

Improving Critical Thinking Skills through Problem-Based Learning Based Teaching Materials in Social Sciences in 5th Grade Elementary School

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1. Abstract

This research is motivated by a lack of critical thinking skills possessed by fifth grade elementary school students, which is caused by the use of teaching materials that do not accommodate student participation in learning activities. Therefore researchers are encouraged to conduct classroom action research through teaching materials based on the Problem Based Learning model to improve critical thinking skills. The selection of the Problem Based Learning model in this teaching material is intended to facilitate student participation in learning activities through problems that exist around students, because this model requires students to discover concepts, principles and knowledge on their own. The purpose of this study was to determine the increase in students' critical thinking skills through the use of Problem Based Learning (PBL) teaching materials in social studies class V students. This study uses the Kemmis and Mc Taggart methods which consist of four stages, namely: planning, action, observation and reflection. The participants in this study were fifth grade students at a school in Bantul Regency. Data collection was carried out using observation and questionnaires, which used data analysis with qualitative techniques. The results of this study prove that teaching materials based on the Problem Based Learning model can improve students' critical thinking skills with a percentage in the pre-cycle of 55.3%, cycle I of 62.1% and in cycle 2 of 72.30%.

Keywords: *Critical Thinking, Teaching Materials, Problem Based Learning*

2. Introduction

Education develops along with the times. The dynamic development of the times, presents various challenges for educators and students. The US-based Partnership for 21st Century Skills (P21) identifies challenges in the world of education today, namely the mastery of 21st century skills called 4C including critical thinking, creativity, communication, and collaboration (Rahmawati, 2016).

One of the skills that is expected to be output in the learning process is critical thinking skills (Kemdikbud, 2016). John Dewey said that critical thinking is essentially an active process in which a person thinks about things in depth, asks questions for himself, finds relevant information for himself rather than accepting things from others (Alec Fisher, 2009). Critical thinking skills should be activities that must be developed and taught in every subject, this is because critical thinking skills are not innate and do not develop naturally. This is in line with the opinion of Schaferman (1991) that critical thinking skills are intellectual potential that can be developed through the learning process.

Teaching materials are one aspect of learning tools that can support the formation of the desired skills. According to Widodo and Jasmani teaching materials are a set of learning tools or tools that contain learning materials, methods, limitations, and ways of evaluating that are designed systematically and attractively in order to achieve the expected goals (Lestari, 2013). This understanding explains that a teaching material

must be designed and written with instructional principles because it will be used by the teacher to assist and support the learning process. Therefore, Ariff and Napitupullu revealed that the teaching materials used must be in accordance with learning objectives, adapted to student needs, factual, easy and economical, according to student learning styles (Bayu Aji, 2017).

In the preliminary study, researchers made observations to find out the learning activities carried out by the teacher and distributed questionnaires to determine the level of critical thinking skills. Based on the results of observations, the researchers found that: first, learning activities were carried out based on the 2013 curriculum textbooks published by the Ministry of Education and Culture. Second, in learning activities students have difficulty analyzing problems, making questions, drawing conclusions and having difficulty finding solutions to problems. Third, learning activities are teacher-centered and do not involve active participation of students in learning so that they look less fun.

From the reasons above, the researcher concluded that the critical thinking skills of VA grade elementary school students were quite low due to the use of teaching materials from the Ministry of Education and Culture which did not optimize student participation in learning activities. Learning activities that do not involve students result in students not being used to honing higher-order thinking skills. This is in line with the opinion (Prastowo, 2014: 14) that students' critical thinking skills will be developed if students are directly involved in learning.

Teaching materials are used by teachers to help carry out learning activities. In the process of making it the teacher must consider various aspects, one of which is the aspect of using the learning model. The use of learning models is closely related to the learning activities that will be carried out by students. One learning model that emphasizes that students are able to find information and understand learning concepts independently based on their abilities and that will be meaningful for students is the Problem Based Learning learning model. The application of the Problem Based Learning model can train students to think critically and how to solve problems in real life.

The Problem Based Learning (PBL) learning model or problem-based learning is a learning model designed to solve the problems presented. PBL is a learning model that exposes students to problems related to the real world which are solved through systematic and scientific steps that are carried out independently through collaboration within groups. Arends (Trianto, 2011) explains that problem-based learning is learning in which students work on authentic problems with the intention of constructing their own knowledge, developing inquiry and higher-order thinking skills, developing independence and self-confidence.

Problem-based learning (Problem Based Learning) can be interpreted as a series of learning activities that emphasize the process of solving problems faced scientifically. This model is characterized by the use of real-life problems to enhance critical thinking and problem-solving skills, as well as gain knowledge of important concepts. This approach prioritizes where the teacher's task must focus on helping students achieve self-

direction skills. It is in this context that critical thinking skills are needed to sort and select correct and useful information for oneself, society, nation and state. However, in the learning activities carried out, students did not show high critical thinking skills. This is characterized by a lack of activity in asking and answering questions, a lack of students in analyzing a question and a problem, low enthusiasm for seeking information, and a lack of student skills in drawing conclusions. This is reinforced by the results of the questionnaire which shows that the average value of students' critical thinking skills is 55.3% with a moderately critical category. There are 3 students who have critical skills while 18 other students are in the moderately critical category.

Based on the background above, the researcher is interested in conducting collaborative research on students' critical thinking skills in class VA SDN Grojogan by applying the Problem Based Learning learning model with the title "Efforts to Improve Critical Thinking Skills Through Problem Based Learning Teaching Materials in Class V Social Studies Subjects".

3. Methods

3.1. Participants and context

This study uses a qualitative method of Collaborative Classroom Action Research (PTKK). This research uses the model from Kemmis and Mc Taggart which consists of four stages, namely: planning, action, observation and reflection (Machali (2022)). The subjects of this study were fifth grade elementary school students, with a total of 21 students. This collaborative classroom action research was carried out in two cycles. The

implementation of each cycle follows the stages of planning, action, observation and reflection.

3.2. Material

The instruments in this study were observation sheets and questionnaires. The observation sheet serves to assess student activity during the learning process. Questionnaires are used to collect information regarding the level of students' critical thinking skills before and after learning activities by implementing Problem Based Learning (PBL) teaching materials.

3.3. Data Collection and analysis

Data collection techniques in this study are observation and questionnaires. Data analysis technique is the process of finding and compiling data systematically to facilitate researchers in obtaining conclusions. In this study researchers used qualitative data analysis techniques. Qualitative data analysis is inductive, meaning that it is only based on the data obtained, in this study based on the values obtained during observation and questionnaire results.

3.4. Ethical Considerations

In this study, elementary school students were involved as research subjects. Therefore, in conducting research there are basic principles of research ethics, including: first is to respect students by not mentioning students' personal data. The second is the benefits, in this study there are benefits, namely overcoming critical thinking problems

through teaching materials based on Problem Based Learning. And the last is the research conducted does not endanger students as research subjects.

3.5. Limitations to the Study

There are limitations that are owned by researchers related to time, effort, and cost. This research focuses on efforts to improve students' critical thinking skills through teaching materials based on Problem Based Learning in Social Studies subjects in Grade V Elementary Schools.

4. Results and Discussion

Collaborative Classroom Action Research (PTKK) consists of pre-cycle, cycle I and cycle II. The following is data on students' critical thinking skills starting from the initial conditions (pre-cycle), cycle I and cycle II of fifth grade students using teaching materials based on *Problem Based Learning learning* models.

Table 1. Increasing Student Activity in Pre-Cycle, Cycle 1 and Cycle II

N0	Pre cycle	Cycle 1	Cycle II
Average	55,3%	62,1%	72,30%
Category	Pretty Critical	Pretty Critical	Critical

From the table above regarding the improvement of students' critical thinking skills during the pre-cycle, cycle I, and cycle II, there was an increase in each stage. During

the pre-cycle, the average students' critical thinking skills were 55.3% or were in the fairly critical category. After implementing learning with the help of PBL-based teaching materials (cycle 1), the average percentage of critical thinking skills has increased to 62.1% or is in the moderately critical category. Even though in the pre-cycle and cycle 1 students were still in the same category, the percentage increased by 6.8%. The aspect that experienced an increase in cycle I was the aspect of giving simple explanations including being able to formulate questions and being able to analyze arguments. In cycle II the average percentage of students' critical thinking skills is 70.05% or is in the critical category.

Table 2. Data Comparison of Students' Critical Thinking Skills Cycles I and II

No	Indikator	Jumlah Skor Siklus I	Jumlah Skor Siklus II	Hasil Siklus I	Hasil Siklus II
1	Give a simple explanation	379	447	61,50%	72,50%
2	Draw a conclusion	178	195	67,40%	73,80%

3	Provide further explanation	253	311	57,50%	70,60%
Average students' critical thinking skills				62,1%	72,30%

Based on the results of action research that was carried out in class V elementary school, it can be concluded that the use of teaching materials based on Problem Based Learning learning models can improve students' critical thinking skills with an average percentage in cycle I of 62.1% and in cycle 2 of 72, 30%. There was an increase in the aspect of giving simple explanations of 11%, in this aspect students experienced an increase in formulating questions, analyzing arguments, classifying by asking and answering questions. In addition, there is also an increase in the aspect of drawing conclusions by 6.4% which is marked by students being able to draw conclusions by induction and deduction. And finally, students experienced an increase in the aspect of giving further explanations by 13.1%. This improvement is demonstrated by students being able to identify assumptions and being able to provide their own definitions and consider them.

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