ANALYSIS OF LEARNING OBSTACLES TO STUDENTS' MATHEMATICAL LITERACY COMPETENCE ON QUANTITY CONTENT

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ABSTRACT

The skill that students are expected to develop is mathematical literacy. But in reality, Indonesia still has a low level of mathematical literacy. One of the causes is learning obstacles. Therefore, this study aims to analyze learning obstacles in terms of mathematical literacy skills of quantity content. This research is qualitative research using didactic situation analysis. The subjects of this study were 28 students of class VII of SMPN 3 Sungguminasa. Data collection used mathematical literacy tests on quantity content, interview, observation, and documentation. The results showed that 1) Students experience ontogeny obstacles, where students do not have confidence in answering questions; 2) Students experience epistemological obstacles, namely students hesitate to answer story questions, students have difficulty in determining the right calculation operation, and students who know the calculation operation used in solving problems have difficulty regarding calculation operations; 3) Students experience didactic obstacles, where learning is only one-way and lack of reinforcement regarding prerequisite material.

Keywords: Learning Obstacles; mathematical literacy; quantity

1. INTRODUCTION

Mathematics is a structured, systematically organized science in its learning process that has a role in the development of cognitive and problem-solving skills, making it an important subject that is always present at every level of education. Mathematics is in every human life, and everything that humans do is sometimes math (Ramadhani & Mutmainna, 2023). It is not surprising that mathematics is one of the sciences that makes

a real contribution to the growth of human thinking skills and is the basis for contemporary technological advances (Asmarani & Sholihah, 2017). The objectives of mathematics learning set by the National Education Department in 2006 align with the NCTM statement that there are five competencies in learning mathematics: mathematical problem solving, mathematical communication, mathematical reasoning, mathematical connections, and mathematical representation (Baharuddin, 2020). The abilities that include the five competencies are also included as mathematical literacy skills.

Mathematical literacy is the ability of students to formulate, use and interpret mathematics in various contexts (Rismen et al., 2022). Mathematical literacy according to PISA is a person's ability to reason mathematically and to apply, formulate, and interpret mathematics in various real-world contexts including procedures, concepts, facts, and tools to describe, explain and predict phenomena (Danishwara & Rahma, 2023). Mathematical literacy is a skill that must be possessed by someone because it will encourage someone to be sensitive to and understand the use of mathematics in everyday life (Abida & Setyaningsih, 2022). The program to evaluate students' mathematical literacy skills is The Programme for International Student Assessment (PISA).

Indonesia has participated in the PISA evaluation program since 2000. PISA results in 2000 showed that Indonesia's math literacy skills were low with an average score of 367 and ranked 39 out of 41 participating countries. Not much different from 2000, in 2018 Indonesia received a score of 379 with a rank of 75 out of 81 countries. The mathematical literacy skills of students in PISA are divided into 6 levels or 6 levels. Literacy level 1 and level 2 are a group of questions with the lowest scale that measures reproductive competence. The preparation of questions is based on a context that is quite familiar to students using simple mathematical operations. In the reproduction group, students can interpret and represent familiar problems, and perform simple and procedural calculations to solve routine problems. Level 3 and level 4 mathematical literacy are medium-scale question groups that measure connection competencies. The preparation of medium-scale problems requires students' interpretation because the situation given seems unfamiliar or even has never been experienced by students. In the connection group, students can integrate and connect all the content of the situation representation of non-routine problem solving using several clear methods in simple mathematical reasoning. Level 5 and level 6 mathematical literacy are high-scaled question groups that measure reflection competencies. Students are expected to be able to solve complex problems, find ideas about mathematics, and use many complex methods to make generalizations in solving problems.

According to PISA, students in Indonesia can only complete or occupy mathematical literacy at level 1 and level 2 (Jufri, 2015). In the 2018 PISA results on mathematical literacy, there were 28% of Indonesian students reaching level 2 (the OECD average at level 2 is

76%) and there were only 1% of students getting level 5 scores (the OECD average at level 5 is 11%). From the survey results, it is known that the mathematical literacy of Indonesian students is still classified in the low category.

The PISA study contains four mathematical contents used, namely (1) Space and Shape, (2) Change and Relationship, (3) Quantity, and (4) Uncertainty and Data. Research conducted by Rahmawati & Mahdiansyah (2014) obtained the following data.
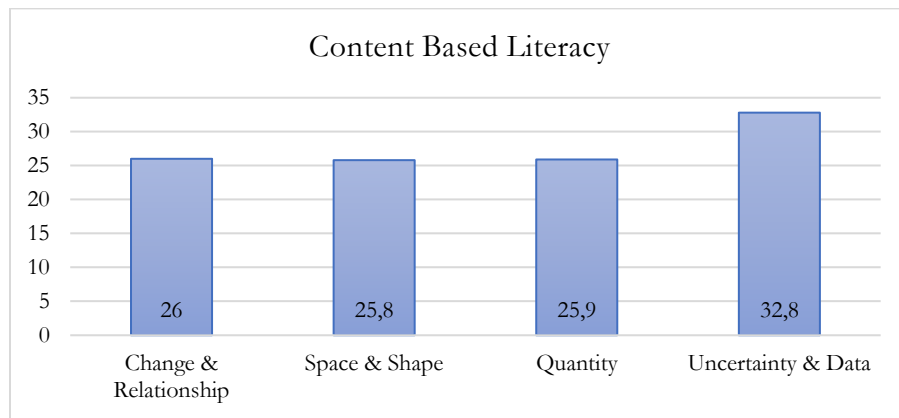

Figure 1. Graph of Mathematical Literacy Based on PISA Content

Based on the graph above, it can be seen that students' mathematical literacy in quantity content is still weak. This raises the question of what makes students weak on this content. One of the causes of students' weak mathematical literacy based on research conducted by Jelvindo et al. (2021) is that students experience learning barriers. Learning obstacles can make it difficult for students to learn, especially on the topic of numbers (Sumirat et al., 2022). If these learning obstacles continue, they will have an unfavorable impact on the quality of learning in subsequent lessons (Alfian et al., 2016). In particular, learning obstacles regarding mathematical literacy in quantity content can affect students' ability to understand mathematical concepts related to quantity and have an impact on their ability to apply and communicate mathematical knowledge (Laamena & Laurens, 2021). Learning obstacles experienced by students make them unable to apply their mathematical knowledge.

The learning obstacles experienced by students usually vary. According toBrousseau (2002:86) can be caused by several factors, namely obstacles of ontogenic origin (students' mental readiness to learn), obstacles of didactical origin (due to the education system), and obstacles of epistemological origin (student knowledge that has a limited application context). According to Suryadi (2016), three factors cause learning obstacles, namely ontogeny obstacles (mental readiness to learn), didactic (due to teacher teaching),

and epistemology (student knowledge that has a limited application context). The ontogenic obstacle is the mismatch between the learning provided by the teacher and the level of thinking of students so that difficulties arise in understanding the material. The epistemological obstacle is a difficulty experienced by students in the learning process due to the limited context of knowledge known to students. A didactical obstacle is a difficulty that occurs due to learning by the teacher.

Based on the results of observations and interviews conducted at SMPN 3 Sungguminasa, one of the mathematics teachers said that some classes had begun to be familiarized with mathematical literacy, but the completion of questions related to mathematical literacy, especially on quantity content, was still relatively low. This can be seen from the initial test given to students with PISA level 3 questions

kamu!

Untuk membuat satu set rak buku, seorang tukang kayu membutuhkan komponen-komponen sebagai berikut: 4 panel kayu panjang, 6 panel kayu pendek, 12 klip kecil, 2 klip besar dan 14 sekrup.
Tukang kayu memiliki stok 26 panel kayu panjang, 33 panel kayu pendek, 200 klip kecil, 20 klip besar dan 510 sekrup. Berapa rak buku yang dapat dibuat oleh tukang kayu tersebut?

To complete one set of bookshelves a carpenter needs the following components:

4 long wooden panels,

6 short wooden panels,

12 small clips,

2 large clips and

14 screws.

The carpenter has in stock 26 long wooden panels, 33 short wooden panels, 200 small clips, 20 large clips and 510 screws.

How many sets of bookshelves can the carpenter make?

(a)   (b)

26 : 4 = 65
33 : 6 = 55
200 : 12 = 1666
20 : 12 = 10
510 : 14 = 364
maka Banyaknya rak ututh yang Bisa di Buat adalah 10 rak

(c)

Figure 2. (a) and (b) PISA level 3, (c) Students' answer

Based on the answers of students, it can be seen that students have been able to make connections between several concepts appropriately using the concept of comparison, but in the calculation process, there is still one error, namely when

performing division operations and the answer has not answered the question. The teacher said that students still feel difficulties in learning mathematics, especially in number material, including the lack of understanding of concepts instilled by the previous teacher so it becomes a challenge for teachers in understanding concepts students. As for external factors from students, namely the lack of mastery of material from the previous school level the teacher becomes difficult in teaching the next material.

Of the many studies on learning obstacles analysis, none has discussed learning obstacles to literacy competence, especially on quantity content. One of the key contents of mathematical literacy is quantity. Quantity is a mathematical concept that involves an understanding of numbers, measurement, and comparison between quantities. Understanding quantity involves recognizing, representing, and manipulating numbers and concepts related to numbers, arithmetic operations, and comparing quantities. Mastery of mathematical literacy skills in quantity content has significant relevance in various aspects of life, such as financial management, sharing data sources, understanding statistics, and data analysis. Meanwhile, diagram 1 shows that quantity content is the second lowest after space and shape. So from this description, the researcher is interested in conducting a study "Analysis of Learning Obstacles to Students' Mathematical Literacy Skills in Quantity Content" to analyze learning obstacles that may be faced by students in developing their mathematical literacy skills in quantity content.

2. METHODS

The research method conducted was qualitative. This research uses a didactic design research framework. According to Suryadi, didactic design research goes through three stages of analysis, namely: (1) didactical situation analysis; (2) metapedadic analysis; (3) retrospective analysis (Astriani et al., 2022). The research was conducted only in stage 1, namely the analysis of the didactical situation, and has a focus on learning obstacles(Aprilia et al., 2018; Dewi et al., 2016; Fahrilianti et al., 2019).

The research was conducted at SMPN 3 Sungguminasa. The research subjects were students of class VII C as many as 28 people. The class selection used a purposive sampling technique by determining class characteristics, namely: 1) students who have heterogeneous abilities; 2) have been given mathematical literacy problems by mathematics teachers.

Data collection techniques in the study were test techniques and non-test techniques. Nonttest techniques (interviews, observations, and documentation) were used to record important events that occurred and explore students' mathematical literacy skills from the tests given during the research process. Instruments in the form of PISA-oriented mathematics questions on quantity content with form questions in the form of

descriptions of as many as 5 questions with different PISA levels which are then processed and analyzed.

Instrumen berupa soal matematika berorientasi PISA pada konten quantity dengan bentuk soal berupa uraian sebanyak 5 soal dengan level PISA yang berbeda-beda yang kemudian diolah dan dianalisis.

Table 1. Indicators of Mathematical Literacy Questions on Quantity Content

Problem Level	Problem Indicator
Level 1	Students can answer questions of a general nature where relevant information is available and the question is clear.
Level 2	Students can apply basic algorithms, formulate, use, and carry out basic procedures or rules.
Level 3	Students can carry out procedures well, including those that require sequential decisions
Level 4	Students can select and combine different representations, including symbolizing and combining them with real situations.
Level 5	Students can select and combine different representations, including symbolizing and combining them with real situations.

Students can select and combine different representations, including symbolizing and combining them with real situations (Septianti et al., 2022). At the time of data analysis, researchers reduced the data obtained during the research. After that, data presentation was carried out by grouping data based on the classification of learning obstacles experienced by students. Finally, concluding all the data obtained. The data validity test is using triangulation techniques by checking data using different techniques.

3. RESULTS AND DISCUSSION

The research data were obtained from 28 students of class VII at SMPN 3 Sungguminasa. The data were in the form of written test results, interview results, and observation results. Written test data are the results of students' work on PISA questions on quantity content. The number of students who experience difficulties is presented in the form of a percentage (%) of the number of students who take the written test at the time of the implementation of this study. The number of students who work on PISA questions is presented in Table 2.

Table 2. Number of students working on PISA question

Problem Level	Indicator	Number of Students who Worked on the Problem (%)		
		Correct answer	Wrong answer	Unable to answer
1	Students can answer questions of a general nature where relevant information is available and the question is clear.	64,29	35,71	0
2	Students can apply basic algorithms, formulate, use, and carry out basic procedures or rules.	42,86	57,14	0
3	Students can apply basic algorithms, formulate, use, and carry out basic procedures or rules.	10,58	53,71	35,71
4	Students can apply basic algorithms, formulate, use, and carry out basic procedures or rules.	28,58	60,71	10,71
5	Students can apply basic algorithms, formulate, use, and carry out basic procedures or rules.	28,57	50,00	21,43

Based on Table 1, it is obtained that students are more mistaken in answering questions than not working on problems. The highest percentage of students are wrong in answering questions at level 4, namely 60.71%. While the highest percentage of students cannot answer questions at level 3, namely 35.71%

Ontogenic Learning Obstacles

Ontogenic obstacles are learning barriers that occur due to limitations from students in self-development or related to students' mental readiness to learn. When given a question, students do not immediately answer because they are afraid of being wrong. This indicates that students experience psychological ontogeny obstacles.

During the test, some students who had not answered the questions in the first 10 minutes were asked about the obstacles to working on the test. All of them answered that they did not know how to do the question. Like the research conducted by Solihah et al. (2021), it was also found that students did not know what they had to do on mathematical literacy questions on integer material. This shows that students have ontogenic obstacles because students are not confident in answering the questions given. Students who do not have confidence in working on problems make learning obstacles for students. This
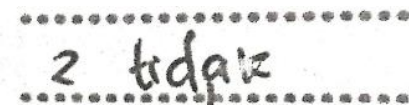
is in line with Sidik et al. (2021) who found that even though students have high abilities in mathematics when working on problems that are different from usual they do not dare to work on these problems. This creates a sense of insecurity about the abilities he has so it creates learning obstacles for him. This can also be seen from the answers that do not have confidence in providing arguments when the question asks to write them down, it can be seen from Figure 3 the answers given by students on level 2 questions.

Rumah yang dibangun Pak Syam memliki luas 132 m² dengan luas ruang tamu yaitu 9 m². Pada ruang tamu akan dipasangi kermaik dengan ukuran 50 × 50 cm. Namun keramik yang tersedia di toko hanya keramik ukuran 30 × 30 cm. Jika Pak Syam membeli keramik yang tersedia di toko, apakah keramik yang digunakan Pak Syam lebih sedikit dibandingkan dengan keramik yang diinginkan Pak Syam sebelumnya?

(a)

The house built by Mr. Syam has an area of 132 m² with a living room area of 9 m². The living room will be fitted with 50 × 50 cm tiles. However, the tiles available in the shop are only 30 × 30 cm tiles. If Mr. Sham buys the tiles available in the shop, will he use fewer tiles than the ones he wanted before?

(b)

2 tdak

(c)

Figure 3. (a) & (b) problem level 2, (c) S25's answer

When interviewed, the reason students only wrote "no" was because by finding the number of ceramics used when using 30 × 30 cm ceramics and 50 × 50 cm ceramics. S25 answered that from this amount so that he could conclude the answer to the problem. However, S25 did not write down the steps to solve the problem to support the reason for answering "yes" because he felt unsure of the steps he used. This shows that students feel afraid and not confident in the answers given so they only write the answer to one of the questions given and do not provide supporting arguments from the answers they write.

In addition, the mental readiness of students in learning greatly affects the achievement of learning objectives (Sukirno & Ramdhani, 2016). With mental readiness, learning is easier to accept. Based on the test results on level 3 and level 4 questions, some students cannot answer. Compared to level 1 and level 2 questions, all students

answered the question even though there were still some mistakes. In addition to unanswered questions, some students answer questions by guessing or carelessly answering. Students have not fully understood the information in the question, so students guess how to answer the question.

Epistemological Learning Obstacles

Epistemological obstacles are obstacles that occur due to the limited knowledge that students have in a particular context.

(1) Students have difficulty answering story problems

In this obstacle, students find it difficult to answer questions because the questions given are too many narratives or the questions are in the form of stories. The following is an interview excerpt:

P   : "Are you used to being given problems like this?"

S16   : "The teacher usually gives problems that have more numbers than stories (the problems given are in the form of sentences)."

P   : "Is it harder to do if the question is like this? "

S16   : "Yes, it's a bit difficult. Because you have to read carefully first and then you can answer correctly"

This can be seen in Table 1 although the percentage of wrong answers is still a lot it cannot be ignored that the percentage of students who cannot answer is higher than students who answer correctly. In line with research conducted by Utari et al. (2019) that students still have difficulty in solving story problems so errors occur in solving them. According to Zakariyah dan Yusoff, students make mistakes not because their abilities are weak, but the mistakes that occur are more about students making mistakes not because their abilities are weak, but the mistakes that occur are more about (Utari et al., 2019). A total of 35.71% of students who could not answer level 3 questions on average complained that they did not understand the meaning of the question. This situation shows that the lack of ability of students to understand the language used results in students not being able to apply the right strategy to get the solution.

(2) Students have difficulty with arithmetic operations

Some students knew how to solve the given problem but did not know how to operate it. This can be seen in Figure 4 and Figure 5

Nurul terpilih untuk mengikuti pertukaran pelajar di Korea selama 3 bulan. Uang saku yang didapat Nurul yaitu Rp 25.000.000. uang tersebut ditukarkan Nurul ke dalam uang pecahan won dengan nilai tukar saat itu 1 IDR = 0,085 Won. Di Korea, Nurul mengahabiskan uang sakunya sebanyak 1.145.000 Won untuk niaya kehidupan sehari-harinya dan membeli oleh-oleh sebanyak 145.000 Won. Pada saat pulang ke Indonesia, Nurul menukarkan uang saku yang tersisa dan pada saat itu nilai tukarnya yaitu 1 IDR = 0,095 Won. Bearapa banyak uang saku Nurul saat di Jakarta setelah menukarkannya?

(a)

Nurul was selected to participate in a student exchange program in Korea for 3 months. The pocket money Nurul got was IDR 25,000,000. Nurul exchanged the money into won bills with the exchange rate at that time 1 IDR = 0.085 Won. In Korea, Nurul spent his pocket money as much as 1,145,000 Won for his daily life and bought souvenirs as much as 145,000 Won. When he returned to Indonesia, Nurul exchanged the remaining pocket money and at that time the exchange rate was 1 IDR = 0.095 Won. How much was Nurul's pocket money in Jakarta after exchanging it?

(b)

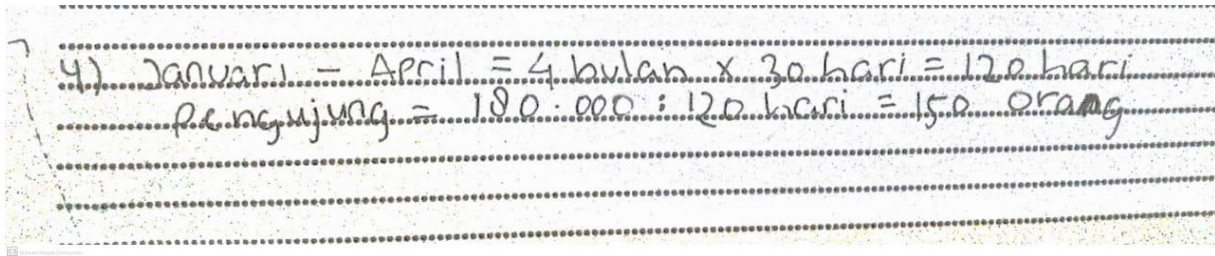Figure 4. (a) & (b) problem level 3, (c) S14's answer

Figure 4 is the students' answers to level 3 questions showing students solve the problem by using several solution steps. However, students still cannot write the answer desired by the problem. It can also be seen that students still mistakenly multiply by decimal numbers and at the end of the S14 students do not complete the final step. When interviewed, learner S14 said that he forgot how to multiply decimals, and when multiplying with large numbers, learner S14 was confused about how to solve it so he did not answer until the end.

Gunung Latimojong merupakan salah satu gunung tertingg di Indonesia yang terletak di Kab. Enrekang, Sulawesi Selatan. Adapun ketinggian gunung tersebut yaitu 3.478 m. Pada awal bulan Jnauari 2023 hingga akhir April 2023 didapat informasi bahwa ada 180.000 orang yang mendaki gunung tersebut. Selama periode tersebut, berapa orang yang mendaki gunung setiap harinya?

(a)

Mount Latimojong is one of the highest mountains in Indonesia, located in Enrekang Regency, South Sulawesi. The height of the mountain is 3,478 m. At the beginning of January 2023 until the end of April 2023, information was obtained that there were 180,000 people who climbed the mountain. During that period, how many people climbed the mountain every day?

(b)

(c)

Figure 4. (a) & (b) problem level 4, (c) S18's answer

Figure 4 is the students' answers to level 4 questions showing that students can already make connections between material concepts and daily life concepts. However, when converting months to days, S7 generalizes that all months are 30 days. And in the calculation process, there is still one mistake, namely when performing the division operation and the answer has not answered the question. This is in line with the findings of Sutrisno & Adirakasiwi (2019) that there are students who are still mistaken in calculating the final results of mathematical literacy questions.

This is supported by the results of interviews conducted by teachers that students still have difficulty memorizing multiplication so when asked to divide they do not know. The division is the opposite of multiplication. Meanwhile, students understand the concept of multiplication by adding numbers. Like multiplying 6, it means 6, 12, 18, 24, and so on. When asked 3 × 6 they did not know the answer.

The results of interviews with students and teachers show that students do not understand the prerequisite material because, in semester 1 in grade 7, the first material

taught is integers so students must understand the prerequisite material, namely knowing counting operations, one of which is multiplication and division which was taught at elementary school

(3) Students have difficulty finding the right mathematical operation

Some students write the information completely and know the meaning of the given problem. But students have difficulty finding out the operation or strategy that is suitable for solving the given problem. This can be seen from S27's answer sheet.

Sari akhir-akhir in suka membuat saus mentai, biasanya ia membuat 100 ml suas mentai dengan resep sebagai berikut.

Mayones	115 ml
Saus tomat	15 ml
Air lemon	10 ml
Karaishi mentaiko	15 ml

Berapa banyak ml saus tomat yang dibutuhkan Sari jika ingin membuat saus mentai sebanyak 320 ml?

(a)

Sari likes to make mentai sauce lately, she usually makes 100 ml of mentai sauce with the following recipe.

Mayonnaise	115 ml
Tomato sauce	15 ml
Lemon water	10 ml
Karaishi mentaiko	15 ml

How many ml of tomato sauce does Sari need if she wants to make 320 ml of mentai sauce?

(b)

(c)

Figure 5. (a) & (b) problem level 4, (c) S27's answer

Whereas the solution to the problem is to make a comparison to get the answer desired by the problem. When asked, students did not know how to solve the problem. When given directions on how to solve by comparison, S27 students only understood this. Learner S27 revealed that students were not familiar with the type of story problem so students did not know how to solve the problem at hand. Students who can only solve familiar problems and when given a little change immediately don't know how to do it indicates that the learning done by students is not meaningful.

Grand Toserba merupakan salah satu tempat belanja murah di Gowa dan sekitarnya. Grand Toserba mempunyai karyawan pria sebanyak $\frac{5}{16}$ dari kesulurahan karyawan dengan karyawan pria yaitu 20 lebih sedikit daripada karyawan wanita. Berapakah jumlah keselurahan karyawan pria?

(a)

Grand Toserba is one of the cheap shopping places in Gowa and surrounding areasGrand Toserba has $\frac{5}{16}$ of the total male employees with 20 fewer male employees than female employees. What is the total number of male employees?

(b)

Figure 5. (a) & (b) problem level 5, (c) S13's answer

On the answer sheet of S13 students, it can be seen that students write information that helps students in answering the question and know about the purpose of the question. From the answer, the steps for solving the problem have led to the desired solution. However, S13 students have not been able to identify the next step that will be used to find the intended answer.

On the answer sheet of S13 students, it can be seen that students write information that helps students in answering the question and know about the purpose of the question. From the answer, the steps for solving the problem have led to the desired solution. However, S13 students have not been able to identify the next step that will be used to find the intended answer.

Didactical Learning Obstacles

Didactical obstacles are obstacles that arise from the methods or approaches used by a teacher.

(1) One-way learning

The following is an excerpt from an interview with a learner.

P: When the teacher teaches, do you usually use the group method, or does the teacher explains directly?

S2: usually the teacher explains the material P If there is something you don't understand, do you ask the teacher?

S2   : no

P   : Does the teacher often ask you if you understand or not?

S2   : normal, but I'm embarrassed. After all, here the important thing is to attend, our grades are complete, and after all, here there will be no one who does not go to class.

This quote is in line with the results of the teacher interview that the model used is mostly direct learning. The difficulty experienced by teachers is the students' misunderstanding of the regulation of Regional Regulation Number 10 of 2013 on the Continuous Grade Completion System (SKTB). It can be seen from the interview excerpt with students who interpret SKTB as a regulation that guarantees that students do not stay in class. So that many students are indifferent to learning, when given homework the task is done as long as it is done.

In addition, during the observation, the teacher only provided information to students, but the explanation of the information provided by the teacher could not be understood by students quickly. Students who do not understand the material do not dare to ask and ask the teacher to re-explain the material presented. The teacher also does not explore to what extent students understand the material presented, this is due to the small time allocation. So it was found that the learning used by the teacher did not

lead to the application of didactic situation theory, namely the action situation. Learning is more dominant in the teacher and the lack of feedback by students.

The learning model planned in the lesson plan is not what is practiced in class. So that the lesson plans made do not run properly. Based on interviews conducted with teachers, the lesson plans made are only one for one level. For example, teachers teach in 5 classes at grade 7 level. For the 5 classes taught, all of them use only one lesson plan. Each class should be prepared with different lesson plans, because understanding students is one of the competencies that must be possessed by a teacher which is very important to consider in determining how to deliver material in the learning process, and helps determine attitudes in treating students (Astini, N. & Purwati, N., K., 2020). This is because students have different characteristics and development, so each class has different strategies because each class has different characteristics. Although one lesson plan is used for several classes, almost 70% of the lesson plans made are not implemented when the teacher starts teaching in class. Teachers must adjust to the ability of students by estimating material such as numbers will be suitable for what kind of learning. So that the math learning carried out by the teacher seems spontaneous.

(2) Lack of reinforcement regarding prerequisite material (calculation operations material)

In grade 7, whole number material has been studied before when in elementary school, and even number counting operations have been studied in elementary school. From the test results and interviews with students and teachers, it is concluded that the lack of cultivation of the concept of arithmetic operations, especially multiplication and division in elementary school, provides obstacles for students in grade 7. The following is an excerpt from the interview with the teacher.

P : "Do students understand arithmetic operations?"

T : "If it's addition and subtraction, all of them can do it, but if it's multiplication and division they are lacking, only 20% can do multiplication and division".

P : "Why does this happen?"

T : "After I find out, it turns out that in multiplication they only memorize the results of addition, like multiplying 6, they say 6, 12, 18. maybe because they were two years online in elementary school, so they don't understand the concept of multiplication and division".

Based on this quote, it can be concluded that online learning for two years makes students less aware of the basics of arithmetic operations, namely multiplication, and

division. This is supported by research by Wasiah (2021) that only 20% of students understand math material when online classes take place and 28% do not understand math concepts. In fact, in learning mathematics, understanding the concept of material is very necessary. Because by understanding the concept of mathematics, students will also better understand the concept of the subject matter itself.

When students have entered grade 7, which is the first class after covid-19, the teacher must work hard to provide conceptual planting regarding the prerequisite material. In addition, the teacher must think about how to make students no longer depend on cell phones to find answers to questions given by the teacher.

Of the learning obstacles experienced by students, students' self-confidence and learning carried out by teachers are the biggest obstacles for students in solving quantity content literacy problems. Whereas self-confidence or belief in the ability of students can build positive energy that is useful for completing tasks or working optimally (Patandung & Saragih, 2020). Likewise, the teacher's model/strategy in learning has a significant effect on students' mathematics skills (Dores et al., 2020). Likewise, the teacher's model/strategy in learning has a significant effect on students' mathematics skills.

Teachers interact with students all the time. The interaction that occurs should encourage them to develop their abilities. The role of teachers in developing students' confidence in learning is not only enough to provide motivation. Teachers also need to provide practice problems. Van de Walle (2012) said that when students work on the exercises given, the exercises can focus students on the ideas and understanding they have and integrate them to further understand the concepts they have learned. In addition, teachers can also apply these strategies, among others, providing a review of learning, increasing students' successful experience by teaching specific strategies, and guiding students to determine learning objectives. In addition, in applying these strategies, teachers need to create a good classroom atmosphere by making students feel comfortable because the teacher appreciates each learner's achievement and provides constructive feedback to students.

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