

Analysis of Mathematics Learning Difficulties in Grade VI Students at Miftahul Ulum Madrasah Ibtidaiyah In Solving Word Problems

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ABSTRACT

Students who experience difficulties in learning mathematics often make mistakes in arithmetic and in the concepts used to solve story problems. The difficulties students often experience include solving story problems: they are unable to understand the problem's meaning and are confused about which arithmetic operation to use. The purpose of this study was to identify the difficulties students experience in learning mathematics and the factors that influence these difficulties in sixth grade at Miftahul Ulum Islamic Elementary School. This study used a qualitative descriptive method. The study subjects were 10 sixth-grade students and their homeroom teacher. The data collection procedures used were observation, interviews, tests, and documentation. The study found that 3 out of 10 sixth-grade students experience difficulties in learning mathematics when solving story problems. The difficulties in learning mathematics in solving story problems in the sixth grade included understanding concepts, calculating, and problem-solving. The factors causing difficulties in learning mathematics came from internal and external factors. Internal factors originating from students included IQ, student attitudes towards learning, and low student motivation to learn. Meanwhile, external factors originating from outside the students include a lack of variety in teaching methods, the use of learning media, and the environment.



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A. INTRODUCTION

Education is a conscious, planned effort to help individuals develop their potential through learning processes and other approaches accepted and valued by society. Through education, humans acquire the knowledge, skills, and attitudes necessary to survive and play an active role in social life. Thus, education has a strategic role in shaping the quality of human resources. One of the disciplines taught at the elementary education level is mathematics. According to Mingjing & Yidi, (2022), mathematics plays an important role across various scientific fields and in the development of logical, critical, and systematic thinking. Therefore, mathematics learning is an important foundation for improving the quality of education and students' thinking abilities from an early age.

However, mathematics learning in schools still faces various problems. One of the main problems is the low interest and learning outcomes of students in mathematics. Most students consider mathematics a difficult and uninteresting subject, leading to a dislike and even avoidance of learning mathematics (Wakhata, Mutarutinya, and BALimuttajjo 2022). This condition affects students' conceptual understanding and learning outcomes in mathematics evaluations.

The learning of arithmetic operations, which include addition, subtraction, multiplication, and division, is an integral part of mathematics education in elementary school. These operations are closely related to numbers, both integers and fractions, which form the basis for mathematics learning at the next level (Wakhata, Mutarutinya, and BALimuttajjo 2022). Mastery of basic arithmetic operations is essential for students to understand more complex mathematical concepts.

When students use mathematical concepts, skills, and procedures to solve a problem, they engage in the process of mathematical problem-solving (Roebyanto and Harmini 2017). One type of question often used to practice this skill is word problems. The ability to solve word problems is very important because it involves applying mathematical concepts in everyday life. However, not all students find word problems easy to solve, so they often struggle with them. Students who experience difficulties in learning mathematics generally exhibit certain characteristics. According to (Sari, Cahyaningrum, and Zahra 2024), students with learning disabilities often make mistakes in learning geometry and arithmetic, as well as in solving story problems. These difficulties in learning mathematics were also found among sixth-grade students at Miftahul Ulum Tunggak Cerme Islamic Elementary School.

Based on an analysis of student scores and interviews with Mr. Muis Firmansyah, a mentor and sixth-grade teacher at Madrasah Ibtidaiyah Miftahul Ulum Tunggak Cerme, it was found that students' ability to solve math problems remained relatively low. The teacher said that mathematics is one of the subjects with the lowest achievement levels. The difficulties students experience include difficulty determining the correct calculation operations and difficulty understanding the meaning and concepts of the questions. As a result, students need a relatively long time to solve problems, especially word problems. These low learning outcomes indicate problems in the learning process that require attention and improvement.

These findings align with research (Rizqi et al. 2023; Sari, Cahyaningrum, and Zahra 2024) indicating that students experience difficulties in numeracy and in comprehending mathematical concepts, which impacts their problem-solving abilities. In addition, research (Phonapichat, Wongwanich, and Sujiva 2014; Sulistyani, Subekti, and Wardana 2021) indicates that students' errors in solving word problems can be examined from several perspectives. First, the aspect of problem comprehension, namely, errors in interpreting the problem's language and in constructing mathematical models. Second, the aspect of problem-solving planning, namely errors in connecting known data with requested data and in relating relevant mathematical concepts. Third, the aspect of plan implementation, namely errors in applying formulas and the use of inappropriate

numbers or units. These errors are generally caused by students' underdeveloped reasoning and thinking.

Although several previous studies have examined students' difficulties in mathematics learning, most of these studies generally focus only on identifying the types of errors or difficulties experienced by students in solving mathematical problems. In addition, many studies were conducted in different educational contexts and did not specifically analyze the difficulties of sixth-grade students in Madrasah Ibtidaiyah, particularly in solving word problems related to arithmetic operations. Therefore, there is still a research gap regarding a deeper analysis of students' learning difficulties that considers both the types of difficulties and the factors influencing them within the specific context of Islamic elementary schools. This study is important because understanding students' learning difficulties in solving word problems can help teachers design more appropriate learning strategies and provide better guidance for students.

The novelty of this research lies in its focus on analyzing the learning difficulties of sixth-grade students in solving mathematics word problems while also identifying the internal and external factors that influence these difficulties in the context of Madrasah Ibtidaiyah Miftahul Ulum Tunggak Cerme Probolinggo. The results of this study are expected to provide a clearer picture of students' learning difficulties and serve as a reference for improving mathematics learning in elementary education.

Based on this description, this study aims to identify various types of mathematics learning difficulties experienced by sixth-grade students at Madrasah Ibtidaiyah Miftahul Ulum Tunggak Cerme in solving word problems. In addition, this study aims to analyze the factors that influence these difficulties and to formulate learning strategies that help students overcome problems in mathematics learning.

B. METHODS

This study uses a descriptive qualitative research design. Qualitative research aims to understand phenomena experienced by research subjects, such as behavior, perceptions, motivations, and actions, holistically and descriptively in the form of words and language within a specific natural context using various scientific methods. (Moleong 2012). This research was conducted at Madrasah Ibtidaiyah Miftahul Ulum Tunggak Cerme with sixth-grade students on January 6, 2024, during the 2023/2024 academic year. The research subjects consisted of 11 participants, including 10 students and 1 teacher. Data were collected through interviews with the teacher and sixth-grade students, written tests consisting of word problems, and documentation.

The data analysis technique in this study refers to the model proposed by Miles and Huberman (Sugiyono 2015), which consists of several stages: data collection, data reduction, data display, and conclusion drawing or verification. In the data collection stage, the researcher gathered information through interviews, tests, and documentation on students' difficulties in solving mathematical word problems. The next stage was data reduction, in which the researcher selected, simplified, and organized the collected data by focusing on information relevant to students' learning difficulties and the factors influencing them.

After that, the data were presented as descriptive summaries and tables to make the findings easier to understand and interpret. The final stage was drawing conclusions and verification, in

which the researcher interpreted the analyzed data to identify the types of learning difficulties experienced by students and the factors contributing to them. The conclusions were continually verified by comparing data from different sources, such as interviews, test results, and documentation, to ensure the validity and consistency of the research findings.

C. RESULT AND DISCUSSION

This study was conducted on sixth-grade students at Madrasah Ibtidaiyah Miftahul Ulum Tunggak Cerme Probolinggo, and the following data were discussed. This study was conducted on sixth-grade students at Madrasah Ibtidaiyah Miftahul Ulum Tunggak Cerme Probolinggo. The research subjects consisted of one homeroom teacher and ten sixth-grade students. The homeroom teacher involved in this study was Bapak Muis Firmansyah, S.Pd., who provided information regarding the factors causing students' difficulties in solving mathematics problems, particularly word problems.

Meanwhile, the student subjects included Abdul Hafid, Siti Badriah, Firda Nadia Aurin Nisa, Nur Faizul Mutaqin, Afiful Islam, Faridatun Najah, Risma Lailatul Mumtaza, Erika Putri, Mazia Maulidiyah, and Renaldi Putra. Based on the test results, only three students were able to achieve the minimum passing grade, while seven other students still experienced difficulties in solving mathematics word problems and obtained scores below the minimum passing grade. These results indicate that most sixth-grade students at Madrasah Ibtidaiyah Miftahul Ulum still face difficulties in understanding and solving mathematics word problems.

1. Difficulties in Learning Mathematics

Please check all the images in your journal, both on screen and in the printed version. When checking printed versions of images, make sure that: Difficulties in learning mathematics are obstacles students encounter, particularly when solving word problems in mathematics lessons. This is in accordance with the theory of (Maghfiroh and Wahyuningsih 2024; Rahma, Fajriah, and Noorbaiti 2025), which states that students' difficulties in solving problems stem from their inability to understand the meaning of word problems.

In this study, the subjects were 10 students, 6 female and 4 male. Seven students were unable to learn mathematics or experienced difficulties in learning it, namely in understanding concepts and solving problems. In this study, the difficulties students experienced in understanding basic concepts were addition, subtraction, multiplication, and division with the same or different denominators. The students' lack of understanding of concepts in solving math problems had a negative impact on them, causing them to experience difficulties in solving story problems because the teacher was not innovative in teaching and did not provide concrete examples that connected the story problems with mathematics. This is similar to the research conducted by Sulistyani et al., (2021) on the analysis of difficulties in learning mathematics, which found that students experienced difficulties due to their lack of understanding of concepts and calculations.

Difficulties in calculation can arise when students make mistakes in their calculations. Students also experience difficulties in calculation skills because they are

not careful in calculating, in line with the view Pratiwi et al., (2020) that students who experience difficulties in learning mathematics often make calculation mistakes.

The analysis of difficulties in solving story problems shows that students cannot interpret the problem sentences and do not follow the steps to solve them, so they cannot answer the questions correctly. This aligns Lariviere et al., (2025) finding that a lack of understanding of mathematical language characterizes children who experience difficulties in learning mathematics. This lack of understanding makes it difficult for students to make meaningful mathematical connections, as is the case when solving problems presented in story form.

2. Factors That Cause Difficulties in Learning Mathematics

These internal factors originate from within the student, such as the student's IQ, learning attitude, and learning motivation.

1. Each student's IQ level varies; some students develop cognitively quickly, while others develop slowly.

Based on the analysis results, it can be seen that in the sixth grade of Madrasah Ibtidaiyah, there are both smart and less capable students. Intelligent students will quickly understand the lesson when the teacher explains it, whereas students with low IQs will need time to understand it. Out of 10 students, only 3 met the minimum criteria for mathematics proficiency. This aligns with Quilez-robres et al., (2021) view that intelligence significantly influences a person's learning progress. In similar circumstances, students with high intelligence will be more successful in their studies than students with low intellectual levels.

2. Learning attitude is a student's tendency to engage or not engage in learning activities.

A positive attitude towards a subject is a good start to the learning process. Conversely, a negative attitude towards a subject can lead to learning difficulties or suboptimal learning outcomes. The analysis shows that students' attitudes towards mathematics vary: some like it, while others do not. Students who dislike mathematics have a negative attitude towards mathematics learning, so they do not follow the learning process well. This aligns with Izzah et al., (2025) view that mathematics is the subject students find most difficult, both among students who do not experience learning difficulties and, even more so, among those who do.

3. Learning Motivation: Motivation serves to direct students' actions in learning.

In addition to teacher motivation, parents' support for learning is very important. The analysis shows that students' learning motivation remains low. Students also do not review the material taught at school when at home, nor do they study mathematics when there are no tests. Low student motivation also leads to a lack of enthusiasm for participating in mathematics learning, thereby creating difficulties in learning mathematics. This aligns with the views of Made et al., (2020), who found that students with weak motivation appear indifferent, are easily discouraged, and have difficulty focusing on lessons, resulting in many learning difficulties.

These external factors originate from outside the students, such as the use of learning media and the environment.

1. Learning media are very useful in explaining the content of a subject.

Concrete learning media are very important to be included in mathematics education. Based on observations and interviews with teachers and students, it is evident that teachers do not use concrete learning materials when teaching fractions, leading students to have difficulty with the concepts. Teachers use blackboards only for teaching and learning activities (Bala, 2025; Mohammed, et al, 2025)

2. The family is the first center of education for students.

Parental guidance and attention are important factors in student learning success (Rodiyah, et al, 2025; Xiao, et al, 2025). According to the analysis, students who are identified as having difficulty learning mathematics do not always receive attention from their parents at home. The family's economic situation is one reason parents pay less attention to their children. Most of the students' parents work as laborers, so they rarely accompany their children while they study at home. Parents leave for work in the morning, dropping their children off at school, and return home in the evening. By the time they get home, they are tired, which leads them to provide less support for their children's learning activities. at home, with the responsibility for students' learning placed solely on the school. This aligns with the findings of Novia et al, (2020), who state that children who do not receive supervision or guidance from their parents are likely to face significant learning difficulties.

D. CONCLUSION AND SUGGESTIONS

The difficulties faced by sixth-grade students at Madrasah Ibtidaiyah Miftahul Ulum in learning mathematics, particularly in solving word problems, are understanding concepts, making mistakes in calculations, and solving problems. Based on the research, two factors cause students to experience difficulties. The first is internal factors, including IQ, learning attitudes, and learning motivation. Meanwhile, external factors consist of learning media and the environment, especially the family.

The recommendations that can be made after conducting this research are, first, teachers must be more creative in managing the learning and teaching process; second, students must do more variations of word problems; and finally, parents must motivate students to learn more actively.

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