

## The Influence of Inkuiri Learning Models Are Leading To the Critical Thinking about Students Students State 1 Lingsar

Sitihasanah, Agusabhipurwoko, Aliefman Hakim  
Post Graduate Of Science Education, Mataram University, Indonesia  
Corresponding Author: Sitihasanah

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**Abstract:** Based on the results of field observations at SMAN 1 Lingsar that students are still less active and teachers more active role in the learning process (teacher centered). With regard to the reality, the researcher conducts experimental research by applying Inquiry Learning model to encourage student activeness (student-centered) in order to improve students' critical thinking ability. The formulation of this research problem; Is there any influence of guided inquiry learning model to the critical thinking ability of SMAN 1 Lingsar Student in Lesson Year 2017 ?. Testing hypothesis with covariance analysis using SPSS version 24 for windows. The results showed; There is no difference in the ability of ultimate critical thinking for students who follow the guided inquiry learning model with students following the conventional learning model. Upon hypothesis test, the significance of learning model is 0.411. So because the value of Sig. > 0,05 then  $H_0$  accepted. This means that there is no second linear relationship with the mean of critical thinking ability in the class which received treatment of guided inquiry self-help model ( $M = 58,70$ ;  $SD = 11,403$ ) did not differ significantly from control group ( $M = 56,36$ ;  $SD = 11,358$ ). Furthermore, the proven covariance also supports the improvement of students' critical thinking skills with a significance number of 0.000. means because the value of Sig. < 0.05 then  $H_0$  rejected. This means that there is a linear relationship between the covariant and the dependent variable.

**Keywords:** inkuiri, critical thinking

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### I. Introduction

Science can in fact be viewed as a product and as a process. Science is a systematic way of finding out about nature to master knowledge, facts, concepts, principles, discovery processes, and scientific attitudes. Science also refers to the composition of knowledge one obtains through that method. With other expressions of science is a way of acquiring knowledge by a particular method<sup>[1]</sup>.

Chemistry is a part of science that is closely related to everyday life. Chemistry contains many abstract concepts such as structured symbols, structures, reactions and chemical processes so that most students assume that chemistry is a difficult subject. The difficulties of students in understanding chemistry are marked by the students' inability to understand the chemical concepts correctly. This is due to: (1) the assumption that has been rooted among teachers that the ability of students in solving algorithmic problems also shows the conceptual ability, whereas the algorithmic ability of students does not show its conceptual ability; and (2) the teaching materials used do not relate the three levels of chemical representation that is macroscopic, symbolic, and microscopic<sup>[2]</sup>.

The demand for the development of critical thinking skills in elementary schools, especially in the field of science, has become the center of attention of educational figures and observers, given the results of research showing that Indonesia is always ranked final or last in the aspect of critical thinking / indicators that refer to the ability think critically because the learning process that is currently implemented largely only improve student learning outcomes in the cognitive aspect<sup>[3]</sup>.

Based on the observation in the field that is at SMAN 1 Lingsar West Lombok regency where the learning of chemistry which still centered on the teacher as giver of knowledge for student, delivery of subject matter tend to still dominated by lecture method. Students play less active role in the learning process to build and find themselves through interaction with their environment, so that students only memorize facts from the book and not from the results of finding and building their own knowledge. Students find it difficult to understand the academic concepts as taught so far, using something abstract with lecture methods. Learning-oriented targets mastery of the material proved only able to deliver students remember the lesson material in a relatively short time, but often the child does not understand and know in depth, the knowledge gained is only memorization that causes the child will forget easily, children to solve problems for a long time. In addition, the lack of interaction between teachers and students leads to less enjoyable learning, leads to saturation and

drowsiness when the learning process takes place so as not to give students space to think because the learning process is only centered on the teacher (Teacher centered).

## II. Method

This research was conducted at SMAN 1 Lingsar academic year 2018. This research used quasi experimental research with nonquivalent control group design pre-test-post-test design.

Population in this research is all Class XI IPA SMAN 1 Lingsar. Sampling technique in this research using quota sampling technique. Where the sample consists of 2 classes of class XI MIA 1 as the experimental class and class XI MIA 4 as the control class. Instrument in this research there are 3 that is: RPP, LKPD and Tes. The test uses multiple choice questions with 5 answer choices consisting of 20 questions. The test is done at the beginning of the meeting (pre-test) and at the end of the meeting (post-test). The resulting data will then be tested ANACOVA.

## III. Result And Discussion

**Table 1.** Analysis of Anakova Type Ifor Variables of Critical Thinking Skills (Post-test)

Tests of Between-Subjects Effects					
Dependent Variable : Kemampuan Berfikir Kritis Akhir ( <i>Post-test</i> )					
Source	Type I Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	2970,526 <sup>a</sup>	2	1485,263	23,446	,000
Intercept	149068,889	1	149068,889	2353,201	,000
Pre-test Model	2926,826	1	2926,826	46,203	,000
Pembelajaran Error	43,699	1	43,699	,690	,411
Total	2660,585	42	63,347		
Corrected Total	154700,000	45			
Total	5631,111	44			

a. R Squared = ,528 (Adjusted R Squared = ,505)

Based on the above table obtained the result that the significance of the learning model of 0.411. So because the value of Sig.> 0,05 then H<sub>0</sub> accepted. This means there is no linear correlation between the learning model and the final critical thinking ability (Post-test) or in other words that there is no difference in the students' critical thinking skills following the guided inquiry learning model with the students following the conventional learning model. This condition is reinforced by the mean of critical thinking ability in the class which received treatment of guided inquiry self-help model (M = 58,70; SD = 11,403) not much different from the control group (M = 56,36; SD = 11,358). In other words, there is no difference in the mean final critical thinking ability of the two classes studied with the ultimate critical thinking ability after being treated. For more detailed critical thinking skills in each class can be seen as the data in the following table:

Descriptive Statistics			
Dependent Variable : Kemampuan Berfikir Kritis Akhir ( <i>Post-Test</i> )			
Model Pembelajaran	Mean	Std. Deviation	N
Model Pembelajaran Inkuiri Terbimbing	58,70	11,403	23
Model Pembelajaran Konvensional	56,36	11,358	22
Total	57,56	11,313	45

Furthermore, to know the influence of the difference of learning model as independent variable and the ability of early critical thinking (Pre-test) as covariance toward the ability of final critical thinking (Post-test) as the dependent variable simultaneously can be seen from the number of significance on the corrected model. It can be seen that the significance of the corrected model is 0.000. Because the value of significance is far below 0.05, H<sub>0</sub> is rejected so that it can be concluded that simultaneously there is influence of early critical thinking ability (Pre-test) and learning model to the ability of critical thinking end (Post-test).

Hydrocarbons themselves are materials that demand analytical, critical, logical and creative thinking skills. This is based on interviews with teachers of class XI SMAN 1 Lingsar and supported by a journal written by <sup>[4]</sup> which states that hydrocarbon material is included into complex material because of many abstract concepts. In SMAN 1 Lingsar, although the curriculum has been implemented in 2013 but the learning on Thermochemical materials is still conventional in which teachers only prioritize the theory in understanding and solving problems, this will make students can only remember and understand the material in a short time (short-

term- memory). While the pattern of learning in students will affect the students' thinking ability. Learning that does not involve students actively will result in high students' thinking ability is relatively low because the thinking process of students is only emphasized on how to solve problems in a limited way.

In line with the opinion of <sup>[5]</sup> in his research the components involved in learning to improve critical thinking skills, namely (1) involving learners to do tasks that require to make decisions reasonably, (2) help them use learning resources to complete the task, and (3) create an environment that encourages and supports them to seek to engage in critical discussion.

#### **IV. Conclusion**

The conclusion in this research is there is no difference of final critical thinking ability for students who follow guided inquiry learning model with students who follow conventional learning model.

#### **Reference**

- [1]. Khaeruman, Siti, N, Sari, R. 2015. Efektivitas Penerapan Model Pembelajaran Problem Solving Dengan Context-Rich Problems Pada Materi Pokok Termokimia Dalam meningkatkan Hasil belajar Siswa Dan Kemampuan Berpikir Kritis. *Jurnal Pengkajian Ilmu dan Pembelajaran Matematika dan IPA: 191-199 Vol II.*
- [2]. Yanto, R, Eny, E, Erlina. 2014. Pengembangan Lembar Kerja Siswa (LKS) Dengan Pendekatan Makroskopis-Mikroskopis-Simbolik Pada Materi Ikatan Kimia. *Jurnal Pendidikan: 1-9.*
- [3]. Azizah, Hani N, Asep, Kurnia J, Diah, G. 2016. Pengaruh Model Pembelajaran Inkuiri Terbimbing terhadap Kemampuan Berpikir Kritis Siswa pada Materi Energi Bunyi. *Jurnal Pena Ilmiah: 51-60 Vol I.*
- [4]. Hapsari, Dwi P, Suciati, S, Marjono. 2012. Pengaruh Model Inkuiri Terbimbing Dengan Diagram V (Vee) Dalam Pembelajaran Biologi Terhadap Kemampuan Berpikir Kritis dan Hasil Belajar Siswa. *Jurnal Pendidikan Biologi: 16-28 Vol IV.*
- [5]. Khumairah, F, Tatang, S, Hadeli. 2014. Pengembangan Modul Kimia Dasar Materi Termokimia Berbasis Keterampilan Berpikir Kritis Untuk Mahasiswa Program Studi Pendidikan Kimia. *Jurnal Pendidikan Kimia: 115-125*

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