

ENHANCING STUDENTS' CRITICAL THINKING CAPABILITIES IN IPAS GRADE V PRIMARY SCHOOL THROUGH CULTURALLY RESPONSIVE TEACHING

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Abstract. The purpose of this study was to determine the improvement in students' critical thinking skills through the Culturally Responsive Teaching (CRT) approach in Grade V Science and Mathematics subjects at elementary school. The research method used was classroom action research. The subjects of this study were 10 Grade V students at SDN 1 Kudu Kertosono Nganjuk. The data analysis process in this study was guided by the steps of qualitative research data analysis. These analysis steps consisted of three concurrent activities, namely: (1) data reduction, (2) data presentation, and (3) conclusion drawing. The results of this study indicate that after implementing the Culturally Responsive Teaching (CRT) approach to improve students' critical thinking skills, there was an increase in learning outcomes and student activity, as observed. This can be seen from the observation results, which show that student activity in cycle I was 66%, while in cycle II it was 82.87%. Thus, it means that in cycle II, students' critical thinking skills had increased compared to cycle I. This was also proven by the students' learning outcomes in the pre-intervention test, cycle I and cycle II. The success rate score showed an upward trend, increasing from 70 in the pre-action, to 79 in cycle I, and further increasing to 90.5 in cycle II. Thus, the Culturally Responsive Teaching (CRT) approach can improve students' critical thinking skills.

Keywords: Critical thinking skills, Culturally Responsive Teaching, IPAS

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1. INTRODUCTION

Rapid changes are occurring in the 21st century, making it difficult to predict all aspects of life in the fields of economics, transformation, technology, communication and other areas. Rapid change can be a good opportunity if used properly. Conversely, if not used properly in a systematic, structured and measurable manner, it will become an obstacle [1]. Knowledge, skills and attitudes, as well as mastery of information and communication technology in the 21st century, are developed by: 1) critical thinking and problem-solving skills, 2) communication skills, 3) creativity and innovation skills, and 4) collaboration skills. These competencies have been framed within the independent learning curriculum. Achieving results requires a varied learning experience, ranging from simple to complex experiences.

According to Amir [2], current learning activities are still based on teacher-centred learning. This principle must be immediately followed up with student-centred learning that is oriented towards students by presenting meaningful situations that are relevant to real life and providing learning resources, guidance, and instructions with knowledge development, particularly regarding the learning material being studied, which can develop problem-solving skills.

Critical thinking skills are one of the fundamental things that everyone needs and play an important role in improving human maturity, which must be trained along with a person's intellectual growth [3]. According to Gagne [4], problem-solving skills are a high achievement in learning. To be able to think critically, students must be trained to learn like scientists learn and discover information in nature. Based on Amir's [2] research, some teachers still lack understanding of the essence of learning activities that emphasise critical thinking skills, resulting in relatively low indicators of critical thinking. Suryosubroto [5] directs that the educational paradigm must be based on learning that emphasises critical and creative thinking skills. Creative thinking focuses on students' skills in interpreting phenomena, while critical thinking focuses on students' acquisition of knowledge.

Critical thinking skills are important in learning activities because they provide students with opportunities to learn through discovery. According to Munandar [6], one of the obstacles to creative activities found in the measurement tools or tests used in schools is intelligence tests, which are used to measure student achievement, and learning achievement tests, which are used to measure student achievement in educational programmes. Until now, intelligence tests and learning achievement tests have only served the purpose of finding the correct answers. In an effort to provide tests of creative thinking skills that emphasise providing answers to problems, measurement is rarely carried out.

Research conducted by Haryanti [7] shows that critical thinking skills need to be cultivated in the learning process so that students have the ability to solve problems they encounter. This is in line with Yaumi's opinion [8], who states that 'critical thinking is the cognitive ability to say something with confidence because it is based on logical reasoning and strong empirical evidence. Similarly, Amir's [2] research suggests that critical thinking in primary school students does not mean that students like to argue by disputing opinions or false assumptions, but rather that students with critical thinking skills can provide solutions to problems and express opinions that are well-founded, rational and careful.

Based on the results of observations in IPAS learning in grade V at SDN 1 Kudu Kertosono Nganjuk , it was found that the learning outcomes of students were still very low in terms of their mastery of the material in the previous daily tests, with only 34% achieving the minimum passing grade and 66% failing to do so. Based on interviews with teachers, they stated that during the learning process in class, students were active in answering questions and completing assignments, but during daily tests, many still failed to meet the minimum passing grade.

Based on the interviews and my observations in the classroom, the students have not achieved meaningful learning in each of the materials presented by their teachers, so there is no lasting learning for the students. Therefore, an approach that can bring meaningful learning to them is needed. Culturally Responsive Teaching (CRT) is an approach that links the culture or habits of students with learning materials. According to Gay [4], CRT is a way of using students' cultural knowledge, previous experiences, and diverse learning styles to create meaningful learning experiences. The CRT approach is also a way for students to acquire new knowledge through their surroundings and backgrounds. Thus, the application of this approach will emphasise various techniques related to the integration of culture and background, as well as student characteristics.

In addition to creating meaningful learning, Culturally Responsive Teaching (CRT) is also expected to familiarise students with the cultures and customs that exist around them in order to reduce the negative impact of increasingly sophisticated science and technology, namely the influx of other countries' cultures into Indonesia, which has caused various problems for regional cultures, such as the loss of a region's indigenous culture, the erosion of cultural pride and nationalism among the younger generation, the loss of kinship and mutual cooperation, loss of self-confidence and Westernised lifestyles [9]. This is expected to create meaningful learning and improve student learning outcomes. The selection of Culturally Responsive Teaching (CRT) as an approach is expected to improve students' critical thinking skills.

2. RESEARCH METHODS

The research method used was classroom action research (PTK). In accordance with the type of classroom action research, this study used a spiral cycle procedure consisting of planning, acting, observing, and reflection. In each cycle, the researcher will carry out activities that begin with planning, followed by action, observation of the action, and ending with reflection.

The research model used in this study is the Kemmis and Mc Taggart model. This model essentially consists of tools or chains, with each tool comprising four components, namely: planning, action, observation and reflection. The following is the Kemmis and Mc Taggart Classroom Action Research design:

- 1) Planning Planning is the initial stage that teachers must undertake before doing anything. It is hoped that the plan will be forward-looking and flexible enough to accommodate unexpected effects, and that with this plan in place early on, we will be able to overcome obstacles.
- 2) Action Action is the implementation of the plan that has been made, which can take the form of applying a specific learning model aimed at improving or refining the model currently being implemented. These actions can be carried out by those directly involved in the implementation of a learning model, the results of which will also be used to improve task implementation.
- 3) Observation Observation serves to observe and document the effects of actions in the classroom. The results of this observation form the basis for reflection, so the observations made must accurately describe the actual situation.
- 4) Reflection Reflection here includes the following activities: analysis, synthesis, interpretation, explanation and conclusion. The result of reflection is a revision of the plan that has been implemented, which will be used to improve the teacher's performance in the next meeting.

The subjects of this study were 10 fifth-grade students at SDN 1 Kudu Kertosono Nganjuk. The data analysis process in this study was based on the steps of qualitative research data analysis. These analysis steps consist of three simultaneous activities, namely: (1) data reduction, (2) data presentation, (3) conclusion drawing. The results of this data analysis will be used as a basis for determining the success of the intervention. In addition, this data analysis will be used as a basis for implementing further interventions if the previous intervention was unsuccessful. Based on the analysis, it will be determined what needs to be improved for the implementation of subsequent actions. Therefore, evaluation is very necessary to ensure the effectiveness of the actions and their suitability with what is expected. For this reason, this study requires a reflection activity.

3. RESULTS AND DISCUSSION

This classroom action research was conducted by always paying attention to several important components of PTK, namely action planning, observation, and reflection, which form an integral whole that is viewed as a unit of the cycle. The term "cycle" here refers to a round of activities or actions. This classroom action research was conducted in two cycles because in the second cycle, the research target had been achieved, namely improving students' critical thinking skills through a culturally responsive teaching (CRT) approach to science and mathematics material in Grade V at SDN 1 Kudu Kertosono Nganjuk.

a) Cycle 1

Cycle 1 was conducted in two (2) meetings. The first meeting was to study the predetermined sub-topics. This was followed by a final test for cycle I.

1) Action Plan 1

Action plan 1 consists of action plans that are carried out before implementing the action. These action plans are preparations for implementing action 1 so that when implementing the action, there are no obstacles or difficulties. These action plans are adjusted to the initial observations made by the researcher at the research site.

2) Implementation of Action 1

The implementation of actions in cycle I was carried out in two meetings. In this implementation, the researcher acted as a teacher, while the Grade V PAS subject teacher acted as an observer tasked with conducting observations.

3) Cycle I Observation

The observation stage was conducted simultaneously with the implementation of the action. In this first cycle, the researcher acted as the teacher, while the observation was carried out by the Grade V IPAS subject teacher. In this study, the researcher observed every process, influence, condition and constraint that arose during the learning process. From the results of the observation carried out by the observer, several important pieces of information on the actions that had been carried out could be obtained. This information was used as feedback for the researcher in planning the next meeting. The researcher divided the observation sheet format into two parts, namely the teacher activity observation sheet and the student activity observation sheet.

Observations of teacher and student activities were conducted by the Grade X Geography teacher. In cycle I, observations were conducted twice during meetings. The results of observations of teacher activities are presented as follows:

Table 1 Results of Teacher Activity Observations

Activities	Indicator	Score
Initial Stage	1. Performing daily routine activities	3
	2. Conveying the objective	4
	3. Determining the material and its importance	3
	4. Motivating students	3
	5. Reviving prerequisite knowledge	5
Core Stage	1. Explaining the material through varied lectures and providing an understanding of basic concepts	4
	2. Encouraging students to think critically and analyse data and facts	3
	3. Providing opportunities for students to develop concepts they have mastered	4
	4. Reinforcing urgent material and material that has not yet been understood	4
Closing Stage	1. Conduct an evaluation	3
	2. Ending the lesson	4
Total Score		40
Average Percentage		72.72

Based on the table above, in general, the researcher's activities were in accordance with the established plan. The score obtained from the observer was 40, while the maximum score was 55. Therefore, the final score was 72.72%.

$$\text{Value} = \frac{40}{55} \times 100 \% = 72.72 \%$$

The predetermined success rate is 75% in the adequate category. From the data above, it can be seen that the cleanliness level of the observations in cycle I is adequate, but in cycle I it did not meet the researcher's expectations, which was to achieve a success rate of 72.72% in the adequate category.

Meanwhile, based on the results of student activities, the following is observed.

Table 2 Results of student activity observations

Activities	Indicator	Observation	
		Observer I	Observer II
Initial Stage	1. Performing daily activities	3	3
	2. Paying attention to the objective	3	3
	3. Paying attention to the teacher's explanation of the material	3	3
	4. Involvement in the generation of prerequisite knowledge	4	3
Core Stage	1. Paying attention to the teacher's explanation	4	3

Activities	Indicator	Observation	
		Observer I	Observer II
	2. Student involvement in groups to think critically, analyse data and facts, and be creative in generating ideas and arguments to solve problems.	4	3
	3. Student involvement in developing concepts that have been mastered	3	3
	4. Listening to reinforcement of subject matter mastery	3	3
Closing Stage	1. Responding to the evaluation	4	3
	2. Ending the lesson	5	3
Total Score		36	30
Average Percentage		66%	

Based on the table above, it can be seen that in general, student learning activities are as expected. Most of the observation indicators appear in student work activities. The score obtained from the observer is $36+30:2=33$. The maximum score is 50, so the average score obtained is

$$\frac{33}{50} \times 100 \% = 66\%.$$

In accordance with the predetermined success rate, the success rate of student activities was in the adequate category. To obtain more complete information, the researcher also made field notes. Field notes can be used to indicate positive or negative trends. The results of the field notes in cycle I, namely the observations made by the observer and the researcher (teacher), showed that:

- Students still appear afraid and shy when asking or answering questions individually, but they are brave when in a group.
 - Teachers also still lack positive reinforcement for students who are brave enough to express their ideas or thoughts.
 - Students tend to copy answers from books
 - There are still students who procrastinate when completing assigned tasks.
 - When working on test questions, there are still students who ask questions or copy from other students.
- Meanwhile, the test results for cycle I can be seen in the table below:

Table 3 Tests in Cycle I

No	Student Name	Score	Description	
			T	TT
1.	Anita Prastina	80	√	
2.	Bima Adi Saputra	85	√	
3.	Fery Rahmansyah	85	√	
4.	Gilang Rahmadhan	80	√	
5.	Heni Galih Saputra	85	√	
6.	Imam Wahyudi	85	√	
7.	Karisma Dangan Pradika	80	√	
8.	Lingga Rintang Saputri	80	√	
9.	Muhammad Rois Finasrulloh	70		√
10.	Nita Noviana	60		√
Total Score Achieved		790		
Average Score Achieved		79		
Complete		8		
Incomplete		2		

From the results of the Cycle I test, it can be seen that the average score obtained by students increased from 70 before the intervention to 79. Meanwhile, the percentage of students who scored above 75 with the application of the Culturally Responsive Teaching (CRT) approach in improving students' critical thinking skills was 80%, and students with scores below 75 were 20%. This indicates that students' critical thinking skills have not yet met the researcher's expectations of 90% of the overall student score, thus requiring action II.

4) Reflection on cycle I

Based on the results of the observation, it appears that there are still many shortcomings that need to be addressed in cycle I. These shortcomings include:

- a) Students lack the initiative to answer questions themselves according to their abilities.
- b) Researchers (teachers) explain the material too quickly, so some students are unable to follow.
- c) Students still appear passive, so learning is still dominated by teachers, who also need to provide positive reinforcement.
- d) The learning process is still rigid, and students are not yet accustomed to the researcher's teaching approach, namely Culturally Responsive Teaching (CRT).

From the results of this reflection, the shortcomings found in cycle I required improvements in cycle II. Teachers attempted to implement improvements in teaching methods by motivating students to be more active in learning and to be brave in expressing their ideas and thoughts, as well as paying more attention to students who were less active in learning.

b) Cycle II

Cycle II is planned to have two meetings.

1) Action Plan II

Action Plan II contains the plans to be implemented. These plans are adjusted based on the results of Action I. These action plans are preparations for implementing Action II so that there are no obstacles or difficulties when implementing the action. The plans for Action II are to develop a lesson plan for teaching the material, create an observation sheet, prepare questions for a quiz, develop final test questions, create a student response questionnaire, and prepare an interview format.

2) Implementation of Action II

The second action was carried out in two meetings. In this action, the researcher acted as a teacher, while the Grade V IPAS subject teacher acted as an observer tasked with conducting observations.

3) Cycle II Observation

The observation stage was conducted simultaneously with the implementation of the action. In this first cycle, the researcher acted as the teacher, while the observation was carried out by the Grade V IPAS subject teacher. In this study, the researcher observed every process, influence, condition and constraint that arose during the learning process. From the results of the observation carried out by the observer, several important pieces of information could be obtained on the actions that had been carried out. This information was used as feedback for the researcher in planning the next meeting. The researcher divided the observation sheet format into two parts, namely the teacher activity observation sheet and the student activity observation sheet.

For the second cycle, the researchers still divided the observation sheets, which were needed to observe the ongoing learning process, teacher performance and student performance. In this observation, the researchers divided the observation sheets into two parts, namely the teacher activity observation sheet and the student activity observation sheet in learning.

Observations of teacher and student activities were conducted by the Grade V IPAS subject teacher. In cycle II, these observations were conducted twice during meetings. The results of the observations of teacher and student activities are presented in Table 4 as follows:

Table 4 Teacher Observation Results

Activities	Indicator	Score	
		Observer I	Observer II
Initial Stage	1. Performing daily routine activities	3	4
	2. Conveying the objective	4	4
	3. Determining the material and its importance	5	3
	4. Motivating students	5	5
	5. Reviving prerequisite knowledge	5	3
Core Stage	1. Explaining the material through varied lectures and providing an understanding of basic concepts	4	5

	2. Encouraging students to think critically and analyse data and facts	4	5
	3. Providing opportunities for students to develop concepts they have mastered	4	5
	4. Reinforcing urgent material and material that has not yet been understood	4	5
Closing Stage	1. Conducting an evaluation	3	5
	2. Ending the lesson	5	4
Total Score		46	48

Based on the table above, in general, the researcher's activities were in accordance with the established plan. The score obtained from observer I was 46 and the score obtained from observer II was 48. Meanwhile, the maximum score is 55, so the average score obtained is $\frac{46 + 48}{2} = \frac{94}{2} = 47$. So the final score that can be

obtained is the Score = $\frac{47}{55} \times 100\% = 85.45\%$. In accordance with the success rate set in the excellent category.

From the data above, it can be seen that the cleanliness level of the observations in cycle II was excellent, but in cycle II it was in line with the researcher's expectations, namely achieving a success rate of 85.45% and falling within the excellent category.

Meanwhile, the results of observing student activities are as follows.

Table 5 Results of student activity observations

Activites	Indicator	Score	
		Observer I	Observer II
Initial Stage	1. Performing daily activities	5	5
	2. Paying attention to the objective	4	4
	3. Paying attention to the teacher's explanation of the material	4	4
	4. Engagement stimulates prerequisite knowledge	5	5
Core Stage	1. Paying attention to the teacher's explanation	5	5
	2. Student involvement in groups to think critically, analyse data and facts, and be creative in generating ideas and arguments to solve problems.	5	5
	3. Student involvement in developing concepts that have been mastered	5	4
	4. Listening to reinforcement of subject matter mastery	5	5
Closing Stage	1. Responding to the evaluation	4	4
	2. Ending the Lesson	5	3
Total Score		47	44
Average Score		82.87%	

Based on the table above, it can be seen that in general, student learning activities are as expected. Most of the observation indicators appear in student work activities. The score obtained from observer I is 47 and the

score obtained from observer II is 44. Meanwhile, the maximum score is 55, so the average score obtained is $\frac{47 + 44}{2} = \frac{91}{2} = 45.5$. So the final score that can be obtained is the Score = $\frac{45.5}{50} \times 100\% = 82.87\%$.

In accordance with the predetermined success rate, the success rate of student activities was in the Excellent category. Based on the results of observations conducted by observers and researchers, it was found that:

- Students have become active in the learning process and are no longer shy about asking or answering questions. This can be seen from the increase in the number of students who are willing to ask questions, answer questions and express different opinions.
- Questioning activities are now dominated by students rather than teachers, as evidenced by the fact that more students ask questions than teachers.
- Students have begun to get used to asking and answering teachers' questions when the teacher acts as a facilitator.
- In the first and second meetings, students began to actively create their own questions and answers, engage in discussions and presentations, and respond to their friends' work.

Improvements in student learning achievement were observed from the results of the final test in cycle

II. The following are the test results for cycle II:

Table 7 Test Results in Cycle II

No	Student Name	Score	Description	
			T	TT
1.	Anita Prastina	90	√	
2.	Bima Adi Saputra	95	√	
3.	Fery Rahmansyah	95	√	
4.	Gilang Rahmadhan	95	√	
5.	Heni Galih Saputra	95	√	
6.	Imam Wahyudi	95	√	
7.	Karisma Dangan Pradika	90	√	
8.	Lingga Rintang Saputri	90	√	
9.	Muhammad Rois Finasrulloh	90	√	
10.	Nita Noviana	70		√
Total Score Achieved		905		
Average Score Achieved		90.5		
Complete		9		
Incomplete		1		

From the results of the Cycle II test, it can be seen that the average learning outcome score obtained by students increased from the Cycle I test, which was 79, to 90.5. From the table above, it can be seen that the percentage of students who scored above 75 with the Culturally Responsive Teaching (CRT) approach in improving students' critical thinking skills was 90%, and students with scores below 75 were 10%. This indicates that the students' learning outcomes have met the researcher's expectations for the overall students to score above 90, so no action is required.

4) Reflection on Cycle II

Based on the results of observations, the efforts made by researchers to improve their actions were to motivate students to be more active in learning activities and to be more courageous in expressing their answers or opinions. Researchers also often provided positive reinforcement to make students more enthusiastic about learning. In addition, it was also evident that students were motivated to learn and work together. Student motivation in learning was evident from the improvement in their academic achievement.

According to Santrock [10], thinking involves the manipulation and transformation of knowledge in storage. The purpose of thinking is to form clear, critical and logical thinking concepts, to be able to make decisions and solve problems. Similarly, according to Arends [11], thinking is a process that involves mental actions carried out through deduction, induction, classification and reasoning. Thinking is an activity to absorb knowledge controlled by reason. The activity of thinking is carried out by connecting existing problems to ponder their solutions. Thus, all thinking activities can be seen from the problems that arise in individuals who continue to ponder the logical thinking process in each individual.

Critical thinking is a thinking process carried out by analysing information or knowledge obtained from observation, experience, communication or reading [5]. Critical thinking is a structured thinking process in students in the formulation and evaluation of their own beliefs and arguments.

According to Johnson [12], critical thinking is defined as a thinking process carried out in the context of systematic self-investigation. This involves not only deliberate thinking, but also proving and using reason. Meanwhile, Daud and Suharjana [13] suggest critical thinking as a process of thinking by creating concepts, reasoning, evaluating and making decisions from communication as a reference for believing and carrying out actions. The above definitions understand critical thinking as the ability to think rationally, think deeply and continuously, and use this ability to assess situations or circumstances in order to make appropriate considerations and decisions.

Meanwhile, according to Hendriana [14], the indicators of critical thinking are: Individuals focus their attention on problems; Analyse and explain problems, solutions and opinions; Individuals can clearly consider problems; Perform deduction and deductive analysis; Perform induction and inductive analysis; Formulating explanations, making hypotheses, and drawing conclusions; Making meaningful considerations; Communicating with others.

From the description of the indicators above, it can be explained that critical thinking skills can be seen from a person's ability to formulate problems, uncover the facts needed to solve problems, identify opinions that are reasonable and in line with reality, and determine the consequences of conclusions in decision making. The indicators in this study are: presenting and analysing arguments; answering questions with explanations; observing and considering the results of observations; making deductions and evaluating the results of deductions; making final decisions; and identifying terms and definitions [2].

4. CONCLUSIONS

The results of this study show that after implementing the Culturally Responsive Teaching (CRT) approach to improve students' critical thinking skills, there was an increase in learning outcomes and student activity, as seen in the observation results. This can be seen from the observation results, which show that student activity in cycle I was 66%, while in cycle II it was 82.87%. Thus, it means that in cycle II, students' critical thinking skills had increased compared to cycle I. This was also proven by the students' learning outcomes in the pre-action test, cycle I and cycle II. The success rate score showed an upward trend, increasing from 70 in the pre-action, to 79 in cycle I, and further increasing to 90.5 in cycle II. Thus, the Culturally Responsive Teaching (CRT) approach can improve students' critical thinking skills. Based on the results of this study, the researchers offer the following suggestions: 1) For students, this study should encourage them to be proactive in learning IPAS using the Culturally Responsive Teaching (CRT) approach in order to improve their critical thinking skills. 2) For teachers, this study should broaden teachers' knowledge about choosing appropriate teaching methods, such as the Culturally Responsive Teaching (CRT) approach, particularly in improving students' critical thinking skills.

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