

Analysis of Difficulties in Mathematics Learning In Second Grade Of Elementary Schools (Case Study in One of South Jakarta Elementary Schools)

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Abstract: This study aims to overcome the difficulties of learning mathematics in second grade students. This research was conducted at SD Negeri Grogol Selatan 17, Kebayoran Lama, South Jakarta. The subjects of this study were all second grade students totaling 28 students. This research is a qualitative research using a case study method. In collecting data, researchers used methods of observation, interviews and documentation. Data analysis techniques used are data reduction, data presentation and drawing conclusions. To test the validity of the data is used to confirm the data triangulation technique. Based on the results of the study found conclusions of various kinds of difficulties faced by students in mathematics lessons such as difficulties in solving numeracy problems, difficulty in placing unit number values, tens and hundreds, difficulties in distinguishing the symbols of counting operations. The factors that lead to learning difficulties are the students' assumption that mathematics is a difficult lesson, the lack of use of teaching aids in learning mathematics, the teacher's method of teaching is less varied. The recommended solution to overcome mathematics learning difficulties faced by students is that teachers conduct intensive guidance and remedial teaching as well as the role of parents at home in helping to overcome mathematics learning difficulties.

Keywords: Case Study, Mathematics Learning Difficulties, Factors Causing Difficulties

1. Introduction

Mathematics is one of the subjects given starting from elementary school to college, it is expected to equip students to have the ability to think logically, analytically, systematically, critically, creatively and the ability to work with others. These competencies are needed by students, so students can have the ability to obtain, process and utilize information to survive in changing situations and conditions. Based on observations on second grade students at 17 South Grogol elementary school, students who had not reached the KKM score of 60% or around 17 students from the total number of second grade students totaling 28 students in 17 South Grogol elementary school. The KKM set by the school for mathematics subjects is 65, this shows that many students still experience difficulties in mathematics subjects.

Learning difficulties in mathematics is an integral part of mathematics learning. Students who experience learning difficulties in

mathematics are shown by "underdevelopment" changes (mathematics learning outcomes) obtained when compared with other students. Students may have one or even more than one form of learning difficulty. Teachers and parents, in this case, have the same task, which is to help students overcome learning difficulties. Being a "counselor" who is able to understand, motivate, and provide appropriate solutions and actions is needed by students who have learning difficulties.

2. Literatur Review

Mathematics has well-defined language and rules, clear and systematic (regular) reasoning, and a strong structure of interrelation between concepts. Mathematics is a field of life study, which needs to be studied because the nature of mathematics is an understanding of the patterns of change that occur in the real world and in the human mind and the interrelationship between these patterns [1]. Mathematical concepts are arranged hierarchically, structured, logically, and systematically from the simplest concepts to the most complex concepts. In mathematics there are prerequisite topics or concepts as a basis for understanding the next topic or concept. The field of mathematics studies taught at SD includes three branches, namely arithmetic, algebra and geometry.

Mathematics is able to convey information clearly, a mathematical formula if expressed verbally, requires a long sentence. Mathematical formulas can cut the long sentence into simple symbols. Mathematics is a means in everyday life. This can be seen in the activities of everyday life most of the considerations to be taken are done through a logical thinking process that considers cause and effect, profit and loss, and estimates of what will happen. Mathematics functions as a tool to solve problems, tools for communication, tools for logical and rational thinking, and tools to facilitate relationships between individuals.

Mathematics learning in elementary school has the ultimate goal of making students skilled in using various mathematical concepts in everyday life [2]. There are various reasons underlying the importance of mathematics as follows: (1) students become individuals who have the ability to solve problems, (2) students can communicate smoothly, (3) students can express various

reasons and arguments rationally, (4) mathematics is a tool to be able to carry out various considerations independently, and (5) mathematics has an important value because various fields of life require the application of mathematical abilities. Five reasons for the need to learn mathematics — because mathematics is a means of clear and logical thinking, a means to solve problems of daily life, a means of recognizing patterns of relationships and generalizations of experience, a means to develop creativity, and a means to increase awareness of cultural development [3].

Mathematical learning starts from the easy then the difficult. In mathematics learning students learn through concrete, semi-concrete, and abstract stages. In the concrete stages students learn from things that are already real, then students learn in the semi-concrete stage that students learn from illustrations of mathematical objects and the last stage is that students learn not to use images but symbols of mathematical numbers. Some people consider mathematics as an activity carried out in adding, subtracting, and dividing or activities related to solving the problem of counts presented in the form of questions. Learning difficulties in mathematics are also called diskalkulia (dyscalculis). The term dyscalculia has medical connotations, which see a connection with central nervous system disorders. Severe mathematics learning difficulties are called acalculia (acalculia) [4].

Characteristics of students who experience mathematics learning difficulties are characterized by an inability to solve problems related to the following aspects: (1) having difficulty understanding the grouping process, (2) having difficulty in placing units, tens, hundreds or thousands in calculating operations (addition and subtraction), and (3) difficulties in visual perception and auditory perception, such as: (a) ground figure, unable to understand the existence of a reduction process in a division operation, and having difficulty understanding multi-digit numbers, (b) discrimination, difficult to distinguish numbers 8 and number 3, and difficult to distinguish symbols of arithmetic operations, (c) reversal, swapping or reversing place of numeric digits (213 to 231), having difficulty in regrouping, (d) spatial or having difficulties in writing decimals, having difficulty with ordinal numbers, experiencing difficulties in

fractions, and experiencing difficulties in me differentiate forms, (e) memory has difficulty remembering newly presented information (short-term memory), having difficulty remembering facts and processes for a long time (long-term memory), (f) experiencing difficulties in showing time, experiencing difficulties in operations count, (g) experience difficulty in calculating patterns in a sequence of sequences, and (h) experience difficulties in solving problems [5].

Teachers need to recognize a variety of common mistakes that children make in completing tasks in the field of mathematics studies, in order to help students who have difficulty learning mathematics. Some of the general mistakes according to Lerner are: (1) lack of understanding of symbols. This kind of difficulty is generally because students do not understand symbols like the same ($=$), not the same as (\neq), plus ($+$), lack ($-$), and so on. In order for children to solve math problems, they must first understand these symbols, (2) place values such as units, tens, hundreds, and so on. Misunderstanding of place value will make it more difficult for students if they are confronted with the symbol of base numbers instead of ten, (3) misuse of processes, mistakes in using calculation processes such as exchanging symbols, number of units and dozens written regardless of place value, all digits added together (wrong algorithm and does not pay attention to place value), digits are added from left to right and do not pay attention to place value, in adding up tens combined with units, large numbers minus small numbers regardless of place value, borrowed numbers are fixed . (4) calculation, students who are not familiar with the concept of multiplication but try to memorize the multiplication. This can lead to errors if the memorization is wrong, and (5) writing that is unreadable, students cannot read their own writing because the letters are not correct or are not straight following the line [6].

3. Material & Methodology

In this study researchers used qualitative research with qualitative case study methods. Case study research is a research approach to a phenomenon that through careful and complete case analysis of an individual, family, group, institution, or other social unit. In qualitative research researchers conduct

data collection through interaction with data sources. In this interaction both researchers and data sources have different backgrounds, views, beliefs, values, interests and perceptions, so that in data collection, analysis and reporting will be bound by their respective values. Sugiyono put forward the characteristics of qualitative research as follows: (1) conducted in natural conditions, (2) qualitative research is more descriptive, (3) qualitative research emphasizes processes rather than products, (4) qualitative research analyzes data inductively, and (5) qualitative research emphasizes meaning. The steps taken in this study are: (a) the stage of the description is to find information about the place, object, data source, and conduct research on the object to be studied, (b) the reduction / focus stage, the researcher chooses interesting, important data , useful and new, and (c) the selection phase, the researcher describes the focus to be more detailed [7].

In collecting data, researchers used observation, interview and documentation techniques. Observations are carried out by researchers to collect data in accordance with the nature of the research because it directly observes or is called involved observation where the researcher also becomes an instrument or tool in research so that researchers have to look for their own data by going directly or observing and looking directly at some predetermined informants as a data source. This observation method researchers choose the type of participatory observation, which is observation which at the same time involves themselves as insiders in certain situations. The researcher is involved with the daily activities of the person being observed or used as a source of research data. This is to make it easier for researchers to obtain data or information. An interview is a meeting of two people to exchange information and ideas through question and answer between the interviewer and the interviewee. The interview technique in this study is structured interviews, namely interviews conducted by asking several questions systematically and the questions asked have been compiled. Documentation is a record of past events. The documentation of this research is in the form of photographs of learning activities and the results of student worksheets. To ensure that the description of the data that has been presented is valid and

has a degree of trust, data validity is guaranteed through confirmability. In qualitative research confirmation is also called research objectivity. Research is said to be objective if the results of the study are approved by many people. Confirmability test data or test the results of research that has been collected in the form of discussions with informants.

4. Results and Discussions

The study was conducted at 17 South Grogol elementary school, Kebayoran Lama Subdistrict, South Jakarta. The data in this study were the difficulty of learning mathematics of grade II students of 17 South Grogol elementary school. From the data obtained, the analysis was to analyze the learning difficulties of students in second grade 17 South Grogol elementary school in the academic year 2015/2016. Seen some students who have difficulty in learning mathematics. Learning difficulties in mathematics is the difficulty or inability of a person to solve numerical problems presented in the problem.

From the description above, the researcher focuses on several problems, namely:

4.1. Difficulty solving counting problems

When completing math problems, the second grade students of 17 South Grogol elementary school, South Jakarta made many mistakes when calculating addition and subtraction. Based on the data obtained, the difficulty in solving problems is caused by errors in reading the mathematical symbols and improperly operating numbers. Difficulties that occur are when students solve addition and subtraction problems. Difficulties faced by students in completing operations count as follows:

$$345\ 67\ 456 - 234 = \dots$$

$$212 + 45 \dots 32 + \dots$$

Students who experience errors in solving numeracy problems, students experience problems. Error working on the problem because students experience difficulties in learning mathematics. In elementary school students must do various activities related to basic mathematics and must find the right answer. Students who experience errors in solving numeracy problems have less understanding of mathematical language. The lack of ability of students to read the language

of mathematics occurs when completing the problem of counting in a story problem, where students do not understand the existing story problems. Errors made by students in working on the questions given by the teacher make students not confident and make students prefer to see their answers compared to counting themselves. Errors made by students show that students experience difficulties in learning mathematics.

4.2. Difficulty in understanding place values

Difficulty in placing the value of the place of hundreds, tens or units in the count operation. Based on the results of interviews and observations in mathematics learning activities, in addition to counting, students must also be able to put the value of the place said like units, tens and hundreds. Difficulties that occur in solving the problem of placing the value of the place that occurs is the number tens placed in the place of the number hundreds, the unit number is placed in the place of the number tens. Mistakes like this occur because students do not understand the value of place numbers. The inability of students to understand the value of place numbers makes it more difficult for students to complete count operations. Difficulties faced by students in placing the value of hundreds, tens and units of numbers as follows:

325 which occupies tens is ...

610 which occupies the unit number is

.....

4.3. Difficulty distinguishing mathematical symbols

Difficulty in distinguishing symbols of count operations. Errors in distinguishing symbols of arithmetic operations, seen when students are wrong in calculating, the deduction problem is calculated by sticking so that students get a value below the KKM and vice versa, the sum problem is calculated by means of subtraction. Errors that occur to students are caused because students do not master the material presented by the teacher. Students who experience errors in distinguishing symbols of operation count because students experience difficulties in remembering the material presented by the teacher. In general, students do not experience too much difficulty in understanding the counting operation symbols such as $48-15$, $87 + 17$, $16 + 18$ and so on.

Errors faced by students are when faced with questions like the following:

$19 = \dots + 3$, $\dots - 15 = 2$ and so on. Errors that occur when completing counting problems because students do not understand symbols like equal (=), less (-), and add (+). The assumption that mathematics is a difficult lesson. The data that the researchers obtained based on the results of interviews with students and teachers then obtained data that most students consider that mathematics is a difficult lesson because mathematics is full of numbers and formulas that make them confused, so they try to memorize all the numbers and formulas learned. This is what makes mathematics difficult, if mathematics has to be memorized, then it will be very difficult because the mathematical concepts are many plus its application to solve problems related to each concept. Many students complain when the teacher gives practice questions or homework different from the examples that have been explained, this happens because students tend to imitate the mathematical problem solving steps that involve the same concept, so that if there is a modification of the problem given by the students confusion and lost sense to determine the expected completion steps. This deadlock is what causes students to think mathematics is difficult.

In the learning process that takes place, it appears that the teacher does not use teaching aids and students only write notes given by the teacher. Teaching aids in learning are included in learning resources. The use of teaching aids greatly supports the smooth process of teaching and learning. A good mathematics learning process begins with concrete, semi-concrete and abstract learning. Using learning teaching aids starts with a concrete stage. In the data that researchers obtained that teachers were more likely to explain mathematical concepts based on books. In reality, the teacher explains the learning material that is based on the language of the book without using simpler language.

In the learning process, it can be seen how the teacher presents teaching material by means of the teacher explaining and writing notes and giving exercises. The teacher explains the teaching material slowly until students understand the material presented. The way teachers convey teaching material is very influential on the success of students

understanding the material presented by the teacher. Based on the results of data collection, the causes of learning difficulties faced by students are the lack of students repeating the lessons that have been delivered at school so that mathematics lessons are only learned at home.

Physical conditions related to health, when students are sick, of course they will experience physical weakness so that the process of receiving or understanding the lesson becomes imperfect. So before the lesson begins, it is seen that the teacher checks students' learning readiness, such as asking the news, asking students whether they are ready to study or not. In the process of mathematics learning, students who do not like mathematics, in learning activities, interest in learning from within students is a very dominant factor in their influence on learning activities, because if students do not have the will or interest in learning, the lessons will result. vain. In addition, the role of the teacher, the way the teacher teaches, the attitude of the teacher, the personality of the teacher, mastery of teaching techniques and the teacher's ability to understand students are very important. Therefore the teacher as a motivator and student facilitator needs to be a reference during the learning process.

How to overcome math learning difficulties faced by students. Seen when researchers collect data, in overcoming various mathematics learning difficulties faced by teacher students give more attention to students who experience difficulties and provide learning privately or individually. The teacher provides many concrete examples to ensure strong understanding before applying learning to abstract concepts. When incarnating story problems, the teacher provides opportunities for students to imagine everyday life situations to form concepts and facilitate students. The teacher presents the material using images to help students in understanding the problem. In addition, the teacher also gave remedials to students who had difficulty learning mathematics until they were finally able to understand the material presented.

Researchers conduct interviews with students and their parents. He obtained data that parents who are busy working rarely help students learn at home and bestow on tutors while the role of parents in helping students

overcome learning difficulties at home plays an important role. Parents who do not pay attention to the education of their children, may be indifferent and do not pay attention to their children's learning progress, it will be the cause of student learning difficulties. Therefore, the attitude of parents who are not good, such as lazing and such, should be avoided and throw away. Parents have an important role in helping students overcome learning difficulties. Parents must pay attention to their child's learning progress. The attitude of parents who pay attention to their children's learning will help their children in facing learning difficulties. When children have learning difficulties and get low grades parents or teachers should not say that the child is stupid or failed, but find out what is the cause of the child's problem and provide assistance to overcome the difficulties.

5. Conclusion

Based on the results of qualitative research with techniques of observation, interviews, and documentation carried out at 17 South Grogol elementary school, South Jakarta about the difficulty of learning mathematics in class II students. Various kinds of difficulties faced by students in mathematics lessons are difficulties in solving numeracy problems, difficulty in placing unit number values, tens and hundreds, difficulties in distinguishing symbols of count operations. The factors that lead to learning difficulties are the students' assumption that mathematics is a difficult lesson, the lack of use of teaching aids in learning mathematics, the teacher's method of teaching is less varied. The recommended solution to overcome mathematics learning difficulties faced by students is that teachers conduct intensive guidance and remedial teaching as well as the role of parents at home in helping to overcome mathematics learning difficulties.

Based on the results of the research obtained, researchers can provide suggestions as follows: For students, students are expected to be more active in learning, repeating lessons that have been conveyed by the teacher at home, so that the difficulties faced can be overcome and students should often practice solving math problems. For teachers and other education practitioners, it should be with a thesis entitled "Learning Mathematics Difficulties in Students of second grade 17

South Grogol elementary school researchers expect to pay more attention to the mathematics learning difficulties faced by students, so that students who have difficulties can overcome their difficulties, teachers should use teaching aids in learning so that the learning delivered will be easily understood by students and develop learning strategies that can make students active in learning so that teachers can create more meaningful learning for students and help students to be able to find and overcome difficulties that occur. For colleagues, through this thesis can provide an overview of the portrait of education in Indonesia at this time which is always making improvements in various aspects in order to achieve the true goals of Indonesian education. For the next prospective researcher, if they are going to carry out research on Mathematics Learning Difficulties in Class II Students, they should try research in another class to give more insight to the community about the mathematics learning difficulties faced by students. For schools, it is expected to conduct further research on the learning difficulties of mathematics for all classes not only in class II but all classes, so that schools can evaluate the difficulties that occur in students so that the school has an advanced program for students who have difficulties.

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