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Geometry Learning Design for Facilitating Pancasila Student Profile's Critical Reasoning Dimensions of Elementary School Students

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Abstract

This research aims to describe the implementation of geometry learning design to facilitate the Pancasila student profile of the critical reasoning dimension of elementary school students. This research was conducted in class IV of an elementary school in Pemalang. This research approach is qualitative, and the research method uses hermeneutic phenomenology and learning design which refers to the didactial design research (DDR) method. The research subjects were class IV students with a total of 32 students. Data collection through observation and interviews. This research shows that there are still learning difficulties experienced by students. From results of the implementation of geometric learning design from the learning situations presented, there is still a tendency towards learning habits that use the lecture method. From various student responses, it was found that the difficulties experienced were difficulty accepting the concept of parts or characteristics of various types– types of flat shapes, difficulty communicating flat shapes according to reasoning, difficulty in comparing various types of flat shapes. From the anticipation that has been carried out, it is concluded that it is easier for students to understand the material through the media of objects and trigger questions.

Keywords: Geometry, Critical reasoning, Learning design

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INTRODUCTION

One of the lessons in mathematics is Geometry. Geometry is one of the subjects given to students which can help students to improve logic in problem solving and improve deductive reasoning skills in continuous learning (Bwalya, 2019). According to Nopriana (2014), learning geometry is very important because geometry is able to provide complete knowledge about the world, geometry exploration activities can develop problem solving abilities, geometry has an important role in learning other concepts in mathematics learning, geometry is also indirectly used every day by many people. However, so far mathematics has always been seen as a difficult subject, so research by Fauzi & Arisetyawan (2020) shows that many students do not like mathematics and have difficulty learning geometry.

The difficulties that are often encountered in learning geometry, especially flat shapes, are difficulties in understanding the characteristics of flat shapes due to difficulties in understanding and lack of reading. Students also have difficulty distinguishing between types of flat shapes and their elements, such as why they are called side, length, width, and high (Rohman et al., 2022). Apart from that, the cause of the difficulties experienced by students in studying flat shapes is experiencing visual perception abnormalities, students who experience this will have difficulty seeing flat shapes and cannot differentiate between them (Simbolon et al., 2022). Often teachers also don't give enough instructions to students

to connect mathematical concepts with real life or students' own experiences, so that students don't understand and feel bored only knowing the lesson in writing without being able to apply it in everyday life. This affects students because they can't solve it. Problems in the form of questions will directly create a burden for students (Silfiana & Widyastuti, 2021). Based on the results of interviews with class IV homeroom teachers, the causes of difficulties in learning geometry are that students are lazy to participate in learning, do not pay attention to the teacher's explanations, and students are less active in being involved in learning. The existence of an independent curriculum that has only just been implemented means that teachers and students need to adapt again because there is a lot that must be understood, and they must be able to carry out their activities (Ineu et al., 2022). Apart from that, implementing the Pancasila student profile in learning also requires time for implications for characters aligned with the dimensions of the Pancasila learning profile (Kahfi, 2022).

The results of previous research, namely research by Nopriana (2014), increased learning for students whose learning used the Van Hiele geometry learning model was better and was classified as high and more effective with teaching aids. Annizar & Suryadi (2017) stated that learning will be more optimal using action situation plans, formulation situations, validation situations, and institutionalization situations. During the learning process, having trigger questions will make it easier for students to be active and facilitate communication to remember and reason in answering questions asked by the teacher (Pandu et al., 2023). To foster critical reasoning, factors that really support improving students' abilities are learning media and orientation to everyday problems (Sutrisno et al., 2023). Moving on from these matters, this research aims to describe the implementation of geometry learning design to facilitate the Pancasila student profile of the critical reasoning dimension of class IV students. The implementation of the learning design used is in the form of teaching modules and teaching materials which are structured and adapted to the newest curriculum, namely the Independent Curriculum. Therefore, it contains one of the dimensions of the Pancasila student profile, which is related to the geometry learning process, namely the critical reasoning dimension.

METHODS

This research uses a qualitative approach and hermeneutic phenomenological research methods, with the learning design used referring to didactic. Hermeneutic phenomenology is a method designed to describe and interpret a person's experiences as well as the meaning and significance associated with these experiences (Fadli, 2021). Meanwhile, the qualitative approach uses researchers as the main instrument where descriptive data is obtained in the form of written or spoken words from observed behavior (Sidiq, 2019). The learning design implemented refers to the DDR method, because it consists of three stages, namely hypothetical didactic situation analysis including pedagogical didactic anticipation (ADP), metapedadidactic analysis, and retrospective analysis, namely analysis that links the results of hypothetical didactic situation analysis with the results of metapedadidactic analysis (Annizar & Suryadi, 2017).

This research was carried out and directly observed on class IV students in one of the elementary schools in Pemalang district with a total of 32 students. The research process took place over 2 meetings on 13 – 14 February 2023 by implementing a geometric learning design. The first meeting was related to the introduction of flat shapes material which is related to everyday life as well as identifying and distinguishing flat shapes. At the second meeting, students worked on questions about flat shapes. Data were collected using

observations based on the critical reasoning dimensions rubric during learning activities and interviews with class teachers and students.

The profile of Pancasila in the design of learning geometry uses the dimensions of critical reasoning along with its elements and sub-elements.

Table 1. Critical reasoning dimension indicator

Elements	Sub element	Information
Obtaining and processing information and ideas	Asking question	Asking questions to identify a problem regarding flat shapes in the surrounding environment in apperception activities
	Identify, clarify, and process information and ideas	Collect, clarify, compare, select information and ideas about flat shapes in activities and discussions
Analyze and evaluate reasoning and procedures	Analyze and evaluate reasoning and procedures	Explain the reasons for making decisions in the discussions carried out
Reflection of thoughts and thought processes	Reflect and evaluate their own thinking	Convey what is being thought and explain the reasons for the differences in regular and irregular terms

RESULTS & DISCUSSION

Results

After carrying out observation activities, in the indicator of obtaining and processing information and ideas, the researcher asks questions to identify a problem regarding flat shapes, namely the researcher asks a question to observe the classroom and asks to mention the shape of objects around the class from the result of student observations from 26 students have answered very well, namely mentioning flat shapes correctly, namely "square, rectangular" quickly, while there were 4 students who answered "round", in the observation of the researcher indeed the object was round, but round was included in the build a room so that the four students can be categorized as good because they are still able to answer even though it is not right. There were also 2 students who did not participate in answering questions from the researcher, it turned out that these 2 students were S-12 and S-25 which previously according to the homeroom teacher these students were indeed less active in every lesson, in the first situation the students' critical reasoning abilities were on average good. Furthermore, the researcher observed students' reasoning abilities through questions on teaching materials which aimed to collect and classify flat shapes. In the teaching materials, an empty table is included, and students are instructed to fill it in by describing objects and checking the column that corresponds to the object they are drawing. From the result of students' answers, the researchers focused on 6 students who had different levels of critical reasoning, namely S-3, S-4, S-10, S-17, S-20, S-25. In the answers from S-3 and S-20, they have sufficient levels of critical reasoning ability because in collecting objects both describe objects correctly but cannot classify the appropriate shapes, because the shapes drawn consist of several shapes that are combined so that based on the observations of the two students researchers are hesitant to or only focus on one

shape in the flat shape classification process, so the result of the shape classification seem ambiguous because they do not focus on just one image.

Observation Result

Table 2. Observation result

No	Activity	Responses			
		1	2	3	4
A.	Analysis of the causes of low critical thinking skills in learning geometry				
	1. Attitude in learning	-	2	-	30
	2. Student interest in learning	-	2	11	19
	3. Habits of students when studying	-	3	-	29
	4. Teacher-student relationship	-	-	-	32
	5. Student involvement in learning	2	-	12	18
	6. Available learning media	-	-	32	-
	7. Condition of schools and classrooms	-	-	32	-
B.	Obtaining and processing information and ideas				
	1. Asking questions to identify	-	2	4	26
	2. Collect, classify, compare, select information and ideas about flat shapes in discussion activities	6	4	17	5
C.	Analyze and evaluate reasoning and procedures				
	1. Explain the reasons for making decisions in the discussions carried out	2	8	16	6
D.	Reflection of thoughts and thought processes				
	1. Convey what is being thought and explain the reasons for the differences in regular and irregular terms	-	3	8	21

Description of the value student responses
1 = need guidance
2 = enough
3 = good
4 = very good

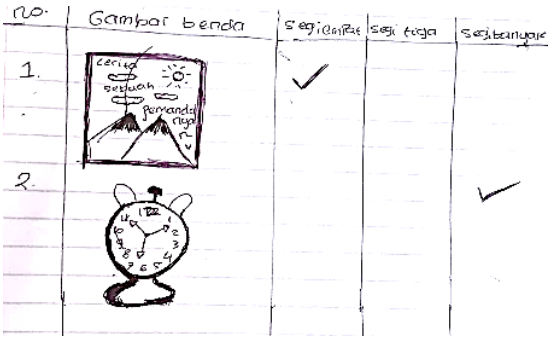

Figure 1. Answer S-3

Furthermore, for S-17 and S-20 students, their answers were based on observations that they had not used their reasoning abilities to determine groups of circles. If seen directly, it only has one side, so it is included in a flat shape other than a polygon.

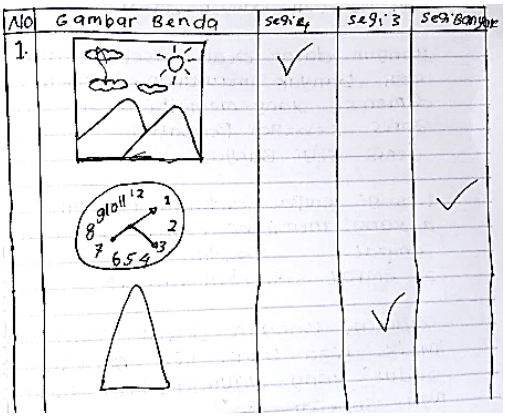

Figure 2. Answers S-17

Furthermore, in the answers to S-10 and S-25, answers from S-10 and S-25 are answers that are mostly found in grade 4 students. S-10 and S-25 have drawn shapes according to the group's choices in the table, but not objects what he drew was the shape of the flat shape directly, based on the observations of the S-10 and S-25 researchers, they were already able to understand the shape of the flat shape but had not yet thought about the concept and reality of the objects they encountered.

Interview result

Class Teacher Interview

Table 3. Interview result

Question	Answer
Have you applied the Pancasila student profile in class IV in your learning activities?	Of course, because it adapts to the use of the curriculum in class IV, namely the independent curriculum.
How to apply the six dimensions of the Pancasila student profile?	Through learning activities by adding activities that reflect the values or content of the Pancasila student profile, although the application is not simultaneous but periodically adjusts the conditions of students so that they can adapt to the newly implemented curriculum and are comfortable participating in learning activities.
How to plan geometry learning activities in class IV?	Planning learning activities using teaching modules that are adapted to geometry material, which in class IV the material is flat.
Is the geometry learning activity in accordance with the planning before the activity is carried out?	In my opinion, whether it is appropriate or not depends on the activity of the learning activities, if in the previous activity the students understand the lesson, then in the next activity it will be easier for students to understand it and the learning activities will also be in accordance with the plan, but due to

	adjusting the conditions and atmosphere in the class there are several activities that are changed so that learning geometry remains conducive, such as by adding guessing activities.
Are there any obstacles in implementing geometry learning activities?	Yes, there are obstacles, including that students sometimes have difficulties, such as starting with students who say they don't like mathematics, making enthusiasm in following math-related material less, then it is often found that students still have difficulty distinguishing the types of sides between length and width.
Does the geometry learn activity affect students' critical thinking skills?	Very influential in my opinion, in class IV students are introduced to shapes in more detail so that students are expected to use their critical thinking skills in discovering the concept of geometry itself.
How to apply students' critical reasoning dimensions in learning geometry?	Through constructive activities, when students are active in learning it will make it easier to apply students' critical reasoning dimensions, one of the activities is through questions.
How to deal with students who still have difficulty using critical reasoning skills in learning geometry?	Of course, you have to get used to it and slowly guide him so that he gets used to using his abilities independently in geometry learning activities.
Are there factors that influence the low critical thinking skills of students?	Factors such as laziness in participating in learning activities, not paying attention to the teacher, less active student involvement in participating in learning activities.
How is the achievement of students who have a low level of critical thinking ability in learning geometry and other learning?	The achievement of students who have low critical reasoning abilities tends to be in the medium to low category in learning geometry and other learning.
Is there a difference between students who have high and low critical thinking skills in learning geometry?	Yes, there must be, those who are tall are active in learning while those who are low are not, the results of their learning are adjusted to the abilities of each student.
How is the learning design used in learning geometry?	In my opinion, this is very good and inspiring, I see that students are more enthusiastic and enthusiastic in participating in learning, the material presented is also appropriate and coherent.
In your opinion, is the geometry learning design effective enough to improve students' critical thinking skills?	Yes, it is effective, as evidenced by the increase in student learning outcomes in this flat shape material, with a learning design that includes activities that build students' critical thinking skills.

Students Interview

Table 3. Student interview result

Question	Number of students answered "Yes"	Number of students answering "No"
Do you know the profile of Pancasila students?	25	7
Do you like learning geometry?	30	2
Is learning geometry easy to understand?	18	14
Do you have difficulty following geometry lessons?	5	27
Does your teacher guide you when you have difficulties in learning geometry?	32	0
How easy is it for younger siblings to understand geometry material	"Notice"	"There are learning media"
	15	17

Critical Reasoning Dimension Rubric Achievement

Based on the achievements of the rubric on the elements of the rubric on the elements of obtaining and processing information and ideas the teacher observes based on student responses in learning situations 1 and situation 3, namely inviting students to observe the classroom and school environment to obtain information about flat shapes, the researcher asks questions about what forms of flat shapes are all around us, at the beginning of learning the students' responses were very general in finding shapes such as square, circles, and, rectangles, but the researcher again asked specifically about blackboard and cupboards so that students could find differences, in this situation as many as 26 students stated in the category develops as expected because it can ask questions to identify differences in shapes as in the following question dialogue "how do you know there are differences when the shape is the same?" and the question "the shape is the same but the number of sides is different, is it because the shapes are combined?" and as many as 4 students were declared developed because they could ask simple questions like the following "why is the name rectangular?" and 2 students were declared to have started to develop because they participated in answering a number of questions based on the question and answer activity in this flat shape identification process.

Whereas at 5 students were also very developed in collecting, classifying and comparing the characteristics of flat shapes and explaining them using language that was easy to understand and 17 students develop as expected because they could mention flat shapes based on flat wake characteristics, while 4 students began to develop mentioned some of the characteristics of flat shapes, and 6 students had not yet developed because they could not distinguish the features of flat shapes.

For the achievement of the rubric elements of analyzing and evaluating reasoning and procedures, a total of 6 students developed according to expectations with the analysis in discussion activities 6 of these students could explain the reasons for the answers to the result of the discussion and solve problems in the flat category using good language and easy to understand, while 16 students progressed because they were able to carry out and try to complete their discussion activities but writing answers to the result of the discussion could not be understood, and 10 students were included in starting to develop even though slowly because they could write down discussion decisions with a few appropriate words.

For the achievement of the reflection elements rubric and thought processes the researcher observed based on several situations, especially in the situation of activities working on student worksheet, as many as 21 students developed according to expectations because they could convey answers and explain answers to student worksheet properly and in situations using media GeoGebra pentagons and student trapezoids can solve their problems using their own thinking, whereas for 8 student began to develop in conveying some good answers in detail and trying to solve problems on GeoGebra with the help of friends while 3 students were stated to be underdeveloped because they had not been able to fulfill the answers independently in their student worksheet activities.

Discussion

Before compiling the learning design, the researcher determines the learning material to be used in the learning design. Researcher made observations and found several difficulties in solving mathematical problems, especially in learning geometry, before compiling a learning design. The researcher conducted interviews with the class teacher to find out more about the obstacles and efforts to overcome these obstacles, in a statement from the class teacher which stated "Geometry learning activities are very influential on students' critical reasoning abilities, students who have high critical reasoning abilities can more easily understand flat shape, while students who have low critical reasoning ability find it difficult to understand flat shapes. Obstacles - obstacles that are often found are lack of concentration in learning activities, mood, self-confidence during learning, and the activeness of students who are still lacking in learning activities. Efforts that are often made in overcoming are by guessing to bring out the activeness of students, this effort is the easiest to attract students' attention. Based on the teacher's statement, the learning obstacles that occur are in flat wake learning.

According Flevares & Schiff (2014) flat shapes or two-dimensional shapes are very important for developing a basic understanding of the field of geometry, learning flat shapes also supports spatial reasoning in children for learning mathematics. Therefore, the researcher chose a flat wake as material in the learning design. Barriers - learning barriers are also closely related to students' reasoning and critical thinking skills which are still low, therefore the researchers developed a learning design that could facilitate the profile of students of Pancasila dimensions of critical reasoning. Like the classroom teacher's efforts to deal with obstacles in learning, the researcher changed guesses into trigger questions which are expected to build students' critical reasoning processes in learning flat shapes. In accordance with Pandu et al. (2023), that the use of trigger questions during the learning process will make it easier for students to remember and reason critically to answer a question raised by the teacher.

The learning design prepared is in the form of teaching modules, teaching materials, and student worksheet. The learning design arrangement the learning design as a learning objective, namely, to describe the characteristics of various plane shapes. Learning activities consist of preliminary activities, core activities, and closing activities. In the main activity of meeting 1 the researcher presented classroom exploration activities, namely the situation of observing flat shapes in the classroom, then the situation of explaining the basic flat shapes by the teacher, classifying flat shapes by describing objects that were adjusted to the choice of flat shapes, the next situation was the introduction of different shapes regular and irregular through conversations between square, hexagon and rectangle shapes. The next situation is to draw a flat shape with a choice of lines included in the teaching materials, then the situation of classifying flat shapes by matching objects with flat shapes, then getting to know the types of triangles and rectangles using GeoGebra, and finally, group discussion activities to classify shapes that include regular and irregular

terms. Furthermore, in the second meeting core activities, 3 situations were also presented, namely the presentation of the results of group discussions, GeoGebra exploration in the form of a puzzle to arrange pentagons and trapezoids using triangular fractions, and the last was working on LKPD. In the design of learning designs using GeoGebra tools, according to Saavedra and Opver (2012), GeoGebra is a technological resource that has the potential to develop students' critical thinking, problem solving abilities, and innovative skills. Therefore, GeoGebra is the right tool for researchers to support the learning designs that are compiled.

In this study the learning design was designed by adjusting the problem of reasoning abilities found in geometry learning in fourth grade. In research activities, researchers found that fourth graders already used the independent curriculum, but only a few activities facilitated the student profile of Pancasila, namely the cooperative dimension, the independent dimension, and the creative dimension. Geometry learning design implementation activities were carried out during 2 meetings, namely:

1. Meeting 1

At the meeting 1 fourth grade students could not use their abilities independently in understanding flat shapes because they were used to passive learning and only listened to the teacher's explanation, therefore researchers had to build students' critical reasoning abilities gradually using trigger questions contained in sustainable teaching materials such as asking the reason of the student's answer. In accordance with the statement of Raharjo et al. (2020), one of initial efforts in developing critical reasoning skills is interaction to communicate ideas and information about the material being studies to bring up an open mind in understanding the material.

In situation 1 the researcher invites students to observe the classroom and name the shapes of the objects in the classroom, students answer several shapes of objects such as square, round, quadrilateral and rectangle. Then the researcher began to use trigger questions to ask the reason for the answer "Which one is rectangular?", students immediately "blackboard, door, cupboard, table", then the researcher again asked the trigger question "Why do these objects enter the four?", then some students answered, "The shape is a box", there were also some who answered "There are 4 lines"

The learning design which contains teaching modules, teaching materials, and LKPD facilitates the delivery of flat material which contains indicators of students' critical reasoning abilities gradually increasing each answer to the trigger question given, the more students who can answer it will affect the enthusiasm of students in identifying and process information about plane shapes.

2. Meeting 2

At meeting 2, the researcher found an increase in critical reasoning skills in the discussion results, although there were still students who were still low, it tended to be caused by misconceptions in receiving student worksheet flat shape material.

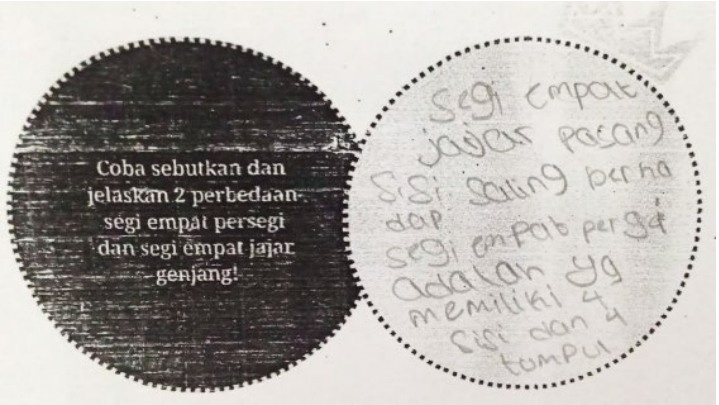

Figure 3. Answer students' misconceptions

The misconception that occurs is that there are names of flat shapes and parts of flat shapes such as sides, angles, and type of angles that are incorrect or interchanged. However, for the overall results of the LKPD that has been done by grade IV students, it shows an increase in students' critical reasoning abilities, evidenced by students who work carefully using the material that has been taught.

Based on an analysis of critical thinking skills in the use of geometry learning designs and the effectiveness of geometry learning design to facilitate the student profile of Pancasila with critical reasoning dimensions using the following indicators:

a. Obtaining and processing information and ideas

In this indicator the researcher analyzes the learning activities in 5 situations, namely:

1) Situation 1

In situation 1 the researcher asks questions to students to identify flat shapes in the classroom environment, inn this situation students respond to the right answers even though only a few objects are mentioned in the following conversation:

Researcher : "try to observe the shape of the objects in this classroom?"
Student : "Square! Round! Square! Panajang square!"
Researcher : "which one is rectangular?"
Student : "blackboard, cupboard"
Researcher : "why are blackboards and cupboards rectangular?"
Student : "the shape of the box! There's a 4" line

The student's answers were correct even though not all students participated in answering the trigger question.

2) Situation 2

In situation 2 the researcher is still in the stage of asking trigger questions and explaining the material to identify a flat shape problem around the class, students who answer correctly begin to increase as in the following conversation:

Researcher : "So what is another name for a flat shape?"
Student : "many facets!"
Researcher : "try to be here whichever is included in the polygon"
Student : "blackboard! Doors! Tables! Cabinets! Books!"

Student responses have increased more than before, even though there were difficulties when asking reasons and students ended up silent, the researchers still guided students so that they could return to answer the triggering questions that were developed.

3) Situation 3

The researcher directed students to describe flat wake objects into one grouping column that had been made in teaching materials, in this situation students' writing responses were better. Even though there are several students who were wrong in grouping pictures of objects as in the following picture:

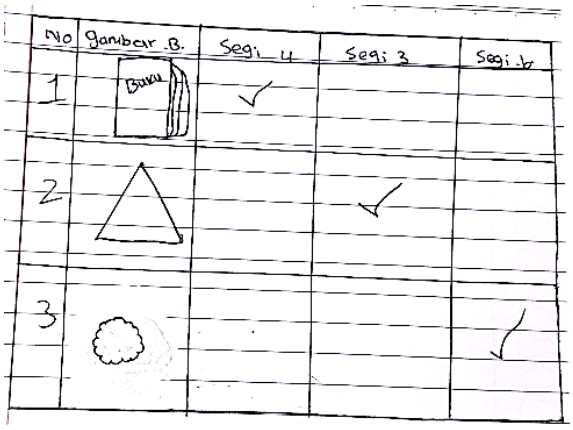

Figure 4. Student answer errors

In the picture, you can see an error in figure 3 which is shaped like a cloud, and is not included in a flat shape, but the students still group the cloud shape into polygons.

4) Situation 4

The researcher invites students to make plane shapes by providing two different lines with the aim that students can use their reasoning abilities to compare side lengths and choose the right information in the introduction of flat shapes. In this situation only a few students were still active in participating in learning activities, therefore the researcher gave the opportunity to several students to draw flat lines according to their thoughts to refocus students' attention.

5) Situation 5

The researcher invites students to classify flat shapes by matching the flat shapes with the information included, even though this activity takes a little longer, the results are quite good. The errors of some students were found in filling out the quadrilateral description, because the rectangular objects that the researcher included all included in an irregular quadrilateral, but there were some who answered in an orderly manner as shown below:

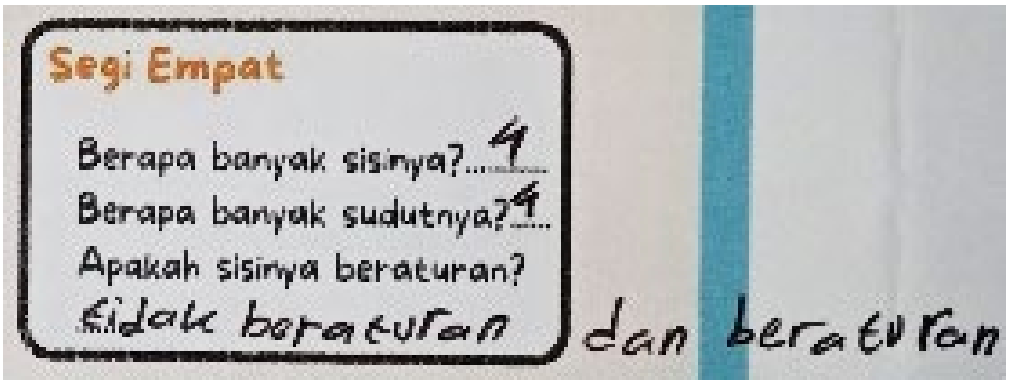

Figure 5. Incorrect student answers

b. Analyze and evaluate reasoning and procedures

This indicator was observed through one situation in the learning activity, namely the researcher instructed students to discuss with the aim of being able to explain the reasons for answering questions in the discussions carried out. Discussions can foster empathy for friends who find it difficult, get used to asking questions to friends, and have a desire to solve problems in the flat shape they face (Nindiasari et al., 2016). In this situation, each group still needed guidance, but out of 6 groups the researcher only found 2 groups which were still not correct in answering the problems in the discussion materials. Incorrect group answers because students cannot convey the reasons, they mean both orally and in writing.

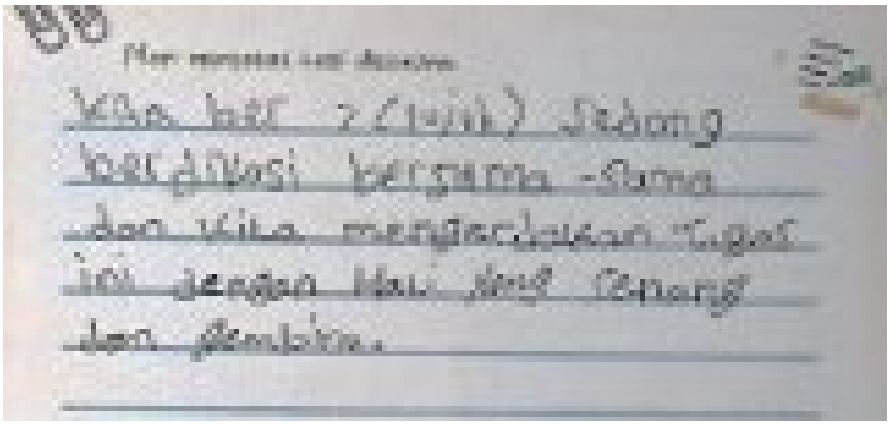

Figure 6. Discussion result

c. Reflection of thoughts and thought processes

Learning with geometric learning design by adding media GeoGebra can improve critical thinking skills by going through experience in recognizing flat shapes and applying them in building flat wake concepts in media GeoGebra.

In this indicator, researchers use GeoGebra media to find out the types of rectangles and triangles. It is intended that students can explain the reasons for the differences between regular and irregular terms. In GeoGebra media, the researcher presents quadrilaterals and triangles where each corner point can be shifted so that the direction and length of the sides will also form a new flat shape. In this situation students are given the opportunity to explore types of rectangles and triangles using this GeoGebra media. In this process students are more enthusiastic about participating in exploration activities and easily remember the shapes and characteristics of flat shapes. Based on these indicators, it can be concluded that students' critical reasoning abilities are indeed low and must be given encouragement and guidance to participate in learning activities that refer to using their reasoning abilities.

From the learning outcomes that have been carried out, there is indeed an increase, although little by little, but enough to improve students' critical reasoning abilities through the trigger questions that researchers provide are proven to be easy in building students' critical reasoning abilities. Just like the researcher conducted by Pandu et al. (2023) entitled The Effect of Trigger Questions on Critical Reasoning Ability and Student Learning Outcomes, which states that the use of trigger questions has more influence on critical reasoning abilities and student learning outcomes, trigger questions will make it easier for students to remember and reason to answer the questions posed by the teacher. And the statement from Negoro et al.(2018) that critical thinking skills can be trained to students through the habit of thinking by learning to reason, in this way it is necessary to involve thinkers themselves. One approach to developing critical thinking skills is to give a few questions, while guiding and linking to the concepts owned by students.

The learning design used is quite effective and reaches a level where it begins to develop according to the rubric on the critical reasoning dimension of the Pancasila student profile because with this understanding students can solve simple problems about flat shapes in teaching materials. Critical reasoning abilities, which were initially very weak, tended to increase, although not instantly through the steps presented in the geometry learning design. The learning design is designed according to the initial problems in learning so that researchers can adjust to overcome these learning obstacles. At the beginning of the design of the learning design, the researcher made students orientate the problem to train students in solving problems and involve students to be active in learning activities, in this case the researcher applied one of the indicators in van Hiele's theory specifically, namely mentioning, making pictures, and grouping related with everyday life to facilitate understanding and train students' critical reasoning abilities.

Research conducted by Aprianti & Hidayat (2016), with the title Didactic Design of Flat Shape Grouping to Develop Static Communication of Elementary School Students, in the results of the study there were different abilities tested differently, but this study implemented the same learning design with van Hiele theory indicators which can develop students' mathematical abilities. In the design of learning geometry can facilitate the student profile of Pancasila in dimension of critical reasoning proven to be able to improve students' critical reasoning abilities, the learning presented is made more involved students to be active by orienting problems in learning activities, students are not only listeners in learning but as thinkers to achieve goals in learning to use reasoning abilities and think critically.

CONCLUSION

Based on result of the analysis and discussion, it can be concluded that the fourth-grade students' critical reasoning abilities increased when using the geometry learning design, this was proven based on the result of observations of students who were able to participate in learning activities that contained elements of dimensions of critical reasoning, and only a few students needed special teacher guidance. To follow and improve their critical thinking skills, and there is an increase in learning activities that build students' critical thinking skills in studying geometry. For the geometry learning design that facilitates the profile of Pancasila students the dimensions of students' critical reasoning can be said to be used, even though the situation has not fully gone according to the learning design, but as many as 27 students can achieve the learning objectives, and 29 students are able to do everything contained in the material teaching, so that it can be said that the 29 students easily understood the geometry of the flat shape material, and 32 students were enthusiastic in being active in receiving the material.

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