

ANALYSIS OF JUNIOR HIGH SCHOOL STUDENT'S MATHEMATICAL LITERACY ABILITY IN RME-BASED MATHEMATICS LEARNING IN VIEW OF SELF-EFFICACY

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Abstract

Mathematical literacy is a skill that a person must master in the context of construction, application and interpretation to obtain solutions to problems encountered in everyday life and can be influenced by self-efficacy. This research has several objectives as follows: (1) Describe the self-efficacy abilities of students at SMP Negeri 2 Todanan. (2) Describe the mathematical literacy abilities of students at SMP Negeri 2 Todanan in RME-based learning. (3) Knowing students' mathematical literacy abilities in RME-based learning in terms of self-efficacy. This research applies a qualitative approach, namely an approach that aims to identify events that occur in research subjects, such as behavior, motivation, perceptions, activities, etc. This research used instruments in the form of a self-efficacy questionnaire, written tests related to material simplifying algebra based on Mathematical Realistic Education, and documentation. The results of this research state that students with high mathematical literacy skills tend to have high self-efficacy abilities. Students with moderate mathematical literacy skills tend to have moderate self-efficacy abilities. Students with low mathematical literacy abilities tend to have low self-efficacy abilities as well.

Keywords: mathematical literacy, realistic mathematical education, self-efficacy

Abstrak

Literasi matematis merupakan suatu keterampilan yang harus dikuasai seseorang dalam rangka konstruksi, penerapan dan interpretasi untuk mendapatkan penyelesaian dari permasalahan yang ditemui dalam kehidupan sehari-hari dan dapat dipengaruhi oleh self-efficacy. Penelitian ini memiliki beberapa tujuan sebagai berikut: (1) Mendeskripsikan kemampuan self-efficacy pada siswa SMP Negeri 2 todanan. (2) Mendeskripsikan kemampuan literasi matematis pada siswa SMP Negeri 2 Todanan dalam pembelajaran berbasis RME. (3) Mengetahui kemampuan literasi matematis siswa dalam pembelajaran berbasis RME ditinjau dari self-efficacy. Penelitian ini menerapkan pendekatan kualitatif yaitu pendekatan yang memiliki tujuan untuk mengidentifikasi peristiwa yang terjadi pada subjek penelitian, seperti perilaku, motivasi, persepsi, kegiatan, dan lain-lain. Pada penelitian ini memakai instrumen berupa angket kemampuan self-efficacy, tes tertulis terkait materi menyederhanakan aljabar berbasis Mathematic Realistic Education, dan dokumentasi. Hasil dari penelitian ini menyatakan bahwa siswa dengan kecakapan literasi matematis yang tinggi cenderung memiliki kemampuan self-efficacy yang tinggi. Siswa dengan kecakapan literasi matematis sedang cenderung memiliki kemampuan self-efficacy sedang. Siswa dengan kemampuan literasi matematis yang rendah maka cenderung memiliki kemampuan self-efficacy yang rendah pula.

Kata kunci: literasi matematis, realistic mathematic education, self-efficacy

INTRODUCTION

Mathematics is a subject studied from elementary to tertiary level because mathematics is a branch of science that is very influential in supporting world development. Mathematics learning aims to make students have a more conceptual mindset, master reasoning and be able to determine how to handle problems in everyday life. Suherman (2003) believes that mathematics is a science that can process logic both qualitatively and

quantitatively. Apart from that, learning Mathematics can develop the ability to think, discuss and speak as well as participate in solving everyday problems (Susanto, 2013). The important role of mathematics learning requires us to find solutions to improve the mathematics learning process. Educational institutions are a place for students to learn and hone their abilities, so the government is required to provide school facilities and other learning institutions so that they can develop the educational environment and learning process (Rozak, Fathurrochman, & Ristianti, 2018).

In order to develop the learning process, mathematical literacy skills can be a reference. According to Ojose (in Sari, 2015: 714) mathematical literacy is the knowledge used to recognize the basics of mathematics in everyday life. According to Kusumah (2011:3) in mathematical literacy there is an ability to formulate questions, solve, formulate and interpret what is presented. Meanwhile, according to Stecey & Tuner (in Sari, 2015: 714) mathematical literacy is the ability to apply mathematical understanding as a process of solving problems presented in order to be better prepared when encountering challenges in real life. Mathematical literacy can also make it easier for someone to understand the role of mathematics in real life. In learning, there are various ways of delivering mathematics learning, one of which is through RME (Realistic Mathematic Education) based learning.

According to Hadi (2005:19), as a starting point for developing mathematical ideas and concepts, you can utilize the Realistic Mathematics Education (RME) approach. Realistic mathematics learning is taken from events experienced by students, which is arranged so that students can understand it easily, realistically and can reach their imagination to develop a solution to a problem presented. According to Aisyah (2007), Realistic Mathematics Education (RME) is one of the methods found in mathematics learning and was developed so that students can better understand mathematics. This realistic problem aims to show students that mathematics is actually close to everyday life. Meanwhile, according to Tarigan (2006:3), in Realistic Mathematics Education (RME) real events are placed as the starting point in introducing the relationship between mathematics and real life. Students are invited to practice how to think about problems that have occurred.

According to the OECD from 2009 to 2015, Indonesia was consistently ranked in the top 10. Indonesia still shows below average performance in three skill categories. The main reason why Indonesia always gets bad ratings is because of the curriculum that is implemented. In the 2018 survey, Indonesian students again ranked at the bottom in reading, mathematics and science. In the literacy category, Indonesia is in sixth place with an

average of 371 (74). Indonesia experienced a decline from 64th place in 2015. In the mathematics category, Indonesia was ranked 7th (73rd) with an average of 379. This shows that the basic mathematics skills of SMP/MTS students in Indonesia are still weak. According to the implementation of PISA, (2012) students' mathematical competence determines the success and progress of a nation in terms of educational quality or political participation. Math proficiency increases, as does confidence and ownership of future change as a change influencer. For example, mathematical skills can be used to predict various problems related to social and economic changes in a country. Self-efficacy is a psychological part that has a significant impact on students' skills in carrying out tasks and overcoming problems. In general, Ormrod (2008:20) is a person's evaluation of his or her ability to take certain actions to reach certain targets. Simply put, self-efficacy is synonymous with "self-confidence" or "self-confidence" in Somakim's understanding (Jatisunda, 2017). Then according to Bandura (2006:307) in a quote (Jatisunda, 2017), self-efficacy is focused on a person's perception of their ability to reach the targets that have been set.

METHODS

This research uses analytical methods, especially qualitative research. Qualitative research is an approach that aims to identify events that occur in research subjects, such as behavior, motivation, perceptions, activities, etc. The subjects in this research were students in class VIII E of SMP Negeri 2 Todanan in the 2023/2024 academic year. The selection of class VIII E as the research object was based on students' mathematical abilities and references from mathematics subject teachers. The research used instruments for data collection in the form of mathematics question sheets based on Realistic Mathematic Education and questionnaires to identify students' self-efficacy abilities.

Table 1. Self-efficacy questionnaire grid

Dimensions	Indicator
Magnitude (How individuals can overcome their learning difficulties)	Have positive thoughts about the tasks carried out.
	Confidence in one's ability to overcome obstacles in the difficulty of the task at hand.
	Feel confident that you can carry out and complete the task.
Strength (How high the student's confidence is in overcoming their learning difficulties)	The commitment you have in completing the tasks presented.
	Perseverance in overcoming tasks
	Believe and understand the advantages you have
Generality (Indicates whether self-efficacy will take place in a certain domain or apply in a	Respond well to various events and be able to think positively.
	Can handle all situations effectively
	Make experiences in everyday life a way to achieve success

variety of activities and settings)

Table 2. RME-based mathematics problem grid

No	Indicators of Mathematical Literacy Ability	Question Indicator	Question Item Number
1	Use knowledge to solve common problems and solve problems in a common context.	Grouping similar terms in an algebraic form.	1
2	Interpret a problem and solve problems using formulas.	Simplify algebraic forms by performing addition operations	2,3
3	Carrying out procedures in a coherent manner in solving a problem and being able to determine the scheme to be applied for solving the problem.	Solving contextual problems related to algebraic forms	2,3
4	Use models effectively and be able to combine different representations and then relate a problem to the real world.	Solving contextual problems related to algebraic forms	2,3,4,5
5	Using models to solve complex events and be able to find solutions to complex problems.	Simplify algebraic forms by performing subtraction operations	4
6	Using reasoning in solving mathematical problems, determining generalizations, formulating and then communicating the results obtained.	Solving contextual problems related to algebraic forms	4,5

Before the questions are used, they must go through a validation stage by lecturers and teachers who are validators. From the validation results, the questions on Simplifying Algebra were obtained as follows:

1. Rara bought 4 pencils and 5 books. The next day, he bought twice as many books as he had bought the previous day. If x and y represent pencils and books respectively, then determine the correct algebraic form to represent the number of pencils and books that Rara has!
2. A triangle has side lengths $(2x+1)$ m, $(3x-5)$ m, and $(x+3)$ m. Then determine the perimeter of the triangle!
3. There is a square with side lengths of $(3x-2)$ cm. Then determine the area of the square!
4. Layla is currently $19+x$ years old. If Putri's age is $x+7$ years younger than Layla, then determine Putri's age in 3 years!
5. Arya, Sera, and Fahri are three people who are friends with each other. They have a number of playing cards. There are 10 more Arya cards than Sera cards. Meanwhile, Fahri's card is 3 times the Sera card. If Sera has n cards, then determine the number of their cards!

RESULTS AND DISCUSSION

The research was carried out at SMP N 2 Todanan with class VIII E and there were 29 students as research objects. The research was carried out by providing practice math questions based on Realistic Mathematic Education with Simplifying Algebra material and a questionnaire used to assess self-efficacy skills. Students will be grouped into 3 categories of self-efficacy abilities, namely high, medium and low. The following are the results of the division into categories of student self-efficacy abilities provided in table form:

Table 1. Self-Efficacy ability categories

Level of Self Efficacy	The number of students	Percentage
High	12	41%
Medium	16	55%
Low	1	3%
Total	29	100%

From table 1 it is found that there are 12 students who have high self-efficacy, 16 students are at a medium level of self-efficacy and 1 student is at a low level of self-efficacy. After students are categorized into high, medium and low based on their self-efficacy abilities, students are then given RME (Realistic Mathematic Education) based mathematics questions with material that simplifies Algebra. Overall, the RME theory includes five characteristics, namely: (1) applying real life contexts as a starting point for learning mathematics; (2) applying a model that prioritizes informal resolution before applying formal processes or formulas; (3) related to other topics in mathematics; (4) applying interactive methods in mathematics learning and (5) respecting the diversity of student responses and participation. The mathematical literacy indicators applied in this research are: (1) formulation of practical problems in solving problems, (2) use of mathematics in solving problems, (3) explanation of solutions in solving problems and (4) evaluation of mathematical results of solutions in solving problems.

Results and data analysis on high subjects (ST)

No	Statement	SS	S	TS	STS
1.	For me, the assignments given by the teacher will encourage me to study more diligently.	✓			
2.	I always convince myself to complete my math assignments well.	✓			
3.	Even though it's difficult, I'm sure I can understand the math assignment.	✓			
4.	I'm sure there are more questions I can solve than I can't.		✓		
5.	Even though the math assignment is complicated, I am confident that I can solve it.		✓		
6.	I try my best to do math assignments.	✓			
7.	When I encounter a unique math problem I feel uneasy until I can solve it.	✓			
8.	I am more successful than most students in solving math problems.		✓		
9.	I can usually help my classmates when they ask for help in completing math assignments.	✓			
10.	I feel proud when I successfully solve a complicated math problem.	✓			
11.	I usually don't give up on completing math assignments until I find the answer.		✓		
12.	Even though I feel that I have many shortcomings, I am confident that I will succeed in completing the mathematics assignment	✓			
13.	I think mathematics is an easy subject.		✓		

Students who have high self-efficacy tend to have enthusiasm for learning and believe in their skills in facing challenges. Students use events in life as experiences and motivation to become better in the future. Students always try to do their best in solving a problem they face and always think positively. Students with a high level of self-efficacy usually do not give up easily in carrying out assignments until they get the right solution. Students tend to prefer challenges.

Jawaban

(1.) Pensil = x → hari pertama = $1x + 1y$
 buku = y → esoknya = $2y$
 $= 1x + 1y + 2y$
 $= 1x + 3y$
 $= x + 3y$

Picture 1. Answer to question number 1 ST

Based on Picture 1, ST category students still have difficulty in the process of formulating real problems in solving a problem. Students have not been able to understand the context of the questions presented and have not been precise in determining the mathematical model of the questions. In the process of using mathematics in solving problems, students in the ST category have not been able to choose the correct steps for working on the questions presented. The process of interpreting solutions in solving a

problem and evaluating solutions in solving problems is still not accurate because students do not know the context of the problem and have not solved the problem with the right answer.

$$\begin{aligned} \textcircled{2} \quad d_1 &= S = (2x+1) \text{ m}, (3x-5) \text{ m}, (x+3) \text{ m} \\ d_2 &= k \Delta \quad \textcircled{6x-1} \\ d_3 &= k \Delta = S + S + S \\ &= (2x+1) + (3x-5) + (x+3) \\ &= 2x+1 + 3x-5 + x+3 \\ &= \textcircled{6x-1} \end{aligned}$$

Picture 2. Answer to question no. 2 ST

Based on Picture 2, ST category students in the process of formulating real problems in problem solving are good. Students are able to understand the context of the questions presented. Students are able to record the available information and ask questions. Regarding the process of applying mathematics to problem solving, ST category students can determine the appropriate steps for working on the problem presented and choose the right formula for working on the problem. The process of interpreting solutions in solving a problem and evaluating solutions in solving problems is good, but students have not been able to communicate the results of their work and determine a conclusion.

$$\begin{aligned} \textcircled{3} \quad d_1 &= S = 3x-2 \text{ cm} \\ d_2 &= L \square = \textcircled{6x^2 - 12x + 4y} \\ d_3 &= L \square = S \cdot S \\ &= (3x-2) \cdot (3x-2) \\ &= 6x^2 - 6x - 6x + 4 \\ &= \textcircled{6x^2 - 12x + 4y} \end{aligned}$$

Picture 3. Answer to question number 3 ST

Based on Picture 3, ST category students in the process of formulating real problems in solving problems are good. Students are able to understand the context of the problems presented. Students are able to write down the information they know and ask about from the question. In the process of using mathematics in working on problems, students in the ST category can determine the correct steps for working on the problems presented and choose the right formula to solve the problems. The process of interpreting solutions in solving a problem and evaluating solutions in solving problems is not good because students are not careful in carrying out the process of determining solutions and students have not been able to communicate the results of their work and determine a conclusion.

$$\begin{aligned} \textcircled{4} \quad \text{usia putri 3th mendatang} &= \text{usia layla} - \text{lahir putri} \\ &= 19 + x - x + 7 \\ &= x - x + 19 + 7 \\ &= 0 + 26 \\ &= 26 \\ \text{usia putri} &= 26 + 3 \\ &= \textcircled{29} \end{aligned}$$

Picture 4. Answer to question number 4 ST

Based on Figure 4, ST category students in the process of formulating real problems in solving problems are good. Students are able to understand the context of the problem presented, but students are not yet able to write down the information that is available and asked about in the question. In the process of using mathematics in solving problems, students in the ST category have not been able to choose the correct steps for working on the problems presented. The process of interpreting solutions in solving a problem and evaluating solutions in solving problems is not good because students are not careful in carrying out the process of determining solutions and students have not been able to communicate the results of their work and determine a conclusion.

(5) $d_1 =$ kartu aya = 10 lembar lebih banyak dari kartu sera
kartu fahri = 3 kali kartu sera
kartu sera = n lembar
 $d_2 =$ Jumlah kartu mereka
 $d_3 =$ kartu aya = $10 + n$
kartu fahri = $3 \cdot n = 3n$
kartu sera = n
Jumlah kartu mereka
 $= 10 + n + 3n + n$
 $= n + 3n + n + 10$
Jumlah = $5n + 10$

Picture 5. Answer to question number 5 ST

Based on Picture 5, ST category students in the process of formulating real problems in solving problems are good. Students are able to understand the context of the problems presented. Students are able to record the available information and ask questions. In the process of using mathematics in working on problems, students in the ST category can determine the correct steps for working on the problems presented and choose the right formula to solve the problems. The process of interpreting solutions in solving a problem and evaluating solutions in solving problems is not good because students are not careful in carrying out the process of determining solutions and students have not been able to communicate the results of their work and determine a conclusion.

Results and data analysis on medium subjects (SS)

No	Statement	SS	S	TS	STS
1.	For me, the assignments given by the teacher will encourage me to study more diligently.		✓		
2.	I always convince myself to complete my math assignments well.		✓		
3.	Even though it's difficult, I'm sure I can understand the math assignment.	✓			
4.	I'm sure there are more questions I can solve than I can't.		✓		
5.	Even though the math assignment is complicated, I am confident that I can solve it.		✓		
6.	I try my best to do math assignments.		✓		
7.	When I encounter a unique math problem I feel uneasy until I can solve it.		✓		
8.	I am more successful than most students in solving math problems.			✓	
9.	I can usually help my classmates when they ask for help in completing math assignments.	✓			
10.	I feel proud when I successfully solve a complicated math problem.	✓			
11.	I usually don't give up on completing math assignments until I find the answer.		✓		
12.	Even though I feel that I have many shortcomings, I am confident that I will succeed in completing the mathematics assignment		✓		
13.	I think mathematics is an easy subject.				✓

Students with a moderate level of self-efficacy also have a high enthusiasm for learning but sometimes still doubt their ability to face challenges. Students use events in life as experiences and motivation to become better in the future. Students with a moderate level of self-efficacy always try and are committed to completing assignments to completion and do not give up easily in the process of completing assignments.

$$5 \quad 1. 4x + 5y = 10y$$

Picture 6. Answer to question number 1 SS

Based on Figure 6, SS category students still have difficulties in the process of formulating real problems in solving problems. Students have not been able to understand the context of the questions presented and have not been precise in determining the mathematical model of the questions. In the process of using mathematics in solving problems, students in the SS category have not been able to choose the correct steps for working on the questions presented. The process of interpreting the solution in solving a problem and evaluating the solution in solving the problem is still not accurate because students do not know the context of the problem and have not solved the problem with the right answer.

$$\begin{aligned}
 & 2. \text{KA} = s + s + s \\
 & \quad = (2x+1) + (3x-5) + (x+3) \\
 & \quad = 2x+1+3x-5+x+3 \\
 & \quad \text{KA} = 3x+4
 \end{aligned}$$

Picture 7. Answer to question number 2 SS

Based on Picture 7, SS category students in the process of formulating real problems in solving problems are good. Students are able to understand the context of the problem presented, but students are not yet able to write down the information they know and ask about from the question. In the process of using mathematics in problem solving, SS category students can determine the correct steps for working on the problem presented and choose the right formula to solve the problem. The process of interpreting solutions in solving a problem and evaluating solutions in solving problems is not good because students are not careful in carrying out the process of determining solutions and students have not been able to communicate the results of their work and determine a conclusion.

$$\begin{aligned}
 & 3. D_1 = s = (3x-2) \\
 & D_2 = \text{Tentukan } L \text{ persegi} \\
 & D_3 = L \square = s \cdot s \\
 & \quad = (3x-2)(3x-2) \\
 & \quad = 3x-2 + 3x-2 + 9 \\
 & \quad = 3x^2 + 4 + 9
 \end{aligned}$$

Picture 8. Answer to question number 3 SS

Based on Picture 8, SS category students in the process of formulating real problems in solving problems are good. Students are able to understand the context of the problems

presented. Students are able to record the available information and ask questions. In the process of using mathematics in solving problems, SS category students can determine the correct steps for working on the problem presented and choose the right formula to solve the problem. The process of interpreting solutions in solving problems and evaluating solutions in solving problems is not good because students are not careful in carrying out the process of determining solutions and students have not been able to communicate the results of their work and determine a conclusion.

$$20 \quad 1. \quad 19 + X - X + 7 = 12 \quad + 3 = 15$$

Picture 9. Answer to question number 4 SS

Based on Picture 9, SS category students in the process of formulating real problems in solving problems are good. Students are able to understand the context of the problem presented, but students are not yet able to write down the information that is available and asked about in the question. In the process of using mathematics in problem solving, SS category students can determine the correct steps for working on the problem presented and choose the right formula to solve the problem. The process of interpreting solutions in solving a problem and evaluating solutions in solving problems is not good because students are not careful in carrying out the process of determining solutions and students have not been able to communicate the results of their work and determine a conclusion.

$$5 \quad \begin{array}{l} 5. \text{Kartu arya } 10 + 10 \text{ Kartu sera} = 20 \\ \text{kartu Fahri } 3 \text{ kali dari kartu sera} = 10 \times 3 = 30 \end{array}$$

Picture 10. Answer to question number 5 SS

Based on Figure 10, SS category students still have difficulties in the process of formulating real problems in solving problems. Students have not been able to understand the context of the questions presented and have not been precise in determining the mathematical form of the questions. In the process of using mathematics in solving problems, SS category students have not been able to determine the correct steps for working on the questions presented. The process of interpreting solutions in solving a problem and evaluating solutions in solving problems is still not accurate because students do not understand the context of the problem and have not solved the problem with the right answer.

Results and data analysis on low subjects (SR)

No	Statement	SS	S	TS	STS
1.	For me, the assignments given by the teacher will encourage me to study more diligently.			✓	
2.	I always convince myself to complete my math assignments well.			✓	
3.	Even though it's difficult, I'm sure I can understand the math assignment.				✓
4.	I'm sure there are more questions I can solve than I can't.				✓
5.	Even though the math assignment is complicated, I am confident that I can solve it.		✓		
6.	I try my best to do math assignments.				✓
7.	When I encounter a unique math problem I feel uneasy until I can solve it.				✓
8.	I am more successful than most students in solving math problems.				✓
9.	I can usually help my classmates when they ask for help in completing math assignments.			✓	
10.	I feel proud when I successfully solve a complicated math problem.		✓		
11.	I usually don't give up on completing math assignments until I find the answer.				✓
12.	Even though I feel that I have many shortcomings, I am confident that I will succeed in completing the mathematics assignment		✓		
13.	I think mathematics is an easy subject.				✓

Students with low levels of self-efficacy usually lack enthusiasm in learning because they feel the assignments given by the teacher are too difficult. Students lack confidence in their abilities and are not able to use events in life as motivation to learn. Students with low levels of self-efficacy usually tend to give up more easily when they encounter more complicated challenges.

$$\begin{aligned}
 & 1. \quad 4x + 5y + 4x + 5y \\
 & = \quad 4x + 4x + 5y + 5y \\
 & = \quad 8x + 10y \\
 & = \quad 18x + y
 \end{aligned}$$

Picture 11. Answer to question number 1 SR

Based on Picture 11, students in the SR category still have difficulties in the process of formulating real problems in solving problems. Students are not yet able to understand the context of the questions presented and are not precise in determining the mathematical form of the questions. In the process of using mathematics in solving problems, students in the SR category are not yet able to choose the correct steps for working on the questions presented. The process of interpreting the solution in solving a problem and evaluating the solution in

solving the problem is still not accurate because students do not know the context of the problem and have not solved the problem with the right answer.

$$2. (2u + 1) + (3u - 5) + (u + 3)$$

$$= 3u + -2 + 4$$

$$= 1u + 4$$

$$= 5u$$

Picture 12. Answer to question number 2 SR

Based on Picture 12, students in the SR category still have difficulties in the process of formulating real problems in solving problems. Students are not yet able to understand the context of the questions presented and are not precise in determining the mathematical form of the questions. In the process of using mathematics in solving problems, students in the SR category are not yet able to choose the correct steps for working on the questions presented. The process of interpreting the solution in solving a problem and evaluating the solution in solving the problem is still not accurate because students do not know the context of the problem and have not solved the problem with the right answer.

$$3. (3u - 2) * (3u - 2) = 8u$$

Picture 13. Answer to question number 3 SR

Based on Picture 13, students in the SR category still have difficulties in the process of formulating real problems in solving problems. Students are not yet able to understand the context of the questions presented and are not precise in determining the mathematical form of the questions. In the process of using mathematics in solving problems, students in the SR category are not yet able to choose the correct steps for working on the questions presented. The process of interpreting the solution in solving a problem and evaluating the solution in solving the problem is still not accurate because students do not know the context of the problem and have not solved the problem with the right answer.

$$4. 19 + u - u + 7$$

$$= 19 - 7$$

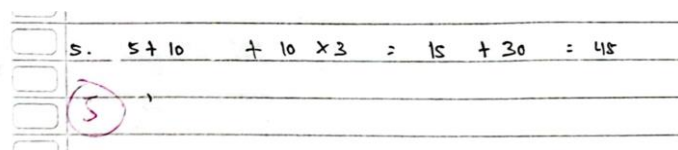
$$= 12u + 3$$

$$= 15u$$

Picture 14. Answer to question number 4 SR

Based on Picture 14, SS category students in the process of formulating real problems in problem solving are not yet good. Students are able to understand the context of the problem presented, but students are not yet able to write down the information that is available and asked about in the question. In the process of using mathematics in problem solving, SS category students can determine the correct steps for working on the problem presented and choose the right formula to solve the problem. The process of interpreting solutions in solving a problem and evaluating solutions in solving problems is not good because students are not careful in carrying out the process of determining solutions and

students have not been able to communicate the results of their work and determine a conclusion.



The image shows a student's handwritten work on lined paper. The first line contains the equation: $s. \quad 5 + 10 \quad + \quad 10 \times 3 \quad = \quad 15 \quad + \quad 30 \quad = \quad 45$. The second line has a circled number '5' with an arrow pointing to the right.

Picture 15. Answer to question number 5 SR

Based on Picture 15, students in the SR category still have difficulties in the process of formulating real problems in solving problems. Students are not yet able to understand the context of the questions presented and are not precise in determining the mathematical form of the questions. In the process of using mathematics in solving problems, students in the SR category are not yet able to determine the correct steps for working on the questions presented. The process of interpreting solutions in solving a problem and evaluating solutions in solving problems is still not accurate because students do not understand the context of the problem and have not solved the problem with the right answer.

Based on the research above, it was concluded that students with high self-efficacy abilities are able to formulate real problems in solving problems. Students are able to understand the context of Realistic Mathematic Education-based mathematics problems and are able to convert information into important data. Students are able to apply mathematics in solving problems and take coherent steps in solving problems. In the process of interpreting solutions in formulating problems and evaluating solutions in working on problems, students with a high level of self-efficacy are able to carry out mathematical operations correctly so as to produce the right answers.

Students with moderate self-efficacy abilities are able to formulate real problems in solving problems. Students are able to understand the context of Realistic Mathematic Education-based mathematics problems, but students are not yet able to write down the information into important data contained in the problem presented. Students are able to apply mathematics in solving problems but are not able to choose the right steps in solving problems. In the process of interpreting solutions in working on problems and evaluating solutions in solving problems, students with moderate self-efficacy abilities are still less thorough.

Students with low self-efficacy abilities have not been able to formulate real problems in solving problems and students have not been able to understand the context of the questions presented and have not been able to write down information into important data. Students still have difficulty determining the steps and formulas that will be used to solve mathematics problems based on Realistic Mathematic Education. Students with low levels of self-efficacy are not yet able to interpret solutions and evaluate the solutions used in working on problems. Students are less careful in carrying out problem solving steps. Students are not yet able to communicate problems related to everyday life in mathematical language.

CONCLUSION

Self-efficacy is a person's confidence in their abilities in carrying out a series of actions taken to face a particular task. Students' self-efficacy abilities influence students' mathematical literacy abilities. Students with a high level of mathematical literacy usually

have high self-efficacy abilities. Students with high levels of self-efficacy usually tend to have more confidence in their abilities so that students are always optimistic about being able to complete complex tasks. Students are able to know the information contained in the problem so that students are able to determine the appropriate method for solving the problem. Students who have moderate mathematical literacy abilities tend to have moderate self-efficacy abilities. Students with a moderate level of self-efficacy also have high enough self-confidence so they don't give up easily when they encounter complicated math problems. Students are able to understand the information contained in the questions but sometimes they are still inaccurate in choosing the method for solving the questions and are not careful in the process. Students with low levels of mathematical literacy tend to have low self-efficacy abilities as well. Students with low levels of self-efficacy usually lack confidence in their own skills so they easily give up when they encounter complicated math problems. Students still have difficulty knowing the information contained in the questions so they cannot determine the appropriate solution method. To train students' mathematical literacy skills, educators are expected to be able to develop learning, for example through understanding students about the relationship between mathematical concepts and real life. Utilizing mathematics learning based on Realistic Mathematic Education can be one solution in developing students' mathematical literacy and increasing students' self-efficacy abilities.

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