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Analysis of Students' Critical Thinking Patterns on Critical Thinking Ability: The Case of Elementary School

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Abstrak - This study aimed at comprehensively analyzing critical thinking patterns in elementary school students through the Grounded Theory method. The design used was a case study. This study involved 25 fourth grade students at Kedung Krisik Elementary School, Cirebon City. Data collection was carried out through critical thinking math test questions; and interviews between researchers and students after completing the test questions. The analysis process was carried out by giving tests to students. The results of this study reveals that students' critical thinking skills in mathematics at the elementary school are divided into three categories, namely CTA 3, CTA 2, and CTA 1. It could be seen that critical thinking skills in mathematics can be improved by practicing working on questions related to mathematics learning, especially in the form of contextual questions. The Watson-Glaser Critical Thinking Appraisal (CTA) critical thinking assessment models could be applied to measure critical thinking skills themselves.

Kata Kunci: Critical Thinking, Elementary School Student, Mathematics

I. PENDAHULUAN

Education is a deliberate and organized effort to create a learning environment in which students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, social attitudes and skills needed by themselves, society, nation and state (Arito et al., 2022). The main goal of education is to help individuals become independent, creative and competitive individuals in the social environment (Amelia S et al., 2022). Society and individuals have a role in contributing to the development of the nation and state through improving the quality of education (Rochmawati & Sunardi, 2021). Therefore, the role of education in development must continue to be improved and directed effectively to achieve the expected goals. Education covers various fields, one of which is mathematics.

Mathematics is an academic field that plays an important role in the world of education, so it is a mandatory subject for all students from elementary school onwards (Firdaus et al., 2019). Mathematics is the basis for the development of science and technology. Technology strengthens the development and application of more complex and realistic mathematics (Yuliantri & Sahono, 2021). Thus, a good understanding of mathematics can help solve problems, equipped with the ability to think logically, analytically, systematically, critically and creatively, as well as the ability to work together. One of the elements in question is critical and creative thinking.

Critical thinking in mathematics is an

important basic skill in students' mathematics learning (Siswanto & Ratiningsih, 2020). Every student must have the important components of critical thinking, because with the rapid development of technology, they must think critically at all times, not only accept information at face value, but also be able to differentiate the information received logically and rationally to look for causes, effects and evidence (Firdaus et al. al., 2021). Critical thinking in mathematics also helps to avoid mistakes in problem solving. By thinking critically, someone can evaluate and check solutions to ensure that they are correct and valid (Munawwarah et al., 2020). Therefore, critical thinking in mathematics is needed in order to develop analytical, argumentative and problem solving skills that are useful in various areas of life.

Through problem solving, students develop critical thinking skills. One of the mathematical materials that must be studied at school is flat figures. A flat shape is a two-dimensional shape whose length and width are only limited by straight lines or curves (Putra & Rasidi, 2022). Plane shapes are shapes that describe concrete objects, so they cannot be discussed separately from symbols and signs. Symbols are written or expressed in a simple way, but have broad meaning (Ikawati & Wardana, 2022).

In the era of globalization, it is realized that it can give rise to increasingly complex and dynamic challenges, so good critical thinking skills are needed to face them. One of the most important abilities needed in the 21st century is the ability to think critically (Febrianti et al., 2021). Critical thinking skills can help evaluate information wisely, identify and solve problems, and explore various solutions more efficiently. Another idea also states that critical thinking is the ability to examine assumptions, discover hidden values, and evaluate and evaluate evidence and conclusions. This makes critical thinking a necessary skill to develop students' thinking skills.

From the description above we can see that the problem solving process requires appropriate skills, one of which is critical thinking skills. Differences in critical thinking abilities can be identified through the problem solving process. According to Polya (1978), the criteria for problem solving ability can be seen from several steps, namely understanding the problem (understanding the problem), making plans (devising a plan), carry out the plan (carrying out the plan), and check return (looking back) (Maisyaroh Agsya et al., 2019). In developing problem solving, students need critical thinking skills in analyzing information.

Based on the problem solving steps proposed by Polya (1978), the ability to solve problems leads to critical thinking abilities (Farib et al., 2019). Therefore, critical thinking skills are needed from students. According to Watson and Glaser (as cited in Fatmarani & Setianingsih, 2022), the criteria for measuring critical thinking can be derived from five indicators namely drawing conclusions (inference), recognition of estimates (recognition of assumptions), deduction (deduction), interpreting information (interpretation), and assessing opinions (evaluation of arguments).

Based on the critical thinking indicators formulated by Watson and Glaser (as cited in Fatmarani & Setianingsih, 2022), this research discusses critical thinking skills referring to Watson and Glaser. Drawing conclusions (inference) where the student's ability being measured is what differentiates the degree of truth or error of a conclusion drawn from the data provided. Unacknowledged conjectures arising from comments or responses are known as assumptions (assumptions). Summing up (Decuce) namely determining whether a particular conclusion should follow from the information from the stated premises or statements. Interpreting information (Interpretation) Measure the evidence when interpreting information to see whether generalizations or conclusions drawn from given facts are accurate. Assessing opinions (evaluation of arguments) from existing statements and facts. The aim is to determine students' critical thinking abilities which refer to Watson-Glaser Critical Thinking (Danaryanti & Lestari, 2018).

Critical thinking is the process of searching, analyzing, evaluating, obtaining synthesis and conceptualizing information as a guide to developing one's thinking with self-awareness and the ability to use that information by adding creativity and taking risks.

Problem solving is critical and is a higher order thinking skill (HOTS), but can be learned (Saraswati & Agustika, 2020). Problem solving can be completed through Critical Thinking Appraisal (CTA) (Ratnasari & Nasrullah, 2022). Critical Thinking Appraisal(CTA) is an approach to learning that aims to develop critical thinking skills in students (Novita et al., 2021). Therefore, CTAs are very important in the current era of globalization and technology, where information is easy to obtain quickly. By developing critical thinking, students can filter the information obtained so they can make appropriate, accurate and relevant decisions.

II. METODE

The design used is a case study. The subjects of this research were 25 students from SDN Kedung Krisik in the city of Cirebon. Purposive sampling, namely a sample selection method with certain considerations, was used to select research subjects. Students are divided into several categories, namely high, medium and low. Processing results used. This research used an instrument in the form of 7 mathematical problem solving questions and obtained interview responses from students.

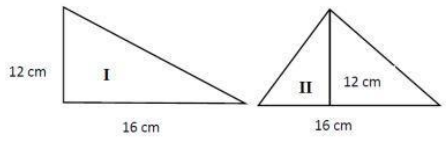
The seven questions of the mathematical problem solving test serve as a research tool for the study. The main topic of discussion in this research question is the perimeter and area of squares, rectangles and triangles. Problem solving can be known when students provide reasons for answers to questions. Solving mathematical problems related to the perimeter and area of squares, rectangles and triangles can be seen in table 1.

Table 1. Classification of Critical Thinking Levels

No	Intervals	Category	Critical Thinking Levels (CTA)
1	<=88	High	CTA 3
2	<=63 to >88	Medium	CTA 2
3	0 to >63	Low	CTA 1

Table 2. Critical Thinking Ability Questions

No	Questions related to the perimeter and area of squares, rectangles and triangles.
1	(Conclusion Drawing) Choose True (B) if the conclusion is correct. Choose Wrong (S) if the conclusion is wrong. Pak Rahmat has a rectangular garden, the length is 30 m and the width is 20 m. Teak trees are planted around the garden, with a distance of 2 m between trees. Pak Rahmat concluded that there were 50 teak trees to be planted. Is this conclusion correct? Explain!
2	(Recognition of Assumptions) Select Usable Estimate (D) if the estimate is correct. Select Forecast Unusable (TD) if the estimate is incorrect. Mom will cut the fabric to make 2 square "napkins". Each napkin has a side length of 10 cm. Mother estimates that the fabric needed to make two napkins is 200 cm^2. Is this estimate correct? Explain!
3	(Deduction (deduction)) Select Appropriate Conclusion (B) if the conclusion is correct and in accordance with the statement presented. Select Inappropriate Conclusion (S) if the conclusion is incorrect and does not match the statement presented. A plot of land is in the shape of a triangle with side lengths of 4 m, 5 m, dan 7 m. A fence will be installed around the land at a cost of Rp 10,000, − per meter. The land owner concludes that the cost of installing a fence is not up to Rp 200,000,−. Is this conclusion appropriate and correct? The cost of installing a fence is not up to Rp 200,000,−? Explain!
4	(Deduction (deduction)) Select Appropriate Conclusion (B) if the conclusion is correct and in accordance with the statement presented. Select Inappropriate Conclusion (S) if the conclusion is incorrect and does not match the statement presented. A traffic sign whose surface is triangular in shape, the length of the two sides is the same, namely 35 cm. The circumference of the traffic sign is 105 cm. Sasa concluded that it was an equilateral triangle and the length of the third side was the same,

	namely 35 cm. Is Sasa's conclusion appropriate and correct? The triangle is an equilateral triangle with the length of the third side being 35cm? Explain your reasons!
5	(Interpreting Information (Interpretation)) Choose the Correct Conclusion (B) if the conclusion is correct and in accordance with the statement presented. Choose False Conclusion (S) if the conclusion is incorrect and does not match the statement presented. Mr. Indra has a rectangular garden plot measuring $8m$×$6m$. Part of the garden will be made into a square fish pond with sides measuring $4m$. Mr. Indra has calculated and concluded that the area of the garden without a fish pond is $30m^2$. Is it true that the area of the garden without a pond is $30m^2$? Explain!
6	(Assessing Opinions (Evaluation of Arguments)) Choose a Strong Opinion (K) if the opinion is correct and related to the statement. Select Weak Opinion (L) if the opinion is not true and is not related to the statement. Sinta drew two triangles as below. His sister Rara thinks that the area of the two triangles is the same. Is Rara's opinion that the areas of the two triangles are the same correct? Explain! 
7	(Assessing Opinions (Evaluation of Arguments)) Choose a Strong Opinion (K) if the opinion is correct and related to the statement. Select Weak Opinion (L) if the opinion is not true and is not related to the statement. A rectangular field measures 120 m×80 m. Tegar ran around the field 3 times. Tegar believes that the distance traveled will be more than 1000 m. Is Tegar's opinion if the distance traveled is more than 1000 m correct? Explain!

After two or five students were asked to answer the seven questions above, after that they were interviewed regarding the reasons for their answers. Interview strategies are known as semi-structural strategies. The interview technique can be known as a semi-structural method. (Harrisman et al., 2021).

III. HASIL DAN PEMBAHASAN

The subjects used in the detailed questionnaire were categorized into 3, namely high (CTA 3), medium (CTA 2) and low (CTA 1). Each CTA will take one subject which can be used to analyze each category. It can be seen in Table 3 explaining the level of critical thinking in students.

Table 3. Level of students' critical thinking in solving problems

Category	Indicator	Level of critical	Frequency
Tall	1. Understand the problem 2. Develop an answer plan 3. Implement an answer plan	CTA 3	5
Currently	1. Understand the problem 2. Develop an answer plan 3. Not perfectly implementing the answer plan	CTA 2	14
Low	Understand the problem	CTA 1	7

The results of Table 3 show that the critical thinking level of class IV students at SDN Kedung Krisik is divided into three levels, namely CTA 3, CTA 2, and CTA 1. Of the 25 students, CTA 3 is only 19%, meaning only 5 students have high category critical thinking skills. . CTA 2 has the highest percentage, namely 54%, meaning that 14 students have moderate critical thinking skills. Meanwhile, CTA 1 has 27%, meaning 7 students whose critical thinking skills are considered low.

CTA Subject Analysis 3

Based on table 3, it shows that CTA 3 subjects can solve problems by going through the stages of understanding the problem, preparing an answer plan and implementing the answer plan. For more details, it can be seen in Figure 1.

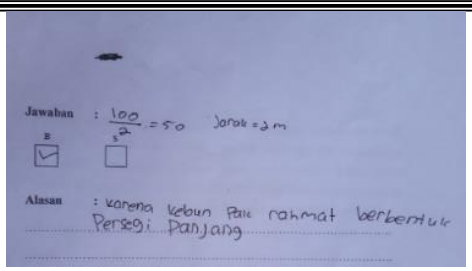


Figure 1 Inference CTA 3

In Figure 1, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level of 3. In this case, students are able to apply the indicators in table 3, namely being able to understand the problems in the questions, shown by the statements given by students, namely because Mr. Rahmat's garden is rectangular, meaning students can understand the problem in the question. In the next indicator, students can develop a plan to answer the question by writing the distance between trees that is known from the question. The final indicator is that students can implement a plan to answer the question because the subject calculates the result of the perimeter of a rectangle, which is 100, divided by the distance between trees, which is 2 meters, with a result of 50. It can also be said that the CTA 3 subject has a high level of inference because he can give conclusions. that the statement in the question is true. The following are the results of the interview conducted on the subject CTA 3.

Researcher : What is known from this statement?

CTA 3 : Mr. Rahmat has a garden that is rectangular in shape and will be planted with 50 teak trees.

Researcher : Question number 1 asks about what?

CTA 3 : Is it true or not that there will be 50 teak trees planted in his garden.

Researcher : How do you do the problem?

CTA 3 : Find the perimeter of the rectangle first, the perimeter of the rectangle is $2 \times (p + l)$ the result is 100 then divide by the distance between the trees. the distance between the trees is 2 m so the result is 50.

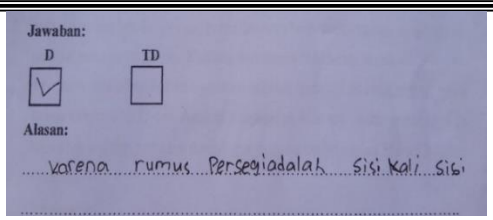


Figure 2 Assumptions CTA 3

In Figure 2, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level of 3. In this case, students are able to apply the indicators in table 3, namely being able to understand the problems in the questions, shown by the statements given by students, namely because square shape means students can understand the problem in the question. In the next indicator, students can develop a plan to answer the question by writing the square formula known from the question. The final indicator is that students can implement a plan to answer the question because the subject calculates the result of the formula, namely the side length of 10 cm multiplied by the cloth totaling 2, then it becomes 200. It can also be said that CTA 3 subjects have a high level of recognition of assumptions because can estimate that the statement in the question is true.

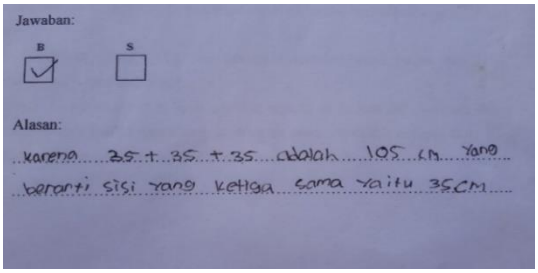
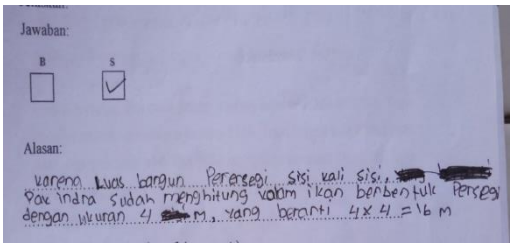


Figure 3 Deduction CTA 3

In Figure 3, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level of 3. In this case, students are able to apply the indicators in table 3, namely being able to understand the problems in the questions, shown by the statements given by students, namely because The shape of an equilateral triangle has the same sides, meaning students can understand the problem in the problem. In the next indicator, students can develop a plan to answer the question by writing how to calculate the sides of the triangle known from the question. The final indicator is that students can apply the plan to answer the question because the subject calculates the result of the formula, namely

the side plus the three sides, which has a perimeter of 105, because the three sides have the same size. It can also be said that CTA 3 subjects have a high level of deduction because they can draw conclusions that the statement in the question is true.



In Figure 4, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level of 3. In this case, students are able to apply the indicators in table 3, namely being able to understand the problems in the questions well as shown by the statements given. students, namely because the area of a square shape means students can understand the problem in the problem. In the next indicator, students can develop a plan to answer the question by writing how to calculate the square-shaped pool. However, the final indicator is that the subject has not implemented the correct plan to answer. Therefore, CTA 3 subjects have a low level of interpretation because they are less precise in interpreting information properly.

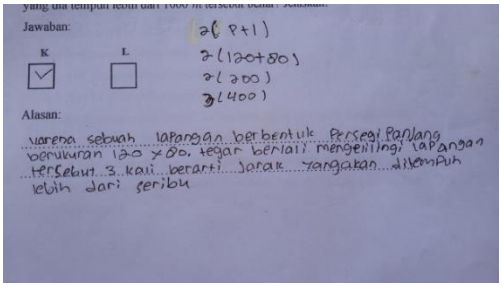


Figure 5 Evaluation of Arguments

In Figure 5, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level of 3. In this case, students are able to apply the indicators in table 3, namely being able to understand the problems in the questions, shown by the statements given by students, namely because The field is rectangular, meaning students can understand the problem in the question. In the next indicator, students can develop a plan to answer the question by writing the formula for the perimeter of the rectangle known from the question. The final indicator is that students can implement the plan to answer the question because the subject calculates the result of the formula, namely the result of the circumference of a rectangle multiplied by the number of turns and the result exceeds 1000 meters. It can also be said that CTA 3 subjects have a high level of evaluation of arguments because they can evaluate the opinions in the statement well.

Based on the picture of the test answers and interview results, CTA subject 3 has written the answer correctly and the reasons are correct. This is proof that the subject has met Watson and Glaser's critical thinking ability indicators, namely conclusions (inference), assumptions, drawing conclusions (deduction), and interpreting information (interpretation), as well as assessing opinions (evaluation of arguments). Because the subject is able to provide conclusions, assumptions, draw conclusions, and interpret the information conveyed in the statement, the subject is considered to have high critical thinking skills or CTA 3.

CTA Subject Analysis 2

The subject can apply the first indicator (understanding the problem) and the second indicator (making an answer plan) but the subject still experiences difficulty in the third indicator (implementing the answer plan). For more details, see Figure 2.

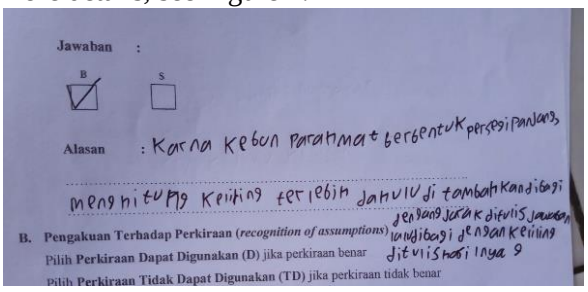


Figure 6 Inference CTA 2

In Figure 6, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level of 2. In this case, students are able to apply the indicators in table 3, namely being able to understand the problems in the questions, shown by the statements given by students, namely because Mr. Rahmat's garden is rectangular, meaning students can understand the problem in the question. In the next indicator,

students can develop a plan to answer the question with a statement, namely calculating the circumference first adding the distance. The subject did not perfectly implement the plan in answering the questions so that the subject only met 2 indicators in table 3, so the subject was included in the medium category (CTA 2). It can also be said that CTA 2 subjects have a moderate level of inference because they can apply the answer planning process but are not correct in answering the questions.

Researcher : What is known from this statement?
CTA 2 : A rectangular garden.
Researcher : Question number 1 asks about what?
CTA 2 : Teak trees to be planted in the garden.
Researcher : How do you do the problem?
CTA 2 : Find the perimeter of the rectangle, then divide by the distance between the trees.

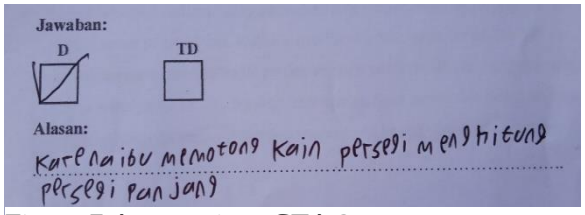


Figure 7 Assumptions CTA 2

In Figure 7, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level of 2. In this case, students are able to apply the indicators in table 3, namely being able to understand the problems in the questions, shown by the statements given by students, namely because Mother cuts the cloth in a square shape, meaning students can understand the problem in the problem. In the next indicator, students can develop a plan to answer the question with a statement, namely calculating the square formula. However, the subject did not perfectly implement the plan in answering the questions so that the subject only met 2 indicators in table 3, so the subject was included in the medium category (CTA 2). It can also be said that CTA 2 subjects have a moderate level of assumptions because they can understand the problem and apply the answer planning process.

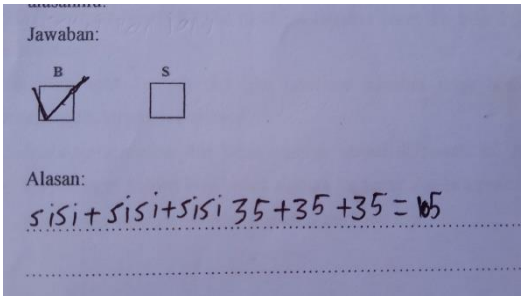


Figure 8 Deduction CTA 2

In Figure 8, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level of 2. In this case, students are able to apply the indicators in table 3, namely being able to understand the problem in the question, shown by the statement given by the student, namely because The shape of an equilateral triangle means that students can understand the problem in the question. In the next indicator, students can develop a plan to answer the question with a statement, namely writing and calculating the perimeter of a triangle. The subject implemented a plan in answering the questions so that the subject was included in the medium category (CTA 2). It can also be said that CTA 2 subjects have a moderate level of deduction.

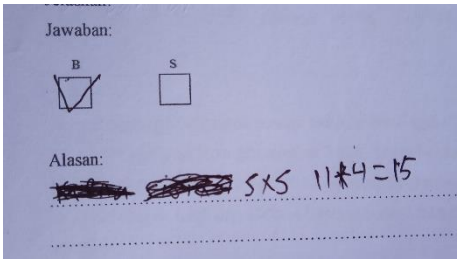


Figure 9 Interpretation CTA 2

In Figure 9, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level 2. In this case, students are able to apply the indicators in table 3, namely being able to understand the problem in the question, shown by the statement given by the student, namely because It is triangular in shape and has the same sides, meaning students can understand the problem in the problem. In the next indicator, students can develop a plan to answer the

question, namely calculating the side plus the side. However, the subject did not perfectly implement the plan in answering the questions so that the subject only met 2 indicators in table 3, so the subject was included in the medium category (CTA 2). It can also be said that the CTA 2 subject has a moderate level of interpretation because he can apply the answer planning process but is not yet precise in answering the questions correctly.

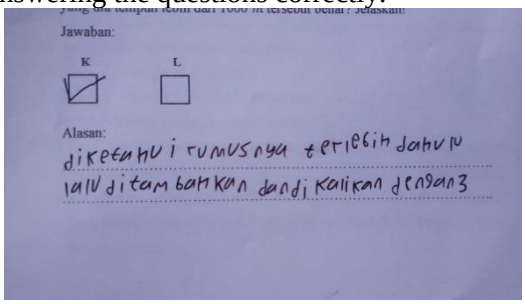


Figure 10 Evaluation of Arguments CTA 2

In Figure 10, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level 2. In this case, students are able to apply the indicators in table 3, namely being able to understand the problem in the question, shown by the statement given by the student, namely because Knowing the circumference of the formula first means students can understand the problem in the problem. In the next indicator, students can develop a plan to answer the question, namely by calculating the circumference and then multiplying it by 3 rounds. It can also be said that the CTA 2 subject has a moderate level of evaluation of arguments because he can identify the problem and apply the answer planning process.

Based on the picture of the test answers and interview results, CTA subject 2 has written the answer correctly but the reason is not correct. This is evidence that the subject has not met Watson and Glaser's critical thinking ability indicators, namely conclusions (inference), assumptions (assumptions), drawing conclusions (deduction), and interpreting information (interpretation), as well as assessing opinions (evaluation of arguments). Because the subject is less able to provide conclusions, assumptions, draw conclusions, and interpret the information conveyed in the statement, the subject is considered to have moderate critical thinking abilities or CTA 2.

CTA Subject Analysis 1

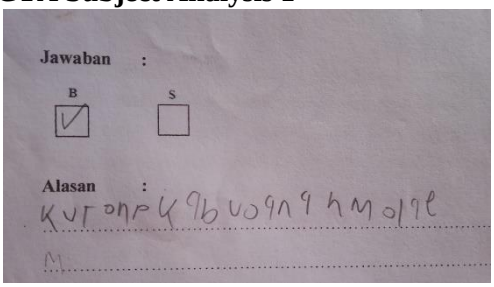


Figure 11 Inference CTA 1

In Figure 11, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level of 1. Students have not been able to understand the problems in the questions so they cannot apply the next stage of critical thinking indicators. In this case it can be seen in the answers given by students are illegible and lack the ability to explain answers. It can also be said that CTA 1 subjects have a low level of inference because they cannot apply the answer planning process and answer questions correctly.

Researcher : What is known from this statement?
CTA 1 : Rectangle.
Researcher : Question number 1 asks about what?
CTA 1 : Teak tree.
Researcher : How do you do the problem?
CTA 1 : Shared.

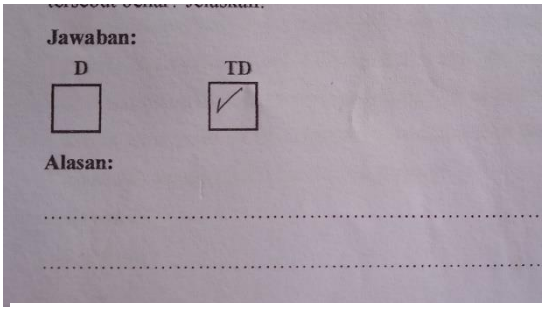


Figure 12 Assumptions CTA 1

In Figure 12, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level of 1. Students have not been able to understand the problems in the questions so they cannot apply the critical thinking indicators for the next stage. Therefore, it can also be said that the subject is CTA 1. has a low level of inference.

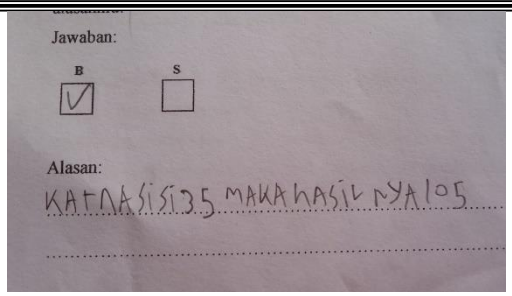


Figure 13 Deduction CTA 1

In Figure 13, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level of 1. The subject is able to understand the problem in the question. In the next indicator, the subject can plan an answer, namely calculating the sides of an equilateral triangle. However, the subject still did not apply the indicators of implementing the answer plan well. So, it can also be said that CTA 1 subjects have a low deduction level.

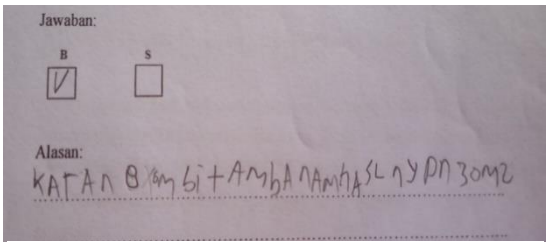


Figure 14 Interpretation CTA 1

In Figure 14, the problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level of 1. Students have not been able to understand the problems in the questions well, but cannot apply the critical thinking indicators for the next stage. Thus, it can be seen in the answers given by the subject's lack of ability to explain the answer. It can also be said that the subject of CTA 1 has a low level of interpretation.

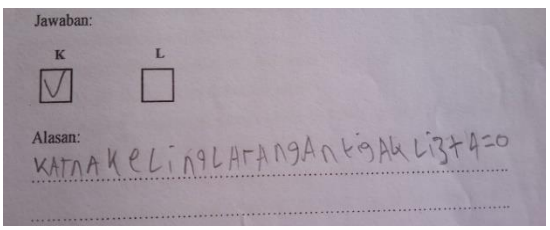


Figure 15 Evaluation of Arguments

In Figure 15, problem solving steps in improving students' critical thinking skills to answer questions shows that the subject has a CTA level of 1. Students have not been able to understand the problem in the questions. However, the subject was not able to implement the answer plan well. In this case, it can be seen that the answer given by the subject is still not quite correct. Thus, CTA 1 subjects have a low level of evaluation of arguments.

Based on the picture of the test answers and interview results, CTA subject 1 has written the answer correctly but the reason is not correct. This is evidence that the subject does not meet Watson and Glaser's critical thinking ability indicators, namely conclusions (inference), assumptions, drawing conclusions (deduction), and interpreting information (interpretation), as well as evaluating opinions (evaluation of arguments). Because the subject is unable to provide conclusions, assumptions, draw conclusions, and interpret the information conveyed in the statement, the subject is considered to have low critical thinking abilities or CTA 1.

To sum up, considering the results of this research, it is clear that different students' critical thinking abilities can be categorized into several, namely high, medium and low. Students' steps in solving problems according to (Polya, 1978) can vary. This is in line with research conducted by Rahimah (2019) showing that the results of students' critical thinking abilities in solving mathematical problems based on the overall polya stages are different.

The differences in each category of high, medium and low CTA have several stages of mathematical problem solving according to Polya. This was also explained in research conducted by (Simatupang et al., 2020), high category students were able to carry out the Polya stages, namely understanding the problem, making a solution plan, carrying out the procedure or plan and checking again. Students with moderate abilities are able to understand problems, make resolution plans, and carry out procedures or plans that have been made. Low ability students are only able

to understand the problem. Students in the CTA 3 category have a high level of deduction in the level of critical thinking in mathematics. This is in accordance with research conducted by Danaryanti & Lestari (2018). The indicator with the second highest level of achievement is the deduction indicator with an average score of 77. .37. In this indicator, the student's ability measured is the ability to determine whether a certain conclusion follows the information from the statement or premise given.

According to research conducted by Putri et al (2023), students with moderate self-confidence are only able to fulfill the problem-solving ability indicators according to Polya, namely indicators 2 and 4. The research results also explain that students with CTA 2 category can only fulfill 2 indicators according to polya in table 3. Students in the medium category tend not to be able to implement answer plans correctly so they can only understand the problem and prepare an answer plan for the question. Students in the medium category are able to analyze problems that occur at the level of inference that is applied which is sufficient because they have considered the problems that occur by managing the information obtained in the questions, but subjects in the CTA 2 category are not yet able to answer with the correct answer. This is in line with research conducted by Danaryanti & Lestari (2018), namely that students' critical thinking abilities are in the "Medium" category. In the first indicator, namely drawing conclusions, several students answered correctly, where students were able to apply skills in identifying and looking for things needed to be able to draw conclusions, namely information, then considering this information and concluding consequences from the data. which are given.

IV. KESIMPULAN

Based on the analysis and discussion of the test results of class IV students at Kedung Kresik Elementary School, it can be seen that students' critical thinking skills in mathematics at the elementary school are divided into three categories, namely CTA 3, CTA 2, and CTA 1. CTA 3 subjects are able to fulfill the critical thinking aspects of Watson and Glaser in the seven test questions tested, aspects of critical thinking that can be fulfilled include inference, assumptions, argument evaluation, deduction, and interpretation. Meanwhile, the CTA 1 subject was only able to answer all the questions correctly, but the way the subject wrote down the questions was still wrong. Based on the research results above, it can be seen that critical thinking skills in mathematics can be improved by practicing working on questions related to mathematics learning, especially in the form of contextual questions. And to measure critical thinking skills themselves, you can use one of the Watson-Glaser Critical Thinking Appraisal (CTA) critical thinking assessment models.

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