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MATHEMATICAL PROBLEM SOLVING ABILITY IN ALGEBRAIC OPERATIONS FROM STUDENT'S SELF-EFFICACY

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ABSTRACT
Problem solving ability and self-efficacy are two important things in learning mathematics. The purpose of this study was to determine the students' ability in solving algebraic operations problems from their self-efficacy. This research method was descriptive qualitative. The instruments were questionnaire sheets, test sheets, and interview guidelines as supporting instruments and the researcher as the main instrument. The stages of data analysis were data reduction, data presentation, and making conclusions. Based on the results and discussion of the research, it can be concluded that subjects who have low self-efficacy are able to fulfill 1 indicator of mathematical problem solving ability, namely planning problem solving. Subjects with moderate self-efficacy can only go through 2 indicators of solving mathematical problems, namely formulating a problem-solving plan and solving problems. The subject with high self-efficacy can go through 2 indicators in solving mathematical problems, namely understanding the problem and developing a problem-solving plan. Subjects with very high self-efficacy are only able to solve problems on the indicators of planning problem solving.
Keywords: problem solving skills, mathematics, self-efficacy, algebraic operations.

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INTRODUCTION

Time continues to evolve and moves forward. The fast-changing cannot be denied, let alone avoid. To survive, adapting to this change is the only wise choice. The current development has entered the era of the Industrial Revolution 4.0 (Lase, 2019). This era brought a trend in industry and manufacturing that included automation and data exchange with the help of the latest technology (Ilyasir, 2019). As mentioned above, this era is marked by a strong fusion between the digital world and the industrial sector (Syamsuar & Reflianto, 2018). Because of that, all human activities can be carried out more effectively and efficiently (Cholily et al., 2019). In line with all the conveniences provided, this era also requires relevant competencies. Humans

who can survive are those who can always adjust their competencies to the needs of the times (Mulyani & Haliza, 2021). There are at least 10 skills that must be mastered in this era which are presented in Table 1 (Luthansa, 2020).

Table 1. Skills Required in the Industrial Revolution 4.0

No.	Name of Ability
1.	complex problem solving
2.	critical thinking
3.	creativity
4.	people management
5.	coordinating with other
6.	emotion intelligence
7.	judgement and decision making
8.	service orientation
9.	negotiation
10.	cognitive flexibility

From the skills above, problem solving skills are important to review. Along with the times as described, the complexity of the problems that arise is also getting higher. To be able to overcome these complex problems, human problem-solving skills become the main important thing.

When doing math learning activities, students will be invited to be able to solve problems. The National Council for Mathematics Teachers (NCTM) further states that problem-solving competence is one of five abilities that students must master (Siwi & Haerudin, 2019). This statement emphasizes that through learning mathematics, students can improve problem solving skill through mathematical thinking. So problem solving skill is important thing to learn mathematics (Rozen & Kramarski, 2014).

The emphasis of problem-solving skills is on the process of thinking systematically and carefully in solving problems (Hadi & Radiyatul, 2014). A person's ability to solve problems is said to be good when that person can understand all the information contained in the problem and use that information to plan problem solving in order to solve the problem (Rambe & Afri, 2020). Problem solving is an intellectual activity in order to obtain solutions to problems faced by the knowledge they already have (Maimunah et al., 2016). Problem solving indicators according to Polya are understanding the problem, planning problem solving, implementing problem solving, and checking again (Yendrawati, 2018).

The importance of problem-solving skills turns out to be ironic. This ability in learning mathematics, especially for Indonesian students, is still relatively low, which can be seen from the results of the national exam which are still relatively low both at the elementary to high school level (Ulya, 2016). The study (Putra et al., 2018) on seventh grade junior high school students also confirmed that the mastery of this ability by students was still in the low category. Problem solving ability in general with mathematical problem solving ability looks similar but different. Mathematical problem solving ability is the ability of students to solve problems with mathematics as the object and the problems come from teachers or phenomena that are often encountered by students (Udin & Hikmah, 2014). Generally, problem solving abilities have

objects that are not only limited in the context of mathematics. Problems that come with problem solving abilities in general are not only from the teacher.

When learning, mathematics is no exception, self-efficacy is an important aspect that must also be considered. Self-efficacy is simply defined as an individual's belief in her abilities (Lianto, 2019). Furthermore, according to Bandura, self-efficacy is people's belief that is able to carry out tasks, achieve goals, or overcome obstacles (Permana et al., 2016). Students who have relatively high self-efficacy tend to do the work given by the teacher smoothly, but students with low self-efficacy tend to give up easily in facing problems (Yuliyani et al., 2017).

Unfortunately, such as problem-solving abilities, self-efficacy also has problems. Whereas previous research showed that there is a positive relationship between self-efficacy and problem-solving abilities (Jatisunda, 2017). Many students have low self-efficacy (Subaidi, 2016). This is indicated by the facts (Jumroh et al., 2018; Utami & Wutsqa, 2017) that students tend to be passive in learning so that when they experience confusion, students do not want to ask the teacher. As a result, a lot of students do homework at school even copy the work of their friends (Fitri, 2017).

Algebra is one of the learning materials for mathematics. The discussion of algebra includes basic things including operations in algebra. Operations in algebra are similar but not the same as number operations that students are used to. This is because in algebra the 'material' for operations is in the form of terms which are not only numbers but also contain variables. As something new for seventh grade junior high school students, of course some students will have difficulty in learning algebraic operations. Another study also confirmed that only a quarter of students were able to answer questions about simplifying algebraic forms through operations on algebraic forms (Lestari & Suryadi, 2020). Thus, this study aims to examine students' self-efficacy and ability in solving mathematical problems. Specifically, this study will examine students' ability to solve mathematical problems from a self-efficacy perspective.

METHODS

This research method is descriptive qualitative, a method that aims to describe in depth a person's behavior, an activity, or an event (Ruspandi, 2014). The data collected comes from questionnaire scores, test results, and interviews. To obtain data for this study, used tools in the form of data collection instruments including researchers as the main instrument and questionnaire sheets adopted from Yunitasari's research (Yunitasari, 2018), problem-solving ability test sheets adapted from Yendrawati's research (Yendrawati, 2018), and interview guidelines. which was adopted from Nurhalimah (2020) as a supporting instrument.

In the following, the data on the validity or reliability of the instruments used are presented. The questionnaire instrument has gone through a validation test process using the expert judgment method. As a result, the instrument is feasible to use without any revision. For the test instrument, the validity test was carried out with the time triangulation technique and the reliability test was carried out with the audit trail method. As a result, the instrument is feasible to use. The interview guidelines have gone through a validation test process using the expert judgment method. As a result, the instrument is feasible to use without any revision. The items used in this study are presented in Figure 1.

Rima mempunyai sebidang tanah. Tanah Rima berbentuk persegi panjang. Jika luas tanah Rima adalah $(x^2 + 6x - 16)\ m^2$ dan panjangnya adalah $(x + 8)\ m$, akan dicari lebar tanah Rima.

Tentukan:

a. yang diketahui dari soal tersebut dalam bentuk aljabar,
b. yang ditanya dari soal tersebut, dan
c. lebar tanah milik Rima!

Figure 1. Items used in this study. adapted from Yendrawati (2018)

Problem solving indicators in this study use Polya's problem solving indicators which include understanding the problem, planning problem solving, implementing problem solving, and checking again. In Table 2, the self-efficacy indicators measured in this study are presented.

Table 2. *Self-Efficacy* Indicator (Yunitasari, 2018)

No.	Name of Ability
1.	task difficult level (magnitude)
2.	strength of belief (strength)
3.	generality (generality)

This research uses 28 students of class 7C in one of the MTs in Yogyakarta as the subject. Subject selection was carried out purposively armed with information from the subject teacher. The information in question is that students in the class tend to be active when learning. The reason for choosing an active class as a research subject is that students in that class are considered able to work together in this study, namely being research subjects.

The results of the questionnaire and tests will be used as a tool to determine the subject of the interview. The test results that have the potential to be followed up through interviews are test results with supporting descriptions. Supporting in this case means that the subject is deemed able to express his ideas in the test so that it is hoped that the ability to provide ideas will also appear during the interview and provide a complete picture of the subject's ability to solve problems. The selection of interview subjects was also based on the information provided by the teacher. From the results of the student questionnaire scores, they will be included in the self-efficacy category, as presented in Table 3.

Table 3. Guidelines for Categorizing Self-Efficacy Questionnaire Scores (Yunitasari, 2018)

Score (%)	Criteria
≤ 20	very low
$21 - 40$	low
$41 - 60$	sufficient
$61 - 80$	high
$81 - 100$	very high

The selection of interview subjects was carried out purposively by considering the subject's ability to communicate his ideas. Each interview subject will represent one category of self-efficacy based on the results of the questionnaire. After all the data has been collected, then an analysis is carried out to obtain a conclusion as an answer to the formulation of the research

problem. Data analysis used Miles and Huberman's steps, namely data reduction, data presentation, and drawing conclusions (Sukmawati et al., 2020).

The process of data analysis, namely data reduction, data presentation, and drawing conclusions will be explained in this section. Data reduction is done by classifying self-efficacy into predetermined categories, looking for subjects who have the potential to become interview subjects based on test results and teacher information, and discarding irrelevant information from interview results. The presentation of the data in this study was carried out using tables, pictures, and narrations. The data presented in tabular form are 10 types of abilities needed in the Industrial Revolution 4.0 era, self-efficacy indicators, guidelines for categorizing self-efficacy scores, and questionnaire results. The data presented in the form of images are the steps of research work and the results of the work of the subject. The data conveyed through the narration are explanations of pictures and tables, opinions or other studies relevant to this research, interview transcripts, and analysis results based on questionnaires, tests, and interviews.

Conclusions are drawn based on the reduction and presentation of the previous data. The conclusions obtained are a combination of the results of the research instruments, both questionnaires, tests, and interviews. In the analysis process, some research findings will be compared with the results of previous studies. The stages of this research are briefly described in Figure 2.

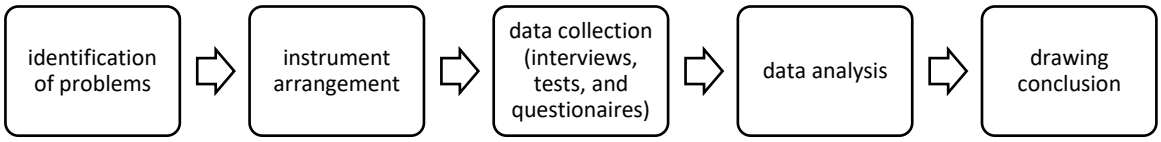

Figure 2. Research Work Steps

RESULTS AND DISCUSSION

Processing the results of the instrument for self-efficacy, namely the questionnaire, became the first thing to do in data analysis. Questionnaire scores as data for self-efficacy were grouped into 5 groups, namely high, very high, low, very low and sufficient. Based on the questionnaire, it can be seen that most of the subjects have high self-efficacy with details as shown in Table 4. Some of the subjects in this study even had very high self-efficacy.

Table 4. Details of Questionnaire Results

No	Quantity	Category
1.	2	very high
2.	20	high
3.	4	sufficient
4.	2	low
5.	0	very low

The results of the questionnaire were then used as the basis for determining the subject of the interview. Interviews were conducted on a subject who represented a category of self-

efficacy. Because from the results of the questionnaire there were no subjects who had very low self-efficacy categories, interviews were conducted with 4 research subjects.

Subjects with Low Self-Efficacy

The first interview was conducted with subjects who have low self-efficacy, namely S4. Before submitting the results of the interview, the results of the S4 work will be described as shown in Figure 3. The subject only copied the statement of point (a) and did not answer it. For item (b) the subject neither wrote nor answered. Problem item (c) can solve the subject by writing the formula for the area of a rectangle. Although the description of the solution uses methods that have not been taught, the final results obtained are correct. Based on the description of the subject matter, it is known that the subject is only able to fulfill one problem solving indicator, namely planning problem solving.

According to interviews, it is known that S4 has never worked on or encountered the same or similar questions as the test questions. When asked to read the questions along with the things that are known and asked, S4 can read them well. However, when asked to discuss the matter in his own language, S4 could not do it. To solve the problem given, S4 has a strategy to solve it, namely the formula for the area of a rectangular flat shape. The step taken by S4 in solving the problem is to first write down the formula, enter the number from what is already known, then operate it until the final result is obtained. The following is an excerpt of the interview transcript between S4 and P with P being the researcher.

(Understanding the Problem)

P : *Alright, have you worked on problems like this before?*

S4 : *Never Sir.*

P : *Try to convey what is known and asked about the question?*

S4 : *In my opinion, what is known is the area of Rima's land and its length and what is being asked is the width of Rima's land.*

P : *Now try to convey it in your own language!*

S4 : *Sorry, Sir, I can't because to be honest, I was helped by other people in doing this problem because I can't do math, Sir.*

(Planning Problem Solving)

P : *Well then do you have a way to solve that problem?*

S4 : *The method I use is the formula for the area of a rectangle.*

P : *What was the first step you took in solving the problem?*

S4 : *I wrote the formula first.*

P : *Then after that?*

S4 : *Enter a number of known information and operate it until a result is obtained.*

(Implementing Problem Solving)

P : *Well, after knowing the formula, can you solve this problem until you get the final result?*

S4 : *Yes i can, Sir.*

P : *Now try to tell me again from the beginning the steps you took in solving this problem!*

S4 : *I first determine the formula that will be used and then enter the known information into the formula and operate until the result is obtained.*

(Checking Again)

P : *So what can you conclude from the process of solving this problem?*

S4 : *The result is the width of Rima's land is* $(x-2)\ m$ *Sir.*

P : *Are you sure about your results?*

S4 : *Yes Sir.*

P : *Did you re-examine the answers already obtained?*

S4 : *Yes, I did.*

P : *How to?*

S4 : *By recalculation bro.*

If you look at the student work sheet, with the formula students can actually solve the problem. However, when describing rectangular formulas, students did not use the method of dividing algebraic forms as they should. Students actually use the quadratic equation method which is class 9 material by factoring the algebraic form of the rectangular area formula as shown in Figure 3. From the results of the interviews, it was found that the students concerned did not work on the questions independently because they felt they could not do mathematics. This is in line with a statement by Alifia and Rakhmawati (2018) which states that students with low self-efficacy will tend to avoid difficult things so that when given challenges or obstacles in the form of questions that they think are difficult, students give up quickly (Alifia & Rakhmawati, 2018). One of the contributing factors is that students assess themselves as not having the ability to solve the given questions (Noviza, 2019). However, the results $(x-2)\ m$ obtained by students as a conclusion are correct. When asked about the confidence in the results, students expressed their belief and even checked the correctness of the answers by recalculating them.

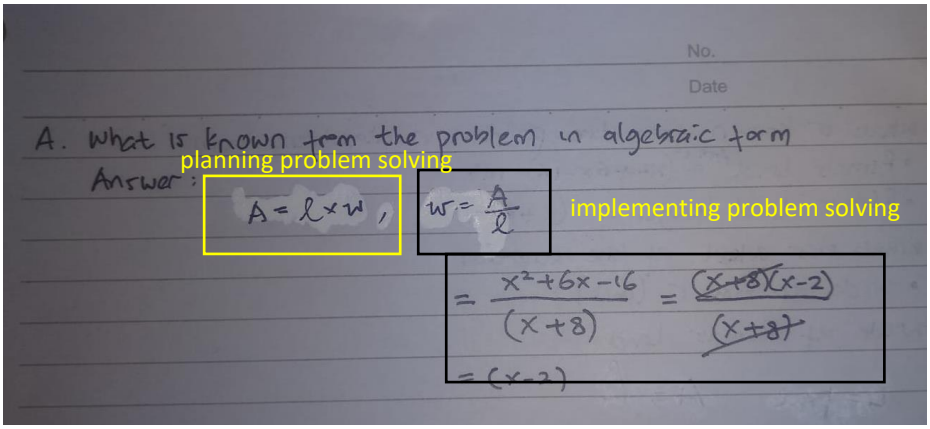

Figure 3. Student Work Results with Low Self-Efficacy

Based on the description of the work that was confirmed through interviews, subjects with low self-efficacy only fulfilled the problem-solving stage, namely planning problem solving. At the stage of understanding the problem the subject does not write down the information that is known or asked. He is also unable to convey the existing problems using his own language. In the problem solving part of Figure 3 the subject does seem to be doing well even though the formula used has not been taught. Unfortunately in the interview it was found out that S4 solved

the problem with the help of other people. At the stage of re-examining the subject only mentioned the time of the interview by recalculation and did not show how he re-examined the answer. Thus it can be concluded that subjects with low self-efficacy can only meet 1 indicator of problem solving ability, namely planning problem solving.

Subjects with Sufficient Self-Efficacy

The last interview was conducted on students with sufficient self-efficacy category, namely S3. Before describing the results of the interview, an explanation of the results of the subject's work will be presented as in Figure 6. The subject only answers for point (c). The formula used to solve the problem is correct. The calculation process has also been carried out using the method that has been taught. The answer obtained by S3 is correct. Therefore, based on the results of the description of the answers S3 is able to go through the stages of problem solving planning problem solving and carrying out problem solving.

In the interview S3 stated that he had worked on a similar problem. When S3 was asked to read the question again, the students did well. Likewise, when asked to mention information that is known and wants to be sought from the question, S3 can do so. Students are also able to express the questions given using their own language. In solving S3 problems, the strategy is to use the formula for the area of a rectangle and algebraic division. After that, enter the known things into the formula, including involving algebraic division to get the result. The formula for the area of a rectangle along with the division of algebraic forms is actually used by these students in solving problems as shown in Figure 4. The answer S3 as a conclusion is correct, namely $(x-2)\ m$. When asked about the correctness of the answer, students stated that they were sure. After obtaining the results of S3 did not check the correctness of the answer. During the interview, S3 stated that before starting to work on the questions, he asked someone else to teach him first. The following is a transcript of the interview with S3.

(Understanding the Problem)

P : *Have you worked on that before?*

S3 : *Once.*

P : *Is that exactly the case?*

S3 : *Not the same Sir.*

P : *Now try to find out what is known and what is being asked about it!*

S3 : *What is known is area and length and what is asked is width.*

P : *Okay, now try to convey about it in your own language!*

S3 : *That's algebraic material and is applied to a real problem about the Rima question using the formula for the area of a rectangle.*

(Planning Problem Solving)

P : *What method did you use to solve this problem?*

S3 : *Use the formula for the area of a rectangle and then use algebraic division.*

P : *Then after that?*

S3 : *Then later to get the width, use algebraic division.*

(Implementing Problem Solving)

P : *After knowing the formula to be used, can you solve the problem until you get the answer?*

S3 : *Yes Sir.*

P : *Now try to tell me again from the beginning the method you used to solve the problem!*

S3 : *Okay Sir. The formula used is the formula for the area of a rectangle using algebraic division as well. After knowing the formula, the known information was entered into the formula for the area of a rectangle. Then also use the algebraic division that I conveyed earlier to get the width of Rima's land.*

(Checking Again)

P : *From the process that has been passed, what conclusions can you draw?*

S3 : *I think the conclusion is the width of Rima's land* $(x - 2)\ m$.

P : *Are you sure about the results obtained?*

S3 : *Sure Sir.*

P : *After getting the results, did you re-examine your answers?*

S3 : *No Sir hehehe.*

Based on the description of the interview results and test results, it is obtained that the subject with the self-efficacy category is quite capable of doing two stages in solving problems, namely developing a problem-solving plan and carrying out the problem-solving process. These results are similar to the results of a study conducted (Mardiana et al., 2018) that subjects with self-efficacy are quite capable of planning to problem solving well even though there are differences in the subject's beliefs in understanding the problem. According to (Novianti et al., 2018) the ability of students with sufficient self-efficacy in solving problems is better than students with low self-efficacy. The subject was able to capture the meaning of the problem presented but unfortunately he did not answer points (a) or (b) as shown in Figure 4. After that the subject was also able to plan problem solving. From planning the subject is able to carry out the problem solving process to obtain results. Thus it can be seen that the subject with self-efficacy is quite able to meet 2 indicators of problem solving ability, namely planning problem solving and problem solving.

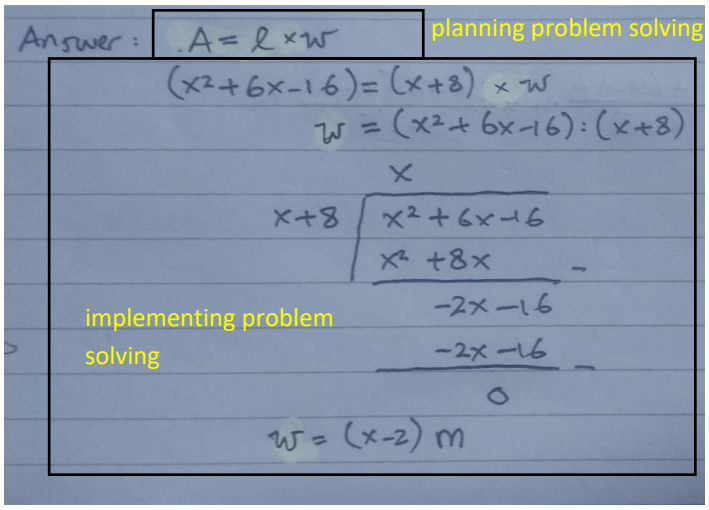

Figure 4. Student Work Results with Sufficient Self-Efficacy

Subjects with High Self-Efficacy

The interview was continued with subjects who had high self-efficacy, namely Masters. Before the results of the interview are presented, the results of S2's work will be explained as shown in Figure 4. S2 is able to answer the three questions. The answers given were all correct. Although the subject is able to write down the exact formula used in solving the problem, in the process it uses a method that has never been taught. Thus, based on the results of the job description, it can be seen that subjects with high self-efficacy are only able to carry out two stages of problem solving well, namely understanding the problem and planning problem solving.

Based on the results of the S2 interview, it turned out that he had worked on similar questions as given on the test. After that, he was asked to read out questions and information including things that were known or asked, and the subject was able to do so. Unfortunately, S2 is less thorough in understanding the problem. When the interview was conducted and the subject was asked to rephrase the question in his own language, Master's degree had an error by stating that what he was looking for was the breadth of the question. Whereas what will be sought from the test questions is the width of Rima's land.

To work on the problems given, S2 has a plan to solve them, namely by using a formula to find the width of a rectangle. The first step taken by S2 is to determine the formula and then enter all the known things into the formula and then operate it until it gets results. However, not much different from students with low self-efficacy, students in this category also solve problems using a quadratic equation as shown in Figure 5. In this case, according to Pasandaran, subjects who have high self-efficacy are able to describe the problem solving process given (Askar et al., 2016), although the process is less precise. The following is an except of an interview transcript with S2.

(Understanding the Problem)

P : *Okay, have you ever worked on this before?*

S2 : *Ever Sir.*

P : *Because it's exactly like that?*

S2 : *No, there's a difference.*

P : *Now try to convey the matter again in your own language.*

S2 : *So the question means that Rima has a rectangular plot of land and will find its area.*

P : *Try now to identify the information that is known and what is being asked of the question!*

S2 : *What is known from the problem is the area and length of Rima's land, while what will be sought is the width of Rima's land.*

(Planning Problem Solving)

P : *So do you have a way to solve this problem?*

S2 : *Yes Sir. I use the formula for the area of a rectangle.*

P : *What was the first step you took to solve the problem?*

S2 : *Area divided by length.*

P : *After that?*

S2 : *Yes, it is entered into the formula from what is known and operated until the results are obtained, Sir.*

(Implementing Problem Solving)

P : *After knowing the formula, can you solve the problem until you find the answer?*

S2 : *Yes Sir.*

P : *Well, try now to tell me how you started from solving this problem until you found the result!*

S2 : *First, explain the length and breadth of what is known in the problem, then divide it until you find the answer.*

(Checking Again)

P : *So what conclusion do you get?*

S2 : *My conclusion is that the result is* $(x-2)\ m$.

P : *Are you sure about your answer?*

S2 : *Yes Sir.*

P : *Did you double check your answer?.*

S2 : *Yes Sir..*

P : *How to?*

S2 : *By asking other people about my work*

The answer obtained by students as a conclusion is correct, namely $(x-2)\ m$. Students believe in the answers they get. This belief is a reflection of self-confidence. Students with high self-efficacy have confidence in solving problems (Pratiwi et al., 2019). To check the correctness of the answers obtained, the students asked others to provide corrections for their work. This is in line with the opinion (Endah et al., 2019) that students with high self-efficacy have self-determination and great effort to find solutions to problems.

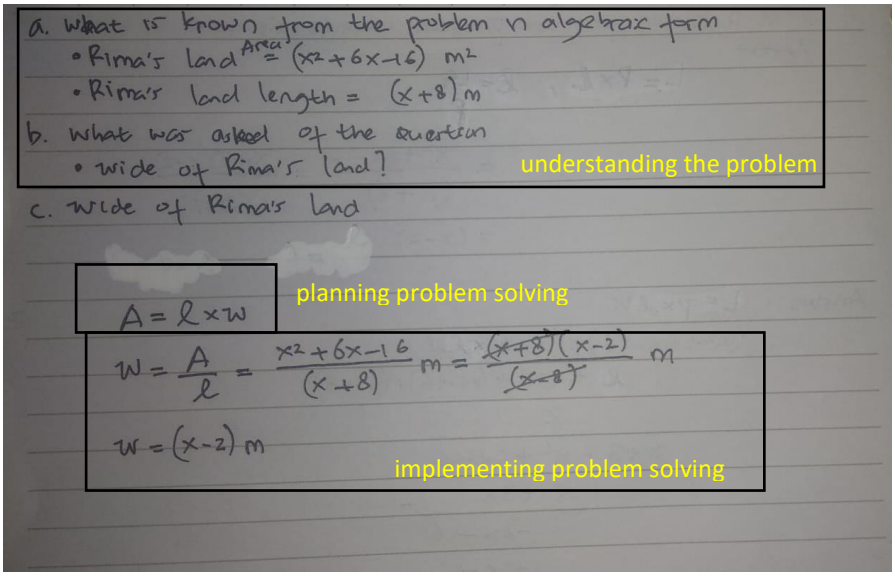

Figure 5. Student Work Results with High Self-Efficacy

Based on this description, information is obtained that subjects who have high self-efficacy are able to carry out steps in solving problems well, namely understanding problems and developing problem solving plans. Item (c) is completed by the subject in a manner that has not been taught. In addition, the activity of re-examining by asking other people to check the

results of their work cannot be proven. This fact is actually different from the study (Noviza, 2019) which shows that subjects who have high self-efficacy are able to carry out all stages of problem solving well. S2 understands the meaning of the problem given. The plan that was drawn up was also correct. However, at the stage of carrying out troubleshooting and re-examination, S2 still cannot perform well. Thus it can be seen that subjects with high self-efficacy are able to meet 2 indicators of problem-solving abilities, namely understanding problems and developing problem-solving plans.

Subjects with Very High Self-Efficacy

The next interview was conducted on students with very high self-efficacy scores, namely S1. Before the results of the interview are submitted, the results of the undergraduate work will be explained as shown in Figure 6. The subject is able to answer all the questions. The formula used is correct, namely the formula for the area of a rectangle. The answers obtained are also correct. Not quite right on the use of units. Subject writes "cm" from what should be "m". Unfortunately the subject uses a method that has not been taught in the process of seeking answers. From this explanation, it can be concluded that S1 is able to pass the stage of understanding the problem and planning problem solving well.

Based on interviews, it is known that S1 has worked on similar questions. Then S1 was asked to read the questions and convey the information that was known and asked in the question and S1 was able to do it well. However, when asked to present questions in their own language or understanding, S1 could not do so. The strategy used by subjects with very high self-efficacy is the same as subjects with low self-efficacy, namely using a rectangular area formula. The first step the subject takes in solving the problem is to write the formula. After that it is operated until the results are obtained. The way S1 operates, based on interviews, is to use the previously mentioned formula and then cross out the same elements as in the form of fractions. The conclusion that students get in this case is that the width of the rectangle in the problem is $(x-2)\,m$. The answer is correct and the subject states confidently. This picture is in line with research (Imaroh et al., 2021) which explains that one of the characteristics of subjects with very high self-efficacy is being able to make the right conclusions in solving mathematical problems. To check the correctness of the answer, S1 tries to calculate again. Unfortunately, students in this very high self-efficacy category do the same thing as the two previous subjects, namely solving problems using methods that have not been given. The following is an excerpt of an interview transcript with the subject of S1.

(Understanding the Problem)

P : *Have you ever worked on problems like this before?*
S1 : *Yes, I have Sir.*
P : *Exactly like that?*
S1 : *No Sir.*
P : *Well now, what is known and asked of the question?*
S1 : *What is known is the area and length of Rima's land, while what is asked is the width of Sir.*
P : *Now you say it in your own language!*
S1 : *I can't Sir.*

(Planning Problem Solving)

P : *What method did you use to solve this problem?*

S1 : *I'm using the formula for the area of a rectangle.*

P : *What is the first step to solving the problem?*

S1 : *First, I write down the formula.*

P : *Then what?*

S1 : *Then I enter what is known into the formula and operate until the result is obtained.*

(Implementing Problem Solving)

P : *Well after you know the formula to be used, can you solve this problem until you get a result?*

S1 : *Yes Sir.*

P : *Now try to convey the steps from the beginning when you solve this problem until you get a result!*

S1 : *First, I wrote the formula using the formula for the area of a rectangle. Then after that, from what I know, I put it into the formula and operated until I got the result.*

(Checking Again)

P : *So what conclusions can you draw?*

S1 : *The width of the rectangle is* $(x-2)\ m$.

P : *Are you sure about your answer?*

S1 : *Yes Sir.*

P : *Did you check your results?*

S1 : *Yes Sir.*

P : *How to?*

S1 : *I'll count again.*

The description of the subject with very high self-efficacy based on the description of the results of interviews and tests, the subject is only able to take one step in solving the problem, namely planning. The subject can state the formula used in obtaining the answer to the problem. At the stage of understanding the problem when S1 was asked to state the problem in his own language, he could not. This fact is in line with the opinion of Prakitipong and Nakamura that one of the obstacles in students' mathematical problem solving abilities is related to understanding the meaning of the problem (Utami & Wutsqa, 2017). Even though the answer is correct, S1 uses a method that has not been taught before. The subject also did not prove the method or steps taken in re-examining. This is different from previous studies which showed that students with very high self-efficacy would describe the results of the examination of answers (Imaroh et al., 2021). The results in this category seem to contradict an opinion which states that students with very high self-efficacy will have good performance at every stage of problem solving (Imaroh et al., 2021). Based on this description, it can be seen that subjects with very high self-efficacy are able to fulfill 1 indicator of problem solving ability, namely planning problem solving.

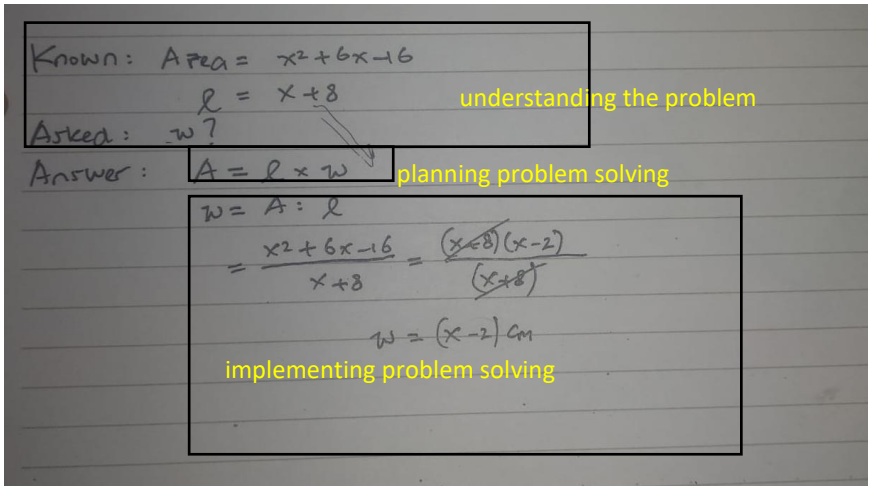

Figure 6. Student Work Results with Very High Self-Efficacy

Previous studies have shown that there is a positive relationship between problem-solving abilities and students' self-efficacy. The positive relationship in question is that the higher the student's self-efficacy, the better the student's ability to solve problems. This seems different from the findings of this study. Subjects with very high and low self-efficacy turned out to meet 1 indicator of the same problem-solving ability, namely planning problem solving.

In fact, in this study the ideal condition that self-efficacy and problem-solving ability is directly proportional is not met. However, these are the findings of this study in the field. Different results from this study and previous research in subsequent studies are very possible in the context of qualitative research. Qualitative research is carried out not to generalize but to understand in depth the problems being studied (Sumiyati, 2017). In addition, qualitative research seeks to understand social phenomena based on existing facts, not based on proper conditions (Rukminingsih et al., 2020).

Marlina tries to provide an explanation between natural phenomena and social phenomena. For natural phenomena, even though the terms and conditions set are perfect, it is also easy to get results that are said to be perfect. However, this is not the case for social phenomena as in this study. Getting ideal or perfect results is difficult to manifest in social phenomena (Marlina, 2021). However, this research is expected to be a reference for future research.

CONCLUSION

Based on the findings that have been presented and the discussion, it can be concluded that there are differences in student competence in an effort to solve mathematical problems based on the level of self-efficacy. Ideally, self-efficacy has a positive relationship with problem solving ability. However, in the field, ideal conditions are not always met as in this study. This is very possible considering that this research is a qualitative study that observes social phenomena based on actual conditions, not what they should be. Subjects who have low self-efficacy are able to fulfill 1 indicator of mathematical problem solving ability, namely planning problem solving. Subjects with self-efficacy can only go through 2 indicators of solving mathematical problems, namely formulating a problem-solving plan and solving problems. The

subject with high self-efficacy can go through 2 indicators in solving mathematical problems, namely understanding the problem and developing a problem-solving plan. Subjects with very high self-efficacy are only able to solve problems on the indicators of planning problem solving.

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