

The Effect Guided Inquiry to Critical Thinking Ability to Build Student Character in Geography Subject

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Abstract—Character is an important thing to consider in education. Characters that should be imparted to students in Indonesia contained in the standard of competence in 2013 curriculum. Teachers can build students character with using of learning models that includes character activities and critical thinking. Guided inquiry learning model can improve critical thinking and growing the students character through activities in a syntax's. The purpose of this paper discusses the effect of guided inquiry model to the critical thinking ability to build the students character in geography matter. This research using quasi-experiment with two classes (experiment class and control class), after that data is tested using independent sample t-test. The results showed that there is influence of guided inquiry model to the critical thinking ability to build the character of students in the subjects of geography with significant value 0.00. Characters that grow among others: honesty, discipline, responsibility, caring, polite, cooperative, and independent. Character reflected in the student activities for applying the guided inquiry model. These activities include: formulating problems, develop hypotheses, collect data, test the hypotheses, and draw conclusions.

Keywords—Character, guided inquiry, critical thinking

I. INTRODUCTION

Guided inquiry learning emphasis on the process of investigation. The investigation of inquiry aimed at obtaining and getting information by observation or experiment. Experiments were doing aimed for finding answers to questions or formulation of the problem by using critical thinking ability and logical. The investigation is the process of asking and finding out the answers to the scientific questions

while student make. Scientific question is the process of find for information that is based on science or existing theories. According to Sumarmi (2012:24), the ask process in inquiry will encourage students to actively explore something that form a comprehensive knowledge.

The material on guided inquiry learning is not given directly to the students. The student job is seeking and finding themselves the subject matter. Teachers act as facilitators and mentors students to learn. According to Bruce and Bruce (1992:61), guided inquiry teaches students to use the skills process, attitudes, and knowledge of rational thinking. Cleaf (1991:190) also argued that guided inquiry is one of the strategies used in the classroom process oriented. When search material the students become critical and analytical on any information obtained if it does not correspond to their reasoning. Critical and analytical thinking process is done through a question and answer between teachers and students.

Guided inquiry learning model syntax's there are five. These stages include: formulating a problem, make hypotheses, collect data, test hypotheses, and draw conclusions. The five steps are carried out independently by students with little guidance or help from the teacher. According to Looi (1998:4), an important stage of guided inquiry are: making hypotheses, collect data, test hypotheses, and draw conclusions. Through these stages, students are able to know the subject matter and can use them potential.

Guided inquiry related to activities that focus on the looking for knowledge by students that are useful for developing critical thinking skills. The process of critical

thinking are mental activities such as: solving problems, analysing assumptions, reasoning rationally, evaluate, doing investigation and make a decision. Making decision stage, students will search, analyse, and evaluate information to make conclusions based on facts. According to Sanaa (2008:202), which guided inquiry learning emphasizes the process of thinking critically. Students who think critically will always find and explain the relationship between the issues discussed with other relevant experience.

Critical thinking is a mental activity that involves the brain works at the complex level and use the analysis and evaluation process. Therefore, critical thinking ability are indispensable in solving problems or finding solutions. The development of critical thinking skills is the integration of the various components of development capabilities, such as: observation, analysis, reasoning, judgment, make decision, and persuasion. The better the development of these abilities, the better it will be to solve the problems. According to Ennis (1962:8), critical thinking is a way of thinking reflectively based reasoning.

The material used in this paper is population. The author chose population material because that are in the real world and easily observed. Students can observe and investigate directly the problems of population in them environment, such as: Kediri growth population increase continuously. In addition the sum population of in the Kediri city unequal in every district. Condition of population in Kediri city today will affect the future. According to Kuhlthau, Maniotes, and Caspari (2007:4), inquiry connects directly between something learned with the real world.

Characters emerge from the activities and the work of the students in guided inquiry stage's nuanced critical thinking. The characters are: honesty, discipline, responsibility, caring, polite, cooperative, and independent. Examples the independent characters appear as dominant students in learning activities that find their own knowledge. According to Vieira, Tenreiro, and Martins (2011:44) thinking critically important for the students future to face the challenges in life and their work. The purpose of this paper discusses the effect of guided inquiry model to critical thinking ability to build the students character in geography subject.

II. METHOD

The research using quasi experimental design with two classes (experimental class and control class). The research subject is students of grade XI Social's Science (IIS) Senior High School State 3 Kediri in 2014/2015 academic year consisting of three classes. Grade XI IIS 3 selected as the experimental class and XI IIS 2 as control class. Grade XI IPS 3 received treatment for the provision of guided inquiry learning model. Grade XI IPS 2 is subjected to conventional learning models (lectures, discussion, and also question and answer).

The instrument used in this research is the essay test with five questions. The instrument has been validated by the validator lecturer and has been tested in grade of XII IIS 1. The

results of trials carried out some testing instruments, there are: difficulty level analysis, different power, validity, and reliability.

The data used in this research is quantitative. Data collected by giving the initial test (pre-test) and final test (post-test). The purpose of a pre-test to determine the initial capability students critical thinking data in experimental class and control class implemented before receiving the subject matter from teacher. Once completed the learning is do the post-test to obtain the final data students critical thinking ability of each class. Difference pre-test and post-test (gain score) was used to test the hypothesis.

Analysis of data using parametric inferential statistics. Measurements include prerequisite test analysis and hypotheses test. The prerequisite analysis test consists of normality and homogeneity test. Hypothesis test using independent sample t-test with SPSS 16.0 for Windows at a significance level of 0.05.

III. FINDINGS AND DISCUSSION

A. Findings

Results prerequisite test analysis showed that the data were distributed normally and homogeneous. This result means that the gain score qualifies to be analysed with parametric inferential statistics. The results research showed that there is effect guided inquiry model to critical thinking ability in the senior high school geography subject with a significance value of 0.00. Parts of critical thinking ability analysed from gain score. The average value of each indicator of the critical thinking ability can be seen in Table 1.

TABLE 1 AVERAGE STUDENTS VALUE FOR INDICATORS CRITICAL THINKING ABILITY

Indicators Critical Thinking Ability	Item Test Numbe r	Average Value Students					
		Experiment Class			Control Class		
		Pre test	Post test	Gain Score	Pre test	Post test	Gain Score
Give a simple explanation	1	7,62	9,75	2,13	7,20	8,97	1,76
Build basic skills	2	12,38	14,68	2,30	11,42	13,39	1,97
Make inference	3	12,60	19,73	7,13	12,13	17,81	5,69
Further explanation	4	14,13	18,27	4,13	12,75	17,38	4,63
Set the strategy and tactics	5	10,13	24,53	14,4	12,6	17,11	4,51

Table 1 shows that every indicator of students critical thinking ability of experiment class has increased better than the control class. Indicators set the strategy and tactics in the experimental class is the greatest increase (14.4) compared to other indicators. Set the strategy and tactics is an important part of critical thinking because it is used as a basis to help students make the decision to solve the problem. When the four indicators have been done properly and correctly, then the fifth indicator would easily do the students. In the control class every indicator of critical thinking ability done in the classroom without going through the process of investigation.

It causes less students can the strategies and tactics to population problems in the environment.

The high increase indicator at control class is make inference in the amount of 5.69 point. The lowest indicator is gives a simple explanation of 1.76. In general average gain score control increase in the is lower than experiment class. In the control class the basics of critical thinking ability less controlled by student because for getting that ability need active in questioning and investigating.

Character is very important in education especially in Indonesia. Characters contained in the competency standard curriculum 2013 include: honesty, discipline, responsibility, caring, polite, environment awareness, mutual aid, cooperation, peace-loving, responsive, pro-active, and independent. The application of guided inquiry learning model nuanced critical thinking able to build character, there are: honest, discipline, responsibility, caring, polite, cooperative, and independent.

Guided inquiry activities includes the step of formulating the problem, make hypotheses, collect data, test hypotheses, and draw conclusions. The activities also include the student worksheet, which consists of exercises and report the findings in accordance with the format provided the author.

B. Discussion

- The Effect of Guided Inquiry to Students Critical Thinking Ability

Formulate problems and make hypotheses stage, students become active thinking by directly confronts the issues to be resolved. This stage there are indicators of critical thinking ability giving a simple explanation. According to Suriasumantri (2003:29), people will think when he is in trouble. Opinion of the above can be done with exposes students to the population problems that occurred in Kediri City. The purpose directly exposes students to the problem is to attract the attention of students and explore their curiosity. For that, teacher need to look for problems that truly reveal the curiosities on students so that they are motivated to learn.

Formulate the problem and make a hypothesis is the first stage of implementation guided inquiry learning model. Teachers should be able to prepare the questions about the population problem is close to student environment. According to Piaget (1970:13), using real experience the cognitive development of a person would be better than just using the language to communicate.

The second stage, collect the data are indicators of critical thinking build basic skills and make inferences. In this indicator, gain score obtained was 2.3 and 7.13. At this indicators, the students gather questionable reasons in the formulation of the problem. The reasons are reinforced by data and facts. According to Dewey (1990:9), critical thinking is active considered, persistent, and careful about a belief or a form of knowledge that is taken for granted in light of the reasons which support it and the conclusions advanced into trends.

The third stage hypothesis test, there are indicators of critical thinking in the form of further explanation. The indicator shows the relationship between the common elements of the theory and reality and analyse the facts. The linkage that will be used to hypothesis test. According to Chance (1986:6) critical thinking is the ability to analyse the facts, give ideas, defend opinions, and solve problems.

The fourth stage, draw conclusions reflect one of the indicators of critical thinking is to evaluate the arguments. Conclusions drawn by the statements given earlier (hypothetical). In a valid argument, a conclusion must be drawn logically. According to Ennis (1985:102) there are six basic elements in critical thinking, namely: focus, reason, conclusion, situation, clarity, and reviews. Based on this opinion can be explained that one of the stages of critical thinking that conclusion and reviews. In the last stage of guided inquiry learning model these two elements have manifested.

Based on the above explanation that every phase of guided inquiry can train students to think critically. Critical thinking ability will not develop properly if there is no desire of the student. The teacher function as a facilitator and motivator very important in teaching the thinking of students.

Unlike the case with the learning condition control class that uses lecture learning methods with variation question and answer and also discussion groups. Application lecture method causes the students tend to passively acquire information or knowledge from the teacher. The knowledge obtained by the students is very limited and students feel bored because the activity is teacher centered. According to Hasibuan and Moedjiono (2010:13), lecture method which is a way of delivering a lesson material with verbal communication and less suitable for the formation of student attitudes.

The main difference between inquiry learning model and conventional there are three. First, the time spent in inquiry learning longer to conduct an investigation, while the conventional model nothing. Second, the teacher stimulates inquiry model with questions raises problems, while in a conventional classroom directly explained the material. Third, the inquiry model connects directly between the material and facts on the field, while the conventional classes provide a general description.

- The Effect of Guided Inquiry to Critical Thinking Ability for Build Students Character

Characters emerge from the activities and the work of the students in guided inquiry stage nuanced critical thinking, such as: honesty, discipline, responsibility, caring, polite, cooperative, and independent. Honestly reflected in the collection population data around the residence of students and not fully supervised by the teacher. Discipline characters in collecting reports and working on student worksheet in accordance with the specified time teachers. There are five issues according to indicators of critical thinking in Worksheet 1 and one report that overall the students collected timely.

According to Sanjaya (2007:215), one of the stages of guided inquiry is to collect data contains activities capturing information (data and facts) to test the hypothesis. According to Bruce, Joyce, Marsha, and Emily (2009:145), inquiry make students active and discipline because building intellectual skills, make questions, and find out the answers that originated from their curiosity.

Responsibility characters is seen when a group of students present and defend what is written or discovered to another group. This process is at the stage of the hypothesis test and conclusion. Students accountable scientifically in accordance with the search process the data and linking these data with the knowledge that already exists. According to Saunders and Shepardson (1987:45), guided inquiry can improve problem solving skills, critical thinking, explain the data, and understand the concepts. According to Suchman (1962:102), inquiry learning model can train students to investigate and explain the process.

Cares is one character arising from students looking directly population problems in them environment. Care character is reflected in the article/report student nuanced critical thinking in the form of explanation problems. These problems are considered students as something that is inappropriate and should be resolved there. Students also provide some solutions proposed to solve the problem. According to Chiras (1992:464), critical thinking is important that students have the ability to analyse and solve a problems they will face in life.

Examples of the problem of unemployment in the district Kota of Kediri City. Efforts to resolve it is by the way the mayor gave to the factory regulations that have been and will be established in order to employ local residents in advance. In addition, the government provides capital loans to help small businesses, as well as related executive government that do counselling entrepreneurs.

Courtesy is characters needs to be continued in Indonesia. Courtesy characters visible when a group of students conducted interviews with people to collect primary and secondary data. Primary data was collected by students direct interview people in the category experienced a population problems. Secondary data obtained by student with contacting the village head to get monographs. Communication directly with people teach students to apply courtesy character to be accepted by the community.

Cooperation reflected when groups of students work on worksheets 2 which includes measures of inquiry from start to finish. Students work in groups (five people) to accomplish tasks together. Assessment was also made by the head of the group so that no member don't work. Independent character visible from all stages of guided inquiry for knowledge developed by the students. According to Sund and Trowbridge (1973:2), which guided inquiry prepares students to conduct their own experiments. According to Kuhlthau, Maniotes, and Caspari (2007:37) one of the advantages of using guided inquiry made independent student research and learning.

IV. CONCLUSIONS AND SUGGESTIONS

A. Conclusions

The results research showed that there is effect of guided inquiry model of build the character that is reflected in the stages and results of students critical thinking in geography lesson in senior high school. Characters that grow among others: honesty, discipline, responsibility, caring, polite, cooperative, and independent.

B. Suggestions

Suggestions can be submitted related to this research on the process of training critical thinking skills, students are still difficulties on the indicator gives a simple explanation. The indicators associated with the stage of formulating the problem and make hypotheses. Teachers should develop students critical thinking ability, in order to put more emphasis on these indicators by showing the contextual issues. If students are familiar with contextual issues, it will be used to formulate the problem and make hypotheses.

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