ANALYSIS OF THE ABILITY TO SOLVE MATHEMATICS STORY PROBLEMS OF CLASS IV PRIMARY SCHOOL STUDENTS

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Abstract

Background: Word problems allow students to apply mathematical concepts in the context of everyday life, helping to see the relevance and usefulness of mathematics. The ability to solve math story problems is an important component in the basic education curriculum, in accordance with national curriculum standards. Story problems have a higher level of difficulty compared to mathematics questions that display mathematical models directly.

Purpose: To find out how the ability to solve math story problems in fourth grade elementary school students and follow up for further research development.

Methodology: The literature review method that the author chooses as a reference in critical analysis of research topics that have been specifically determined with the aim of providing a comprehensive and up-to-date overview of current research on a particular topic, and to identify areas for further study.

Results: The activity of measuring students to determine higher thinking abilities is an activity that cannot be separated from learning outcomes. Test instruments or commonly called questions are one of the measuring tools used to detect students' abilities. In the realm of cognitive competence or knowledge, there are six levels of cognitive thinking processes according to Bloom's Taxonomy as revised by Anderson and Krathwohl. The story problem instrument allows a good evaluation of students' abilities in solving mathematics story problems which are used to measure abilities that take into account the diversity of story problem types, levels of difficulty, and cognitive abilities tested. It is important to include in the cognitive domain mathematics learning outcomes assessment instrument which was developed with the hope of increasing high-level thinking abilities, especially in low-level elementary school students in class IV.

Keywords: Ability to Solve Story Problems, Elementary School Mathematics Learning

I. INTRODUCTION

Mathematics is a problem related to problems in everyday life that can be solved. Skills in using Mathematics are very necessary in solving problems in everyday life. Solving mathematical problems in the form of story problems is a very important part of the mathematics curriculum because in the learning process and in solving it, students are able to gain experience using the knowledge and skills they already have to apply to solving non-routine problems.

Word problems allow students to apply mathematical concepts in the context of everyday life, helping to see the relevance and usefulness of mathematics. The ability to solve math story problems is an important component in the basic education curriculum, in accordance with national curriculum standards. Story problems have a higher level of difficulty compared to mathematics questions that display mathematical models directly (Dwidarti, Mampouw, & Setyadi, 2019).

Mathematics story problems are a form of mathematics problem that includes aspects of the ability to read, reason, analyze and find solutions, for this reason students are required to be able to master the skills in solving mathematics story problems (Agustini & Pujiastuti, 2020; Khasanah et al., 2021). The ability to solve word problems in the form of mathematical stories in everyday life, including

the stages of determining and writing down known aspects, aspects being asked, completing mathematical models or choosing operations and answering correctly by drawing conclusions (Anwar et al., 2022; Wasiah et al. al., 2020).

Difficulty in solving mathematics story problems is characterized by students not being careful in reading, understanding, knowing and remembering one or more terms of a concept sentence by sentence stated in the problem, as well as how to solve the problem correctly by looking at students' mistakes in solving it. (Dwidarti et al., 2019; Sudirman et al., 2019; Rahmawati, 2019). We can see students' difficulties in solving math story problems from their ability to read, understand, transformation process, solving process skills and writing answers. (Surya et al, 2018; Sesanti & Bere, 2020).

Mathematics story problems can be one solution in solving the problem of students' low mathematical problem solving abilities by implementing a learning model that emphasizes increasing the ability of trained students in solving various problems (Asfar & Nur, 2018; Anwar et al., 2022). Analysis of the ability to solve story problems is used as an indicator to evaluate the effectiveness of the mathematics curriculum at the elementary school level and provide information for curriculum adjustments as well as effective teaching strategies in developing the ability to solve story problems, including the use of teaching materials, learning approaches, and evaluation methods to improve mathematics learning student. There needs to be an instrument that allows a good evaluation of students' abilities in solving mathematics story problems. The instruments used to measure this ability need to take into account the diversity of types of story questions, level of difficulty, and cognitive abilities being tested. Instruments are one of the measuring tools used to detect students' abilities. The activity of measuring students to determine higher thinking abilities is an activity that cannot be separated from student learning outcomes (Sa'idah et al., 2019). It is important to include in the cognitive domain mathematics learning outcomes assessment instrument which was developed with the hope of increasing high-level thinking abilities, especially in low-level elementary school students in class IV.

II. METHODOLOGY

This research uses a literature review method which is a critical analysis of existing research on a particular topic in the form of a summary and evaluation of the current knowledge on a topic that has been specifically determined with the aim of providing a comprehensive and up-to-date picture of current research on a particular topic, and to identify area for further study. The sources used in searching for relevant literature related to the research topic come from existing literature such as academic databases, books and journal articles, both national and international.

III. RESULTS AND DISCUSSION

Solving ability according to Nurwasilah (2023) is the ability of students to solve and complete learning problems or solve problems that occur in everyday life. Increasing the ability to solve a problem or problem that can be given by the teacher can be trained by giving questions in the form of story questions. The ability to solve can be done mathematically, namely by using logical relationships and the required elements. The ability to solve problems is a skill possessed by students, in carrying out mathematical solutions, on problems in mathematics (Teresa et al., 2020). The ability to complete and resolve a matter or problem is very important for students' lives, namely to develop students' abilities in solving various types of problems in learning, such as problems in mathematics subjects, and being able to overcome problems that occur in everyday life (Nurfitriyanti et al., 2020).

The ability to solve math story problems using 4 aspects can be seen from the indicators in solving math story problems, these indicators are: 1) Ability to write down known aspects, 2) Ability to write down aspects in question, 3) Ability to complete mathematical models, 4) Ability to draw conclusions. The type of research that the researcher will use is descriptive quantitative. Based on the results of the data analysis that has been carried out, looking at the four existing indicators, an average value of 63.08 was obtained (Wasiah et. al., 2020). This shows that the ability of class IV students at SDN 9 Bukit Batu is in the sufficient category.

Then the students' ability to understand mathematics subjects by understanding the basic mathematical concepts that have been studied (Utami et.al., 2018) is the students' ability to solve story problems, they can use the teacher's teaching methods and styles very well and are easily accepted by students and The teacher familiarizes students with solving story problems. And developing the personality of students is one of the important tasks of a teacher because when every parent enters school, the role of the teacher is one of replacing parents at home, so what the teacher must do is provide good service to students, guide students properly. right on target, as well as making students confident in carrying out their learning tasks at school, developing students' emotional intelligence is very important for teachers because it can produce students who have identities such as honest, sincere, disciplined, tenacious, and have a sense of responsibility and build always positive character.

The ability to solve mathematics story problems was carried out using descriptive research with a qualitative approach that looked at students' learning styles (Nurdiana, et. al., 2021). Students' abilities in solving mathematics story problems in terms of visual, auditory and kinesthetic learning styles are respectively in the criteria of good, poor and very poor. Students with a visual learning style have the ability to solve math story problems better than students with an auditory and kinesthetic learning style. Students' abilities in solving math story problems in terms of learning style were determined through analysis of students' answers in solving number story problems and based on interview results. The analysis technique used is descriptive statistical analysis. From the research results, it was found that the ability to solve mathematics story problems for students with visual, auditory and kinesthetic learning styles was respectively in the criteria of good, poor and very poor. The ability to solve students' math story problems with a visual learning style is good. The ability to solve math story problems for students with an auditory problems for students with a story problems for students with a visual learning style is poor. The ability to solve math story problems for students with a visual learning style is poor. Students with a visual learning style is poor. Students with a visual learning style is poor. Students with a visual learning style have the ability to solve math story problems for students with a story problems for students with a visual learning style is poor. Students with a visual learning style have the ability to solve math story problems for students with a story problems for students with a visual learning style is poor. Students with a visual learning style have the ability to solve math story problems for students with a story problems for students with a visual learning style.

Then use problem solving strategies in the ability to solve math story problems and STAD strategies. The results of research by (Yulianda, 2023) obtained, among others: 1) there is a difference in the ability to solve math story problems between students who learn to use problem solving strategies and students who learn to use the STAD strategy, 2) there is a difference in the ability to solve story problems between studence high learning and students who have low learning independence, 3) there is an interaction effect between learning strategies and learning independence on the ability to solve story problems, 4) there are differences in the ability to solve story problems of students who have high learning independence between students who learn using problem solving strategies and who use the STAD strategy, 5) there is a difference in the ability to solve story problems for students who have low learning independence between students who learn to use the problem solving strategies and who use the STAD strategy.

The Polya stages can be applied to the ability to solve math story problems sequentially (Nurva'ida et. al., 2023). It can be seen that the abilities of Class IV students in solving math story problems vary. There was 1 student with high story problem solving abilities, 9 students with medium story problem solving abilities, and 8 students with low story problem solving abilities. Students with high story problem solving abilities were able to solve all the story problems according to the polya stages correctly, students with medium story problem solving abilities were only able to solve 3-4 questions according to the polya stages correctly, and students with low story problem solving abilities were almost able to solve 3 story questions according to polya stages.

IV. CONCLUSIONS AND NEWNESS

The ability to solve story problems includes students' ability to solve learning problems and daily life problems through practicing mathematical story problems which are seen from four aspects, namely aspects that are known, asked, completing mathematical models and drawing conclusions. Test instruments or commonly called questions are one of the measuring tools used to detect students' abilities. The activity of measuring students to determine higher thinking abilities is an activity that cannot be separated from learning outcomes. In the realm of cognitive competence or knowledge, there are six levels of cognitive thinking processes according to Bloom's Taxonomy as revised by Anderson and Krathwohl, namely: remember, comprehend, apply, analyze, evaluate, and create (create).

There needs to be an instrument that allows a good evaluation of students' abilities in solving mathematics story problems. Instruments are used to measure abilities that take into account the diversity of types of story questions, level of difficulty, and cognitive abilities tested. It is important to include in the cognitive domain mathematics learning outcomes assessment instrument which was developed with the hope of increasing high-level thinking abilities, especially in low-level elementary school students in class IV.

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