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Critical Thinking Skills and Student Self Concept on Student Learning Outcomes by Applying the Inquiry Model

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Abstract

The purpose of this study was to determine and analyze the effect of critical thinking skills and students self concept on student learning outcomes by applying the inquiry model to class VIII students of SMP Negeri 2 Bakauheni, South Lampung. This research method is a quantitative research with the type of survey research. The population in this study amounted to 93 students. The sample used in this study amounted to 90 students. The sampling technique used is simple random sampling. This study uses data collection techniques using observation, questionnaires, documentation, literature study. The results of this study indicate that; 1) The effect of critical thinking skills on student learning outcomes can be shown by the value of R square = 0.556 or the contribution of critical thinking skills to student learning outcomes of 55.6%. 2) the influence of self concept on learning outcomes can be indicated by the value of R square = 0.564 or it means that the contribution of self concept to learning outcomes is 56.4%. 3) The effect of critical thinking skills and self concept variables on learning outcomes is 0.565. This means that the influence of critical thinking skills and self concept variables on the learning outcomes of class VIII students of SMP Negeri 2 Bakauheni is 56.5%. These results indicate that critical thinking skills and selfconcept have an influence on learning outcomes by 56.5%.

Keywords: *Critical Thinking Skills; Self Concept; Learning Outcomes; Inquiry Model*

Introduction

Education is basically a process of changing the behavior of individuals (students) in developing their various natural potentials towards individuals who are able to face various life problems they face. To prepare students for such a complex life, education must be able to optimize the potential of students, namely their intelligence, emotional and spiritual potential. One of the potential intelligence of students is critical thinking skills (critical thinking skills). Critical thinking ability is an ability that must be possessed by students. The ability to think critically is very useful to be able to observe and deal with various problems in everyday life. Critical thinking itself is an ability to analyze facts, generate and organize ideas, defend opinions, make comparisons, draw conclusions, evaluate arguments and solve problems.

The self concept that exists in students will experience changes, determine the behavior to be carried out, affect learning activities in schools in which students experience various learning difficulties. Certain obstacles to achieving learning outcomes, and can be psychological, sociological or physiological, so that in the end it can cause learning achievement to be below what it should be.

Self concept is the entire awareness or perception of oneself that is observed, experienced, and owned by the individual himself. The basic concepts that individuals have about themselves will direct their behavior throughout their lives. Self concept is one of the determining variables in the educational process. There is a lot of evidence that confirms that the low achievement and motivation of students and the occurrence of deviations in student behavior in class are caused by negative perceptions and attitudes of students towards themselves. Likewise, students who have learning difficulties, many students already think that they are unbiased or incapable before doing and starting school assignments.

One of the learning strategies that helps teachers to relate one of the learning concepts to the real world is the Inquiry model. The Inquiry Model begins with observations to understand the concept and is continued by carrying out meaningful activities to produce a formulation. By developing the habit of critical thinking patterns, the steps or stages start from problem formulation, collecting data by observing, analyzing and drawing conclusions.

The critical thinking ability of each individual is different from one another so it needs to be nurtured from an early age. Critical thinking is a process of thinking that is reflective, focused and directed in an effort to decide what to believe or do as it should. Critical thinking is reasonable and reflective thinking focused on deciding what to believe or do (Ennis, 2011: 1). Critical thinking is done when someone is going to test something or an opinion to get a clear belief or understanding (clarification).

That critical thinking aims to test an opinion or idea. Doing considerations or thoughts on the opinions submitted. So that consideration and thinking in critical thinking are some of the cognitive aspects involved in critical thinking (Sapriya, 2014: 87).

Selfconcept is a series of conclusions that a person draws about himself based on experience, either directly or indirectly (Slameto, 2010: 182). Self concept is a persons views and feelings about himself which includes psychological, physical, and social aspects (Rachmat, 2005:100). The aspects of self concept are divided into three, namely:

- 1) Physical aspect is an aspect that includes a persons selfassessment of everything he has such as his body, clothes, and objects.
- 2) Psychological aspects include thoughts, feelings, and attitudes that a person has towards himself.
- 3) Social aspects include how a persons role in the scope of his social role and a persons assessment of that role.

Learning outcomes are a process to see the extent to which students can master learning after participating in teaching and learning activities, or the success achieved by a student after participating in learning activities marked by certain numbers, letters, or symbols agreed by the education provider (Dimiyati dan Mudjiono, 2006:3). Explains that learning outcomes are abilities obtained by children after going through learning activities. According to him, children who are successful in learning are successful in achieving learning goals or instructional goals (Abdurrahman, 1999:38).

According to Muhibbin Syah (2011:132) the factors that influence student learning are:

- 1) Internal factors include two aspects, namely:
 - a) Physiological aspects
 - b) Psychological aspects
- 2) External factors include:

- a) Social environmental factors
- b) Non social environmental factors

The inquiry learning model is a student centered strategy; groups of inquiry students are involved in a problem or seek answers to questions in a clearly outlined procedure and group structure (Hamalik, 2011:88). The learning steps using the inquiry learning model, according to Sanjaya (2014: 101), are as follows:

1. Problem orientation
2. Formulate the problem
3. Formulate hypotheses
4. Collecting data
5. Testing the hypothesis
6. Conclusion

Research Methods

This study is a quantitative study to determine whether there is an effect of critical thinking skills and student self concept on student learning outcomes by applying the inquiry model to integrated social studies subjects. The design of this study uses a survey by distributing questionnaires to test the presence or absence and strength of the influence of the related variables in an object or subject under study.

The population in this study amounted to 93 students of class VIII SMP Negeri 2 Bakauheni South Lampung. The sample used in this study amounted to 90 students. The sampling technique used is *simple random sampling* with proportional allocation for each class. This study uses data collection techniques using observation, questionnaires, documentation, literature study.

This research consists of two variables, namely the independent variable and the dependent variable. The independent variables in this study were Critical Thinking Skills (X1) and Student Self Concept (X2), while the dependent variable was Student Learning Outcomes with the Inquiry Model (Y).

Result

4.1 Result Description Data

1. Description of Critical Thinking Skills Variable Data

Data on critical thinking skills was obtained using a questionnaire consisting of twenty question items, the average value (mean) was 78.96, this means that the critical thinking skill variable is included in the very good category with a total median value of 78, 50. Meanwhile, the minimum total score is 65 and the maximum total value is 92 with a difference between the maximum and minimum values (range) of 27. In the critical thinking skills variable, the standard deviation value (data spread value) is 6.682. Based on the results of respondents answers in the variable questionnaire, it shows that critical thinking skills obtained an average of 34 (37.61%) students answered strongly agree, 26 (28.67%) students answered agree, an average of 22 (24.89%)) students answered less agree, an average of 7 (8.33%) teachers answered disagree with an average of 1 (0.50%) students answered strongly disagree.

2. Description of Self Concept Variable Data

Based on the description of the self-concept data, from the twenty question items obtained an average value (mean) of 78.46, this means that the self concept variable is included in the very good category with a total median value of 78.00. a minimum of 64 and a maximum total value of 93 with a difference between the maximum and minimum values (range) of 29. In the work discipline variable, the standard deviation value (data spread value) is 7,041.

Based on the results of respondents answers to the selfconcept questionnaire, an average of 32 (36.00%) students answered strongly agree as many as 27 (30.06%) students answered agree, an average of 22 (24.72%) students answered less agree, an average of 8 (8.67%) students answered disagree and an average of 1 (0.56%) students answered strongly disagree.

3. Description of Learning Outcome Variable Data

Based on the description of the learning outcomes data, from the twenty question items obtained an average total value (mean) of 78.59, this means that the learning outcomes variable is included in the very good category with a total median value of 78.00, while the total minimum score is 78.00. of 64 and the total maximum value of 93 with the difference between the maximum and minimum values (range) of 29. In the learning outcomes variable, the standard deviation value (data spread value) is 7.159.

Based on the results of the answers to the questionnaire respondents, the student learning outcomes obtained an average of 32 (35.67%) students answered strongly agree, 27 (30.56%) students answered agree, an average of 22 (25.28%) students answered less agree, and an average of 7 (8.06%) students answered disagree.

4.2 Prerequisite Test of Data Analysis

1) Normality Test

Normality testing has a purpose to test whether in the regression model, the confounding or residual variables have a normal distribution.

Basic normality test

1. The data is normally distributed if the sig value (significance) > 0.05
2. The data is not normally distributed if the value of sig (significance) < 0.05

The results of this normality test are to determine whether the data collected from each variable is normally distributed or not. The data requirement is normally distributed if the Sig (2-tailed) value obtained from the calculation results is greater than the 5% alpha level or Sig. (2-tailed) > 0.05 . Output normality test results using SPSS) version 16.0 windows. The data is normally distributed where the significance value is 0.835. Overall the data is normally distributed because the significance value is greater than the 0.05 level of significance.

Based on the results of the normality test of the critical thinking skills variable, the *Kolmogorov-Smirnov Z* value is 0.835 and the Asymp value. Sig. (2-tailed) $0.488 > 0.05$, it can be concluded that the critical thinking skills data variable is normally distributed. The results of the normality test of the self concept variable obtained the *Kolmogorov-Smirnov Z* value of 0.850 and the Asymp value. Sig. (2-tailed) $0.466 > 0.05$, it can be concluded that the self-concept data variable is normally distributed.

Based on the results of the normality test of the learning outcomes variable, the *Kolmogorov-Smirnov Z* value is 0.709 and the Asymp value. Sig. (2-tailed) $0.696 > 0.05$. So it can be concluded that the variable of learning outcomes data is normally distributed.

2) Homogeneity Test

The homogeneity test is intended to show that two or more groups of sample data come from populations that have the same variance. In regression analysis, the analysis requirement required is that the regression error for each grouping based on the dependent variable has the same variance. The basis for decision making is as follows:

Table 1. Homogeneity between Learning Outcomes and Critical Thinking Skills

Levene Statistic	df1	df2	Sig.
3.821	20	65	.023

Source: Researcher data processing, 2020

Based on the table above, it is known that the significance value of learning outcomes based on the critical thinking skills variable $0.023 > 0.05$ means that the learning outcomes variable (Y) based on the critical thinking skills variable (X1) has the same variance.

Table 2. Homogeneity between Learning Outcomes and Self Concept

Levene Statistic	df1	df2	Sig.
4.591	20	65	.017

Source: Researcher data processing, 2020

The table above shows that the significance value of learning outcomes based on the self concept variable is $0.017 > 0.05$, meaning that the learning outcome variable (Y) based on the self-concept variable (X2) has the same variance.

4.3 Inferential Statistical Test

Multiple Linear Regression Results

Based on the results of the calculation shows the constant value or coefficient constant of 17,740. This value means that if there are not all independent variables, namely critical thinking skills (X1) and self concept (X2), it is 17.740, while the coefficient value of the Critical Thinking Skills variable is 0.169, and the self concept variable is 0.605. Based on these values, the form of a multiple linear regression analysis equation model is as follows:

$$Y (\text{Learning Outcomes}) = 17.740 + 0.169 (\text{Critical Thinking Skills}) + 0.605 (\text{Self Concept})$$

The regression coefficient for critical thinking skills (X1) is 0.169, meaning that every 1 value increase in the critical thinking skills variable will increase student learning outcomes by 0.169.

The self concept regression coefficient (X2) is 0.605. This means that every 1 value increase in the self concept variable will increase learning outcomes by 0.605.

Discussion

a. The Effect of Critical Thinking Skills on Student Learning Outcomes

Table 3. T-test The Effect of Thinking Skills on Learning Outcomes

		Coefficients ^a					
		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	
	Model	B	Std. Error	Beta			
1	(Constant)	15.538	6.033		2.575	.012	
	Critical thinking skills	.799	.076	.745	10.487	.000	

a. Dependent Variable: Learning outcomes

Source: Researcher data processing, 2020

Based on the results of the t-test calculation using SPSS 21.00, it is obtained that tcount is 10,487 and ttable at $n=90$ and $\alpha=0.05$, it is obtained ttable= 1.662 and a significance level of 0.00, thus $tcount >$

1 t_{table} or $10,487 > 1,662$ and a significance level of $0,00 < 0,05$ then H_0 is rejected and H_a is accepted. This means that critical thinking skills have a significant contribution and influence on learning outcomes. The real effect of critical thinking skills on learning outcomes can be shown by the value of $R^2 = 0,556$ or $55,6\%$. If critical thinking skills are increased, it will increase student learning outcomes by $55,6\%$ or the contribution of critical thinking skills to student learning outcomes by $55,6\%$.

b. The Influence of Self-Concept on Student Learning Outcomes

Based on the results of the t-test calculation using SPSS 21.00, it is obtained that t_{count} is $10,673$ and t_{table} at $n = 100$ and $\alpha = 0,05$, it is obtained $t_{table} = 1,662$ and the significance level is $0,00$, thus $t_{count} > t_{table}$ or $10,673 > 1,662$ and the level of significance of $0,00 < 0,05$ then H_0 is rejected and H_a is accepted. This means that self-concept has a significant contribution and influence on student learning outcomes.

Table 4. T-test The Effect of Self Concept on Student Learning Outcomes

		Coefficients ^a				
		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
Model		B		Beta		
1	(Constant)	18.669	5.636		3.312	.001
	Self concept	.764	.072	.751	10.673	.000

a. Dependent Variable: Learnin outcomes

Source: Researcher data processing, 2020

The effect of self concept on learning outcomes can be shown by the value of $R^2 = 0,564$ or $56,4\%$. meaning that the contribution of self-concept to learning outcomes is $56,4\%$.

Conclusion

Based on the results of data analysis, the conclusions of this study are as follows:

The effect of critical thinking skills on student learning outcomes can be shown by the value of $R^2 = 0,556$ or $55,6\%$. or the contribution of critical thinking skills to student learning outcomes by $55,6\%$.

The effect of self concept on learning outcomes can be shown by the value of $R^2 = 0,564$ or $56,4\%$. meaning that the contribution of self concept to learning outcomes is $56,4\%$.

The effect of critical thinking skills and self concept on learning outcomes is $0,565$. This means that the influence of critical thinking skills and self concept variables on the learning outcomes of class VIII SMPN 2 Bakauheni students is $56,5\%$. These results indicate that critical thinking skills and self concept have an influence on student learning outcomes by $56,5\%$.

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