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Abstract. This study aims to describe the metacognitive abilities of students in solving problems of the Two-Variable Equation System (SPLDV). The ability of Metacognition in this study consists of three stages: planning, monitoring, and evaluation. The research is descriptive qualitative. The subjects in this study from class VIII grade students of SMP Negeri 3 Bandar Lampung. Data collection techniques in this study were written tests, observations, interviews, and documentation. The data technique reduction data, presenting data and drawing conclusions. The results of research conducted on male and female students show that there is no difference in using the structure or ability that it already has to solve mathematical problems encountered. However, there are differences in the procedure for carrying out problem-solving. While the steps to plan and look again there are no differences in procedures and concepts.

1. Introduction

Education is a very instrumental tool to create quality human beings and potential in the broadest sense, through education there will be a process of self-maturity so that in the decision-making process of a problem faced is always accompanied by a sense of responsibility. Education should look far ahead and think about what students will face in the future. Learning mathematics itself has several goals. The purpose of learning mathematics, is that students have the ability (1) Understanding mathematical concepts, explaining inter-conceptual relationships and applying concepts or algorithms, flexibly, accurately, efficiently, and precisely, in problem-solving. (2) Using reasoning on patterns and properties, manipulating mathematics in making generalizations, compiling evidence, or explaining mathematical ideas and statements. (3) Solve problems that include the ability to understand problems, design mathematical models, solve models and interpret the solutions obtained. (4) Communicating ideas with symbols, tables, diagrams or other media to clarify the situation or problem. (5) Having an attitude of appreciating the usefulness of mathematics in life, namely having curiosity, attention, and interest in learning mathematics, as well as being tenacious and trusting in problem-solving. Based on the description, it can be seen that the ability that students must possess after attending mathematics learning is mathematical understanding ability [1]. States that there are many students who, after learning mathematics, are unable to understand even the simplest part [2]. Many concepts are misunderstood so mathematics is considered a difficult, complicated, and difficult science. However, in reality, many students still have difficulty understanding mathematical concepts. Understanding student concepts is one of the aspects students need in learning mathematics. The ability to understand concepts makes it easier for students to solve problems because students will be able to link and solve these problems with concepts they have understood. Conversely, if students do not understand given concept students will tend to have difficulty in using and choosing certain procedures in applying concepts and problem-solving algorithms. As the learning principle recommended by the National Council of Teachers of

Mathematics [3] that, "student must learn mathematics with understanding, actively building new knowledge from experience and prior knowledge" which means in learning mathematics students must learn with understanding and actively build new knowledge from previous experience and knowledge. Understanding that metacognition refers to ways to increase awareness about the thinking and learning processes carried out and this awareness will be realized if someone can start thinking by planning, monitoring and evaluating the results and activities of thinking [4]. The students' thinking process begins with the planning aspect which includes understanding the concept of the material, understanding the purpose of the problem and determining the completion strategy. The aspects of planning and monitoring include the suitability of the information in the problem with the formula and the suitability of the formula with the calculation. Students in solving math problems must have an appropriate and directed strategy. Metacognitive is very important when solving application problems or story problems.

This will be possible if more time is allocated for metacognitive instruction, the process of teaching and learning mathematics can increase. Based on the description, the purpose of this study is to describe the metacognitive abilities of students in the form of gender. The metacognitive aspects that will be analyzed in this study are aspects of planning, monitoring, and evaluating the results of student work. Mathematics is usually considered the most difficult for some students compared to other subjects. For this reason, teachers need to present a more enjoyable learning process, so students can easily understand concepts and solve mathematical problems. Fun learning requires appropriate strategies and problem-solving steps to make students more active. So that in solving problems, especially mathematical problems. Through metacognition, students are expected to be accustomed to always planning, monitoring and evaluating what they have done. Even someone needs to manage their thoughts well by utilizing the knowledge they already have, controlling and reflecting on the process and results of their own thinking, what is thought that can help in solving a problem. Awareness of this thought process is called metacognition. Metacognition introduced by John Flavell, is defined as thinking about thinking or one's knowledge of the thought process. According to him, metacognition is the ability to think in which the object of thinking is the thought process that occurs in oneself.

2. Methods

This type of research based on the approach is qualitative research with a descriptive research design. Descriptive research is intended to describe a situation or phenomena as they are [5]. In this study, researchers will provide a description of students' metacognition abilities in solving mathematical problems in the Sub-System of Two-Variable Equations (SPLDV) which are reviewed based on gender differences. The study was conducted on eighth-grade students of SMP Negeri 3 Bandar Lampung by taking four students as research subjects. The determination of the subject of this study uses a purposive sample technique. The purposive sample technique is the technique of determining the subject based on certain criteria to make it easier to get the desired information. Data collection techniques in this study consisted of 1) interviews conducted to find out information related to students' metacognition abilities in dealing with problems of the Two-Variable Equation System (SPLDV) 2) The test in this study was used to obtain data about students' steps in solving problems, 3) Documentation is shown to obtain data directly such as school data, class VIII student data at SMP Negeri 3 Bandar Lampung and the results of student problem-solving tests, 4) This observation aims to obtain data about the description of mathematics learning conducted by teachers and students. Data analysis techniques in this study consisted of consisting of reducing data, presenting data and making conclusions. For the validity of the data, this study uses triangulation methods. Triangulation in testing, credibility is interpreted as checking data from various sources in various ways, and at various times. The triangulation of this method uses two methods, namely interviews and documentation [6].

3. Result and Discussion

This research was conducted at Negei 3 Bandar Lampung Junior High School by giving a test description of five questions of the grade VIII Class Two-Equation System (SPLDV) class about students' Metacognition Skills in terms of Gender. Following the differences in metacognition skills between male and female:

a. Metacognition of male students

- 1) He male student mentioned what he knew from the problem aloud, namely "Yes, this problem must be made mathematical equation and solved by elimination. ". The male students in the questions asked mostly lead to look at the assignment sheet and answer with a little tense here occurs a process of metacognition where students are aware of the process and the results of their thinking, in evaluating actions, when understanding the problem. Male students are not flexible in answering the questions given. He answered seriously thinking about the question about how much time was used in solving this problem, with the answers thinking a little and kept paying attention to the answer the student answered "This problem I have often done so, only takes approximately 10 minutes. Male students who have a scheme that is asked in a mathematical problem can identify and classify the problem from a given problem. Male students can immediately understand the problem and be aware of the thought processes and outcomes. here metacognition process occurs where students can estimate the time of completion of this task quickly.
- 2) Arranging the Plan Male subjects compile a plan to solve the problem that is asked is to do the problem, what do you plan to do from that problem written answers students "After previously getting two equations then the two equations were eliminated, substitution and mixture to find the value of the variable, after the value the variables are obtained, then continue with substitution, elimination and mixture ". In this case, the planned strategy also continues from what was planned that is using the formula of substitution elimination, and mixture. In planning arithmetic operations he uses certain formulas but prefers certain methods. Subjects can explain even if they stammer, "my first step would be to eliminate the two equations then equalize the coefficient of the variable to be eliminated ie $3x + 2y = \text{Rp. } 13,000$ and $6x + y = \text{Rp. } 17,000$ to determine the value of the variable ". In this case, the male student shows the process of metacognition aware of the process and the results of his thinking, in developing planning, when thinking about the action plan that is able to find the relationship with the problem that has been resolved and check the suitability of the initial knowledge used with the goal.
- 3) Execute the Plan On carrying out the plans of the male students using the steps of completion by entering a known formula. The male subject answered the question directly and still looked at the answer sheet the researcher asked the question on the male subject using the formula, are there problems a, b, and c with all three methods? Why is that! the subject answers directly ie "no". The subject can answer the questions posed by the researcher here occurs a process of metacognition where the subject can carry out an action plan by choosing strategies to solve mathematical problems because the subject has no difficulty and takes steps steadily.
- 4) Re-checking the male subject in checking back revealed the answers casually while continuing to look at the answer assignment sheet and was very sure of the answer he got

b. Metacognition of Female Students

- 1) Understanding the problem, the female subject in understanding the problem initially answered the first question from the researcher namely "After reading the problem as a whole, what do you think of that problem?" The subject answered with a little tension while holding a pen and looking at the answer sheet. The female subject to the question posed can answer it well and smoothly here a metacognition process occurs where the subject is aware of the process and the results of her thinking, in monitoring the implementation when understanding the problem. In another part, the subject answered smoothly while nodding his head while still holding the pen

that is "Once, in eighth grade and while looking away the subject answered Yes, I did use it. The female subject mentioned smoothly on the questions of the problem given. When interviewed that what was asked was approximately how long did you spend in solving this problem, by answering smoothly the subject answered "because this question I have already learned so, it doesn't take too long to solve approximately 10 minutes. The female subject has a scheme that is asked in a mathematical problem can identify and classify the problem from a given problem. The female subject can immediately understand the problem and be aware of the process and the results of her thinking. here metacognition process occurs where the subject can estimate the time of completion of this task quickly

- 2) Arranging the plan Women's subjects compile a plan to solve the problem that is "I only plan to do it in substitution, elimination, and mixture". In this case, the planned strategy also continues from what was planned that is doing substitution, elimination, and mixture. In another part, the subject answered about his strategy "I am trying to solve the problem as efficiently as possible" here occurs a process of metacognition where the female subject is thinking about an action plan, building alternative solutions to mathematical problems and being aware of the process and the results of his thinking, in developing plans, when thinking about plans of action and being able to obtain plans for solving them. it explained smoothly the female subject answered, "I saw here when I saw the two equations that I thought of eliminating x because in my opinion x was easier to be eliminated". In this case the female subject shows the process of metacognition, that is, the subject is aware of the process and the results of her thinking, in developing plans, when thinking about an action plan that is determining the formula used at each step and can check the suitability of the initial knowledge used with the objectives
- 3) Execute the Plan On implementing the female subject plan using the steps of its completion by entering a known formula. The female subject answered the question directly, the researcher asked the question on the female subject using the formula a, b and c problems can be solved by all three methods? Why is that !. the subject responded by shaking his head and smiled "no". The subject can answer the questions raised by the researcher here and a metacognition process occurs where the subject can carry out an action plan by choosing a mathematical problem-solving strategy because the subject has no difficulty and takes steps steadily.
- 4) Re-checking the subject of the woman in checking again revealed the answer with great enthusiasm while continuing to look at the answer sheet and was very sure of the answer she got. So that the female subject in expressing answers has evaluated and reexamined the best solution.

Metacognitive Owauamanam and Babbatunde state that women follow more lessons that require a lot of energy for thinking ability [7]. Stated that problem-solving ability and metacognition for male and female students did not have a significant difference [8]. Stated the results of research conducted on male and female students showed that there was no difference in using the structures or abilities that they already had to solve the mathematical problems encountered [9]. However, there are differences in the procedures for understanding and carrying out problem-solving. Stated that students in the creative category did not meet the indicators of metacognition skills. On monitoring, students could not determine strategies to solve problems. In evaluation, students do not evaluate or refine methods and calculations. Less creative category students can understand the questions and determine the plan at the start. In monitoring, the strategy is completed with the correct steps. In evaluating, students consciously know their mistakes but do not re-evaluate their work. Fairly creative category students meet the indicators of metacognition skills. Students identify information and determine initial plans well. In monitoring, students can determine strategies to solve problems. In evaluation, students evaluate the steps or calculations of problem-solving [10]. Stated that the metacognition profile of junior high school students in solving open problems of geometry and geometry in terms of gender differences based on Polya's phasing. In the stage of understanding the problem, male and female students have the same metacognition profile, which is to carry out planning, monitoring and evaluation activities of their thought processes[11].

Stated that there are differences in the metacognitive skills of male and female students in the planning, monitoring and evaluation stages [12]. Stated that there was no effect of gender influence on student biology learning outcomes, there was an effect of metacognitive awareness of biology learning outcomes and on the influence of gender and metacognitive awareness together on biology learning outcomes and on outcomes studying biology[13].

4. Conclusions and suggestions

The metacognitive abilities of male students at the planning stage students are able to understand the problem well, while at this stage students are not aware that the steps or strategies that are done are not right, so the final results obtained by students are not right. The last step in metacognition is the evaluation stage. At the evaluation stage students generally, do not re-check the completion steps. So students do not realize that the answers obtained are not in accordance with what is expected. The metacognition abilities of female students have been used well when solving a problem. This is because students fulfill three stages of metacognition. The three stages consist of the planning stage, the monitoring or monitoring stage and the evaluation stage. At the planning stage, female students can understand the problem correctly and can determine the initial steps that must be taken in solving problems. For the monitoring stage, female students can write down correctly the problem-solving strategies that have been thought of and can solve them well besides that at the evaluation stage students re-check the overall solution steps. For this reason, it is suggested that the development of metacognitive skills in terms of gender in learning given the importance of these elements in the development of students' abilities and success in learning. In addition, further research is needed to uncover several other aspects that play a role in the development of students' metacognitive skills in terms of gender.

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