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STUDENTS' LEARNING DIFFICULTIES IN PROBLEM SOLVING ABILITY IN FACE-TO-FACE LEARNING LIMITED ELEMENTARY SCHOOL

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Abstract. Face-to-face learning activities in the current conditions found that there are still students who have difficulty in solving the problem in the topic of shapes. This can be seen from the fact that the success of students in problem solving is still low because students think mathematics is difficult as mathematics is abstract and uses symbols or language. In this study, the researchers wanted to find out more about the types of student learning difficulties in solving questions about shapes and the factors that cause student learning difficulties. This research was conducted using case study research. Collecting data was done to determine students' learning difficulties by using the methods of tests, observations, interviews, and documentation as complementary data in the hope of explaining the types and factors of learning difficulties in problem solving abilities. The results showed that the students had weakness in numeracy, weakness in knowledge, weakness in mathematical language, and visual perception. This is due to the lack of understanding of students' knowledge of mathematical concepts and arithmetic operations, as well as students' lack of accuracy. The factors that cause students to have learning difficulties are giving students negative responses to mathematics lessons, low student motivation, lack of guidance and assistance from family members, and limited time for face-to-face learning.

Keywords: learning difficulties, problem-solving, limited face-to-face learning

I. INTRODUCTION

Education in Indonesia during the COVID-19 pandemic, which was carried out through face-to-face virtual meeting, or learning from home, experienced changes in the implementation of learning activities carried out by teachers and students. State that the learning pattern that changes from face-to-face to learning from home can cause student learning losses to be greater than the decline in student abilities due to school holidays so it will have an effect on decreasing the quality of learning [1][2][3]. In addition to learning loss, learning from home can have an impact on decreasing student motivation and achievement in learning activities [4][5].

In an effort to reduce the increase in learning loss, the government made a new policy by implementing limited face-to-face learning activities or it is called PTM. Based on the PTM readiness survey by Elementary School Directorate in 2021, it is expected that 97% of students want to return to school and as many as 96.4% of students are accustomed to wearing masks and 96.6% of students are able to practice washing their hands properly. Furthermore, a Joint Decree of the Ministers, namely the Minister of Education and Culture, the Minister of Religion, the Minister of Health, and the Minister of Home Affairs of the Republic of Indonesia Number 440-717 of 2021 concerned about the guidelines for the Implementation of Learning during the COVID-19 Pandemic was made.

The implementation of limited face-to-face learning is carried out in addition to avoiding an increase in learning loss for students. It is also carried out to improve student competence in learning activities, one of which is in mathematics subjects that require more detailed explanations and steps in solving mathematical problems. Mathematics is included in the subject matter taught at all levels of education, including the elementary school level, which was later strengthened in Law no. 20 of 2003 concerning the National Education System article 37 about compulsory subjects for primary and secondary education students. One of the subjects is mathematics. Based on the Minister of Education and Culture Regulation No. 28 of 2014, mathematics subjects aim to make students able to (among others) understand mathematical concepts; solve the problem; use mathematical reasoning; communicate problems systematically, and have attitudes and behaviors that are in accordance with the values in mathematics.

Mathematics is not only focused on understanding mathematical concepts or quick ability to count, but also on improving reasoning ability to solve mathematical problems in various ways [6][7][8]. According to Zaozah, et al. [9] "one of the mathematical abilities that elementary school students must have is problem-solving ability". To facilitate students in problem-solving skills, according to G. Polya's theory has 4 stages in problem-solving, namely, understanding the problem; planning a solution; using problem-solving strategies; and looking back.

However, in reality, in the world of education, students' mathematics learning outcomes are still low. This can be seen from the international study PISA (Program for International Student Assessment) in mathematics literacy, Indonesia is ranked 72 out of 78 countries with a score of 379 out of an average international score of 489. For this reason, efforts are needed to be made by a teacher in teaching ways of teaching. solve math problems, especially in problem-solving.

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A teacher has a characteristic in teaching how to solve mathematical problems, one of the problems is that educators provide examples of how to solve a mathematical problem without paying attention to students' abilities so that students do not get the opportunity to try to solve problems independently [10][11][12]. The impact of this learning is that it makes students lose their confidence in their abilities in the process of solving mathematical problems. The loss of students' self-confidence will cause students to have learning difficulty in solving practice questions or math problem-solving exam questions. Students actually have the ability to solve math problems if educators can pay attention to their competence. Mabruroh, et al [13] and Wakefield et al. [14] argue that learning difficulties are a condition of students' lack of success in understanding and mastering concepts, principles, problem-solving as well as problem-solving even though students have tried to solve problems.

Based on the results of observations of mathematics lessons during limited face-to-face learning activities for class IV SDN Kranji 13, it shows that the success of students in problem-solving on the Bangun Datar (shapes) material is still low with a passing grade limit of 70. This is because the fourth-grade students consider mathematics difficult. It has become a general reality that mathematics is considered a lesson that is difficult for students to understand and requires high concentration in studying it Awiria et al. [15] according to Safitri, et al. [16] Mathematics is abstract in the form of objects or symbols in mathematics.

During the learning activities of the shapes (bangun datar) material, students only listen to what the teacher says and do not record the formulas or examples of questions given by the teacher. It can cause students to have learning difficulties in solving mathematical problems. According to Jayanti, et al [17] there are two factors that cause learning difficulties, namely internal factors originating from within students and external factors originating from outside students

The problem of students' learning difficulties in solving math problems can be seen in previous research where researchers took 3 relevant studies, including research conducted by Zhang et al.[18]; Saja'ah [19] and Burte et al. [20] with the title "Analysis of Difficulties of Elementary School Students in Solving Problems explained that the causes of students having learning difficulties in problem-solving are the condition when the students are not used to solve problems so they do not understand the meaning of the questions, lack of mastery of problem-solving strategies, lack of accuracy and caution in performing arithmetic operations. Furthermore, research conducted by Jayanti, et al. [17] with the title "Analysis of Internal and External Factors of Difficulty in Learning Mathematics in Elementary Schools' ' explains that there are internal and external factors that affect students' mathematics learning difficulties. The internal factors are student interest in learning, motivation, and student attitudes as well as external factors, namely the teacher's teaching methods and learning facilities in schools. The difference in this study is that the research was conducted at limited PTM, different school locations, and different research subjects.

II. METHODS

The research aims to describe phenomena that exist in the field, these phenomena are natural in accordance with events in the field. This research uses case study where researchers want to examine or understand a case in an in-depth way while looking for results [21]. Research informants that will be examined in this study are 7 fourth-grade students because these students have learning difficulties in solving math problems, and fourth-grade teachers, because the teacher provides information about students who have learning difficulties in solving math problems. and parents of students as student mentors in the family environment. This research was conducted for 7 months with the stages as follows: 1) data collection to find data and information related to research 2) data reduction, namely simplifying the data obtained in the field and then choosing the main things according to the research focus 3) data presentation in the descriptive form to understand the information obtained in the field according to the research focus and 4) drawing conclusions in the form of explanations based on research findings

The subjects in this study were 7 students who had difficulty learning problem solving, class teachers who could provide information about students who had learning difficulties in problem-solving, and 7 parents of students guiding students at home. The instruments in this study consisted of tests and non-tests. 1) the test is used to find out the types of difficulties experienced by students in problem-solving as per the guidelines for problem-solving steps in table 1.

Table 1. G. Polya's Problem-Solving Skills Steps

No	Polya's Problem-Solving Stages	Polya's Problem-Solving Indicator
1	Understanding the problem	Students can determine what is known and what is asked in the problem
2	Planning a solution	Identify appropriate problem-solving strategies for solving problems
3	Using problem-solving strategies	Apply in detail the arithmetic operation information in accordance with the completion of the problem solving that has been planned
4	Looking back	Students review the results to whether the results obtained are in accordance with the provisions

source : Astutiani [22]

2) non-test includes observing the learning conditions of students in solving the problem-solving ability of flat

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shapes, interviews include interviews of researchers with teachers, and students to find out the types of learning difficulties and factors of student learning difficulties by looking at the results of the problem-solving ability test of flat material and parents on factors students' learning difficulties in face-to-face learning are limited, documentation as complementary data needed in research.

III. RESULTS DAN DISCUSSION

The results of the researchers' findings on the types of students' mathematics learning difficulties in solving math problems with flat shapes are as follows:

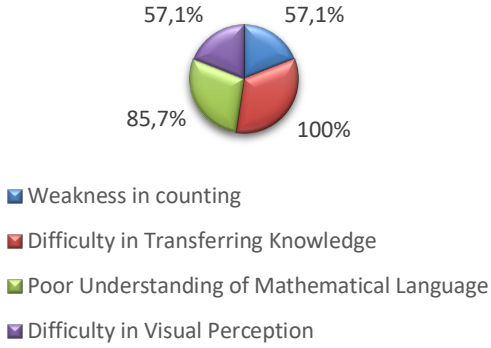

Figure 1. Chart of Types of Student Learning Difficulties

There are 4 students who have weakness in counting. Weaknesses in counting occur due to the lack of accuracy of students in reading questions and performing multiplication arithmetic operations. This can be seen when S-2 is working on test number 4 there is an error in the results of the multiplication calculation operation.

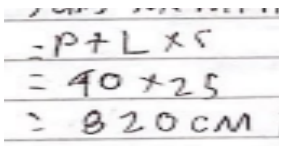

Figure 2. Weakness in Counting S-2

At the time of working on the test questions, S-2 did the arithmetic operation quickly and agilely, but after doing the arithmetic operation S-2 did not re-check the calculation operation. There are students who have difficulty in transferring knowledge. The test results showed that 6 students had difficulties in transferring knowledge with the formulas for the perimeter and area of squares and rectangles.

One of them is S-1 having difficulty in connecting the formula for the perimeter of a rectangle about numbers. This can be seen in the image of the test results as follows.

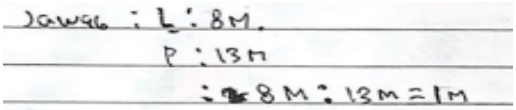

Figure 3. Poor Mathematics Language Understanding S-1

In the picture above, it can be seen that S-1 did not write the correct formula for the perimeter of the rectangle. The researcher asked the origin of the students using the division operation formula instead of multiplication. then S-1 answered that S-1 did not understand and looked at his friend. So S-1 has difficulty connecting the concepts of mathematical knowledge related to testing questions because students do not understand making students cheat on their friends. Based on the results of the researcher's observations, 7 students experienced less mathematical language understanding. One of them is that S-3 has difficulty connecting mathematical language concepts with mathematical meanings. One of them is question number 3. This can be seen as follows.

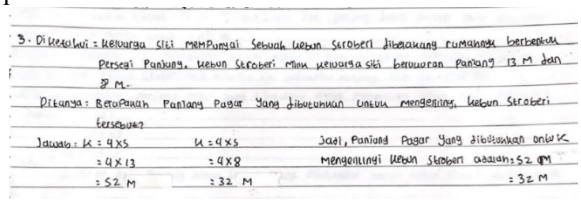

Figure 4. Poor Understanding of Mathematical Language S-3

In the picture above, it can be seen that S-3 writes what is known and asked in full. However, for the mathematical meaning of S-3, the formula for the perimeter of a square and the perimeter of a rectangle is wrong. S-3 explains that students understand the meaning of the question and can explain how S-3 determines what is known and asked, for S-3 answers see and understand the question again. Based on the researcher's observations regarding visual perception difficulties, there were 4 students who had visual perception difficulties. Students are able to understand flat shapes. S-6 has difficulty in visual perception, there is an error in writing symbols. This can be seen as follows.

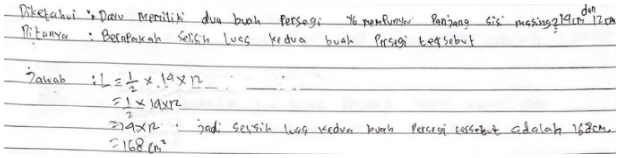

Figure 5. Difficulty in Visual Perception S-6

In the picture above, it can be seen that S-6 wrote the formula for the area of a square and the difference between the squares and the difference between the mathematical symbols and arithmetic operations was incorrect. In addition, researchers interviewed students regarding the understanding of shapes on test questions, S-6 said that students did not understand flat shapes on questions and only did the original.

Based on the results of the researcher's observations, the researchers saw that there were students who gave positive responses by responding to teachers or negatively by not responding to teachers when face-to-face learning activities were limited. One of the reasons students never respond to the teacher when face-to-face learning activities are limited to flat shape material is because S-5 feels that they can't get shape material and memorize very little multiplication which makes students not confident. The teacher motivates students through positive words so that students can be enthusiastic about learning. Students can also

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feel and understand that the positive words given by the teacher are a form of motivation for students to learn.

Even though students get motivation or encouragement, if you look at the motivation in students when face-to-face learning activities are limited, the shapes material tends to be low, seen from students not preparing textbooks and notebooks when PTM activities take place, students' learning attitudes are not good, students are lazy in re-learning the material of flat shapes and students already consider mathematics to be a difficult subject. This can make it difficult for students to learn mathematics in flat material. During the limited face-to-face learning activities, students who attend learning activities in class are expected to be students who at that time are in a healthy physical condition. Thus, when the researchers conducted observations and interviewed students regarding physical health, students were in good physical condition, had no history of illness that interfered with learning activities, and could participate in learning well. Based on observations made by researchers, researchers found students who had visual impairments where students could not see far because they had problems with their sight. One of the efforts made by the teacher is to place students with visual impairments sitting in the front. In addition to visual abilities, if students experience hearing loss, it can affect students in receiving information conveyed by the teacher. Researchers found students with hearing loss through interviews with students when the class was crowded.

The researcher found that the teacher used a variation learning method with the lecture method and interactive learning by involving students in learning mathematics activities. After explaining on the blackboard and giving questions, the teacher supervises and sometimes guides students when doing practice questions. Class conditions can be arranged properly, have adequate air ventilation and adequate lighting. Conditions when face-to-face learning activities are limited to shaped materials that can be conducive to paying attention to the teacher during learning. However, during learning activities, it is not always conducive for students to be silent when students feel they cannot understand the material. Class conditions will start to get crowded because students are chatting with friends or joking. In addition to class conditions, the teacher in explaining the material on shapes uses simple visual aids like cardboard to explain the shapes.

Lack of family guidance and attention to students when studying at home can cause students learning difficulties. Based on the results of interviews with students, researchers found that one of the students was not guided by parents or family while studying at home so the students did it themselves. Lack of guidance and attention from parents can cause learning difficulties. However, the wrong pattern of parental guidance and attention can also cause learning difficulties, such as parents who get used to doing student homework so students will experience learning difficulties because they are used to having homework done by their parents. Based on the observations of PTMT at SDN Kranji 13, they have implemented 100% PTM during learning activities, teachers and students continue to apply health protocols by wearing masks, providing hand sanitizer, and being in good health.

During this PTMT activity, it can make it easier for students to understand the material because students can interact directly with the teacher. However, the time for learning activities at school is still minimal, which is only 2 hours a day so the teacher cannot explain in detail and only the important points. During PTM activities students still find it difficult to understand the material of flat shapes. Especially for problem-solving stories.

In this study, the weakness in counting experienced by students was the lack of accuracy of students in reading questions that made students unable to answer correctly, this is to the opinion expressed by Amallia, et al. [23] 2018) that the lack of a student's accuracy in working on questions can be the cause students with numeracy weaknesses. In addition, students do not understand the problem and do not understand the concept. In addition to the lack of accuracy, the weakness in counting experienced by students is that students have not memorized multiplication and how to perform less precise arithmetic operations. According to Dwiyono [24] students who have not memorized multiplication can cause errors in determining the results of multiplication both with multiplication and story problems. If students do not understand the steps in multiplication counting operations, the result will be wrong. Difficulties in arithmetic operations occur when students make mistakes in operating numbers arithmetic operations [25].

In this study, the difficulty in transferring knowledge experienced by students was that students had difficulty in using the formulas for the perimeter and area of squares and rectangles. This is in line with research Fauzi, et al. [26] on the analysis of student learning difficulties in geometry material in elementary schools with the conclusion that students have difficulty using the perimeter and area formulas of squares and rectangles this is due to the lack of students' memory of an object in mathematical language that deals with the perimeter and area of shapes. Difficulties in transferring knowledge occur because they do not understand the concept of mathematical knowledge and make students cheat on their friends. The condition of students cheating is also experienced in research Safitri, et al. [16] where students cheat on their friends because students do not have the ability to understand mathematical concepts and make students less confident.

In this study, the lack of understanding of mathematical language was caused by students not understanding the meaning of mathematics. According to Tyas [27] the lack of understanding of language causes students to have difficulty in making language connections with mathematical meanings. This is in line with research Saja'ah [19] on the analysis of student learning difficulties in solving problem-solving problems where students have difficulty understanding the meaning of the question. This is due to the lack of understanding of students' mathematical language and students' accuracy. In this study, some students had difficulty in visual perception, this was because students did not understand the questions and were too hasty in reading. According to Sinaga, et al. [28] students who have

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visual perception problems will have difficulty visualizing mathematical concepts.

Attitude is a student activity in responding to something with a positive or negative response. According to Anggraeni, et al. [7] a person's attitude in learning will affect their learning outcomes. If students can give a positive attitude it will make learning outcomes good, but if students are negative then the learning outcomes are not optimal and will cause students to have learning difficulties [29]. In this study, based on the results of interviews, some students could give positive responses when the teacher asked students to come forward. Then, some students gave negative responses. This was due to a lack of student confidence, and they did not understand the material and did not like mathematics so they tended to not be able to participate in learning activities well. This is in line with research Mabruroh, et al. [13] where students' lack of interest in mathematics makes students give negative responses.

Motivation is an encouragement given to students with the function of directing students' actions in learning. The results of the analysis show that students' learning motivation is low. Low student learning motivation will affect student learning attitudes, students who are less enthusiastic when taking math lessons are students who have low motivation. This can be seen when students do not prepare books and stationery when limited face-to-face learning activities begin. Students also do not re-learn the shape material at home and do not study mathematics when there is no test or homework. In addition, students feel that mathematics is a difficult subject.

Students' physical health will affect learning activities where students who have good physical health study well or if their physical health is disturbed, it will interfere with learning activities. The results of the analysis in this study during face-to-face learning activities were limited to students in healthy physical condition because according to the Ministry of Education and Culture one of the requirements to participate in limited face-to-face learning was that students and teachers were in good health. The results of the analysis in this study are that there are students who experience visual impairment due to the condition of their eyes. This can be overcome by the teacher by placing the student's seat in front. This is in line with research Safitri, et al. [16] about students' learning difficulties in mathematics where there are students who have visual impairments then the teacher places students on the front bench in the middle so that students can see the blackboard clearly. In addition to the ability to see, the ability to hear is also important in learning activities. The results of the analysis in this study were students who experienced hearing loss due to crowded classroom conditions so that students did not receive the information conveyed by the teacher. This is in line with research Anggraeni, et al. [7] about the factors causing difficulties in learning mathematics where students can see the blackboard clearly but in terms of listening students are not focused.

The results of the analysis that have been carried out show that teachers try to use varied methods in learning mathematics because a teacher must be able to create a pleasant learning atmosphere so that students are interested in learning mathematics. The teacher tries to combine several methods such as the lecture method with interactive learning; it is intended that students can play an active role in learning. Interactive learning aims to overcome student boredom in learning activities [30]. However, during learning activities, the lecture method is still dominant when delivering material so students are less enthusiastic. Students' attitudes and ways of learning can affect the success of teachers in teaching. So according to the opinion Waskito Ningtyas [31] when teachers are not able to actively involve students in learning, it will cause students to be less enthusiastic and get bored quickly so they have learning difficulties. However, the teacher still guides students during learning activities. In this case Novita, et al [32] revealed that learning management needs to be carried out by teachers including the creation of innovative technology-based learning tools, 21st century skills, and the application of HOTS-based learning models.

Facilities and infrastructure can affect the learning process. The results of the analysis that have been carried out show that the facilities and infrastructure in schools have supported mathematics learning activities where the classroom conditions are comfortable and have adequate air ventilation and adequate lighting. In addition to classroom conditions, the use of teaching aids for teachers uses simple teaching aids for flat shapes. According to Anggraeni, et al., learning facilities are needed to support the teaching and learning process in the classroom to make it easier for students to understand the material. The use of media in articles Novita, et al. [33] has a good impact on learning and provides motivation for students.

The results of the analysis that have been carried out show that the lack of guidance and attention from the family can cause students' learning difficulties. One example of a lack of parental attention is that students often do not do their homework. This can be found in research Safitri, et al. [16] and Novita, et al. [34], where students have difficulty learning mathematics because students do not do the homework given, this is known to be due to a lack of parental attention. According to Maptuhah, et al.[35] parental attention has an influence on student learning motivation, so parents need to increase their attention and continue to direct and control student behavior, establish good relationships and provide advice. The results of the analysis that have been carried out show that the limited face-to-face learning activities carried out at elementary school apply good health protocols in accordance with the rules for implementing limited face-to-face learning.

Face-to-face learning can make it easier for students to interact directly with teachers, but limited face-to-face learning can also be a factor in student learning difficulties because of the short study time so that learning is focused on the teacher because the material is quite dense. This is also in line with research Ode et al. [36] related to the implementation of limited face-to-face learning where the implementation of PTMT is carried out with the application of strict health protocols but students' mathematics learning outcomes still have not reached the criteria for completeness

due to insufficient lesson hours, compressed material so that only discuss the important points.

IV. CONCLUSION

Learning difficulties experienced by students consist of 4 components, namely weakness in counting, difficulty in transferring knowledge, poor understanding of mathematical language and difficulty in visual perception. This is because students do not memorize multiplication, and lack understanding of the concept of flat wake material knowledge. Factors that cause difficulties in learning mathematics come from internal factors and external factors. Internal factors that come from students include students' attitudes in learning mathematics, low student motivation. While external factors that come from outside the students include lack of attention and guidance from the family environment and limitations in learning activities in limited face-to-face learning.

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