The Impact of Digital Literacy for Inquiry Based Learning toward Critical Thinking of Student

Risa Puji Lestari, Waspodo Tjipto Subroto, Nasution

Primary Education, Postgraduate, State University of Surabaya

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Abstract- Social studies education aims to understand and develop knowledge, cognitive, affective and psychomotor aspect and to prepare the student as good citizens. But in fact, social studies education is still conventional and centered on teacher. The purpose of the research is to find the impact of using digital literacy for inquiry based learning on student critical thinking skill. This research sample was quasi experimental. the research design was a pretest-posttest control group design and the sample was the VB and VC classes that have been selected through random sampling techniques. The result of analysis claims that critical thinking skill was obtained t_{hitung} = 13,539 with significance of 0,05 and df 38. Thefore, digital literacy for inquiry based learning has significant toward improving critical thinking skill.

Index Terms - critical thinking, inquiry learning, social studies.

I. INTRODUCTION

The learning of social studies has aim for understanding and developing the knowledge, value, social skill, civics, fact, phenomenon, concept, and generalization and capable to prove it into the society life, the nation and the state[1]. The process of social studies especially in elementary school, that must be reconditioned because in fact among this time there are a lot of studies conventional. Another weakness is the wrong thinking from the parents, the children its self and the teacher, even the decision which claims that social studies education become weak and unqualified, it is also have less of value and aim compared with another study like science studies [2]. Based on the research in Virginia, the study time for social studies had been ruled out [3]. Time for social studies given only less than two hours per week while for mathematics and science studies six hours per week.

The active study claims that the student always does the meaningful of learning experience [4]. One of the methods is using inquiry, it is a study which emphasize on the process of critical thinking and analytical to search and find the answer from the problem [5]. The methods using inquiry is the form of the study with the development which purposed to teach the student how to think [6]. In other side, the phases of inquiry method are orientation, statement of the problem, find the hypothesis, collect the data, examine the hypothesis and conclusion[7].

The inquiry method is based on digital literacy. Digital literacy refers to the ability to use digital technology, communication equipment and or networks to access, manage, consolidate, evaluate, and seek information in the knowledge of the community[8]. Utilizing the internet students can improve their ability to read, write, listen, speak, and translate. Students are also better able to use internet English, develop web-based students, understand computer software and hardware, and use blogs and e-mail. Between digital literacy skills and internet learning has a strong relationship [9]. Study which concluded that there was a positive correlation between digital literacy and internet use. Based on the description above, it can be concluded that the use of the internet in learning is strongly related to the increase in students' digital literacy abilities [10].In this research, the inquiry method based on digital literacy helps the student to collect the data in analyzing the types of economic enterprises that exist in the community. The statement of the problem in this research is how is the impact of digital literacy for inquiry based learning on critical thinking skill. The purpose of the research is to analyze the impact of digital literacy for inquiry based learning on critical thinking skill.

II. IDENTIFY, RESEARCH AND COLLECT IDEA

This research using qualitative with quasi experiment which the aim is to examine the effect of learning method by applying the treatment to a group of subject research and the design was pretest-posttest control group. The subject of the research is the student of VB grades at SDN Petemon X/358 Surabaya as the experimental class and student VC grades as the control class. The samples of the research are 20 for control class a 20 for experimental class.

The normality test in this research was carried out by taking the data from different value of pretest and posttest in experimental and control class. In this case, for analyze the normality the researcher using the Kolmogrov Smirnov test with the help of SPSS 21.00 program at the level of normal significance. The homogeneity test in this research aims to determine whether the sample (control and experimental class) has the same variants or not. The homogeneity test was carried out using Oneway Anova test with SPSS 21.00 program. The testing of this hypothesis used to compare the control class and experimental class. For the test, it is calculated using *T test* formula.

III. RESULTS AND DISCUSSION

The data collected from the results of the dissemination of the instrument is then given an assessment of each answer, and then it is referred to as the calculation material in this study. The results of collecting data from variables are raw scores. In the statistical test the raw score is changed to the raw score that will be used as the basis for the statistical assumption test in the form of a normality and homogeneity test which is a statistical test requirement with a t_{test}.

1. Normality Test

The result data of the student normality test using *one sample kolmogrov-smirnov* technic at significance level 0,05 at computer program SPSS 21.00.

Table 4.14
Normality Test Result

Variable	Class	Kolmogorov-Smirnov	Sig. (2Tailed)
Critical Thinking skill *pretest*	Experiment	0,881	0,419
Critical Thinking skill *posttest*		0,982	0,290
Critical Thinking skill *pretest*	Control	1,084	0,191
Critical Thinking *posttest*		1,082	0,192

Source: processed secondary data of researchers, 2018

Table 4.14 shows that the normality assumption has been fulfilled can be seen from the significant level of critical thinking variables of the student in the control class and the experimental class of more than 5% or 0,05.

2. Homogeneity Test

Homogeneity test was conducted by using *One way Anova* with the help of *SPSS 21.00* program.

Table 4.15
Homogeneity Test Result

Variable	Levene Statistic	df_1	df_2	Sig.
Critical Thinking *pretest*	0,052	1	38	0,821
Critical Thinking *Posttest*	0,787	1	38	0,381

Source: processed secondary data of researchers, 2018

Based on the table 4.15, it can be seen from the significant level of variable more than 0,05 which means it is homogeneous, so that the test requirements for analysis have been fulfilled.

3. Hypothesis Testing

a. Hypothesis Testing Result of Student's Critical Thinking

T test on the *pretest* was conducted to measure the similarity from the control class and the experiment class before the treatment. The following below are the result of the analysis student's pretest using *SPSS 21.00.*

Table 4.16
Hypothesis Testing Result of Student's Critical Thinking (Pretest)

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Critical Thinking Pretest	Experimental	20	45,2083	5,28345	1,18142
	Control	20	43,5417	5,14323	1,15006

Source: processed secondary data of researchers, 2018

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tail)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Critical Thinking Pretest	Equal variances assumed	,052	,821	1,011	38	,318	1,66667	1,64875	-1,67106	5,00439
	Equal variances not assumed			1,011	37,973	,318	1,66667	1,64875	-1,67114	5,00447

Source: processed secondary data of researchers, 2018

Based on the table 4.16 shows the result of analysis with the t *Independent Sample T test*, the independent simple which obtained *sig 2 tailed* in the amount of 0,318 > α (0,05) with t_{count} in the amount of 1,011 then the result t_{count} consulted with t_{table} for the test of one part where t_{table} 1,686 (df = 38) so that $t_{count}<t_{table}$ means the result of two samples which no significance different. Which means there is no different of critical thinking ability student in the experimental class and control class at pretest. While the results of the students critical thinking ability after the treatment are presented in the table below.

Table 4.17
Hypothesis Testing Result of Student's Critical Thinking *(Posttest)*

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Critical Thinking	Experimental	20	91,2500	8,53836	1,90923
	Control	20	57,7083	7,06008	1,57868

Source: processed secondary data of researchers, 2018

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Critical Thinking	Equal variances assumed	,787	,381	13,539	38	,000	33,54167	2,47738	28,52647	38,55686
	Equal variances not assumed			13,539	36,705	,000	33,54167	2,47738	28,52066	38,56268

Source: processed secondary data of researchers, 2018

Based on the table 4.17 shows the result of analysis with the *Independent Sample T test*, the independent sample which obtained *sig 2 tailed* in the amount 0,000 < α (0,05) with t_{count} amount of 13,539 then the result of t_{count} consulted with t_{table} for the test of one part where t_{table} 1,686 (df = 38) so that $t_{count}>t_{table}$ it means the result from the two samples have the significance different.

Based on the analysis above, table 4.14 can be seen that the two groups of the data tested were the group of student that have been learned using inquiry learning method and the student using the conventional learning method. According to the table, it obtained a significance value for the result of normality analysis the critical thinking skill pretest amount 0,881at experimental class and 1,084 at the control class. For the result of normality analysis, the critical thinking skill posttest amount 0,982 at experimental class and 1,082 at control class. For the result of normality analysis of critical thinking skill (posttest) of 0.982 at experimental class and 1,082 at control class. Both of the testing group have a significance value > 0,05 or > 5% it can be concluded that the data of critical thinking skill each group is normally distributed. Based on the table 4.15 for homogeneity test obtained the value of 0,052 pretest and 0,787 posttests because for the significance number > 0,05 and it can be concluded that the various samples are homogeneous.

The average value of student's critical thinking skill at pretest is presented at the table 4.16 that 43,5417 at the control class and 45,2083 at experimental class, then looking at the result of independent sample T test at the table 4.16 obtained that t_{count} = 1,011 < t_{table} = 1,686. The result of *sig. 2 tailed* 0,318 > α (0,05) concluded as H_o rejected and H_a accepted. This case shows that there are no differences between control class and experiment class on student's critical thinking skill.

After given the treatment, the posttest shown at the table 4.17, the analysis result of critical thinking skill (posttest) showed that the value mean of critical thinking skill student at control class was 57,7083 and the experiment class was 91,2500 and looking for the result of *independent sample T* test in table 4.17 obtained that t_{count} = 13,539 > t_{table} = 1,686. Sig. 2 tailed 0,000 < 0,05 concluded as H_o rejected and H_a accepted. This case shows that there are differences on student's critical thinking skill both in control and experimental class.

IV. CONCLUSION AND SUGGESTION

The inquiry method base on literacy digital have the impact to student's critical thinking skill. it can be seen from the analysis result which obtained t_{count} = 13,539 with the significance 0,05 and df 38. According the result, it obtained that the teacher suggested to use inquiry method based on literacy digital as one of alternative in learning activities. This case allows the student for active learning to find the problem solving.

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AUTHORS

Firs Author – Risa Puji Lestari, Postgraduate Students, Primary Education Study Program, State University of Surabaya, e-mail: risa.17070855431@mhs.unesa.ac.id
Second Author – Waspodo Tjipto Subroto, Doctorate, Primary Education Study Program, State University of Surabaya, e-mail: waspodosubroto@unesa.ac.id
Third Author - Nasution**,** Doctorate, Primary Education Study Program, State University of Surabaya,
e-mail: nasution@unesa.ac.id

Corespondence Author - Risa Puji Lestari, risa.17070855431@mhs.unesa.ac.id**, +62 85648355589**