and psychological factors.
- External factors are factors that exist outside the individual. External factors include: family factors, school factors, and community factors.

METHODS

The method in this study uses a quantitative research approach with correlational research methods. The research design used is multiple correlational research consisting of 3 independent variables, namely: self efficacy (X1), and self esteem (X2), while the dependent variable is learning outcomes (Y). The research design is a relationship between self efficacy and self esteem towards student learning outcomes. can be seen in the picture of the scheme berikut:



Graph: Research Design Scheme

The population in this study were all students of SMA Negeri 1 Cikarang Barat in the school year 2018-2019. Determination of the study sample using a purposive sampling technique, by selecting students of class XI IPA consisting of 4 classes, 1 class used for the instrument trial class and 3 classes made the sample with a total of 109 students, from 109 students calculated Slovin as much as at least 86 students as samples in this study. based on data in the field researchers obtained a sample of 97 students who could be sampled in this study.

Data collection techniques used in this study were questionnaire methods (questionnaires) and learning outcomes tests with two tests on different subject matter. Questionnaire is a technique of data collection conducted by giving a set of questions or written statements to the respondent to answer. The questionnaire method was used to reveal the independent variables namely self efficacy and self-esteem, while the cognitive tests to get the results of the dependent variable were students' cognitive learning outcomes.

The stages in this study:

- Conduct cognitive tests regarding the respiratory system and excretion in humans to find out cognitive learning outcomes in class XI students of the West Cikarang 1 High School Science major.
- Measuring the level of self-efficacy, the level of self-esteem and self-regulation in class XI students majoring in Science at SMA Negeri 1 Cikarang Barat.
- Assess the measurements that have been made
- Collect data about the results of measurements made, then do data analysis

- The data obtained are then analyzed using various types of tests as follows:
- The normality test is carried out using the Kolmogorov-Smirnov test and Shapiro Wilk. The Kolmogorov-Smirnov test was used for the variables of self efficacy, self esteem, and self regulation, while the Shapiro Wilk test was used for the learning outcome variable with a significance level of $\alpha = 0.05$ (with the SPSS application)
- The linearity test is determined based on the value of the Deviation From Linearity with a significance level of $\alpha = 0.05$ (with the SPSS application)
- Test the hypothesis through multiple correlation regression techniques using the t-test to test the relationship between two variables, the F test to test the relationship of three or more variables.

RESULT

Tabel 1. Descriptive Analysis

Identity	Group	N	N (%)	Mean		
				X ₁	X ₂	Y
Gender	Male	31	32 %	49,45	70,90	50,58
	Female	66	68 %	48,95	68,15	52,12
Room Class	IPA1	32	33 %	49,06	69,81	46,00
	IPA2	36	37,1 %	48,53	65,19	46,92
	IPA3	29	29,9 %	49,90	72,93	63,69
Favorite Subject	Chemistry	17	17,5 %	50,18	68,24	50,29
	History	4	4,1 %	46,25	61	46,50
	Computer	2	2,1 %	54,50	76,50	48,50
	Sports	14	14,4 %	48,64	71	53,93
	Art	13	13,4 %	48,92	66	51,69
	Mathematics	14	14,4 %	47,36	70,36	54,50
	Bahasa	3	3,1 %	46,67	67,33	42,67
	English	11	11,3 %	51	70,36	53,55
	Geography	4	4,1 %	43	63	37,25
	Physics	3	3,1 %	58,33	72,67	48,00
	Biology	5	5,2 %	51,40	73,20	60,80
	PKN	3	3,1 %	47,00	63	47,33
	PAI	3	3,1 %	46,67	73,67	55,67
	None	1	1 %	51	80	57
Hobby	Reading	17	17,5 %	49,25	67,71	51,35
	Sports	29	29,9 %	48,93	71,59	50,72
	Art	22	22,7 %	48,05	65	50,59
	Waching	5	5,2 %	48,80	67,80	51
	Computer	3	3,1 %	50,33	73,67	56
	Cooking	5	5,2 %	50,20	69	54,20
	Traveling	6	6,2 %	50,67	70	53,17
	Writing	3	3,1 %	49,33	65	50
	Game	4	4,1 %	49,25	72,50	51,59
	Business	1	1 %	51	73	61
	Eating	1	1 %	49	73	64
	None	1	1 %	51	80	57

Tabel 2. Corelation Self efficacy (X₁) and Biology Learning Outcome (Y)

N	Koefisien		t _{hitung}	t _{tabel}	
	r _{yl}	(r _{yl}) ²		$\alpha = 0,05$	$\alpha = 0,01$
97	0,176	0,031	1,743	1,661	2,367

Tabel 3. Correlation Self esteem (X₂) and Biology Learning Outcome (Y)

N	Koefisien		t_{hitung}	t_{tabel}	
	r_{y2}	$(r_{y2})^2$		$\alpha = 0,05$	$\alpha = 0,01$
97	0,309	0,096	3,169	1,661	2,367

Tabel 4. Correlaion Self efficacy (X₁), Self esteem (X₂) and Bilogy Learning Outcome (Y)

N	Koefisien		F_{hitung}	F_{tabel}	
	$r_{y.12}$	$(r_{y.12})^2$		$\alpha = 0,05$	$\alpha = 0,01$
97	0,314	0,099	5,154	3,093	4,838

DISCUSSION

The results of this study indicate that there is a positive relationship between self efficacy and learning outcomes, with a correlation coefficient of 0.176 and $t_{count} = 1.743$ greater than $t_{table} = 1.661$ at a significance level of $\alpha = 0.05$. Based on the chcoreation coefficient of 0.176, it shows that the closeness of the relationship between self efficacy and student learning outcomes is still very low, sugiono (2010).

The coefficient of determination is 0.031, meaning that self efficacy contributes 3.10% to the learning outcomes of high school students. While 96.9% of learning outcomes are influenced by other factors, such as other internal factors, other psychological factors and physical factors, as well as external factors outside themselves such as family factors, school factors and community factors, Sugihartono (2007).

The results of the research obtained are in line with other studies conducted by Tuhardjo, Juliardi and Rafsanjani (2016), which show the results that self efficacy has a positive relationship and has a significant effect on learning outcomes. The results of another study conducted by Rambood, Sharif and Khademian (2018), which states the results that self efficacy and learning outcomes have a significant relationship.

In line with what was stated by Santrock (2009), defining self efficacy as an individual's belief in his ability to master the situation and produce something positive. As soon as it is conveyed by Baron and Byrne (2004), that self efficacy is an individual's assessment of his ability or competence to do a task, achieve a goal, and produce something.

Alwisol (2009), also states that self efficacy as self-perception regarding how good ones themselves can function in certain situations, relates to the belief that self has the ability to take actions that are expected. Someone who has high self efficacy tends to do something with a big and challenging effort, whereas individuals who have low self efficacy will tend to avoid tasks and give up easily when problems arise (Retno, 2013).

Based on the results of the study, that there is a positive relationship between self efficacy and learning outcomes, it can be concluded that the higher the assessment or confidence of students in their abilities, and tend to make greater efforts in facing challenges, especially in terms of learning, the higher achievement of learning outcomes he got.

The results of this study indicate that there is a positive relationship between self esteem and learning outcomes, with a sorrel coefficient of 0.309 and $t_{count} = 3.196$, greater than $t_{table} = 2.367$ at a significance level of $\alpha = 0.01$. Based on the choreation coefficient of 0.309, it indicates that the closeness of the relationship between self efficacy and student learning outcomes is still relatively low, sugiono (2010). The coefficient of determination is 0.096, meaning that self esteem contributes 9.60% to the learning outcomes of high school students. While 91.40% of learning outcomes are influenced by other factors.

As stated by Rosenberg (1995), that self esteem relates to specific dimensions, such as academic ability, social skills, physical appearance, or collective self-esteem. In line with the research conducted by Nuryanti, Rochani and Rohmad (2017), that there is a very significant relationship between self esteem and learning outcomes. Also supported by other studies conducted by Aydogan (2016), obtained results that self esteem and learning outcomes have a positive relationship. In addition, Komarraju and Dial (2014) also found results that self esteem has a positive relationship to student learning outcomes.

Branden (2007), states that self esteem is a belief in oneself, that individuals have the ability to think and face life's challenges, as well as the belief in the right to success, happiness and obtain needs or desires. Based on the results of the study that there is a positive relationship between self esteem and learning outcomes, it can be concluded that the higher the students' confidence in themselves that they have the ability to face challenges, and have confidence in things to achieve success, the learning outcomes will also increase.

The results of this study indicate that there is a positive relationship between self efficacy and self esteem together with learning outcomes, with a multiple correlation coefficient $r_{py.12}$ of 0.314 with F_{count} of 5.154 greater than $F_{table} = 4.838$ at the significance level $\alpha = 0.01$, then the correlation coefficient is very significant. Based on the multiple correlation coefficient value of 0.314, it means that the closeness of the relationship between self efficacy and self esteem together with the learning outcomes is still relatively low.

Based on the coefficient of determination between self efficacy and self esteem together with learning outcomes is 0.099. This means that learning outcomes are affected by 9.90% by self-efficacy and self-esteem factors. While the remaining 90.10% is influenced by other factors, both factors that exist within students and factors that are outside of students.

This research is in line with the results of research conducted by Komarraju and Dial (2014), that self esteem and self efficacy have a positive relationship to student learning outcomes. This means that the higher the level of self efficacy and self esteem that is owned by students, the higher the learning outcomes achieved.

CONCLUSION

This research was conducted to prove empirically whether there is a relationship between self efficacy, self esteem, and self regulation together with learning outcomes. The sample carried out in this study were high school students of class XI IPA SMAN 1 Cikarang Barat, from 4 classes of XI IPA that there were 1 class used as a trial class for research instruments and 3 classes were used as research samples, namely 97 students.

Based on the results of the research that has been done, it can be concluded that the hypothesis in this study is accepted, which means that there is a significant positive relationship between self efficacy, self esteem, and self regulation together with student learning outcomes. This means that the higher the level of self efficacy, self esteem, and self regulation together, the higher the learning outcomes achieved by students. The three variables together had an effect of 9.90% on student learning outcomes, meaning that 90.10% of learning outcomes were influenced by other graduates.

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