The Use of Interactive Multimedia to Improve Critical Thinking Skills of Primary School Students

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Abstract- Based on observations made by researchers in the fifth grade of elementary school, there is a lack of students' activity in the learning process and the lack of teacher's innovation in selecting and applying learning media. These create a less optimal learning process and student learning outcomes that has not achieved the Minimum Achievement Criteria. One of the skills that must be mastered by students is critical thinking. Alternative problem solving is using interactive multimedia in learning. This study uses classroom action research. The research instrument used observation sheets, non-tests and questionnaires. The data analysis technique uses qualitative and quantitative analysis techniques. Increased teacher activity, student activities, student learning outcomes, results of critical thinking skills and student responses to the learning process are the results of this learning process. Increases occur in stages starting from cycle I to cycle III in very good criteria. Based on the results of this study, it can be concluded that the learning process by using interactive multimedia to improve critical thinking skills is able to improve teacher and student activities, learning outcomes and student responses in elementary school.

Index Terms- critical thinking, interactive multimedia, learning outcomes

I. INTRODUCTION

Education itself will continue to follow the life journey of students, because education is actually an endless process that follows humans from babies to death, along with the increasing quality of human life itself. [1]. In the era of globalization, mastery of technology is a prestige of a country's progress. Countries are said to be advanced if they have high technology mastery, while countries that cannot adapt to technological progress are often called failed countries. Indonesia as a developing country is trying to meet the needs of technological advances seen by the application of information technology in the world of education to provide quality education for every citizen. [2] Primary school age between 7-13 years is a period of children who tend to be active and always curious about new things. The selection of learning media for social studies learning for elementary school students must be in accordance with their characteristics, it is necessary to develop learning media that are interesting, effective and fun for students. Media as an intermediary that is used to increase effectiveness and efficiency in achieving learning goals, [3]

Based on the results of observations and interviews at Dukuh Menanggal I / 424 Elementary School Surabaya, it was shown that the use of information technology in delivering thematic learning with IPS material was still rarely done. This activity suggests learning that is still teacher-centered, when learning students who sit behind cannot see what the teacher is doing, then tend to get bored and make the class not conducive. Problems that arise include: 1) lack of teacher innovation during the teaching and learning process and limited time to share some material in class 2) the teacher uses the lecture method; 3) teacher centered learning; 4) lack of interaction between students and teacher. Problems arising from students in the social studies learning process in class V B of Dukuh Menanggal I Elementary School include: 1) students are only objects in learning activities; 2) students only receive material given by the teacher; 3) students do not focus on receiving material and do not pay attention to the explanation from the teacher; and 4) students chat with other students.

The results of the initial test were held only a small number of class V students who achieved the passing grade in the material role of the economy in improving people's lives, students who completed were students who had the ability to read and memorize material.

After doing a reflection in the class, there is a lack of learning outcomes in Social Sciences which analyzes several cases in the economic role of the community. About 65 percent of all students do not get grades above minimal completeness criteria. From some of the problems described above, researchers focus on this case, especially in low student learning outcomes, low student activity and lack of learning media applied by teachers which are not appropriate in social science.

According to Sadiman, et al. Some of the benefits of using media in learning are; 1) clarify the presentation of the message so that it is not too visual, 2) overcome the limitations of space, time, and sense power, 3) increase learning motivation and reduce student passivity, 3) students are able to learn on their own based on student interest, 4) can equate student experience and perception the contents of the lesson [5]. Whereas according to the times, multimedia will benefit the learning process more interesting, more interactive, the amount of teaching time can be reduced, the quality of student learning can be improved and the teaching and learning process can be done at any time, and student learning attitudes can be improved [6]. Critical thinking ability is the activity of analyzing ideas in a more specific direction, distinguishing sharply, identifying, studying and developing in a more perfect direction is a skill that must be possessed by students in the 21st-century [7]. Critical thinking skills themselves are one of the 21st-century learning skills that are now supported by the existence of technology to access, search, analyze, store, organize, create and communicate information. Students can master critical thinking skills by utilizing e-mail, short messages, and online media to work together with fellow students more easily.

Interactive multimedia has a purpose where students are asked to work together independently in finding the concept of a problem more practically. The use of interactive multimedia will make some students become active in discussions, question and answer, presentations and also pay more attention to learning. In addition, the reason for using interactive multimedia for critical thinking skills is that students can work with their friends by utilizing modern technology-based media during the teaching and learning process. Based on the description above, the researcher conducted a classroom action research entitled "The Use of Interactive Multimedia to Improve Critical Thinking Skills of Primary School Students". Researchers try to turn old traditions into the latest methods, conducive, active and communicative methods. The purpose of this study was to find out the teacher's activities in applying the Use of Interactive Multimedia to Improve Critical Thinking Skills of Primary Students in the fifth grade of Dukuh Menanggal I Elementary School and to determine students 'learning outcomes and students' critical thinking skills in social studies and describe responses to the use of interactive multimedia to improve critical thinking skills.

II. IDENTIFICATION, RESEARCH AND DATA COLLECTION

This study uses Classroom Action Research (CAR) using a 3 cycle model. According to Kemmis and Mc. Taggart [8], the implementation of Classroom Action Research (CAR) consists of 3 stages, namely: a) planning, b) actions and observations (actions and observations), c) reflection. The subjects of this study were 31 fifth grade students in Dukuh Menanggal I Elementary School. consisted of 17 male students and 14 female students. Research will be conducted for social studies subjects.

The research data is taken from teacher activities, student activities, student learning outcomes, results of students' critical thinking skills and student responses during the learning process. Data collection techniques consist of, 1) Observation of teacher and student activities during learning; 2) Questionnaires that are given as qualitative data for students' responses to using interactive multimedia; 3) Written tests to assess students' critical thinking skills. The instruments used in the study are, 1) teacher activity observation sheet; 2) student activity observation sheet; 3) student response interview questionnaire sheets; 4) Test critical thinking skills. Data analysis techniques in this study are: (1) Analysis of data from observations of teacher and student activities during the learning process, the data collected is then analyzed. (2) Test Analysis using the percentage of learning outcomes of students who succeed to have critical thinking skills and assessment of completeness of student learning outcomes. (3) analysis of student responses during learning.

III. RESEARCH RESULT

The research will be analyzed to determine the increase in teacher activity, student activities, skills of students' thinking, learning outcomes and student responses in learning cycles I, II and III by using interactive multimedia. From the description, it can be explained by the tables and diagrams below:

Teacher Activity

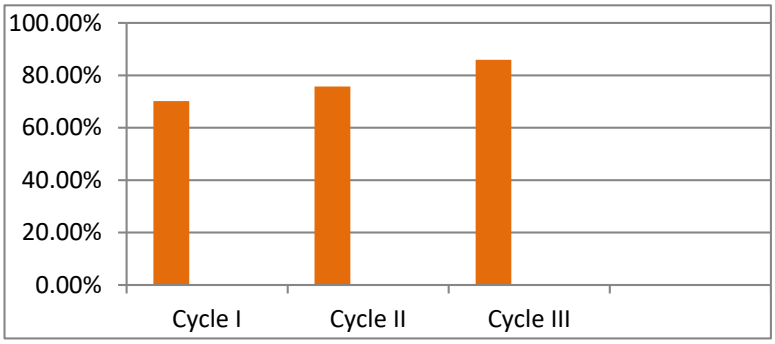
this is a comparison table of teacher activities in cycles I, II and III

Table 1. Comparison of activities in cycles I, II and III

Aspect	Cycle I	Cycle II	Cycle III	Results
Average increase in teacher activity	70,18%	75,74%	85,91%	Increase

Below is a comparison diagram of teacher activities seen in cycles I, II and III

Diagram 1. Data Comparison of teacher activities using interactive multimedia during learning



From the tables and diagrams above, it can be seen that the teacher's abilities and activities increase from cycle I, cycle II and cycle III. This research shows that the use of interactive multimedia on social studies learning in grade 5 elementary school can be implemented properly by the teacher. The average percentage of teacher activity in using interactive multimedia in social increased from the first cycle of 70.18% to 75.74% during the second cycle and 85.91% in the third cycle. Increased teacher activity can be seen from reflections carried out after the implementation and observation in the first cycle and second cycle.

In the first cycle, the increase in teacher activities did not meet the expected research indicators. After reflection, the researcher continued on cycle II. After the implementation of the second cycle of learning was carried out, it was seen that the activity of the teacher had fulfilled the expected research indicator criteria. However, the researcher continued to cycle III to check the validity of the results, and it was seen in the third cycle that teacher activity fulfilled the expected and increasing research indicators.

Student activities

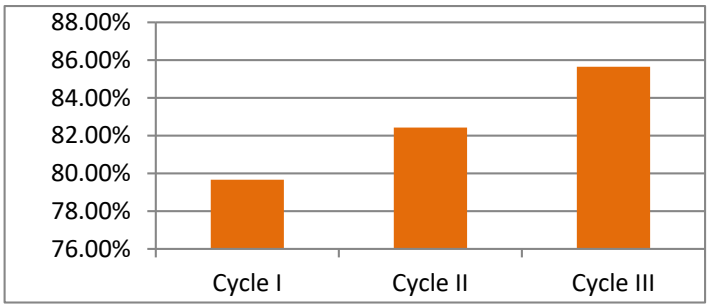
This is a comparison table of student activities in cycles I, II and III

Table 2. Comparison of student activities in cycles I, II and III

Aspects of improvement	Cycle I	Cycle II	Cycle III	Criteria Results
Average increase in student activity	79,67%	82,43%	85,65%	Increase

Below is a comparison diagram of student activities seen in cycles I, II and III

Diagram 2. Data Comparison of student activities using interactive multimedia during learning



From the tables and diagrams above, it can be seen that students' abilities and activities have increased from cycle I, cycle II and cycle III. This research shows that the use of interactive multimedia in social studies learning in grade 5 elementary school can be implemented in students. The average percentage of student activities in using interactive multimedia increased from 79.67% in the first cycle to 82.43% during the second cycle and 85.65 %% in the third cycle.

In the first cycle, the increase in student activities has met the expected research indicators, but students are still adapting to the learning media so that the results are not too maximal, after reflection, the researcher continues on the second cycle. After the implementation of the second cycle of learning is done, it appears that student activities have met the criteria of the expected research indicators and experienced improvement. Continuing to cycle III to check the validity of the results, and seen in the third cycle the activities of students who have adapted to the learning media used, namely interactive multimedia meet the expected research indicators and experience a fairly high increase.

Student learning outcomes

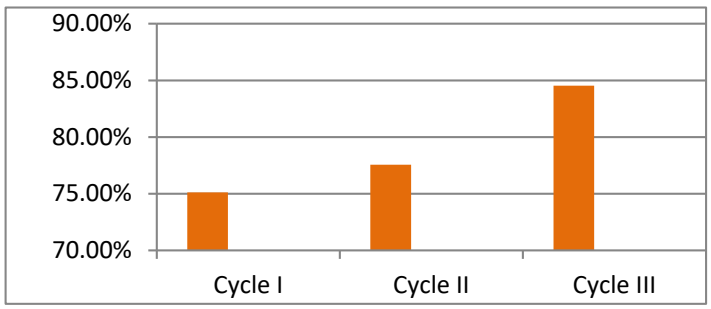
This is a comparison table of student learning outcomes in cycles I, II and III

Table 3. Comparison of student learning outcomes in cycles I, II and III

Aspects of improvement	Cycle I	Cycle II	Cycle III	Criteria Results
Average increase student learning outcomes	75, 12%	77. 56%	84,54%	Increase

Student learning outcomes data can be seen from the diagram below:

Diagram 3. Data on student learning outcomes using interactive multimedia to improve critical thinking skills



From the tables and diagrams above, it can be seen that student learning outcomes have increased from cycle I, cycle II and cycle III. The average percentage of student activity in using interactive multimedia increased from the first cycle of 75.12% not fulfilling the expected criteria, namely if the completeness of learning outcomes reached 80%, in the implementation of the second cycle student learning outcomes increased to 77, 56, the results were also not reaching 80%. When implementing the third cycle 82.43% during the second cycle and 85.65 %% in the third cycle. There was an increase in student mastery learning with a percentage reaching 84, 54% and fulfilling the criteria for achieving 80%. In accordance with Trianto's opinion that the percentage of increasing student learning outcomes must be more or equal to 80% and cooperative learning can improve student learning outcomes. [9]

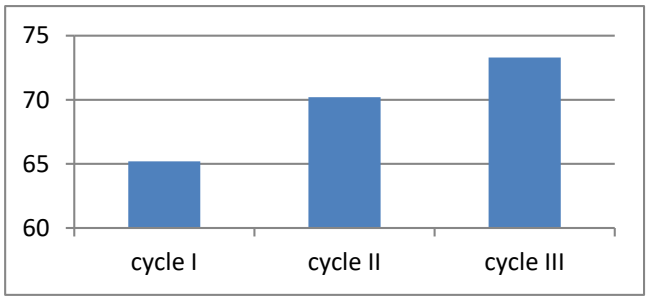
Results of Student Critical Thinking Skills

This is a comparison table of the results of students' critical thinking skills in cycles I, II and III

Table 3. Comparison of the results of students' critical thinking skills in cycles I, II and III

Aspects of improvement	Cycle I	Cycle II	Cycle III	Criteria Results
The average increase in students' critical thinking skills	65,2	70,2	73,3	Increase

Diagram 3. Data on the results of critical thinking skills students use interactive multimedia to improve critical thinking skills



From the tables and diagrams above, it can be seen that student learning outcomes have increased from cycle I, cycle II and cycle III. The average percentage of critical thinking skills of students using interactive multimedia increased from cycle I 65.2 not fulfilling the expected criteria, in the implementation of the second cycle students' critical thinking skills increased to 70.2, these results have reached the expected criteria are very critical. And when implementing the third cycle the results of students' critical thinking skills have increased to 73.3. These results have shown the fulfillment of the criteria that students have experienced improvement in accordance with the expected indicators. In accordance with Arikunto's opinion that critical thinking skills are said to be successful if the students' skills fall into the critical category ($66 \leq N \leq 79$). [10]

Student response

The results of student responses from questionnaires filled in each cycle, students fill out questionnaires in cycle I, cycle II and cycle III, shown in the table below:

Table 4. Comparison of student responses from cycles I, II and III

Aspects of improvement	**Cycle I**	**Cycle II**	**Cycle III**	**Criteria**
Students respond to the use of interactive multimedia in improving critical thinking skills	82,14%	87,01%	87,57%	Increase

The results of comparisons of student responses are also presented in the following table:

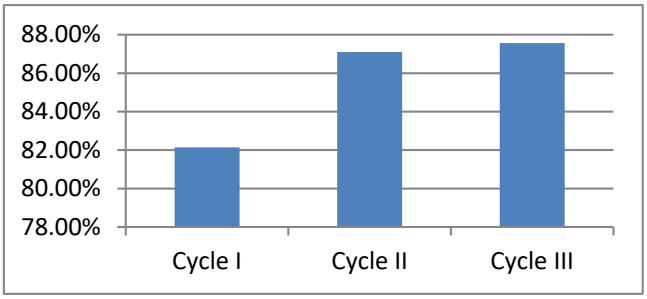


Diagram 4. Data of student response in social science of implementation Two Stay Two Stray

From the tables and diagrams above, it appears that in the first cycle students' responses are still low because students never use interactive multimedia as a medium of prior learning. The results of student responses in the first cycle of 82.14% have not reached the expected rate of 80%. The response of students in the second cycle increased to 87.01%, indicating a good improvement and achieving the indicators of this study. In the third cycle, there was an increase in results even though it was not significant. The response of students in the third cycle was 87.57% and had reached indicators that were more or equal to 80%. [11]

From the description above it can be seen that interactive multimedia makes it easier for students to understand and enjoy applying learning material that contains information about facts, time (time) and attitudes such as social science in developing economic activities in people's lives. In the implementation of interactive multimedia, results are obtained by increasing teacher activity, increasing student activity, improving student learning outcomes, increasing students' critical thinking and increasing student responses to learning that has been done. This is in line with Muhtadi's opinion which states that multimedia used in the right direction can improve psychomotor development for the better and strengthen the visual process of the users. [12] Multimedia also provides opportunities for students to develop learning techniques so as to produce maximum results. Interactive multimedia implementation is one of the ways and variations that can be used by teachers to improve student learning outcomes, especially in critical thinking skills. In this study, not only focuses on improving children's learning outcomes in but also includes other observations, namely competency skills and attitudes.

IV. CONCLUSION

Based on the results of this study, the use of interactive multimedia to improve critical thinking skills in 5th grade students of Dukuh Menanggal I Elementary School Surabaya can be summarized as follows: 1) the results of the average teacher activity can be concluded that the use of interactive multimedia to improve critical thinking skills has increased from cycle I to cycle III; 2) the average results of student activities experience an increase from cycle I, cycle II, to cycle III; 3) the use of interactive multimedia to improve critical thinking skills also improves student learning outcomes and critical thinking skills, this can be seen from the percentage of classical completeness in cycle I to cycle III; 4) the results of student responses can be seen in the questionnaire on the use of interactive multimedia to improve critical thinking skills also increased. The application of this learning multimedia makes students attractive and reduces learning difficulties in social studies subjects.

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