



# Improving Critical Thinking Skills and Creativity of Fourth Grade Students in Social Science Using Inquiry Based Learning Model

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## ABSTRACT

**Keywords:**

Inquiry Based Learning;  
Critical Thinking;  
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This research aims to improve the critical thinking skills and creativity of social sciences through inquiry based learning in the fourth grade students on one of the Sleman Private Elementary Schools. This type of research is classroom action research with two cycles. Both cycles consist of two meetings. To collect the data in this research is non-test including observation and questionnaires. The research subjects were fourth grade with a total of 49 students. The initial condition showed that the score of critical thinking skills was 55,72 (fairly critical category) and the score of creativity skills was 56,33 (fairly creative category). The results showed that the use of inquiry based learning model can improve critical and creative thinking skills. Evidenced by the increase in the score of critical thinking skills in the first cycle was 78,37 (critical category) and in the second cycle was 87,75 (very critical category). In addition, the increase in the score of creative thinking skills in the first cycle was 76,73 (creative category) and in the second cycle it was 85,92 (very creative category).



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## A. INTRODUCTION

All dimensions of life require an educational process. Social interactions and correlations that occur in the educational process affect the development of human personality. Education is obtained from the results of consecutive experiences throughout human life (Anwar, 2015). Education occupies an important role in human life, because in the educational process each person will experience changes for the better.

The 21st century is marked by the presence of technology, information and communication that has led to a digital revolution that has an impact on all aspects of life including learning and learning skills. The Indonesian state has entered the 21st century where a person can get various information quickly from various unknown sources. Entering the 21st century, competition and challenges in all aspects of life are getting stronger. Increasingly advanced technology and an increasingly fast free market encourage the availability of reliable and quality human resources. In order to fulfill this, a human being must master the skills of the 21st century. In partnership for 21th century skills it is said that 21st century skills include critical

thinking and problem solving, communication, collaboration, creativity and innovation (Wulandari et al., 2020).

Without the ability to think critically, students will have difficulty applying the new information they get through learning in dealing with problems in real life. A person's critical thinking skills will have a careful view to consider whether to accept, oppose or delay information (Haryani, 2011). Apart from critical thinking skills, students at the elementary school level also need creativity. This is supported by Marliani and Hidayati's opinion which suggests that someone who usually thinks creatively in his life will have an impact on creative personality (Mariyaningsih & Hidayati, 2018). This will form a creative person who is usually more organized in action, innovative plans and their original products have been carefully estimated in advance by considering the problems that may arise with its implications. The education system must be able to equip students as human beings with creative and critical characteristics (Fauziah, 2011).

Based on the results of observations and interviews in grade 4 of a private elementary school in the Sleman area, it was found that the school had provisions in formulating indicators, objectives and learning assessments, including the presentation of social studies learning activities in grade IV which had implemented the Higher Order of Thinking Skill (HOTS) and 21st century learning (4C), among others, students have communication and collaboration skills in social studies learning in the classroom. However, students still have low critical thinking skills and creativity. Where students tend not to focus on questions about the subject matter. Students are not accustomed to finding information on their own. Students also consider teachers and textbooks to be the main information. Students rarely ask questions and have difficulty finding solutions to the problems at hand.

This was evidenced by the results of classroom observations by distributing questionnaires for critical thinking skills and creativity that were filled in by students. The results obtained by the percentage of students' critical thinking skills were 55.10%. A total of 27 students with the minimum category are quite critical out of 49 students. Meanwhile, the percentage of students' creativity was 63.30%. A total of 29 students with the minimum category are quite creative out of 49 students. With the average critical thinking skills of all students was 55.72 and the average creativity of all students was 56.33. Therefore, it is necessary to have social studies learning innovations to improve students' critical thinking skills and creativity.

To provide optimal learning for elementary school students, a learning model is needed that can eliminate abstract concepts in learning and provide direct experience in exploring information or obtaining knowledge that will provide a better change not only in terms of knowledge, skills, critical thinking abilities and creative. As stated by Corebima that learning for students should improve critical thinking skills. Empowerment of critical thinking skills can be carried out by teachers by learning using constructivist learning strategies that have the potential to empower critical thinking skills, such as inquiry based learning, problem based learning, Thinking Empowerment by Questioning (TEQ), cooperative learning. Furthermore, Neka's research results state that in achieving the mastery of creative thinking skills in students, the inquiry learning model provides better results than the direct learning model (Neka et al., 2015). Both studies are strengthened by the results of Rodiyana's research which states that inquiry learning is efficient to develop students' critical thinking skills and creativity (Rodiyana, 2015).

Inquiry based learning model is a series of learning activities that emphasize the critical thinking process to seek and find answers to a question in question (Hamruni, 2012). This

approach trains students to learn to find and find things or problems on their own. In Aribawati's research, Inquiry based learning model offers learning that enhances student creativity measured through three aspects, namely curiosity, openness to experience, and willingness to accept risks (Aribawati et al., 2018). Meanwhile, according to Inasyah, the inquiry based learning model is a learning activity that emphasizes the maximum student involvement of all students' abilities to investigate systematically, logically, and analytically, so that they can find their own findings confidently with teacher guidance (Inasyah, 2013). The inquiry based learning model is a learning process where the teacher guides students in carrying out activities by giving initial questions to students and leading to a discussion (Deshiana et al., 2015). Thus it can be concluded that the inquiry learning model is a learning activity that emphasizes the process of critical and creative thinking to seek and find solutions for themselves and conclude learning activities with direction and guidance from the teacher.

Inquiry based learning model was developed by the researcher himself by making several changes and additions to the learning steps based on Gulo's opinion (Mariyaningsih & Hidayati, 2018) and Hamruni's opinion (Hamruni, 2012). The first step, orientation in which the teacher conditions the class and students listen to the explanation of the learning objectives. Second, determine questions where students formulate problems to be sought answers to. Third, the hypothesis and the determination of the steps for the investigation, namely the students make temporary answers to the problems they formulated. Fourth, investigations where students collect the information needed through observation to find answers to a problem. Fifth, analysis, namely students analyze the information obtained based on the results of observations. Sixth, draw conclusions based on the findings obtained in the field.

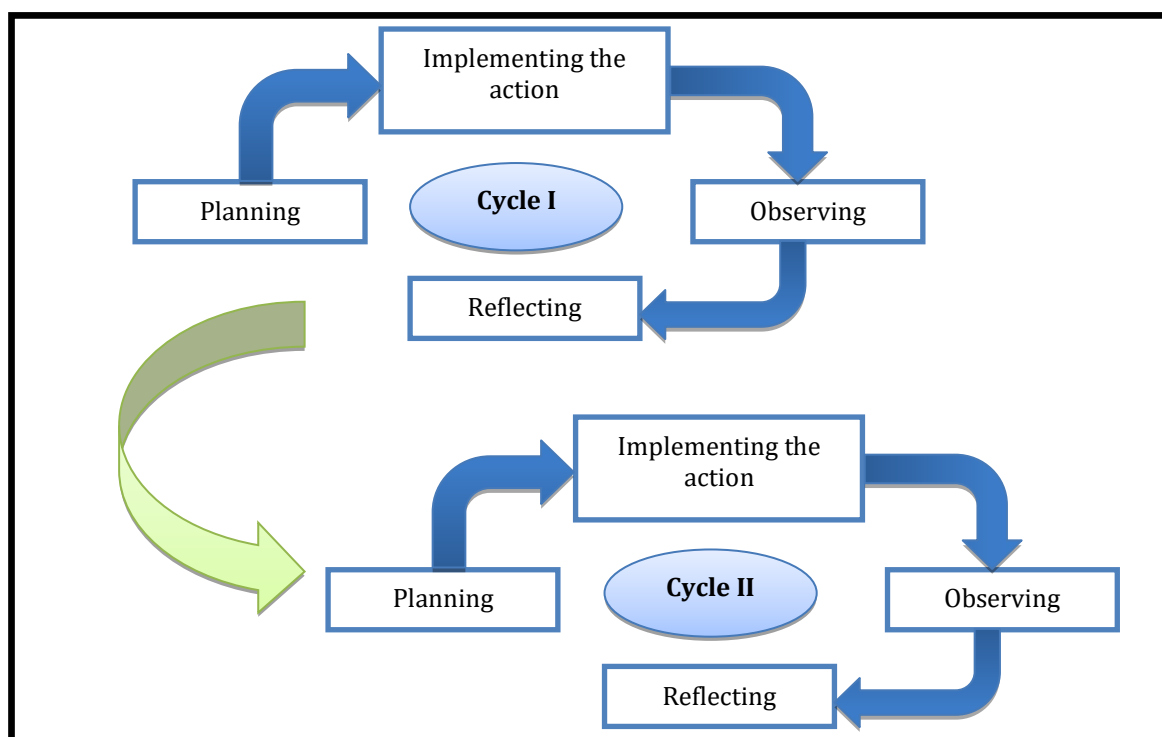
Critical thinking skills are reasoned thinking, reflecting, being responsible, thinking skills that are focused on making decisions about what is believed or should be done (Rodiyana, 2015). Ennis and Costa state that critical thinking skills are a way of using thinking skills effectively that can help someone make, evaluate and make decisions about what to believe or do. Meanwhile, Ennis (Liliasari, 2012) said that critical thinking skills use the basis of a questioning process to analyze and generate ideas which are then developed into reliable, logical, and convincing reasoning patterns. Referring to the three opinions about critical thinking skills, the author combines the three definitions and adds relevant points. Critical thinking skills are the ability to ask appropriate questions, collect relevant information, sort information efficiently and creatively, reason logically, to arrive at reliable and reliable conclusions.

Creativity is the ability to create based on available data or information in finding many possible answers to a problem, where the emphasis is on quantity, efficiency and diversity of answers (Rodiyana, 2015). Creativity is to continue what already exists, not to create or create completely new things, but to be newer and superior (Malaka, 2011). From some of these definitions, it can be concluded and added with regard to creativity. Creativity are the process of revealing new possibilities extracted from existing information to be developed into new things that can be utilized by others.

## **B. METHODS**

This research is a classroom action research. This research model uses a spiral model according to C. Kemmis and Teggart. The classroom action research procedure uses 2 cycles and each cycle consists of four stages, namely planning, implementing the action, observing and

reflecting. The research was conducted in 2 cycles, each cycle consisting of 2 meetings. The classroom action research cycle according to Kemmis and Taggart can be seen in Figure 1.



**Figure 1.** The Classroom Action Research Model Cycle According to Kemmis and Taggart

This Classroom Action Research was conducted on social studies subjects in grade 4 of a private SD in the Sleman area in the second semester with a total of 49 students. The researcher chose social studies learning by considering the results of observations of fourth grade students. This research was conducted from November 2020 to May 2021, starting with compiling a proposal to a research report.

Data collection techniques in this study used measuring instruments in the form of non-tests. In this study, researchers measured the indicators of students' critical thinking skills and creativity using non-tests in the form of interviews with class teachers, observations during the learning process and questionnaires given to students.

Researchers determine success criteria based on variables according to predetermined indicators. Achievement targets for cycle I and cycle II as an indicator of success in improving students' critical thinking skills and creativity. Average achievement targets for indicators of critical thinking skills and creativity of students in cycle I and cycle II are the same, namely 65 in cycle I and 80 in cycle II.

### **C. RESULT AND DISCUSSION**

This research was carried out in pre-cycle activities or initial conditions, cycle 1, and cycle 2. In pre-cycle activities, researchers conducted observations and interviews to determine the needs of the class being studied. Then in the 2-cycle activity, each cycle was held 2 times by utilizing the inquiry learning model, where each cycle consisted of 4 stages, namely the planning stage, the action implementation stage, the observation and the reflection stage.

## 1. Critical Thinking Skills

Data on students' critical thinking skills were obtained from questionnaire sheets that were filled in by students. Questionnaires were distributed at the end of each cycle. The improvement of students' critical thinking skills was measured based on data obtained from the results of filling out the questionnaire in the initial conditions before the action, at the end of cycle I, and at the end of cycle II. The following is a comparison of the data presented in Table 1.

**Table 1.** Comparison of Students' Critical Thinking Skills at Each Stage

Stage	Average Value	Category
Pre- Cycle	55,72	fairly critical
Cycle I	78,37	critical
Cycle II	87,75	very critical

Based on the table above, students' critical thinking skills have increased at each stage. Pre-cycle or the initial condition before carrying out the research, the average critical thinking skills of students was 55.72 with a fairly critical category. As many as 16 students (33%) were categorized as not critical, 6 students (12%) were categorized as less critical, 9 students (18%) were categorized as quite critical, and 18 students (37%) were categorized as critical.

At the end of the implementation of cycle I by applying the inquiry learning model showed an increase in students' critical thinking skills. The average value of students' critical thinking skills in the first cycle was 78.37 in the critical category. This data can be described in details, there were 17 students (35%) who were included in the very critical category, 23 students (47%) were included in the critical category, 3 students (6%) were included in the quite critical category, 3 students (6%) were included in the less critical category and 3 students (6%) were included in the non-critical category. Researchers determined the target average score of students' critical thinking skills at 65 and it was achieved because the data obtained by the mean value of students' critical thinking skills was 78.37.

At the end of the second cycle by applying the inquiry based learning model, it showed an increase in students' critical thinking skills. The average value of students' critical thinking skills in cycle II was 87.75 with a very critical category. This data can be described in details, there were 32 students (65%) included in the very critical category, 13 students (27%) included in the critical category and 4 students (8%) included in the fairly critical category. Researchers determined the target average score of students' critical thinking skills at 80 and it was achieved because the data obtained by the average value of students' critical thinking skills was 87.75. Thus, the researcher did not continue the research to the next cycle.

## 2. Creativity

Data on students' creativity were obtained from a questionnaire filled out by students. Questionnaires were distributed at the end of each cycle. The improvement of students' creativity was measured based on data obtained from the results of filling out the questionnaire in the initial conditions before the action, at the end of cycle I, and at the end of cycle II. The following is a comparison of the data presented in Table 2.

**Table 2.** Comparison of Students' Creativity at Each Stage

Stage	Average Value	Category
Pre- Cycle	56,33	fairly creative
Cycle I	76,73	creative
Cycle II	85,92	very creative

Based on the table above, students' creativity have increased at each stage. Pre-cycle or the initial condition before carrying out the research, the average creativity of students was 56.33 with a fairly creative category. A total of 14 students (28.5%) were categorized as not creative, 6 students (12%) were categorized as less creative, 14 students (28.5%) were categorized as quite creative, and 15 students (31%) were categorized as creative.

At the end of the first cycle, applying the inquiry based learning model showed an increase in students' creativity. The average value of students' creativity in the first cycle was 76.73 in the creative category. This data can be described in details, there are as many as 18 students (37%) are included in the very creative category, 19 students (39%) are included in the creative category, 6 students (12%) are included in the fairly creative category and 6 students (12%) are included in less creative categories. Researchers determined the target average value of students' creativity at 65 and it was achieved because the data obtained by the average value of students' creativity was 76.73.

Furthermore, at the end of the second cycle by applying the inquiry based learning model, it showed an increase in students' creativity. The average value of students' creativity in the second cycle was 85.92 in the creative category. The data can be described in details, there are as many as 29 students (59%) who are included in the very creative category, 15 students (31%) are included in the creative category and 5 students (10%) are included in the fairly creative category. Researchers determined the target average value of students' creativity at 80 and it was achieved because the data obtained by the average value of students' creativity was 85.92. Thus, the researcher did not continue the research to the next cycle.

The following researchers present the results of research regarding the recapitulation of increasing students' critical thinking skills and creativity which can be seen in Table 3.

**Table 3.** Recapitulation of Research Results

Variable	Indicator	Pre-Cycle	Cycle I		Cycle II	
			Target	Achievement	Target	Achievement
Critical Thinking Skills	Average value of critical thinking skills	55,72	65	78,37	80	87,75
Creativity	Average value of creativity	56,33	65	76,73	80	85.92

Based on the table above, it can be seen that the two variables which became the object of the study experienced a significant increase in each cycle. This research can be said to be successful because the two variables that become the object of research show an increase and the targets that have been set in each cycle are achieved. The use of inquiry based learning models in learning in elementary schools has a good influence on students' critical thinking skills and creativity.

Pre-cycle data on the variable of students' critical thinking skills is 55.72. In the first cycle with a target of 65, students' critical thinking skills increased to 78.37 and in the second cycle with a target of 80, students' critical thinking skills increased again to 87.75. This is in line with the research of Kristianto (Kristianto, 2019), Indriyani, Mawardi, Wardani (Indriyani et al., 2019) and Rustini and Tjandra (Rustini & Tjandra, 2016) that learning using the inquiry model can improve students' critical thinking skills. Meanwhile, students' creativity also increased. The pre-cycle data on the variable of students' creativity was 56.33. In the first cycle with a target of 65, students' creativity increased to 76.73 and in the second cycle with a target of 80, students' creativity again increased to 85.92. In line with the research of Dewi, Mayasari and Jeffry (Dewi

et al., 2017), Putra, Rinanto, Dwiastuti and Irfa (Putra et al., 2016), Isti and Suryanti (Isti & Suryanti, 2013) that the use of inquiry learning models can improve students' creativity.

The findings obtained from this study are that there are differences with previous studies. First, the steps of the inquiry based learning model in this study were developed by the Penitentiary himself by making several changes and additions. Second, the implementation of learning by applying the inquiry learning model can improve two variables, namely students' critical thinking skills and creativity in social studies subjects. Third, the researchers require students to always write down the sources of information obtained by students in order to improve students' critical thinking skills. The researcher also assigned students to make simple videos in each cycle to improve students' creativity.

#### **D. CONCLUSION AND SUGGESTIONS**

Based on the results of research and discussion, it is concluded that the inquiry based learning model can improve students' critical thinking skills and creativity in social studies subjects for grade IV in a private elementary school in Sleman. This is indicated by the average value of critical thinking skills and creativity in each cycle. In the pre-cycle before the action was given, the average value of students' critical thinking skills was 55.72 (fairly critical) and creativity of 56.33 (fairly creative). The average value of critical thinking skills increased in the first cycle of 78.37 (critical) and in the second cycle of 87.75 (very critical). In addition, the increase in the average value of creativity in the first cycle was 76.73 (creative) and in the second cycle was 85.92 (very creative).

Based on the above conclusions, the researcher proposes several suggestions to be used as useful input, including that the teacher is expected to be able to use the inquiry learning model to create a different learning atmosphere and make students active in participating in learning, the teacher can use this model to improve the quality of teachers in teaching so that students become more critical and creative in participating in learning. It is hoped that the application of the inquiry learning model can solve problems that arise in everyday life by means of interesting social studies learning.

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