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Analysis of Mathematical Thinking Skills on Numerical Problems

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Abstract. This study aims to determine students' mathematical thinking skills on numeracy problems. The research method used is the descriptive qualitative method, with the subjects in this study being class VIII G students, totaling 20 students with even absent numbers. The instrument used in data collection used a numeracy test instrument using indicators of mathematical thinking ability from Stacey and interviews. Data analysis techniques used include data reduction, data presentation, and conclusion. The results showed the results of the analysis of the percentage of overall indicators, and the analysis of per indicator for each question of mathematical thinking ability 20 students with even-numbered absences in class VIII G was in the medium category, with an overall average of 33%.

Key words: mathematical thinking, numeracy problems, Stacey.

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INTRODUCTION

The importance of mathematics in schools makes mathematics a subject that has a certain character (Ikhwanudin, 2018), (Novalia & Rochmad, 2017), (Maryati & Priatna, 2018), The characteristics of mathematics require high mental abilities and attention to a theorem or definition (Subia et al., 2020), (Ibrokhimovich, 2022), in studying mathematics subjects it takes a relatively long time and requires perseverance and sincerity to be able to understand the material. However, this also causes mathematics to be a subject that is less attractive to students (Vermana & Mustika, 2021), (Wulansari et al., 2017). The development of science that requires students to be able to think critically, systematically, logically, and creatively cannot be denied anymore. This way of thinking can be developed by learning mathematics, because mathematics has a strong and clear structure and linkage between concepts that enable students to be skilled at rational thinking. (Kahar, 2017). This demanding way of thinking allows students to develop various abilities in mathematics.

Thinking is an activity that is carried out individually, while mathematical thinking can be interpreted as a dynamic process that allows us to increase the level of complexity of an idea that we can deal with, which can expand our understanding. (J. Mason, 2010).

The ability to think mathematically is a dynamic process that expands understanding and involves the use of mathematical skills, such as estimation, induction, deduction, specification, generalization, analogy, reasoning, and verification. (Mustafa et al., 2019). Meanwhile, according to (J. Mason, 2010) Mathematical thinking is a dynamic process by increasing manageable thinking and expands our understanding.

The minimum competency assessment that will be determined by the government should be part of the government's target in preparing students to face the 21st century with various skills that must be achieved. (Asrijanty, 2019). These skills are contained in the four 4C competencies, namely critical thinking and problem-solving, creativity, communication skills, and the ability to work collaboratively. (Dzurrahmi et al., 2021).

Mathematics learning given is not necessarily able to grow students' numeracy skills (Pangesti, 2018), teachers must make special learning plans that can improve students' numeracy literacy skills. Numerical literacy is the knowledge and skills of students in using a variety of numbers and symbols related to basic mathematics to solve practical problems in everyday life,

analyze information, and interpret analysis results to predict and make decisions (Kemdikbud, 2017).

METHODS

The type of research used in this research is descriptive qualitative research. The research subjects selected from this study were class VIII G SMP Negeri 1 Cirebon City, which consisted of 20 students with even absent numbers. Because since the pandemic, students in each class are divided into 2 study groups, namely even-numbered study groups and odd-numbered groups (Argianti & Andayani, 2021). Collecting data using a test instrument for students' mathematical thinking skills by looking at four mathematical thinking processes with eight indicators of Stacey's mathematical thinking ability, and interviews. The data analysis technique used is data reduction, presenting data, and conclusions. To test the validity of the data using triangulation.

RESULTS AND DISCUSSION

The study was conducted with two data collection techniques, firstly giving numeracy questions to determine students' mathematical thinking skills, and secondly interviewing student representatives with three levels of analysis of student learning outcomes, namely high, medium and low.

Table 1. Average Mathematical Thinking Ability Based on Indicator

No	Indicator	Presentation Per Indicator	Category
1	Identify the problem	88.00	High
2	Develop and try various possible strategies	66.67	High
3	Reflect on the ideas/ideas created	32.00	medium
4	Expanding the range of results obtained	32.00	medium
5	The analogy to similar cases	10.00	low
6	Looking for reasons why the results obtained can appear	14.00	low
7	Form a pattern from the results obtained	14.00	low
8	Make the opposite of the pattern that has been formed	10.00	low
Overall Average		33.33	medium

Based on Table 1, the average student learning outcomes obtained the average answers for each indicator. In the indicator of identifying problems, the results are 88.00%, this shows that the ability to identify students' problems is in the high category. Then, the indicator compiles and tries various strategies which may result in a result of 66.67%, indicating that this indicator is also in the high category.

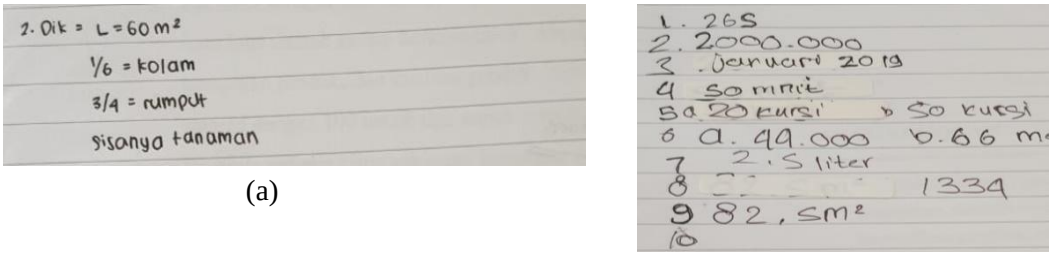
Furthermore, for indicators reflecting the ideas that are made, the results are 32.00%, in the medium category. Similar to the previous indicator, the indicator expanding the scope of the results obtained also obtained a result of 32.00%, which was in the medium category. In the analogy of the indicator, in a similar case, the result is 10.00%, which is in the low category.

In the indicator looking for reasons why the results obtained can appear and the indicators form a pattern from the results obtained, the results obtained are 14.00%, in the low category. The last indicator, which is making the opposite of the pattern formed, obtained a result of 10.00%, which is in a low category.

Specializing

The first aspect of the ability to think mathematically is the specializing aspect. In this aspect, there are two indicators of thinking ability, the first to identify problems, and the second to develop and try various possible strategies.

The problem identification stage is carried out to find out how students can identify what is known in the problem. There are many ways for students to identify problems. Some students pass this stage in working on numeracy test questions and immediately answer questions with answers without using methods or steps.



(a) (b)

Figure 1. Identifying the Problem

Based on Figure 1, it can be seen that the answers of students who can identify problems in questions well and students who skip the stage of identifying problems in solving math problems, simply write down the answers. Students who write down first what is known from the problem show they student is solving the problem in the right way or steps in mathematical concepts.

Based on the results of the numeracy test that has been done by the students, the problem identification indicator is in the high category, with the percentage of the numeracy test results in Table 1 of 88%. This shows that many students already understand or understand how to identify problems that exist in numeracy problems, but there are still some students who still do not use or perhaps understand how to identify problems that exist in numeracy problems.

The second indicator in the specializing aspect is to develop and try various possible strategies. This stage is carried out to find out how students can develop strategies or concepts that might be applied, and try various ways of solving that might be applied in the problem.

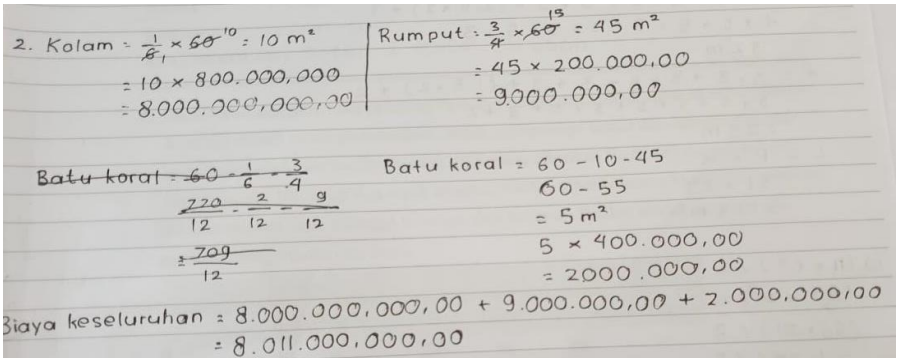


Figure 2. Developing and Trying Various Possible Strategies

Figure 2 shows the stages of student work showing indicators of developing and trying various possible strategies. Based on the results of the numeracy test tests carried out by students at this indicator stage, they are still included in the high category with a percentage of numeracy test questions of 66.67%, as shown in Table 1. This shows that most students have understood and used this stage.

Generalizing

The second aspect that exists in mathematical thinking skills is generalizing, in this aspect, there are 2 indicators of thinking ability, namely reflecting ideas or ideas that are made and the second is expanding the scope of the results obtained.

The first indicator in this aspect is the reflection of ideas or ideas made. This stage is carried out to find out how students can rewrite the ideas or ideas they have made.

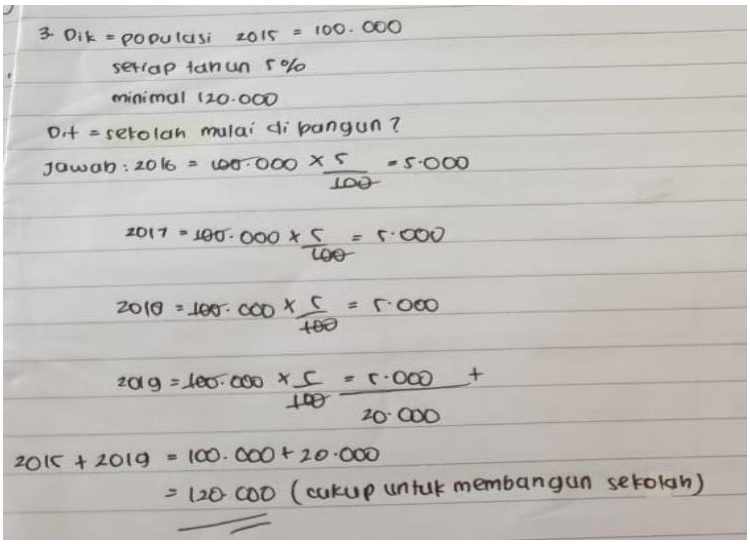


Figure 3. Reflecting on the Ideas/Ideas Created

Based on Figure 3, it can be seen that the student's answers reflected the ideas that were made. Based on the results of the numeracy test results carried out by students at this stage, they fall into the medium category, this is indicated by the percentage results of the numeracy test results contained in Table 1 of 32%, which means that some students still skip this stage. While the second indicator in this aspect is expanding the scope of the results obtained, where this stage is carried out to find out how students can expand the concepts or strategies that were previously applied. The following are the results of student answers containing indicators to expand the scope of the results obtained.

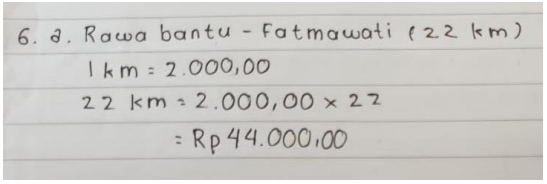


Figure 4. Expanding the Scope of Results obtained

Figure 4 shows that students reach the stage for indicators to expand the scope of the results obtained, based on the results of the numeracy test questions that have been done by students at this stage, they fall into the medium category as well with the percentage of the numeracy test results of 32%.

Conjecturing

In this aspect, there is only one indicator of thinking ability, which is to make an analogy in similar cases. At the analogy stage in similar cases, it is done to find out how students can create something new based on existing examples.

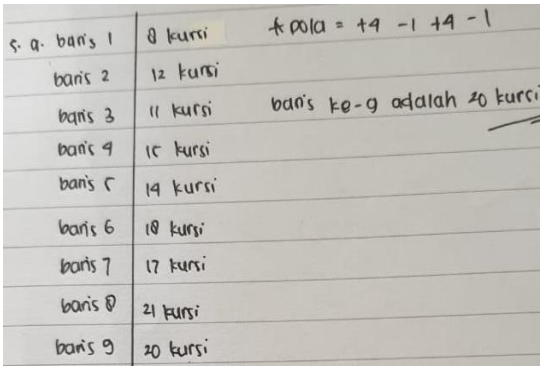


Figure 5. Analogy to Similar Cases

Based on Figure 5, it can be seen that the results of the answers are only a few students who have reached the indicator stage by analogizing in similar cases. Based on the results of the numeration test questions carried out by students at this stage, they fall into the low category which has a percentage of 10%.

Convincing

In this aspect there are 3 indicators of thinking ability, the first is looking for reasons why the results obtained can appear, the second form a pattern from the results obtained, and the third makes the opposite of the pattern formed. The first indicator in this aspect is looking for reasons why the results obtained can appear. This stage is done to find out how students can find or prove the final result can be obtained.

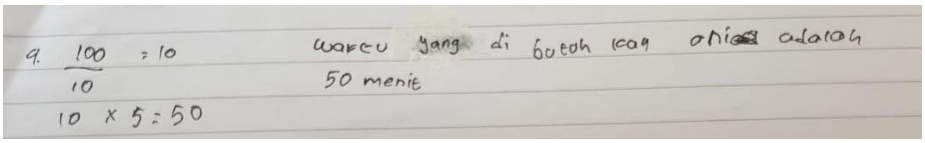


Figure 6. Finding the Reasons Why The Results Can Appear

Figure 6 shows the results of students' correct answers in the stage of looking for reasons why the results obtained can appear. Based on the results of the numeration test questions carried out by students at this stage, they fall into the low category which has a percentage of 14%. The second indicator is to form a pattern from the results obtained. This stage is carried out to find out how students can form new patterns or concepts from the results of the previous questions.

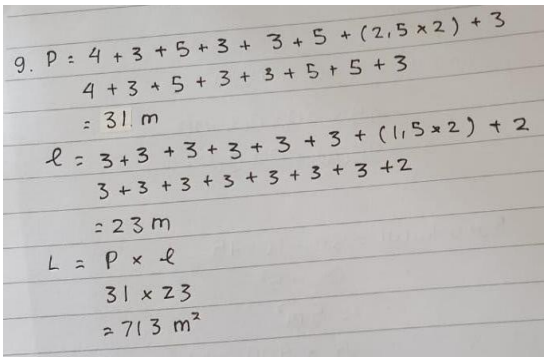


Figure 7. Forming a Pattern or Concept from the Results Obtained

In Figure 7 there are the results of students' correct answers in the stage of forming new patterns or concepts from the results obtained. Based on the results of the numeration test questions carried out by students at this stage, they fall into the low category which has a percentage of 14%. And the last indicator in this aspect makes the opposite of the formed pattern. This stage is done to find out how students can make the opposite of the previous pattern or concept.

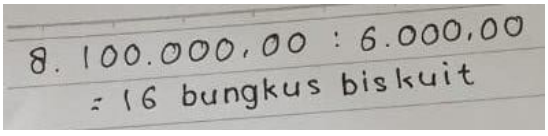


Figure 8. Making the Reversal of the Formed Pattern

Figure 8 shows the results of students' answers that are not quite right in the stage of making the opposite of the pattern formed. Based on the results of the numeration test questions carried out by students at this stage, they fall into the low category which has a percentage of 10%.

Based on the description above, it can be seen that high-ability students are at the stage of identifying the problems that exist in the questions, students can understand the problems that exist in the questions and convert them into mathematical form. Students are also highly capable at the stage of compiling and trying various possible strategies, students can develop and try various strategies, concepts, or steps that will be used to solve problems. Students' abilities tend to be at the stage of reflecting on ideas or ideas that are made, students can reflect or recast ideas or ideas obtained from identifying problems.

At the stage of expanding the scope of the results obtained, students' abilities tend to be moderate, because students tend not to expand or describe the concepts and methods they apply to get results. At the analogy stage in similar cases, students' abilities are low, because students are less able to create something new or connect problems with similar problems that already exist. At the stage of forming a pattern from the results obtained also the ability of students tends to be low, because students are less able to form patterns or concepts to get results. At the stage of making the opposite of the pattern formed, students' abilities tend to be low, because students are less able to make the opposite of patterns or concepts that have been formed.

The Thinking Process of Students with High Category Mathematical Thinking Ability

Interviews for students who have high mathematical thinking skills were conducted with 3 students of class VIII G with different materials, students with high abilities selected in this study included T1 students, T2 students, and T3 students. T1 students were selected to be interviewed with question number 16 about number material with sub-chapters of representation and indicators of achievement of learning outcomes to understand whole numbers, and aspects of thinking skills in this question, namely, Specializing, Generalizing, and Conjecturing. With indicators identifying the cake made by the mother, compiling and trying

to count the number of cakes of each type, expanding the scope by calculating the share that each person gets, making an analogy to the case of Randi who has eaten several parts of the cake. The following are the results of interviews with T1 students:

Figure 9. Problem Number 16 Dividing Snacks

Figure 9 is a question that asks the distribution of snacks to be distributed equally to three people, and with the given conditions. The thinking process carried out by T1 students for the first indicator is to identify the cake made by the mother, the first step taken to solve the problem is to count the number of cakes cooked by the mother. Furthermore, for the indicator of trying and compiling the number of cakes, the steps taken are counting 6 plates of pastries with 6 cakes on each plate, 4 plates of sandwiches in which there are 3 pieces of bread, and 3 plates of sugar bread with 4 pieces of bread on each plate. For indicators to expand the scope of the results obtained, the steps taken are adding up all the cakes and dividing them equally between Ayah, Kiki, and Randi. So that the Specializing stage for students with high mathematical thinking skills has been fulfilled. In the analogy indicator in a similar case, the step taken is that T1 students add up the cakes that Dad and Kiki get and then subtract the total number of cakes, then the number of cakes that Randi gets is reduced by the cakes that Randi has eaten.

T2 students were selected to be interviewed with question number 12 on data and uncertainty, with the sub-chapters on uncertainty and opportunity, with indicators of learning achievement in calculating the probability of simple events. The aspect of ability in question number 12 is Specializing and Convincing, with indicators looking for the red color that is not yet known, forming a pattern from the smallest to the largest, identifying the smallest opportunities.

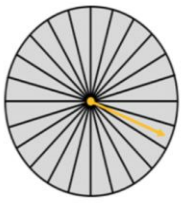
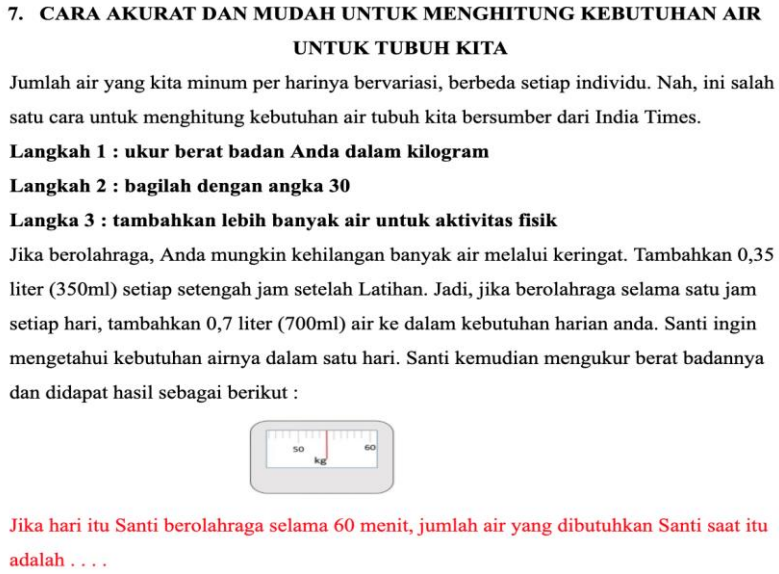


Figure 10. Smallest Probability Questions

The thinking process of students to answer the questions in Figure 10 is for the first indicator by looking for the red part that is not yet known by making the fraction a vertical line and making the numerator the same. The second indicator forms a pattern from the smallest to the largest, the steps are taken to arrange the fractions from the smallest to the largest. The

last indicator, which is to identify the smallest opportunity, is to look at and determine the smallest fraction from the array of fractions that have been compiled.

T3 students were selected to be interviewed with question number 7 about geometry and measurement with sub-chapters of geometry and indicators of achievement of learning outcomes to calculate the volume and area of shapes. The aspect of ability in question number 7 is Specializing, Generalizing, and Conjecturing. The indicators of existing abilities are identifying the amount of water we drink per day, compiling and trying to calculate the water needs of our bodies per day, expanding the range of results obtained from calculations, and introducing the case of Santi to students.



7. CARA AKURAT DAN MUDAH UNTUK MENGHITUNG KEBUTUHAN AIR UNTUK TUBUH KITA

Jumlah air yang kita minum per harinya bervariasi, berbeda setiap individu. Nah, ini salah satu cara untuk menghitung kebutuhan air tubuh kita bersumber dari India Times.

Langkah 1 : ukur berat badan Anda dalam kilogram

Langkah 2 : bagilah dengan angka 30

Langka 3 : tambahkan lebih banyak air untuk aktivitas fisik

Jika berolahraga, Anda mungkin kehilangan banyak air melalui keringat. Tambahkan 0,35 liter (350ml) setiap setengah jam setelah Latihan. Jadi, jika berolahraga selama satu jam setiap hari, tambahkan 0,7 liter (700ml) air ke dalam kebutuhan harian anda. Santi ingin mengetahui kebutuhan airnya dalam satu hari. Santi kemudian mengukur berat badannya dan didapat hasil sebagai berikut :

Jika hari itu Santi berolahraga selama 60 menit, jumlah air yang dibutuhkan Santi saat itu adalah . . . .

Figure 11. Problem Calculating Volume and Area of Building Space

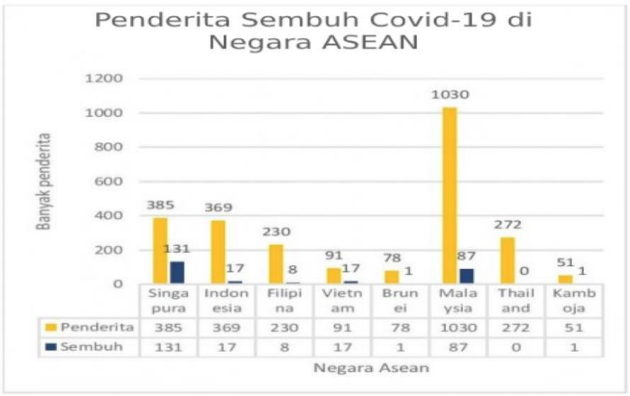
Figure 11 shows a question about the amount of water needed by the body during exercise. Based on the results of student interviews in answering these questions, the first indicator is identifying the water we drink per day, namely by calculating Santi's water needs from a known weight. The second indicator is compiling and trying to calculate the water needs of the body by dividing Santi's weight by 30. The indicator expands the scope of the results obtained, the step taken is to identify how much water Santi needs by looking at the physical activity Santi does in her daily life. one day. The last indicator is an analogy to Santi's case, the step taken is to add up what has been known previously, namely Santi's weight divided by 30, and added to the amount of water Santi needs by looking at the physical activities Santi does in one day.

Students with high mathematical thinking skills carry out a complete mathematical thinking process, namely the Specializing, Generalizing, Conjecturing, and Convincing stages. The indicators for each stage have been carried out by students belonging to this category.

The Thinking Process of Students with Medium Category Mathematical Thinking Ability

Interviews for students with moderate abilities were carried out with 3 students of class VIII G with different materials, students with moderate abilities selected in this study included S4, S5 students, and S6 students.

S4 students were selected to be interviewed for question number 13a, which is about data material and uncertainty with sub-chapters on data and its representation, indicators of achievement of learning outcomes in the questions, namely determining and using the mean, median, and mode. Aspects of the capabilities that exist in these questions are Specializing and Generalizing with indicators of the ability to identify the spread of the virus to ASEAN countries, arranging countries with sufferers and their recovery from the lowest to the highest, reflecting on healing from the lowest to the highest and sorting them alphabetically.



13.

Sejak Januari 2020, sejenis virus menimbulkan kegaduhan di Provinsi Wuhan CIna. Kemudian menyebar ke banyak Negara.

a. Diagram berikut merupakan data penderita yang sembuh dari wabah Covid-19 di beberapa negara ASEAN. Urutan negara-negara tersebut berdasarkan banyak penderita yang sembuh dilanjutkan dengan abjad nama negara secara meningkat adalah . . . .

Figure 12. Problem 13a Determine Mean, Median, and Modus

Figure 12 is a matter of reading graphs, the thought process that S4 did for the first indicator to identify the spread of the virus in ASEAN countries, the first step taken was to identify the diagram presented. The second indicator compiles countries with sufferers and their recovery from the lowest to the highest, the steps taken are to see and arrange Covid-19 sufferers from the lowest to the highest, then the recovered patients from the lowest to the highest. The next indicator reflects healing from the lowest to the highest and sorts them alphabetically, the step taken is to identify the order of healing from the lowest to the highest, then sorted alphabetically.

S5 students were selected to be interviewed for question number 15 about the number material with sub-chapters representation and indicators of achievement of learning outcomes to understand whole numbers. The aspect of ability contained in this problem is specific, generalize, and convincing, with indicators identifying the area of Pak Made's rice fields, reflecting the number of fish density/ha, forming a pattern to determine the number of fish according to type. The following are the results of interviews with students S5:

15. Perhatikan teks berikut!

MINA PADI

Mina padi adalah suatu bentuk usaha tani gabungan yang memanfaatkan genangan air sawah yang tengah ditanami padi sebagai kolam untuk budidaya ikan. Oleh karena itu, selain mendapat hasil panen yaitu padi, petani yang menerapkan sistem mina padi juga dapat memanen ikan. Pak Made adalah salah satu petani di Bali yang menerapkan sistem mina padi di sawahnya. Pak Made mengatakan bahwa dengan menerapkan sistem mina padi, pendapatan dari hasil panen beliau meningkat. "Akan tetapi, perawatan padi dan ikan pada sistem mina padi memang gampang-gampang susah", katanya.

Benih ikan yang ditebar oleh Pak Made di sawah beliau yang seluas 1,5 ha adalah ikan emas dan ikan nila yang masih berukuran 5 cm sampai dengan 8 cm dengan kepadatan 5.000 ekor/ha. Perbandingan benih ikan emas dengan benih ikan nila yang ditebar oleh Pak Made adalah 3 : 2. Harga bibit ikan nila adalah Rp500,00/ekor dan harga bibit ikan emas adalah dua kali lipatnya. Setiap pagi, Pak Made memberi pakan tambahan berupa dedak halus 250 kg/ha untuk ikan yang ada di sawahnya.

Setelah tujuh puluh hari, Pak Made memanen ikannya tersebut. Total ikan yang dipanen adalah 6.500 kg/ha. Perbandingan hasil panen ikan emas dan ikan nila sama dengan perbandingan benih ikan ketika ditebar. Harga ikan emas dan ikan nila yang dipanen oleh Pak Made berturut-turut adalah Rp30.000,00/kg dan Rp27.000,00/kg. Sekitar 2 bulan kemudian, Pak Made memanen padinya dengan hasil panen 5,7 ton/ha. Pak Made menjualnya dalam bentuk gabah kering panen (GKP) dengan harga Rp5.000,00/kg.

Tentukan urutan total benih ikan dari yang terkecil !

Figure 13. Identifying Rice Field Area

Figure 13 shows that the initial indicator in question number 15 is to identify the area of Pak Made's rice fields, the step taken is to identify the area of Pak Made's rice fields based on the information already in the text. The second indicator is reflecting the total density of fish/ha, the step taken in this indicator is to rewrite the information contained in the text about the total fish stock stocked. The last indicator is to form a pattern to determine the number of fish according to the type, the steps taken are the area of the rice field divided by the density of fish, the ratio of tilapia and goldfish known, then looking for the number of Nila fish, and goldfish, the last is sort the fish species from lowest to lowest. to the most.

S6 students were interviewed for question number 8, which is about geometry and measurement with the sub-chapter on geometry and indicators of achievement of learning outcomes, namely calculating the volume and surface area of the shapes. Aspects of the ability that exist in this question are specific, guessing, and convincing, with indicators of the ability to identify questions, forming a pattern from the results of the calculation of the number of biscuits that can fill the jar, making the opposite of the pattern that has been formed to find the maximum biscuit obtained with Rp. .100.000,00. The following are the results of interviews conducted with S6 students:

Figure 14. Lots of Biscuits in a Jar

In Figure 14, it can be seen that the first ability indicator in question number 8 is to identify questions, the first step is to identify the questions asked first. The second indicator is to form a pattern from the calculation of the number of biscuits that can fill the jar, the step taken is to look at the price of 1 biscuit package. The last indicator is to make the opposite of the pattern that has been formed to find the maximum biscuit obtained with Rp. 100,000.00. The step taken is to divide Rp. 100,000.00 by the price of 1 biscuit package, which is Rp. 6,000.00. And the result is looking for the closest number.

For students with medium mathematical thinking skills, some students have not applied all stages of the mathematical thinking process in ways or steps in completing, namely stages, Conjecturing, and several Convincing indicators.

The Thinking Process of Students with Low Category Mathematical Thinking Ability

Interviews for students with low abilities were conducted with 2 students of class VIII G with different materials, students with low abilities selected in this study included students R7 and students R8.

Student R7 was interviewed for question number 5a, the material in the question is about Algebra with sub-chapters of relations and functions, and indicators of achievement of learning outcomes, namely understanding patterns in number sequences and object configurations. Aspects of the ability in this problem are guessing and discussing with analogy indicators in cases of similar number patterns, identifying rows of seats in the theater, and compiling and trying various strategies to find many seats in the back row. The following are the results of interviews conducted with students R7 :

5. Gedung Pertunjukan

Dalam suatu gedung pertunjukan terdapat 9 baris kursi. Pada baris pertama terdapat 8 kursi, baris kedua 12 kursi, baris ketiga 11 kursi, baris keempat 15 kursi, baris kelima 14 kursi, dan seterusnya mengikuti pola yang sama.

(Gambar hanya ilustrasi)

a. Berapa banyak kursi pada baris belakang ?

Figure 15. Number Pattern Problem

Figure 15 shows that the first ability indicator is in question number 5a, which is to make an analogy in the case of a similar number pattern, the first step is to determine the pattern contained in the problem. The next indicator identifies the row of seats in the theater, the step taken is to see how many rows are there in the question. The last indicator is to develop and try various strategies to find a lot of seats in the back row, the steps taken are to look at the pattern in the question and then count it according to the row that is known in the question, and see the number of seats in the back row.

Student R8 was interviewed for question number 6a, the material on algebra with sub-chapters of equations and inequalities and indicators of achievement of learning outcomes solving linear equations with 1 variable or a system of linear equations with two variables. Aspects of thinking skills in question number 6a are speculating, generalizing, and guessing, with indicators of the ability to identify available transportation services, compiling and trying various possible strategies to get to Fatmawati, reflecting on ideas by adjusting the distance traveled, expanding the scope of results obtained from the distance traveled, time and cost, is analogous to the case of Adi who will depart from a dead-end swamp to Fatmawati. The following are the results of interviews conducted with students R8:

6. Masyarakat sudah dimudahkan dengan tersedianya berbagai layanan angkutan seperti KRL (Kereta Rel Listrik), MRT Jakarta (Moda Raya Terpadu Jakarta), maupun transportasi *online*. Biaya yang ditarifkan menyesuaikan dengan jarak yang ditempuh pengguna layanan. Melalui mesin pencarian *maps*, seseorang dapat melihat berbagai pilihan untuk menuju suatu tempat. Seperti tabel di bawah ini. Dengan catatan MRT dalam masa percobaan maka belum dikenakan tarif.

KRL

(Dari tujuh stasiun perhentian KRL Rawa Buntu - Tanah Abang, empat yang ditampilkan)

Rawa Buntu → Tanah Abang (21 km)

Stasiun	Waktu
Rawa Buntu	11:39
Jurang Mangu	11:48
Kebayoran	12:00
Tanah Abang	12:12

Tanah Abang → Sudirman (2,8 km)

Stasiun	Waktu
Tanah Abang	12:21
Karet	12:25
Sudirman	12:28

Tarif KRL untuk 1-25 km pertama adalah Rp3.000,00 dan + Rp1.000,00 tiap 10 km berikutnya.

MRT

(Dari 11 stasiun perhentian, enam yang ditampilkan)

Stasiun	Waktu
Sudirman	12:32
Bendungan Hilir	12:36
Senayan	12:40
Blok M	12:45
Haji Nawi	12:50
Fatmawati	12:55

Ojek Online

Tanah Abang → Fatmawati (15 km)

Kebayoran → Fatmawati (13 km)

Rawa Buntu → Fatmawati (22 km)

Tarif online bike adalah Rp2.000,00 per km, dengan waktu tempuh rata-rata untuk 1 km adalah 3 menit.

a. Adi akan berangkat dari Rawa Buntu ke Fatmawati. Berapakah biaya minimal yang akan dikeluarkan Adi ?

Figure 16. Identification of Transport Services

Figure 16 shows the first capability indicator in the question, namely identifying the available transportation services, the first step is to look at and observe the transportation services available in the text. The second indicator is to develop and try various possible strategies to get to Fatmawati, the step taken is to try to arrange available transportation services to get to Fatmawati. Furthermore, the third indicator is to reflect on the idea by adjusting the distance traveled, the step taken is to rewrite the information obtained from the text about the distance traveled from Rawa Buntu to Fatmawati. The next indicator is to expand the range of results obtained from the distance traveled, time, and cost. The steps taken are to look at factors other than the distance traveled, namely time and cost. The last indicator is an analogy to the case of Adi who will depart from Rawa Buntu to Fatmawati, the step taken is to

make the final result of the case of Adi who departs from Rawa Buntu to Fatmawati at a very low cost.

Students with low mathematical thinking skills only carry out mathematical thinking processes at the Specializing stage, for some students work on several indicators at the Generalizing and Conjecturing stages.

CONCLUSION

The mathematical thinking ability of 20 students with even absent numbers in class VIII G SMP N 1 Cirebon City is in the medium category. This is obtained from the results of the application of the given numeration questions with an overall average of 33,33%. The percentage is obtained from the analysis of student learning outcomes. The analysis carried out, among others, analysis of the percentage of overall indicators, and analysis per indicator for each question. For indicators that are included in the high category, most students are able, or apply, to identify the problems that exist in the problem into mathematical form in solving problems. But there are still students who do not use or may not be able to apply the indicators to identify this problem, this is indicated by the answers of students who directly write down the results of their answers and do not use methods or concepts in solving numeracy problems. Indicators in the medium category, are some students who have not applied this indicator in ways or steps in solving problems. While the indicators are in the low category, many students do not use or apply these indicators in ways or steps to solve problems.

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