Analysis of Students' Mathematical Literacy Skills in Solving Word Problems on Probability Material

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Abstract

This research aims to describe the mathematical literacy abilities in class XII TKR1. The study involved 17 students who were classified at the level of mathematical ability. Classification of students' mathematical ability levels is based on the average score of daily mathematics tests based on Learning Goal Achievement Criteria (KKTP). The research method used is qualitative description. The data in this research were obtained from observations, tests and interviews. The test used is a mathematical literacy ability test which includes 4 questions which refer to indicators of mathematical literacy ability. The test results show that the literacy of class XII TKR1 students was still low based on the KKTP score. Apart from that, based on the indicators, SS and SR subjects have not met the indicators, while ST subjects have only one indicator that has not met the.

Keywords: *Mathematical Literacy; KKTP; Opportunity Material.*

Abstrak

Penelitian ini bertujuan untuk mendeskripsikan kemampuan literasi matematis siswa kelas XII di SMK Teratai Putih Jakarta dalam memecahkan soal cerita materi peluang. Subjek dilakukan di kelas XII TKR1 sebanyak 17 siswa yang digolongkan pada tingkat kemampuan matematika. Penggolongan tingkat kemampuan matematika siswa berdasarkan nilai rata-rata ulangan harian matematika berdasarkan Kriteria Ketercapaian Tujuan Pembelajaran (KKTP). Metode penelitian yang digunakan adalah deskripsi kualitatif. Data dalam penelitian ini didapatkan dari hasil observasi, tes, dan wawancara. Tes yang digunakan adalah tes kemampuan literasi matematis berjumlah 4 soal yang mengacu pada indikator kemampuan literasi matematika Hasil tes menunjukkan masih rendahnya literasi para siswa kelas XII TKR1 berdasarkan nilai KKTP. Selain itu berdasarkan indicator, subjek SS dan SR belum memenuhi indicator sedangkan subjek ST hanya satu indikator yang belum memenuhi.

Kata Kunci: Literasi Matematika; KKTP; Materi Peluang.

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INTRODUCTION

21st century education requires everyone to develop all their competencies, one of which is literacy skills. Mathematical literacy skills are very important for students to have because they can help students use mathematics in real life, use efficient methods for problem solving, assess whether the results obtained are reasonable and analyze situations and draw conclusions (Genc et al., 2019). Mathematical literacy includes concepts, procedures, facts, and tools to describe, explain, and predict phenomena. Mathematical literacy helps individuals understand the role of mathematics in the world and make reasoned judgments and decisions needed by constructive, engaged, and reflective 21st century citizens. The Organisation for Economic Cooperation and Development (OECD) has published a publication focused on 21st Century skills and has sponsored a research project entitledThe Future of Education and Skills: Education 2030.The key skills of the 21st Century emphasize critical thinking, creativity, research and inquiry, self-direction, initiative and persistence, use of information, systematic thinking, communication and self-reflection.

According to Ojese in (Kusumawardani, Wardono, & Kartono, 2018) Mathematical literacy is the ability to understand and utilize the basics of mathematics in everyday life. Mathematical literacy allows individuals to know the function or application of mathematics in everyday life and apply it to create the right decisions as citizens who contribute to development, have empathy, and the ability to reflect. Those who have cognitive talent in mathematical literacy are far superior to those who can only interpret, analyze, and evaluate. Therefore, it can be stated that an individual has a special level of mathematical literacy ability. According to Yunus in (Hidayati, Wulandari, Maulyda, Erfan, & Rosyidah, 2020) mathematical literacy is the ability to understand and use mathematics in various contexts to solve problems, as well as the ability to explain how to apply mathematics to others. This process requires the ability to reason quantitatively, which begins with the ability to recognize and understand problems. There are many examples of contexts, one of which is the use of everyday language in the form of discourse (written or spoken) including mathematical concepts that must

be understood in each sentence and converted into mathematical language. The causes of the low level of mathematical literacy of Indonesian students include personal, instructional, and environmental factors. The first factor, namely personal factors, is assessed from students' impressions of mathematics, enthusiasm for learning mathematics, and self-confidence in their mathematical abilities. This can be shown by the opportunities given to students to gain experience in solving various problems. In addition, in terms of intensity, quality, and training techniques, instructional factors are components of the second factor. Meanwhile, environmental factors can be studied depending on various things ranging from the nature of the teacher to the existence of learning media in schools. Teachers are required to have a greater understanding of everyday problems to educate students on how to solve these problems (Hidayati, Wulandari, Maulyda, Erfan, & Rosyidah, 2020).

With mathematical literacy, a person can have the ability to recognize and use mathematical functions or applications in everyday life. Improving good mathematical literacy skills can improve human resources (Masjaya & Wardono, 2018), such as having the ability to think more systematically, analytically, and critically in making the right decisions (Khasanah et al., 2023). However, according to Hidayati (2020), the level of ability of students in Indonesia in reading, writing, and understanding mathematics at various stages of education is still lacking. The results of the 2022 Program for International Student Assessment (PISA) study (December 5, 2023), Indonesia is ranked 68th with a score; mathematics (379), science (398), and reading (371). What is somewhat worrying is that only 18% of students can obtain mathematics skills of at least level 2. While the other 82% of information is not available. Level 2 means that students can interpret and recognize, without direct instruction, how simple situations can be represented mathematically (e.g. comparing the total distance on two alternative routes, or converting prices into different currencies. Almost none of our 15-year-olds perform well in mathematics, namely those who obtain level 5 or 6 in mathematics assessments (OECD average: 9%). According to Zahroh et al. (2020) there are three main things that are the main ideas of the concept of

mathematical literacy, namely: a) The ability to formulate, apply, and interpret mathematics in various contexts which are hereinafter referred to as the mathematical process, b) The involvement of mathematical reasoning and the use of mathematical concepts, facts, and tools to describe, explain, and predict phenomena, c) The benefits of mathematical literacy skills are that they can help someone apply mathematics to everyday life as a form of constructive and reflective community involvement.

Mathematical literacy skills are very important because mathematics is closely related to everyday life (Sari, 2015). Mathematical literacy skills can improve human resources (Masjaya & Wardono, 2018). Mathematical literacy can help someone understand the role or usefulness of mathematics in everyday life. In addition, mathematical literacy also emphasizes students' ability to analyze, reason and communicate ideas effectively in solving mathematical problems they encounter (OECD, 2009). This is what connects the mathematics learned in the classroom with various real-world situations. According to Abdussakir (2018), mathematical literacy does not only involve the use of procedures, but requires basic knowledge and competence as well as self-confidence to apply their knowledge in everyday life. This means that someone who has mathematical literacy skills can estimate, interpret data and solve problems in everyday life. In addition, understanding mathematics is very important for students' readiness to live in modern society because mathematics is an important tool for students when they face problems in everyday life (Muzaki, 2017).

Mathematical literacy is also in line with the objectives of mathematics learning in Indonesia (Wardhani & Rumiati, 2011). Kartadinata (2011) stated that the overall goals of education are individual goals, collective goals, and existential goals. Individual goals are goals that must be achieved by each student in developing their potential. Collective goals are goals that must be achieved in the form of the intelligence of the nation's life. While existential goals are goals that must be realized in the character of a dignified nation that has strong competitiveness and resilience. The demands of students' abilities in mathematics are not just about having the ability to count, but the ability to think logically,

critically and systematically in solving problems. This problem solving is not only in the form of routine questions but more about problems faced every day. This mathematical ability is called mathematical literacy. Someone who has mathematical literacy (literacy) does not just understand mathematics but is able to use it in solving everyday problems. In addition, the results of several previous studies examined the importance of students' mathematical literacy skills to be studied, namely: 1) Analysis of prospective teacher students (Prabawati, 2018); 2) Development of realistic mathematics problems (Mangelep & Kaunang, 2018); 3) The concept of fractional number operations (Suwarto, 2018); and 4) Development of problem-based LKS (Prabawati, Herman, & Turmudi, 2019).

Based on the results of observations and interviews conducted with students of SMK Teratai Putih Jakarta, it was found that their mathematical literacy skills were still low. This can be seen from the difficulties students had in solving the problems given. These difficulties were apparent when students did not write down what was asked in the problem and were unable to identify important questions contained in the problem. As a result, students were unable to meet the communication process indicators in mathematical literacy. In addition, students also did not write down the steps in changing real problems into mathematical forms. This is reflected in their less realistic answers when solving problems and drawing mathematical conclusions. In some cases, students' final answers did not match those requested in the problem, for example determining the length of each edge of a square without showing the initial calculation process. As a result, students were unable to meet the mathematization process indicators in mathematical literacy. Furthermore, students also had difficulty in re-representing objects in mathematical problems. Thus, it can be concluded that they have not met the representation process indicators in mathematical literacy. Related to the potential strengths and weaknesses of mathematical literacy skills as mentioned above, an in-depth analysis is needed on how the mathematical literacy skills of vocational school students are. The results of this study will provide an overview of the mathematical literacy skills of vocational school students. The purpose of this study is to determine the level of mathematical

literacy skills of students at Teratai Putih Jakarta Vocational School in Solving Mathematical Problems in the Form of Story Questions on Probability Material.

In addition, the results of several previous studies examined the importance of students' mathematical literacy skills to be studied, namely: 1) Analysis of Students' Mathematical Literacy Skills (Muzaki, A. 2019); 2) Analysis of Junior High School Students' Mathematical Literacy Skills on Triangle and Quadrilateral Materials (Widianti, W., & Hidayati, N. 2021); 3) Profile of students' mathematical literacy skills (Styawati, R. D., & Nursyahida, F. 2017). The difference between this study and several previous studies lies in the research subjects using vocational high school students who have not been well described in terms of students' mathematical literacy skills at the vocational high school level.

RESEARCH METHODS

This study uses a descriptive qualitative approach method, which takes place at SMK Teratai Putih Jakarta with the research subjects followed being 17 class XII TKR1 students at SMK Teratai Putih Jakarta. The research subjects are grouped based on the Learning Objective Achievement Criteria (KKTP) according to the categories that can be presented as in Table 1 below.

Table 1. Students' Mathematics Ability Level

No	Interval Value	Category
1	Value > 85	High
2	Mark≤72 and Value≥ 85	Currently
3	Value < 72	Low

Data collection was carried out using a mathematical literacy test consisting of 4 questions and interviews with one student each in the high, medium and low categories. The instruments used in this study were written tests and interviews. The first instrument, namely instrument 1, was a mathematical knowledge ability test to obtain a classification of students' mathematical abilities in the form of students' mathematical ability levels. The second instrument was instrument 2,3, namely a student literacy ability test to measure the profile of

students' mathematical literacy abilities after students had been grouped and classified into categories for each level of students' mathematical abilities. The interview guideline instrument was an instrument used to help dig up information about students' literacy ability profiles and to find out what factors influenced students' mathematical literacy abilities.

The test results are in the form of written answers that refer to students' ability to work on mathematical literacy problems. Interview data are in the form of students' mathematical literacy questions, starting from students' habits in solving mathematical problems and studying. Interview data are in the form of students' answers about the difficulties in working on mathematical literacy problems. After that, the data analysis technique used is to analyze using qualitative analysis methods with the stages of reducing data, presenting data, and drawing conclusions. Students' ability to work on mathematical literacy problems is based on the indicators presented in the following table.

Table 2. Mathematical Literacy Ability Indicators

No	Indicator	Description
1	Formulating the situation mathematically	Can write information related to questions, whether concepts, facts or mathematical procedures
2	Using mathematics in problem solving	Can develop and implement strategies to obtain mathematical solutions Can identify problems well
3	Applying, interpreting and evaluating mathematics	Can evaluate the answers from the solutions that have been carried out by rechecking. Can interpret the results of the solution well.

RESULTS AND DISCUSSION

After conducting a literacy ability test with opportunity material on 17 class XII TKR1 students, the results were obtained as in the following table.

Table 3. Percentage of Students' Mathematical Literacy Ability with Value Intervals

No	Interval Value	Category	Number of Students	Presentation
1	Value > 85	High	3	18%
2	Mark≤72 and Value≥ 85	Currently	5	29%
3	Value < 72	Low	9	53%

Based on the table above, the mathematical literacy skills in class XII TKR1 are in the low category, 53% of the 17 students who took the test. In Table 3, only one student is taken from each student with high, medium and low categories. The researcher calls the subjects ST (subjects for the high category), SS (subjects for the medium category) and SR (subjects for the low category), which will be discussed according to the indicators of mathematical literacy abilities.

a. Questions and Results of Mathematical Literacy Skills No. 1

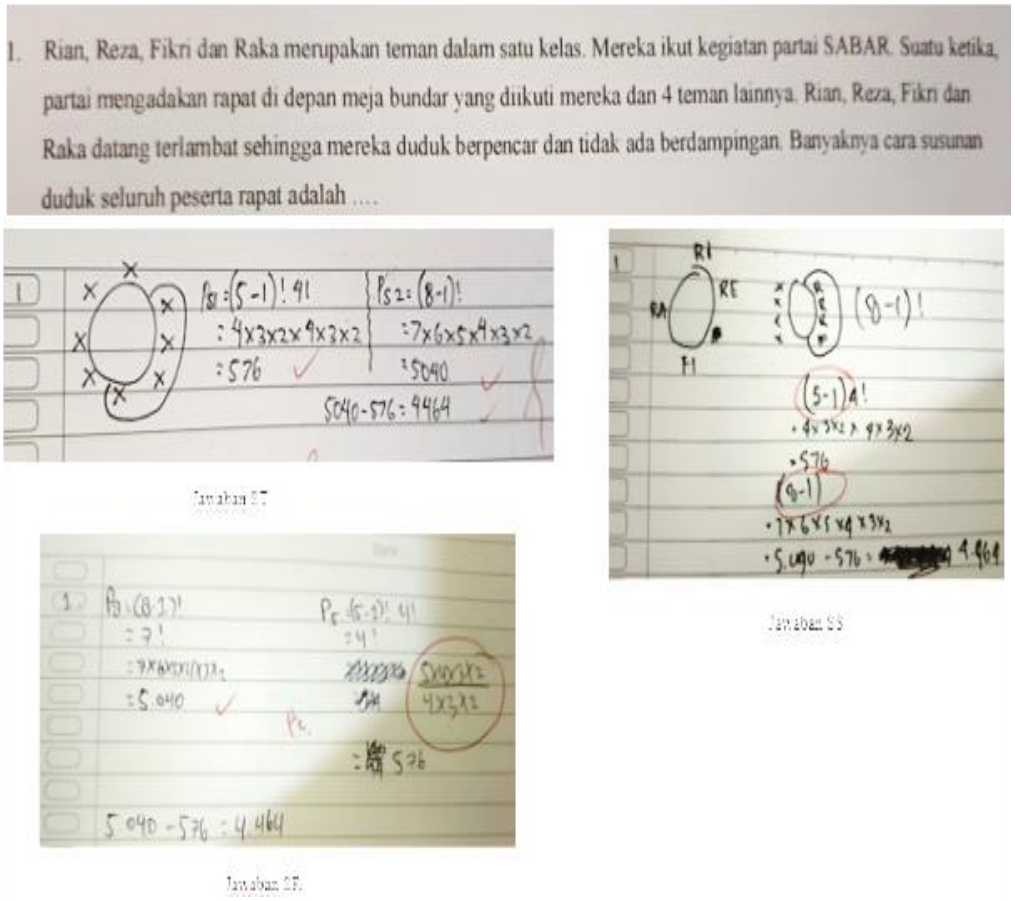

Figure 1. Question and Answer Results for No. 1

1. The first indicator, formulating the situation mathematically

In the indicator of formulating the situation mathematically based on the answers obtained. Subjects ST and SS wrote down what was known by drawing a circle assumed to be a table and the symbol X as the people surrounding the table. They also circled the X mark which assumed the people were sitting side by side so that the subjects found it easier to solve the problem.

In subject SR, the final answer was wrong because the calculation was also wrong. Initially, the calculation was correct when he assumed everyone was sitting in a circle. When asked during the interview, subject ST and subject SS were able to answer and explain the question, while SR had not mastered the sequence of answers. Here are the results of their interviews.

P : In your opinion, what is the problem in question No. 1?
ST : There are many ways to sit at a round table. So there are 4 people who are "best friends". But when the meeting comes late so they sit separately
SS : There is a party activity, they will have a meeting sitting in front of a round table. There are 8 people in the meeting. 4 people sit separately because they are late.
SR : Party activities that want to meet
P : What information is known in the question?
ST : People sitting at a round table of 4 people are not allowed to sit side by side.
SS : Count the number of ways to sit at a round table with 8 people where 4 people cannot sit next to each other.
SR : 4 people sit separately from the 8 people sitting in front of the round table
P : Why did you do that?
ST : It is more clearly illustrated by describing the condition of the problem so that it is easier to imagine it.
SR : I only know how to answer that way

2. The second indicator, using mathematics in problem solving

Following are interviews with the three subjects;

P : Can you do this problem with mathematics?
ST : Can
SS : Bisa yourself
SR : Of course you can

P : How to solve it?
ST : With cyclical permutation. First, count a group (4 people) into one and then count the rest of the people using cyclical permutation. Then count everyone again in the same way. After that, the result is the difference between the two answers.
SS : Use cycles. Count all of them first. Then count the four of them. After that, subtract all of them from the four of them.
SR : Use cyclic, but I can't solve it. Forgot how.
P : Why use the solution steps?
ST : Our teacher teaches such a way to make it easy to solve.
SS : There was once an assignment with almost the same problem and the method was like that.
SR : Told by friend while working

So, from the results of the answer sheets and interviews of the three subjects in using mathematics in problem solving because they were able to state fluently and in detail how the procedure or steps to work on the problem by linking the facts found in the problem, subjects ST and SS were able to do it while SR was not able. He only got answers based on his friends.

3. The third indicator, applying, interpreting and evaluating mathematics

In this indicator based on the results of the three subjects' answers, the students were unable to write conclusions from the results obtained. They only wrote the final result, namely the calculation result. When interviewed, subjects ST and SS were able to interpret the results of their calculations into the real world, while SR was unable because he could not calculate multiplication. Here is the interview.

P : What is the result obtained from question No. 1?
ST : 4464 ways
SS : 4464
SR : 576
P : What conclusion do you get?
ST : Because Rian, Reza, Fikri and Raka came late, they could not sit side by side. So they can sit between 4 other friends in 4464 ways.
SS : They can sit at a round table 4464 ways in which 4 people do not sit next to each other.
P : Have you checked the work steps you have taken?

ST : Just check once, by recalculating the factorial calculation. Afraid of miscalculation
SS : Yes. Check by asking your friend next to you, is the result the same? He…he…he…
SR : No

b. Questions and Results of Mathematical Literacy Skills No. 2

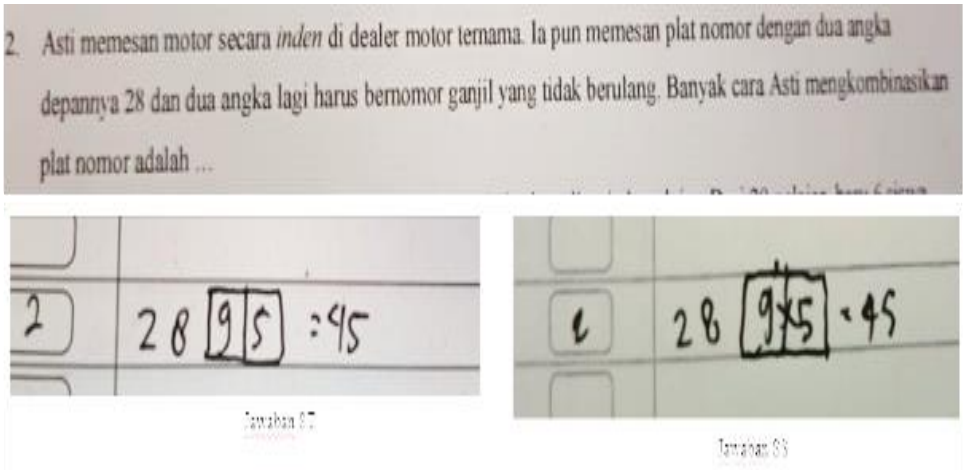

Figure 2. Question and Answer Results for No. 2

1. The first indicator, formulating the situation mathematically

Subjects ST and SS did not write the formulation of the problem situation in mathematics. They directly wrote the formula of the question asked. Subject SR had no answer. When interviewed, subjects ST and SS were able to answer questions and were able to change them into mathematical form. This can be seen based on the following interview results:

P : In your opinion, what is the problem in question No. 2?
ST : Asti bought a motorbike with a plate number ordered with the first two numbers numbered 28. The other two numbers are odd numbers and cannot be repeated. So I made 4 boxes containing the first two boxes numbered 28 and the two empty boxes are the remaining numbers that must be calculated.
SS : Ordering a motorbike with the license plate number that Asti wants. The front number of the plate must be 28 so the other 2 numbers that must be searched for are odd numbers and cannot be repeated.
SR : Don't know. (Scratching his head)
P : What information is known in the question?
ST : What is known, two numbers are known and an odd number that does not repeat

SS : There are two known numbers, then find two more odd numbers
SR : …….(Just grinning)
P : Why did you do that?
ST : It is easier to calculate the combination of numbers.
SS : The license plate has 4 numbers so I made 4 boxes. Two boxes are filled with the number 28, the rest are counted. So it's easy to count.
SR : Of course….

2. The second indicator, using mathematics in problem solving

The use of mathematics in problem solving for the second indicator, can be implemented by subjects ST and SS. They use mathematics with enumeration rules and they also know the conditions that must be used for calculations in problems, namely odd numbers. The following is an interview with all subjects.

P : Can you do this problem with mathematics?
ST : Can
SS : Yes, yes
SR : Can
P : How to solve it?
ST : Initially, a box was made according to the number of plate numbers, namely 4 numbers. Then the first two numbers were given the number 28. Because the odd number asked, the last number or the last box was given an odd number. Odd numbers from 1 - 9 are 5. The empty box is filled with the number 0 - 9 minus 1, because the numbers cannot be repeated so that 9 is obtained. After that, the number 5 is multiplied by the number 9.
SS : Just multiply the two numbers in the box where the last box must be an odd number. The empty box is filled with other numbers from 0 – 9 which has been taken 1 odd number.
P : Why use the solution steps?
ST : It is easier to use a box or a counting rule.
SS : Our teacher teaches such a way to make it easy to solve.
SR : Forgot how

3. The third indicator, applying, interpreting and evaluating mathematics

Although the answer was correct, subjects ST and SS did not write down the conclusions obtained and only wrote the final results. When interviewed, subjects ST and SS were able to interpret the results well. Here is the interview:

P : What is the result of question No. 2?
ST : 45 ways
SS : 45 ways
P : What conclusion do you get?
ST : Asti can order plate numbers for two odd numbers in 45 ways
SS : There are 45 possible combinations that can be obtained from a number plate.
P : Have you checked the work steps you have taken?
ST : No. I am sure that by calculating 9 times 5 it is 45.
SS : Ng, because 9 x 4 is 45

c. Questions and results of mathematical literacy skills No. 3

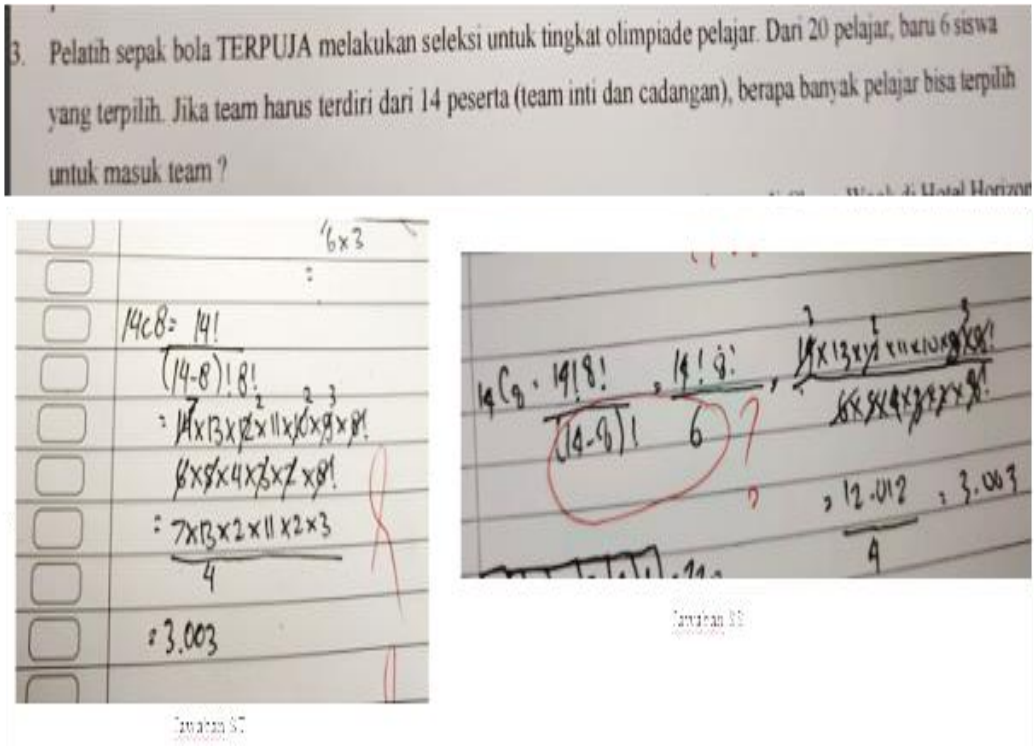

Figure 3. Question and Answer Results for No. 3

1. The first indicator, formulating the situation mathematically

From the answer results, subject ST did not write the formulation of the situation from the question, such as known, asked and answered. He just wrote the combination formula along with the calculation. In the answer of subject SS, it was the same and the calculation result was wrong. While subject SR did not answer.

When interviewed, what problems are in the questions, subject ST can answer sequentially. Subject SS can also answer the problems in the questions. Not so, subject SR only answered, do not know. Here is the interview:

P : Question no. 3, what problem is being asked?
ST : The coach wants to conduct a selection from 20 students and 6 students have been selected, there are only 14 students left... The problem is if only 14 students participate, how many ways can students enter the team?
SS : There are 20 students, 14 of whom will be selected for the Olympiad. 6 students have been selected, meaning 20 minus 6 and 14 minus 6. So there are only 8 students who will be selected from 14 students.
P : What information do you know from this question?
ST : Only 14 students will take part in the selection from the 20 existing students, with the note that 6 students have been selected.
SS : Use a combination method
P : Why is it done that way?
ST : By doing one by one the calculations for the question, I can answer it.
SS : To make it easy. I forgot the combination formula so the formula answer is wrong.

2. The second indicator, using mathematics in problem solving

In question No. 3, subjects ST and SS use mathematics according to the combination formula in solving the problem. They can also explain when interviewed. Here is the interview:

P : Did you solve the problem using mathematics?
ST : Can
SS : Can
P : How to solve it?
ST : Use the combination formula method
SS : Combination count
P : Why do you use this method?
ST : Use a combination because question no. 3 does not pay attention to the order of objects, so anyone can be combined.
SS : I was taught about this question and used this method, although I forgot the formula so my answer was wrong.

3. The third indicator, applying, interpreting and evaluating mathematics

P : What is the result obtained for question no. 3?
ST : Three thousand three combinations
SS : 3.003
P : In your opinion, what conclusion was reached?

ST : The coach can choose as many as three thousand three-way teams from 20 students where 6 people have been selected in advance.
SS : There are 3,003 ways for a coach to pick an Olympic team
P : Have you looked back at your calculations?
ST : Yes, because this is a calculation that needs to be checked again. Afraid of being wrong
SS : Yes, but it turns out my formula was wrong and I got the answer from my friend next to me.

d. Questions and results of mathematical literacy skills No. 4

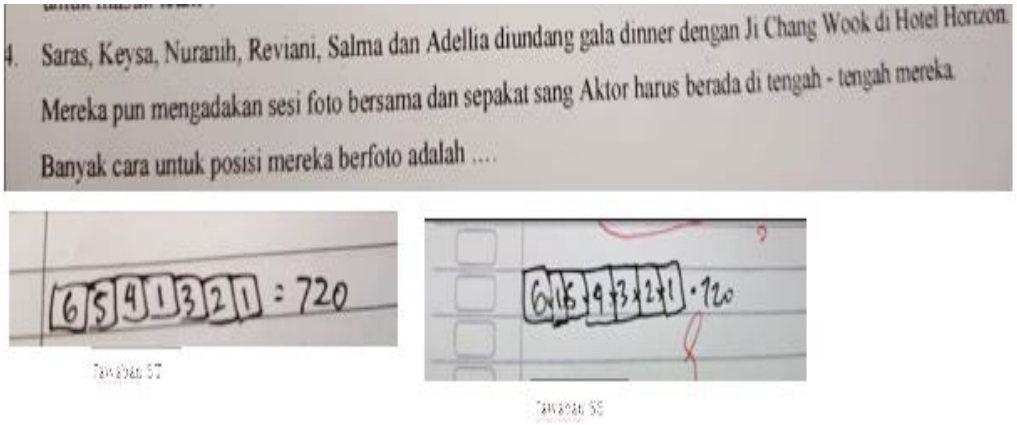

Figure 4. Question and Answer Results for No. 4

1. The first indicator, formulating the situation mathematically

In the answers of subjects ST and SS, their answers are correct. However, they did not write the formulation of the situation mathematically so they did not meet the first indicator. Subject SR had no answer. All three subjects were able to answer the question well. Here is the interview:

P : Question no. 4, what problem is being asked?
ST : Taking a photo with a Korean idol. How do 6 people take a photo with their idol where the idol has to be in the middle?
SS : How to take a photo with your idol, provided that your idol is in the middle when taking the photo.
SR : Want to take a photo with your idol.
P : What information do you know from this question?
ST : It is known that there are 6 people and a Korean idol. Asked, how many ways they can take a photo in a row with the condition that the idol is in the middle of them
SS : From the question, 6 people will take a photo lined up sideways with 1 idol. How many ways will they take the photo with the condition that the idol must be in the middle?

SR : How many ways can 6 people line up their photos with their idol in the middle?
P : Why is it done that way?
ST : By using the enumeration method, it is easy to calculate.
SS : By using a box according to the number of people to be photographed, it is easier for me to count.
SR : Didn't answer because I couldn't finish it.

2. The second indicator, using mathematics in problem solving

In question no. 4, subjects ST and SS used mathematics according to the combination formula in solving the problem. They used the enumeration rule to calculate the problem. When the interview was conducted, subjects ST and SS were able to explain their results. Here is the interview:

P : Did you do question number 4 using mathematics?
ST : Can
SS : Can
P : How to solve it?
ST : Use the box and then use the enumeration rule
SS : Counting rules of enumeration
P : Why do you use this method?
ST : With the enumeration rule, it is easier to answer the many ways they take photos with the condition that the Idol is among them.
SS : It's easy to calculate. Just multiply them all after the numbers are made.

3. The third indicator, applying, interpreting and evaluating mathematics

In the third indicator, the results of the ST and SS subjects' answers are the same. They can apply, interpret and evaluate their answers. It is proven that when the interview was conducted, they were able to answer according to their answers.

P : Your answer for number 4, what is the result?
ST : 720
SS : 720
P : In your opinion, what conclusion was reached?
ST : By calculating using the enumeration rule, there will be many ways to ask. So these are six people standing sideways and the Idol is in the middle of them. Calculated if Saras is already on the side then it is impossible to be in the second row, so 6 is subtracted from one for the second row. The third row subtracts one from the results of the second row and so on until the value is 1.

SS : There are 720 ways to get a photo session position.
P : Have you looked back at your calculations?
ST : Can
SS : Yes, afraid of being wrong.

The mathematical literacy ability of class XII at SMK Teratai Putih Jakarta for the material of probability is very low. This is proven by the failure to fulfill the literacy ability indicators as in the following table:

Table 4. Analysis of Mathematical Literacy Skills of Class XII of SMK Teratai Putih Jakarta Based on Indicators

Subject	Question 1			Question 2			Question 3			Question 4			Ability Level
	I1	I2	I3	I1	I2	I3	I1	I2	I3	I1	I2	I3	
ST	√	√	√	-	√	√	-	√	√	-	√	√	High
SS	√	√	√	-	√	√	-	√	-	-	√	√	Currently
SR	-	-	-	-	-	-	-	-	-	-	-	-	Low

Infomation:
I1 : First indicator
I2 : Second indicator
I3 : The third indicator
√ : Able to meet the indicators
- : Not yet able to meet the indicators

From the results of Table 4, it is explained that. Subject ST meets 8 of the 12 indicators of mathematical literacy, SS meets 6 indicators, and SR does not meet any indicators. The results of this study are supported by the results of other studies which state that students in the KAM category are low in the aspect of recognizing dominant ideas from the problems being faced, both subjects are still confused in understanding the questions, unable to recognize dominant ideas from the questions properly (Muzaki, A. 2019).

CONCLUSION

Based on the results and discussion, literacy skills based on three indicators from the three subjects are still low, especially in the SR subject. The difficulties experienced by students are writing information related to questions, both concepts, facts or procedures, in the first indicator it is not met in the four

questions, except for the first question for all subjects. This difficulty does not occur in the second indicator, namely using mathematics in problem solving. Subjects ST and SS can compile and apply strategies to obtain mathematical solutions. However, in the third indicator, SS cannot evaluate the answer by re-checking. What he did was ask his friend.

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