

ANALYSIS OF STUDENT'S ABILITY IN COMPLETING OPERATIONS OF SUMMARY AND REDUCTION OF INTEGER NUMBERS

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ABSTRACT

This study aims to describe the abilities and difficulties experienced by students in solving arithmetic operations on addition and subtraction of integers in SDIT Bunayya class. The data was collected by using test, interview, observation, and documentation methods. From the interview data, it shows that in solving problems students do not understand the concept of addition and subtraction of integers, the factor causing the difficulties experienced by students in solving problems is the lack of willingness to learn from within students. Students are often lazy to learn mathematics, do not want to listen to the teacher's explanation when the lesson is in progress, students do not concentrate fully during teaching and learning activities, students are afraid to ask the teacher if they do not understand the material. The material being taught, students always assume that mathematics is very difficult, students are less careful when working on problems. The results showed that the learning activities facilitated by the teacher were included in the good category. The teacher presents the lesson in an interesting way so that the learning process is not boring. The discussion method is used during the learning process to encourage students to ask questions and discuss so that students can share ideas. Students have difficulty solving problems between positive integers and negative integers in the form of stories. Students have difficulty because students do not understand the concept of integers contextually. This can be overcome by using learning media and contextual emphasis on learning concepts and observing student development using the results of the evaluation at the end of the class.

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1. INTRODUCTION

Education has a significant role in the development of Indonesia. Without a good education, every individual will not be able to compete in the face of progress (Maulyda, Hidayati, & Erfan, 2020; Rosyidah & Hartono, 2019). Through education, starting from elementary school education, it is hoped that it can form skilled, intelligent, and noble human beings; besides that, it can also develop critical thinking, reasoning, and creative abilities through education. Education in Indonesia is currently directed at efforts to improve the quality of human resources by being human beings who are proactive in facing global challenges following national education goals (Rosyidah & Hartono, 2019). As stated in Law no. 20 of 2003, concerning the National Education System, Chapter II article 3 states that: National education functions to develop capabilities and shape the character and civilization of a dignified nation in the context of educating the nation's life, aiming

at developing the potential of students to become human beings who believe, fear God The Almighty, has a noble character, is healthy, knowledgeable, capable, creative, independent and becomes a democratic and responsible citizen. Achieve these educational goals, which can be done through formal, non-formal, and informal education. One of the lessons taught in schools is Mathematics (Nurfahrudianto, Pd, Pd, Darsono, & Kom, 2017).

Mathematics is one field of study that exists at every level of education, from elementary school to university level. Umar et al. (2020) argues that mathematics is one of the disciplines that can improve the ability to think and argue, contribute to solving everyday problems and become a fundamental science in studying other sciences. It can be synthesized that mathematics needs to be taught to students, especially in elementary schools to improve critical, logical, and systematic thinking skills. As one of the subjects taught at every level of education, mathematics plays an important role because mathematics is a means to train critical and rational thinking skills. In addition, mathematics is also a basic science to study other fields of science. Mathematics subjects need to be given to all students, especially in elementary schools to equip students with "the ability to obtain, select and manage information requiring logical, analytical, systematic, critical and creative thinking" (Apsari, Sripatmi, Sariyasa, Maulyda, & Salsabila, 2020).

In mathematics, good numeracy skills are needed to solve problems in the form of questions to get the correct answers or problem-solving. However, there are still many elementary school students who cannot solve even simple arithmetic operations. One of the materials studied in mathematics is "Integer Numbers (Wright, 2013)." This integer has been studied since elementary school. One of them is in the high class, namely grades 4, 5, and 6. Usually, the material that will be discussed in high class is about recognizing the meaning of integers, the properties of arithmetic operations, arithmetic operations on integers, estimation, and rounding, and roman numbers. It will all be learned by high-grade elementary school students. Understanding and using integers has become a necessity for every human being to be able to live in their environment (Atmojo, Muhtarom, & Lukitoaji, 2020).

After interviewing on May 20, 2022, with a grade VI teacher at SDIT Bunayya, Pasarkemis District, Tangerang Regency, the subject matter that students find difficult to understand is integer operations. Students have difficulty working on arithmetic operations questions for addition and subtraction of integers on combined or mixed questions. Based on the interviews, it was found that students' mathematics learning outcomes were still low, especially in the material for adding and subtracting integers. Students do not understand how to solve problems (-) (+) errors that are also often experienced by students in doing addition and subtraction operations on integers. In addition, students are also lacking in the ability to count.

From the results of interviews, the teacher must also find ways so that students can quickly understand the whole number material and the teacher, in teaching as much as possible, uses learning media so that students do not get bored in learning. Based on the interviews, the teacher felt that students understood more quickly if the mathematics learning process of adding and subtracting integers was using learning media. However, it is miserable when the written tests students have difficulty.

2. RESEARCH METHOD

This research is a descriptive research that describes the data from the research results in a qualitative form (Cresswell, 2012). This research requires data on how the ability of grade VI students is, and the difficulties faced by students in performing arithmetic operations on addition and subtraction of integers. The data collection used in this research are (1) Observation, (2) Test, (3) Interview. This research was carried out at SDIT Bunayya, this research was carried out in collaboration between researchers and grade VI teachers to describe mathematical abilities in performing arithmetic operations on addition and subtraction of integers in grade VI students at SDIT Bunayya, Pasarkemis District, Tangerang Regency, in the 2021/2022 academic year. The subjects of this study were grade VI students of SDIT Bunayya, Pasarkemis District, Tangerang Regency, for the 2021/2022 academic year. In this study, grade VI students studied addition and subtraction of integers well.

1. Place and time of research

The research was conducted at SDIT Bunayya Villa Permata, Pasarkemis District, Tangerang Regency, Banten. This research was carried out during interviews with informants through direct/offline conversations.

2. Observers

Time and Place of Activity took place at 08.30 Friday, 20 May 2022 at SDIT Bunayya with three interviewer.

3. RESULT AND DISCUSSION

The results of the assessment of the learning outcomes of grade VI SDIT Bunayya students on addition and subtraction of integers.

Table 1. Student Achievement Results in Integer Counting Operations

Student achievement	Percentage
Achievement of students who can understand the material for arithmetic operations of addition and subtraction of integers	80%
The achievements of students who cannot understand the material for arithmetic operations of addition and subtraction of integers	20%

From the table above, it can be concluded that students who have the ability to operate arithmetic addition and subtraction of integers at SDIT Bunayya are quite a lot and for students who do not understand the material for arithmetic operations of addition and subtraction of integers at SDIT Bunayya, the average score is 70-60 while the KKM lessons Grade VI mathematics at SDIT Bunayya is 75. Therefore, students who get scores below the KKM will often be given practice questions by the teacher.

Learning arithmetic operations of addition and subtraction of integers is included in the good category. Constraints faced by students when completing arithmetic operations of integers are: students do not understand story problems in the form of arithmetic operations of addition and subtraction of integers, and students also forget the concept of operations of addition and subtraction of numbers round.

The solution to overcome this problem is

1. do not understand the concept of addition, subtraction and completion of integer operations
2. multiply practice,
3. during the learning process, it is necessary to use media to teach concrete integer operations.

So the teacher should pay attention to the development or ability of students to the material provided through the results of evaluations that have been carried out because difficulties in learning mathematics can be said to be obstacles in achieving mathematics learning outcomes in accordance with the abilities of students, and students' difficulties in completing arithmetic operations (Lisesi, 2017; Tzohar-Rozen & Kramarski, 2014). Addition and subtraction of integers can be caused because students do not understand the concept of integers contextually (B. R. Pourdavood, Mccarthy, & Mccafferty, 2015).

In solving problems, especially on the subject of addition and subtraction of integers, students are still confused with the positive (+) and negative (-) signs. Students are still confused which one to add or subtract. Through learning mathematics, it is hoped that it can grow useful abilities to overcome problems that will be faced by students in the future (Nisa', Asrowi, & Murwaningsih, 2020; R. Pourdavood, McCarthy, & McCafferty, 2020).

4. CONCLUSION

Based on the results of the research and discussion that have been presented, it can be concluded several things as follows:

1. Learning activities for adding and subtracting integers at SDIT Bunayya are good
2. The teacher conveys the addition and subtraction of integers already using learning media so that students can easily understand the material.
3. From the percentage results described above, students who understand the material for arithmetic operations of addition and subtraction of integers are 80%, and students who do not understand the material of addition and subtraction of integers are 20%.
4. Students have difficulty solving compound or mixed questions between positive integers (+) and negative integers (-).
5. From the results of interviews, the teacher must also find ways so that students can quickly understand the whole number material and the teacher, in teaching as much as possible, uses learning media so that students do not get bored in learning. Based on the interviews, the teacher felt that students understood more quickly if the mathematics learning process of adding and subtracting integers was using learning media.

Based on the results of the findings, discussions, and conclusions, the suggestions that can be submitted are:

1. Students are expected to be able to increase their enthusiasm for learning and improve their ability to master the arithmetic operations of addition and subtraction of integers.
2. Teachers are expected to be more enthusiastic in teaching their students, provide solutions to problems students face, and improve mathematics learning, especially in arithmetic operations of addition and subtraction of integers. And the teacher must also motivate students so that students are always enthusiastic about learning in class, especially in mathematics. Teachers should try to liven up the atmosphere in the classroom so that students do not get bored in learning, especially learning mathematics.

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