

Students' Learning Difficulties Review from Mathematics Problem-Solving Ability in Third-Grade Elementary School

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Abstrak

Siswa mengalami kesulitan pada materi pecahan terutama perbandingan pecahan. Selain itu siswa juga mengalami kesulitan dalam proses perhitungannya. Hal ini berdampak pada hasil belajar matematika pada siswa yang rendah. Tujuan penelitian ini yaitu menganalisis kesulitan belajar siswa yang ditinjau dari kemampuan pemecahan masalah matematika pada materi pecahan kelas III sekolah dasar. Jenis penelitian ini adalah penelitian kualitatif deskriftif. Subjek yang diambil adalah 6 siswa. Data diperoleh melalui wawancara, tes dan dokumentasi. Instrument yang digunakan untuk menganalisis data yaitu kuesioner. Teknik yang digunakan untuk menganalisis data yaitu kuesioner. Teknik yang digunakan untuk menganalisis data yaitu analisis deskriptif kualitatif dan kuantitatif. Hasil penelitian yaitu siswa memiliki skor pada aspek memahami masalah sebesar 50 (33.3%) berada pada kategori kesulitan sedang. Aspek membuat rencana memiliki skor sebanyak 34 (22,60%) (kesulitan tinggi). Aspek menerapkan rencana memiliki skor sebanyak 95 (63,30%) (kesulitan rendah). Aspek mengecek kembali memiliki skor sebanyak 98 (65,30%) yang masuk kategori kesulitan rendah. Kesulitan tersebut dikarenakan masih kurangnya pemahaman terhadap soal, kesalahan dalam menentukan strategi yang benar untuk menyelesaikan soal dan kesulitan dalam proses perhitungan serta daya tangkap anak yang rendah.

Kata kunci: Kesulitan Belajar, Pemecahan Masalah, Pecahan

Abstract

Difficulty in the calculation process. It has an impact on low mathematics learning outcomes for students. This study aims to analyze students' learning difficulties in terms of mathematical problem-solving abilities in grade III elementary school fractions. This type of research is descriptive qualitative research. The subjects taken were six students—data obtained through interviews, tests, and documentation. The instrument used to analyze the data is a questionnaire. The technique used to analyze the data is descriptive qualitative and quantitative analysis. The study results are that students have a score on the aspect of understanding the problem of 50 (33.3%) in the medium difficulty category. The planning aspect has a score of 34 (22.60%) (great difficulty). Implementing the plan has a score of 95 (63.30%) (low difficulty). The re-checking aspect has a score of 98 (65.30%), which is in the low difficulty category. The difficulty is due to the lack of understanding of the questions, errors in determining the correct strategy to solve the problems and difficulties in the calculation process, and the child's low grasping power.

Keywords: Learning Difficulties, Problem Solving, Fractions

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Introduction

Problem-solving is an essential part of the curriculum of mathematics (Mutakinati et al., 2018; Nurtanto et al., 2020). In the learning process, students can gain experience using the knowledge and skills they already have to be applied to non-routine problem solving (Abrami et al., 2008; Pitt et al., 2015; Seruni et al., 2020). Solving problems is the main goal in learning mathematics (Yuniarti & Radia, 2020). One needs to study mathematical problem solving because, in the 21st century, someone who can solve mathematical problems lives more productively (Cheung & Yin, 2021; Kowiyah et al., 2019). Someone skilled at solving problems will be able to keep pace with the needs of his life, become a productive worker, and be able to understand complex issues (Nurlaily et al., 2019; Pratama & Retnawati, 2018).

Problem-solving is a part of mathematics that uses knowledge and problem-solving skills (Sun et al., 2021; Yemi, 2018). Problem-solving is an attempt to find a way out of a

difficulty to achieve a goal that is not easy to immediately achieve (Mulyanto et al., 2020; Turan & Koç, 2018). Problem-solving can be in the form of creating new ideas, techniques, or products (Kembara et al., 2018; Purwanita et al., 2019). In learning mathematics, problemsolving also has an interpretation, such as solving story problems or non-routine questions (Ambussaidi & Yang, 2019; Pangesti et al., 2017). From some of the opinions above, it can be seen that problem solving is a way to solve a problem using the skills already possessed. One of the factors that affect student learning difficulties, for example, do not understand the concepts and operations of counting fractions (Setiawan & Ari Oka, 2020).

Based on interviews with third-grade teachers at SDN Gayamsari 02 Semarang, it can be seen that third-grade students have difficulty with fractions. The common problem-solving ability of students is due to several things. First, the learning methods used by teachers are still conventional. Second, it is caused by the students themselves, who are less concerned about learning mathematics. Mathematics is considered boring and less attractive to most students. It has an impact on students' low mathematics learning outcomes.

The research findings are that two factors cause student learning difficulties in solving math story problems on fractional material: internal and external factors (Indriani, 2018; Maghfiroh & Hardini, 2021). Internal factors include difficulty understanding the problem in question, not understanding the concepts and operations of counting fractions, and most general causes are forgetting, not being careful, and being in a hurry (Chityadewi, 2019; Hidayati, 2012). External factors come from the teacher. Teachers still emphasize the lecture method and memorization in multiplication and division pembagian (Trisnawati et al., 2019). In addition, other research findings also state that students' learning difficulties in solving story problems include difficulties in understanding concepts, skills, and solving problems.

An appropriate solution is needed to overcome these problems so that it is expected to improve problem-solving skills in learning mathematics. This research focuses on what learning difficulties are experienced by the third-grade students of SD N Gayamsari 02 Semarang in terms of mathematical problem-solving abilities in fractional material. The purpose of this study was to analyze more deeply the learning difficulties of third-grade students at SD N Gayamsari 02 Semarang in terms of mathematical problem-solving abilities in fractional material. It is hoped that the results of this study can assist teachers in overcoming the problems of students' mathematical problem-solving abilities.

Methods

This research uses a descriptive qualitative research method. This research was conducted at SDN Gayamsari 02 Semarang. The subjects taken were six students. The data collection procedure in this study used interviews, tests, and documentation. The test was conducted using a google form, and interviews were conducted face-to-face. The instrument used to collect data is a questionnaire. The technique used to analyze the data is descriptive qualitative and quantitative analysis. The analytical method used is data reduction, data presentation, verification, and conclusion.

Results and Discussion Results

The results of the questions done by the code one student in question number 1t can be seen that the code 1 student did not write down the plan he would use to solve the problem. In question number 2, code 1, students also did not write down the plan to solve the problem. In question number 3, code 1, students did not write down the units at the planning stage. In question number 4, student code 1 did not write down the plan to be used. In question number 5, student code 1 did not write down the plan to be used. In question number 5, student code 1 did not write down the plan to be used and did not write down the result and unit numbers in the conclusion section.

The results of interviews that have been conducted with students of code 1. It can be seen that students of code 1 have difficulty understanding the problem, so that students read the questions repeatedly and have difficulty in the calculation process. Based on the results of working on the questions and interviews, it can be concluded that code 1 students have difficulty understanding the problem and making plans. In work on question number 1, code 2, students experienced not writing down information, problems, plans that would be used to solve the problem and did not implement the plan. In the conclusion section, do not write "so," the units and numbers. In questions number 2, 3, and 4, code 2 students did not write down information, and problems did not make plans. At the stage of implementing the plan, do not write down the units. In question number 5, code 2, students did not write down information, problems, did not make plans, and implemented their plans. At the conclusion stage, do not write down the numbers or units. From the results of interviews with students of code 2, it can be seen that they have difficulty in questions number 2,3, and 4. Moreover, students of code 2 are still confused about understanding the problem, and there are still fractional methods that have not been understood. Code 2 students sometimes have difficulty in the calculation process.

Based on the results of the questions and interviews, it can be concluded that code 2 students have difficulty understanding the problem, determining the method to be used, and difficulties in the calculation process. From the results of the work of students of code 3, it can be seen that in question number 1, students of code 2 did not write down information, problems and did not write down the plans to be used. In implementing the plan, do not write down the units and numbers that are entered incorrectly. In the conclusion stage, do not write so, units or numbers. In question number 2, code 3, students did not write down the information, problems, or methods that would be used to solve the problem. At the stage of implementing the plan, code 3 students experienced errors in their mathematical concepts. In questions number 3 and 4, code 2 students did not write down the problem, information, and only numbers at the conclusion stage. In question number 5, code 3, students did not write down the problems, information, or plans to be used. Code 3 students did not show the calculation process at the implementation stage, and there were no units. While at the conclusion stage, students code 3 did not write down the units or numbers. From the results of interviews with students of code 3, it can be seen that students of code 3 do not understand the problems and difficulties in the calculation process.

The results of interviews with students of code 5 can be seen that students of code 5 have difficulty in understanding the problem, determining the method and process of calculation. Based on the results of student work and interviews with these students, it can be concluded that code 5 students have difficulty understanding the problem, determining the method, applying the method, and the calculation process. The results of student work code 6 in numbers 1 to 5 do not write down the problems, information, and methods used. In question number 1, do not write down the units and numbers. In questions number 2 and 3 the students did not write down the units. In question number 5, do not write down the units and numbers. From the results of interviews with students of code 6, it can be seen that students of code 6 have little difficulty understanding the problem and determining the method to be used. Based on the results of interviews and the work of students of code 6, it can be concluded that students of code 6 have difficulty understanding the problem and the method used to solve the problem.

Stages	Questio n 1	Questio n 2	Score Questio n 3	Questio n 4	Questio n 5	Total	Percent age
Understanding the Problem	10	10	10	10	10	50	33,30%
Making Plans	6	6	10	6	6	34	22,60%
Executing the Plan	17	18	21	22	17	95	63,30%
Check Back	18	21	22	22	15	98	65,30%

Table 1. Results of Data Analysis

From the data above, it is known that students have a score on the aspect of understanding the problem as much as 50 (33.3%), which fall into the category of moderate difficulty, making plans has a score of 34 (22.60%) and is in the category of great difficulty, implementing plans has a score of 95 (63.30%) in the low difficulty category and re-checking has a score of 98 (65.30) which is in the low difficulty category.

Discussion

In understanding the problem, 5 subjects did not write down the information or problems in the questions. In making plans, the average subject does not write down the plans used to solve the problem because mathematics is complex and does not yet understand how to solve the problem. Other research findings also found that students generally consider mathematics difficult (Kartika et al., 2019; Selvianiresa & Prabawanto, 2017; Yin et al., 2020). Teachers must plan a fun mathematics lesson so that students feel happy in learning mathematics and do not find it difficult (Legesse et al., 2020; Schoenfeld, 2016). In implementing the plan, code 3 students have errors in their strategies, but for the results, they are correct. This also shows that subject 3 does not understand the mathematical concept of the problem.

In solving a problem, a person will face mathematical concepts, skills, and processes (Dinayusadewi et al., 2020; Nugroho et al., 2018; Shah et al., 2020). Code 4 students also apply the wrong strategy. Lack of understanding about questions is one of the reasons why students make mistakes in determining strategies (Kowiyah et al., 2019; Öztürk et al., 2020). In the aspect of re-checking, which is seen from the conclusion of the question. There is one subject who did not write a conclusion. It concludes that students do not understand the questions given. Students who do not understand the questions will have difficulty answering questions (Mailizar et al., 2020).

Based on the above discussion, teachers should better understand the difficulties experienced by students in learning so that they can find solutions to overcome the difficulties experienced by students (Ikawati & Kowiyah, 2021; Sulastri & Kusmanto, 2016).One way is by repeatedly providing practice problem-solving problems and providing an effective way for students to solve problems in fraction story problems. In addition, teachers can also use innovative learning strategies that can make students feel happy when learning mathematics (Hendriana et al., 2018; Hidayat et al., 2020). In addition, fun learning strategies will make students feel comfortable while studying and not feel tense. Teachers can also use learning media to improve students' understanding (Setiyani et al., 2020). Learning media can help students in distributing learning material information so that students will learn easily. The use of appropriate media and learning strategies will undoubtedly help students in learning.

Conclusion

Students have difficulty understanding the problem, making plans, implementing plans, and making conclusions based on the analysis. The difficulty is due to the lack of understanding of the questions, errors in determining the correct strategy to solve the problems and difficulties in the calculation process, and the child's low grasping power.

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