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DIFFICULTY OF SOLVING PROBLEMS STORY SOLVED MATERIAL STUDENTS OF CLASS 5 UPT SDN 1 BITTUANG (LITERATURE REVIEW STUDY)

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ABSTRACT

This study aims to describe students' mistakes in solving word problems in the aspects of understanding the problem, planning problem solving, and carrying out problem solving. In this study, researchers used a literature study. The method of writing this Literature Review article is the library research method, which is sourced from online media such as Google Scholar, Mendeley and other academic online media. Based on research on students' difficulties in working on math word problems on fractional material, it can be concluded that (1) Difficulties in solving word problems include: difficulty reading questions, difficulty understanding problems, difficulty transforming problems, difficulty calculating processes, and difficulty writing conclusions about the final answer. Students experience the most difficulties in the calculation process, especially in determining the denominator of fractions with different denominators. Errors in the calculation process were made 204 times by the research subjects on all the questions tested. (2) There are three factors that cause students to make mistakes, namely due to difficulty understanding the problem, not understanding fractional concepts and operations, and causes of errors due to forgetfulness, carelessness, and haste. (3) Solutions that can be made to minimize students' mistakes in working on story problems are to increase the practice of working on story problems, make story questions in a more communicative language, apply cooperative learning in teaching story problems, and provide explanations using concrete props

Keywords: *Difficulty, Word Problems, Fractions, Mathematics*

INTRODUCTION

Students generally face many problems in various forms of math problems, one of which is word problems. Math problems in the form of stories require more understanding than other problems. Solving math word problems is not an easy thing because word problems do not only depend on the final answer. The problem in math word problems is that students must understand what is

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known, what is being asked, and how students change word problems into mathematical models so that students can find ways to solve problems.

Skills in solving problems are needed by students to solve problems in mathematics. According to Sri Harmini (2011: 124) states that problem solving is a process of accepting challenges and hard work in solving mathematical problems. Formulas, theorems, laws, work rules, cannot be directly used in solving mathematical problems because one problem with another is not always the same in its solution. Solving problems requires planning what steps must be taken so that problem solving is carried out systematically. A student is considered capable of solving a problem if he has gone through several problems. Polya in Widodo (2013) mentions four steps to solving a math problem, namely understanding the problem, making a problem solving plan, and re-examining answers. These stages must be possessed by students to be able to solve mathematical problems

This research was motivated by the low achievement of Class 5 Students of UPT SDN 1 BITTUANG. The cause of the low student achievement in mathematics may be that there are problems in the level of understanding of students' concepts that are not optimal, low mastery of mathematical materials and students' interest in studying mathematics is low. Such conditions are very likely to result in student errors. According to Suparno (2013: 4) an error or wrong concept is showing a concept that is not in accordance with scientific understanding or the understanding received by experts in a particular field. Errors that occur in students will result in student mistakes in solving the problems given and also affect mathematics learning achievement. Muzangwa (2012) holds that mistakes are held strongly by students and are different from experts. Drivers in Dahar (2012: 156) suggest that mistakes are personal, that is, students construct their own meaning. Errors originating from students can be in the form of preconceptions or initial conceptual errors, associative thinking, humanistic thinking, incomplete or incorrect reasoning, wrong institutions, learning abilities and interests (Suparno 2013: 34). In addition Savitri, et al (2014) concluded that most students only understand the concept. So that when faced with a new problem, they experience confusion which results in errors. The causes of errors in students with the Field Dependence (FD) cognitive style group are more dominated by incomplete student reasoning and students' abilities that are lacking in understanding and remembering material that has been received.

In this study, the researcher has several objectives that must be achieved, including describing student errors in solving word problems in the aspect of understanding the problem, planning problem solving, and carrying out problem solving.

METHODS

The method of writing scientific articles is by using qualitative methods and literature studies or library research. Reviewing theories and reviewing literature books that are in accordance with the theories discussed are sourced from Google Scholar. One of the main reasons for conducting qualitative research

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is that the research is exploratory in nature, (Ali & Limakrisna, 2013). In the next stage it will be discussed in depth in the section entitled "Related literature" or "literature review", as the basis for formulating hypotheses and in the final stages these two literatures become the basis for making comparisons with the results and findings. -findings revealed in research (H. Ali & Limakrisna, 2013).

FINDINGS AND DISCUSSION

Math Story Problems

The ultimate goal of learning mathematics in elementary schools is for students to be able to use various mathematical concepts to solve problems in everyday life. To practice problem solving skills in everyday life, usually at the end of a material questions will be presented in the form of a story. This story problem can be used to measure students' abilities in learning mathematics. Topilow in Fatimah and Sujati (2011: 336) explains, "A word problem is a form of math problem expressed in the form of a sentence that needs to be translated into an open sentence notation". Furthermore, Rahardjo (2011: 8) explains, "Story questions are math problems related to everyday life to find solutions using mathematical sentences that contain numbers, arithmetic operations (+, –, × , :)), and relations (= , <, >, ≤, ≥)".

Based on this explanation, it can be concluded that word problems are applied questions from the subject matter of mathematics presented in the form of stories or sentences and related to everyday life. As previously stated, in order to practice problem solving skills in everyday life, usually at the end of a material questions will be presented in the form of a story. But that doesn't mean that all word problems are problems. Runtukahu and Kandou (2016: 192-193) explain, "Mathematical problem solving is divided into two types, namely routine problem solving and non-routine problem solving".

In solving routine problems, children apply a mathematical method that is almost the same as the method described by the teacher. Most problems in textbooks are routine problems, or better known as word problems.

Whereas in non-routine problem solving, questions start from real situations and the solution is to translate the problem into a mathematical model, and then the problem is returned to real world problems. In solving word problems, you can use steps or problem-solving strategies, even though word problems are not necessarily a problem for students. One of the commonly known mathematical problem solving steps is the problem solving step according to Polya. Polya in Buddhayanti (2008: 9.9 - 9.10) states, "There are four steps in problem solving, namely, 1) Understanding the problem (students determine what is known and asked), 2) Planning a solution (students develop problem solving strategies), 3) Carry out the plan (students solve problems based on the plan), 4) Look back (check) ". In addition to the problem-solving strategy according to Polya, there is another problem-solving strategy that is effective in solving word problems, namely Newman's strategy. Newman (1977) in Jha (2012: 17) says, "When students try to answer a problem in math word problems, the student will go through various sequential stages, namely reading the problem (reading),

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understanding the problem (comprehension), transformation (transformation).), process skills, and coding.

The stage of reading the problem is reading the questions and understanding the keywords or symbols and sentences in the questions. The stage of understanding the problem is determining what is known and asked in the problem. The problem transformation stage is to create a mathematical model of the questions presented and determine the formulas and operations to be used in solving the problems in the questions. Furthermore, the stage of process skills is to perform mathematical calculations based on predetermined formulas or operations. The last stage of coding is that students write conclusions or final answers from solving problems.

Difficulties in Solving Math Problems in the Form of Stories

Learning difficulties are something that is experienced by some students in elementary schools, even experienced by students who study at higher education levels. Learning difficulties can be seen from the empirical fact that there are students who stay in class, or students who get poor grades in some of the subjects they take.

The results of research conducted by Reid (1989) in Jamaris (2015: 186-187) suggest, "The characteristics of children who have difficulty learning mathematics are marked by their inability to solve problems in aspects 1) understanding of the grouping process; 2) arithmetic operations of addition and subtraction; 3) difficulties in visual perception and auditory perception. Another feature of the characteristics of children with learning difficulties in mathematics was put forward by Lerner in Abdurrahman (2010: 259), namely, "1) there are disturbances in spatial relationships, 2) abnormalities in visual perception, 3) visual-motor associations, 4) perseveration, 5) difficulty recognizing and understanding symbols, 6) impaired body appreciation, 7) difficulties in language and reading, and 8) PIQ scores are much lower than VIQ scores. Based on this explanation, it can be concluded that learning difficulties in mathematics is a condition where students experience obstacles, distractions or obstacles in receiving and absorbing lessons and their efforts to gain knowledge or skills in mathematics. To help children with learning difficulties in mathematics, teachers need to recognize the various mistakes made by students in completing tasks in the field of mathematics. Runtukahu and Kandou (2016: 252-259) state, "Mistakes or mistakes of students who have difficulty learning mathematics are mistakes in learning to count, mistakes in learning geometry, and general mistakes in solving word problems". Furthermore, Rahardjo (2011: 14) states, "The errors experienced by students in working on mechanical word problems included errors in understanding the questions, errors in making mathematical models, errors in calculating, and errors in interpreting answers to mathematical sentences." In addition, there are other opinions regarding the types of student errors in working on word problems, commonly known as Newman's Error Analysis (NEA). In accordance with Newman's error analysis, Karnasih (2015: 40) explains "There are five types of errors that may occur when students solve math word problems,

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namely, 1) reading errors; 2) Easy to understand questions; 3) Transformation error; 4) Error calculation process; and 5) Errors in writing answers. Each of these errors can be studied when the child is working in the process of solving the problem by conducting interviews with the child

Reading errors are mistakes that students usually make when reading story problems. According to Jha (2012: 18) and Singh (2010: 266) errors in reading questions are errors caused because students cannot read the words or symbols in the questions, do not understand the meaning of the symbols in the questions, or interpret the keywords in the question. Jha (2012: 18) and Singh (2010: 266) explain, "Misunderstanding a problem is an error caused because students cannot understand the overall meaning of a problem". Errors in understanding the problem can be identified when students write wrongly and explain what is known from the problem, and write down and explain what is asked of the problem. Or in other words, an error in understanding the problem occurs when students are able to read the problems in the problem but do not know what problems they have to solve.

Transformation errors occur because students cannot identify arithmetic operations or formulas that will be used to solve problems. In this error, students are usually able to understand the problem but are not precise in determining arithmetical operations or formulas. Calculation errors are caused because students cannot know the process/algorithm to solve the problem even though they have been able to determine the formula correctly, and students also cannot carry out the procedure correctly even though they have been able to determine the mathematical operations used correctly. In this error, students are usually able to choose what mathematical operations to use, but they are not able to calculate them correctly. Errors in writing answers are errors that occur when students are wrong in writing what they mean. This error is caused by the student not being able to write down the answer he intended correctly, causing the meaning of the answer he wrote to change, besides that it is also caused by the student's inability to express the solution to the problem he is working on in written form and the student's inability to write the conclusion of his work correctly. .

The analysis of difficulty in solving word problems in this study is based on problem solving steps according to Newman's theory. With reference to NEA, the difficulty analysis that will be used is based on difficulty in reading questions, difficulties in understanding questions, difficulties in transformation, difficulties in the calculation process, and difficulties in answering questions or concluding questions.

Overcoming Student Learning Difficulties in Learning Mathematics

Aunurrahman (2013: 197-198) explains, "Efforts to help students overcome difficulties and errors in learning mathematics can be carried out through several stages, namely, 1) Identification, 2) Diagnosis, 3) Prognosis, 4) Therapy or providing assistance, 5) Follow-up continue or follow up. Identification is an activity directed at finding students who have learning difficulties. This identification activity can be done by collecting document data

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on student learning outcomes, analyzing student attendance, conducting interviews, distributing questionnaires about learning problems, and working on test questions. The diagnosis emphasizes determining the results of processing data about students who have learning difficulties and the types of mathematics learning difficulties experienced by students. Prognosis focuses on preparing a plan or program that is expected to help overcome the problem of learning difficulties in mathematics. Therapy is the provision of assistance to children who have learning difficulties according to a program that has been prepared at the prognostic stage. The last stage, namely follow-up, is an attempt to find out the success of the assistance that has been given to students.

CONCLUSION

Based on research on students' difficulties in working on math word problems on fractional material, it can be concluded that (1) Difficulties in solving word problems include: difficulty reading questions, difficulty understanding problems, difficulty transforming problems, difficulty calculating processes, and difficulty writing conclusions about the final answer. Students experience the most difficulties in the calculation process, especially in determining the denominator of fractions with different denominators. Errors in the calculation process were made 204 times by the research subjects on all the questions tested. (2) There are three factors that cause students to make mistakes, namely due to difficulty understanding the problem, not understanding fractional concepts and operations, and causes of errors due to forgetfulness, carelessness, and haste. (3) Solutions that can be taken to minimize students' mistakes in working on word problems are to increase the practice of working on story problems, make story questions in a more communicative language, apply cooperative learning in teaching story problems, and provide explanations using concrete props.

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