

An Analysis of Student Understands of Ability Concept for Solving Word Problem in SPLDV Material

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Abstract—Understanding of ability concept is the one of differences, guess, expand, conclude and review. Story exercises is an interesting exercise because it presents a problem by connecting daily life. This study describes students' understanding of ability concept in solving SPLDV math problems in the form of word problem. This study uses a qualitative descriptive study to The Second Grade Students Class A of Senior High School 1 Trimurjo as research subjects. The instrument used was a written test in the form of four questions of essay and teacher interview guidelines, the researcher took five from thirty two students as interviewers with a purposive sampling technique. The five subjects are all students who meet all the indicators of understanding of ability concept. Based on the research obtained there are three subjects who are able to understanding of ability concept in solving mathematical problems and two subjects are quite capable of understanding of ability concept in solving mathematical problems.

Key Words: SPLDV, Problem Solving, understanding of ability concept, analysis processes ,Junior High School

I. INTRODUCTION

The role of education is very important to create an intelligent, peaceful, open and democratic society because the progress of a nation is largely determined by the quality of human resources, and the quality of human resources depends on the quality of education. The main priority of an education system is to educate students about how to learn and understanding of ability concept. In the 2013 curriculum, the strengthening of the learning process was carried out through the application of scientific learning. Scientific learning is learning that focuses on the ability of students to ask, observe reason, synthesize, conclude, evaluate, and create. The learning process is expected to facilitate students to have mathematical understanding of ability concept.

Learning mathematics with a deep and meaningful understanding will bring students to feel the benefits of mathematics in everyday life [1]. Understanding of ability concepts is a type of learning outcome that is higher than knowledge. For example, it can explain in its own sentence structure something that is read or heard, provides another example of what has been exemplified, or uses application instructions in other cases. Mathematics is meaningless if only memorized. Therefore, the ability to understand concepts is needed in problem solving / finding solutions.

In mathematics learning, mathematics problem solving is usually formed of word problem. The word is one form of problem that presents problems related to everyday life in the form of stories [3]. In solving word problems is a problem solving activity[4]. So that the ability to think critically is very closely related to solving word problems. Thus, the purpose of this study is to describe and analyze of student's Understanding of ability concepts for solving story exercises in SPLDV material.

Many students tend do not understand of ability concept in the given word problem, so there are many mistakes in answering, so they need the Understanding of ability concepts students in working on math problems, especially word problem.

II. RESEARCH METHOD

This type of research is a qualitative descriptive study. This study was written to analyze and describe the Understanding of ability concepts of The Second Grade Student Class A of Senior High School 1 Trimurjo on the Variable Linear Equation System (SPLDV) material which is guided by whether the indicators of Understanding of ability concepts are completed or not . The research subjects were five students selected by purposive sampling of Senior High School 1 Trimurjo, purposive sampling is a sampling technique with certain considerations [6]the same thing is clarified purposive sampling is the selection of a group of subjects based on known population characteristics previous [5]. The Research time was conducted at the beginning of the odd semester of the 2019/2020 school year. Data collection techniques in this study used several types of instruments, namely a set of Understanding of ability concepts tests.

The test is used as an attempt to obtain primary data about the mathematical Understanding of ability concepts of The Second Grade Student Class A of Senior High School 1 Trimurjo. The scope of the test material is two Variable Linear Equation System (SPLDV) material . The instrument used in this study was a question test of Understanding of ability concepts. The test questions are arranged in the form of a description of four questions to measure the level of Understanding of ability concepts students'and analyzing the results of students' answers according to the steps of understanding of ability concepts or not so that students can

find errors in solving word problems because it is not systematic in answering.

III. RESULTS AND DISCUSSION

The results of interviews conducted by researchers to teachers in the five students who were recommended to have understanding of ability concepts in solving problems especially mathematics. After students are given the task, the researcher analyzes the results of each student's answer. Data on the results of tests of students' understanding of ability concepts in solving problems in the matter of a word system of two Variable Linear Equation System (SPLDV) material based on understanding of ability concepts indicators [2], namely:

General Indicators	Understanding
Review a concept	The ability to restate a concept is the ability of students to re-express concepts that have been communicated to them.
Classification objects according to certain properties	Classification objects according to certain properties (according to the concept).
Presenting concepts in various forms of mathematical representation	The ability to present concepts in various forms of mathematical representation, is the ability of students to describe concepts in sequence that are mathematical in nature and can describe concepts in the form of images, tables, graphs, etc., are also able to write mathematical sentences of a concept.
Used, utilized and choose certain procedures or operations	The ability to use, utilize, and choose certain procedures or operations, meaning students' ability to solve problems.

Furthermore, the data is processed and analyzed based on understanding of ability concepts indicators contained in the problem solving process. The test provided consisted of four item description.

Below is the display of question number 1

A parking attendant gets Rp. 17,000.00 from 3 cars and 5 motorbikes, while from 4 cars and 2 motorbikes he got Rp. 18,000.00. If there are 30 motorbikes and 20 cars, a lot of parking money earned is ...

Display question number 2

In the cage there are 13 goats and chickens. If the number of animal legs is 32. Then the number of goats and chickens each is ...

Display question number 3

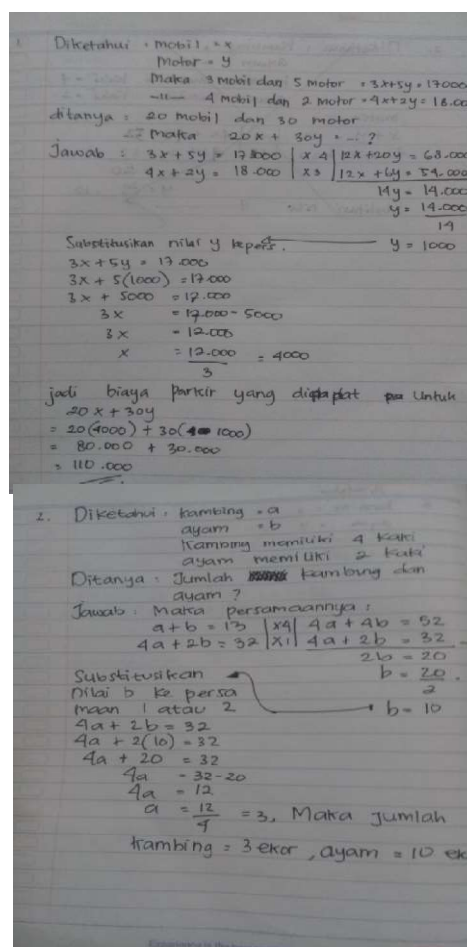
Two years ago a man was 6 times his son's age. 18 years later his age will be twice the age of his child. then their age now is ...

Display question number 4

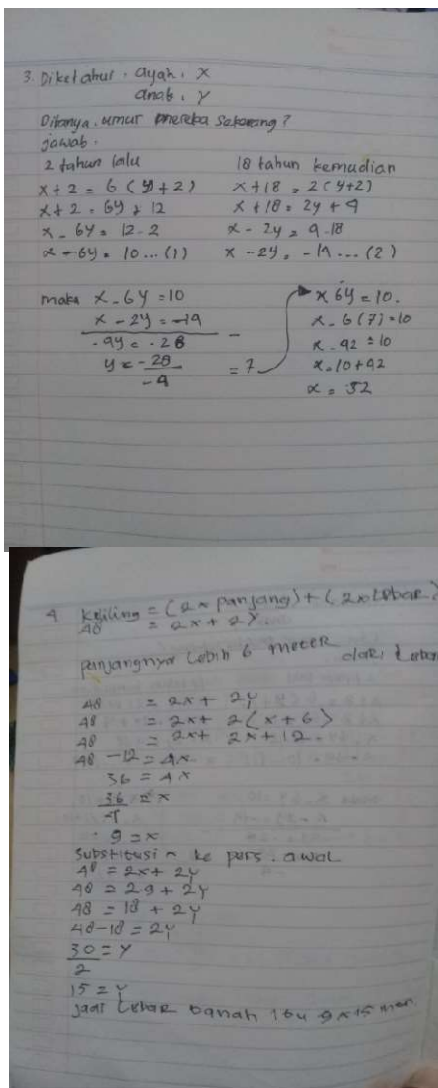
The circumference of a rectangular plot of land is 48m. Its length is more than 6 meters from its width. Then the size of the land is ...

Based on the four questions given to students, three students answered correctly and completed the understanding of ability concepts indicator and two students answered incorrectly and did not complete the understanding of ability concepts indicator.

Next Figure 1. Students who answered correctly and complete the indicators of critical thinking.



Next Figure 2. Students who not answered correctly and not complete the indicators of understanding of ability concepts.



the first figure is the result of correct student answers in accordance with the steps of understanding of ability concepts : Review a concept, Classification objects according to certain properties, Presenting concepts in various forms of mathematical representation, Used, utilized and choose certain procedures or operations.

the second picture there are two errors the first answer is systematic and according to the steps of understanding of ability concepts but in the evaluation step is wrong in the calculation and for the second problem the answer results are not in accordance with the steps of understanding of ability concepts so that in working on the problem an error occurs.

IV. CONCLUSION AND SUGGESTION

Based on the description and analysis of the results of the research that has been done, it can be concluded that the understanding of ability concepts of students from five students in solving the problems of the Two Variable Linear Equation System (SPLDV) is quite sufficient.

This is supported by data from four questions given that there are three students who are able to solve problems by completing understanding of ability concepts indicators and only students who answer incorrectly and do not complete all indicators of understanding of ability concepts. Based on the results of this study, suggestions are given:

- 1) for other researchers to conduct other research on understanding of ability concepts processes on other material to better reveal the high school students' understanding of ability concepts processes and conduct research in other schools through different approaches and perspectives according to characteristics existing in can be identified whether the characteristics of understanding of ability concepts processes in solving problems found are the same or different.
- 2) The teacher should encourage and guide students so that they can develop students' thinking in solving problems, especially the understanding of ability concepts.

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