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HONEY-MUMFORD LEARNING STYLE: REVIEW OF MATHEMATICAL COMMUNICATION FOR ELEMENTARY SCHOOL STUDENTS IN PROBLEM SOLVING

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Abstract

The purpose of this study is to describe the mathematical communication process that students do on each type of learning style they have. The learning style referred to refers to Honey-Mumford, namely; (1) Theoretical; (2) Pragmatic; (3) Activist; and (4) Reflective. The research was conducted at SDN 44 Ampenan with 39 students as the subject of the research. Data collection was carried out by providing 2 instruments, namely a learning style questionnaire and mathematics questions followed by semi-structured interviews to students who had finished. The results showed that the number of students with the most theoretical learning styles and students with the least active learning styles. After the data is collected, the research data is analyzed in three stages, including; (1) condensing the data, (2) presenting the data, (3) drawing and checking the validity of the conclusions. The results also show that there are differences in mathematical communication in each learning style, but mathematical communication errors made by all types of learning styles are errors in writing formulas and conclusion sentences. Based on the results of the study, it can be concluded that students with theoretical and activist learning styles often make mathematical communication errors when writing symbols. Meanwhile, students with pragmatic and reflective learning styles tend to make mathematical communication errors when writing mathematical formulas.

***Keywords**: Cognitive ability, learning style, mathematical communication, problem solving, writing error.*

Abstrak

Tujuan penelitian ini adalah untuk mendeskripsikan proses komunikasi matematis yang dilakukan siswa pada setiap jenis gaya belajar yang dimiliki. Gaya belajar yang dimaksud mengacu pada Honey-Mumford, yaitu; (1) Teoritis; (2) Pragmatis; (3) Aktivis; dan (4) Reflektif. Penelitian dilaksanakan di SDN 44 Ampenan dengan subjek penelitian seluruh siswa kelas V yang berjumlah 39 siswa. Pengumpulan data dilakukan dengan menyediakan 2 instrumen yaitu angket gaya belajar dan soal matematika dilanjutkan dengan wawancara semi terstruktur kepada siswa yang telah selesai. Hasil penelitian menunjukkan bahwa jumlah siswa dengan gaya belajar teoritis paling banyak dan siswa dengan gaya belajar aktivis paling sedikit. Setelah data dikumpulkan, data penelitian di analisis dalam tiga tahap antara lain; (1) mengondensasikan data, (2) menyajikan data, (3) menarik dan mengecek keabsahan kesimpulan. Hasil penelitian juga menunjukkan bahwa terdapat perbedaan komunikasi matematis pada masing-masing gaya belajar, namun kesalahan komunikasi matematis yang dilakukan oleh semua jenis gaya belajar adalah kesalahan dalam penulisan rumus dan kalimat kesimpulan. Berdasarkan hasil penelitian, dapat disimpulkan bahwa siswa yang bergaya belajar teoritis dan aktivis sering melakukan kesalahan komunikasi matematis pada saat penulisan symbol. Sedangkan siswa bergaya belajar pragmatis dan reflektif cenderung melakukan kesalahan komunikasi matematis pada saat menuliskan rumus.

Kata kunci: Kemampuan kognitif, gaya belajar, komunikasi matematis, pemecahan masalah, kesalahan penulisan

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INTRODUCTION

Mathematics learning has a strategic role to develop students' communication skills. This is reinforced by The National Council of Teachers of Mathematics (NCTM, 2000) which states that communication is an important part of mathematics and mathematics learning. When students are given the opportunity to communicate about mathematics, students will engage their thinking skills. Students will learn to reflect, clarify, and expand their ideas and understanding of mathematical arguments (Hunt et al., 2013). The mathematical idea in question can be in the form of students' ideas in solving problems related to certain materials, then students explain the reasons for choosing the right solution strategy which is one of the students' mathematical arguments.

Communication in mathematics is often called mathematical communication. According to Gultom et al. (2020) mathematical communication is mathematical communication is the way to deliver of student's mathematical ideas, linking these ideas in social contexts, making connections, and making knowledge in their minds when students learn and engage in mathematics. Meanwhile, according to Aihara et al. (2019) mathematical communication is a skill that students have to understand, state, and interpret their mathematical ideas orally and in writing.

Mathematical communication is one of the five standard processes in learning mathematics (NCTM, 2000). While the Program for International Student Assessment or PISA (OECD, 2013) makes mathematical communication as one of the competencies on mathematical literacy. PISA states that the domain of mathematical literacy is the ability to analyze, reason, and communicate ideas effectively (Schleicher, 2019). Written and oral communication is very useful in learning mathematics in the classroom. The results of research by Al-saleem et al. (2020) about the importance of communication in the classroom, namely students realize that the correct answer is not enough, the student enjoys understanding the writings of his friend's work and tries to describe if the method his friend uses is different from the method that has been used. In addition, the results of Menduni-Bortoloti & Paula Perovano (2018) research states that students get the opportunity to gain an understanding of their mathematical thoughts and ideas through writing.

Based on the results of the preliminary study conducted in 2020, it was found that the ability of students in elementary schools was still low. This research was conducted at SDN 44 Ampenan to see students' problem-solving abilities. However, the results showed that students often made writing errors in the process of solving a given problem. This makes researchers assume that students at SDN 44 Ampenan have low mathematical communication skills.

Based on that explanation, researchers need to describe students' mathematical communication in solving mathematical problems using Polya's stages of completion (in Hidayati et al., 2020) in terms of the Honey-Mumford learning style that students have by using indicators adapted from NCTM (2000). Therefore, the researcher will conduct a study entitled " Honey-Mumford Learning Style: Review of Mathematical Communication for Elementary School Students in Problem Solving".

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RESEARCH METHODS

The approach in this study is a qualitative approach with the type of research being descriptive research (Creswell, 2014). This is because this study focuses on describing student communication in terms of Honey Mumford's learning style. The researcher collected students' written completion to describe written mathematical communication as well as supporting interview results. The researcher reviewed all the data using the researcher's own language. The study is based on indicators that have been adjusted at the Polya stage.

This research is taking place in SDN 44 Ampenan, having its address at Jalan D. Paniai No.1, Pagutan Bar., Kec. Mataram, Mataram City. The subjects in this study were students who were in class V, this consideration was carried out in accordance with the consideration of the development of mathematical communication skills in children aged 8-11 years already at the concrete stage (NCTM, 2000). This will facilitate the process of analyzing mathematical communication of subjects who will be given problems related to everyday life. To identify Honey-Mumford students' learning styles, researchers will give questionnaires to 39 fifth grade students at SDN 44 Ampenan.

Furthermore, the prospective subjects with different learning styles were given a problem to find out their written mathematical communication. Giving this problem is adjusted to the mathematics lesson schedule and in accordance with the agreement with the class teacher. Then the researcher corrected the work of the problem. The researcher chose research subjects that matched the criteria, namely two students in each group who communicated ideas in solving problems completely (getting the correct final solution for all questions on the problem), showing seriousness in writing ideas, as well as suggestions from the teacher. class.

The second procedure is the selection of research subjects. First, the researcher asked students to answer a learning style questionnaire. These activities are carried out during learning hours and carried out in the classroom with the permission of the mathematics teacher and principal. In this activity, researchers obtained data from the learning style questionnaire which was then analyzed to obtain a classification of student learning styles. Based on the results of the classification, the prospective research subjects were obtained. Furthermore, researchers get the mathematical communication data of prospective subjects by providing problems. Giving problems is carried out in the teacher's room. This subject selection procedure has been described in detail in the location and research subject subsections. After the selection of research subjects was completed, the next data collection procedure was conducting interviews. This activity was carried out to confirm students' written communication and to know students' mathematical communication more deeply. Interviews were conducted face-to-face with the research subjects one by one at the school according to the permission of the mathematics teacher. Interviews were carried out guided by the interview guidelines that had been made.

RESULTS OF THE RESEARCH AND THE DISCUSSION

After the data collection was done, the researchers obtained questionnaire data on learning styles

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and the results of students' work in solving math problems. This data was obtained from 39 fifth grade students at SDN 44 Ampenan. The results of the student learning style questionnaire are show in figure 1.

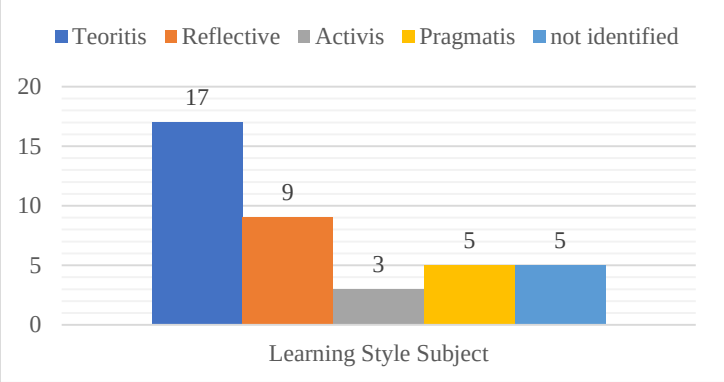

Figure 1. The results of tabulation of the number of students based on learning styles

Based on Figure 1, the results of filling out this questionnaire, it was also found that there were 5 students whose learning styles could not be identified because they did not show a tendency to any learning style. To clarify the results, an explanation of the results of the work of the subject in each learning style will be presented. The deepening of the results of this study will involve 4 subjects, which come from 4 learning styles. For each learning style, 1 subject will be selected as a representative by considering the selected research subjects are able to represent the work of other subjects in the same learning style category. Furthermore, the results of the subject's work will be analyzed using mathematical communication indicators as show in table 1.

Table 1. Indicators of mathematical communication in solving problems

Polya's Steps	Indicator	Sub Indicators
1. Understanding the Problem	Using mathematical language to present mathematical ideas accurately	a. Using mathematical symbols when writing question information b. Make a picture or illustration according to the information in the question
2. Making a Plan	Using mathematical language to describe the solution method accurately	a. Write a plan of completion with appropriate mathematical terms and symbols. b. Make a mathematical model that fits the purpose of the problem.
3. Executing the Plan	Communicate mathematical thinking coherently and clearly.	a. Write down each stage of completion completely and sequentially. b. Write the completion steps with precise and clear mathematical symbols
4. Check Back	State the conclusion sentence in accordance with the purpose of the problem.	a. Change mathematical symbols into situational sentences in conclusions.

a. Theoretical Learning Style

The results showed that the number of subjects with theoretical learning styles was 17 subjects. This number is the highest, where this result shows that most of the subjects have a theoretical learning style. Of these 17 subjects, 1 subject was selected to be

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assigned the ST code. To deepen the research results, the results of ST's work will be analyzed based on the following mathematical communication indicators:

1. Understanding the Problem

At this stage, ST is required to be able to describe what information is contained in the questions. In addition, ST is also expected to be able to write down the purpose of solving the problem or what is asked in the given question. In this case, ST has written what is known and what is well asked, as shown in Figure 2.

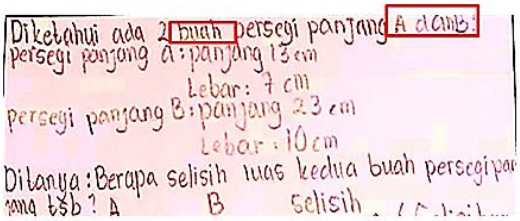

Figure 2. ST Stages in understanding problems

Based on Figure 2, it can be seen that the content written by ST is in accordance with the information contained in the questions. This shows that ST can understand all the information contained in the questions well. In addition, ST also writes the unit of length in centimeters (cm) as shown in Figure 2 which is marked in yellow. In this case, ST does not forget to write the units of length at this stage, such as 13 cm, 7 cm, 23 cm, and 10 cm. This finding contradicts the results of the study of Kamid et al. (2020) where elementary school students often forget to write units of length or width when solving math problems. Not only that, the results of Klosterman (2017) research also found that writing signs for units of length, weight, or other units indicates that the student fully understands the problem given.

Figure 2 also shows some errors in the use of mathematical symbols at this stage. In Figure 2 it can be seen that students do not provide spaces in writing "$A\ and B$" even though what is meant is "$A\ and\ B$". This can lead to misinterpretation of others who read the writing. In addition, the subject of ST looks inconsistent in writing the symbol for the name of a rectangular shape. Subject ST wrote "Rectangle A" even though what was meant was "Rectangle A". The last writing error is using the terminology of the word "fruit", even though "buah" has its own meaning, not to indicate many units. This result is in line with the research conducted by Pansak et al. (2019) that the use of the word "fruit" in the terminology of mathematical logic is something that is not right. To clarify the results of ST's work in question number 1, the following are the results of an interview with ST.

Q : What was the first step you took to solve this problem?
ST : I wrote down what was known and what was asked, sir.
Q : What do you know and ask?
ST : There are 2 rectangles, sir, that's why I named them Rectangle A and Rectangle B. Rectangle A is 13 cm long and 7 cm wide, while Rectangle B is 23 cm long and 10 cm wide.
Q : How did you know all that?
ST : Everything is in the question, sir, so in the question it has been explained what is known and what was asked.

From the results of the interviews above, it can be seen that students work on the questions systematically and carefully. The results of the interviews

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also showed that students observed the questions carefully before writing down what they knew and what the questions asked. This is in line with the results of Dina & Ikhsan (2019) research that students with theoretical learning styles have several characteristics, such as, these students like to adopt and integrate all their observations into their frame of mind. This causes students to see how an observation is related to other observations. In addition, one of the characteristics of students with theoretical learning style has systematic thinking (Morphew et al., 2020).

2. Making a Plan

At this stage, ST is required to be able to describe the method, method, or formula used by the subject in solving the problem. In this case, ST is less explicit in writing the problem-solving method used in solving the problem. At the planning stage, ST did not clearly write down the settlement plan that was carried out to solve the problem. In Figure 3 which is marked with yellow, it can be seen that students write "difference". This shows that the plan to solve the ST problem is to find the difference between Rectangle A and Rectangle B. However, ST also writes the formula "$L = p \times l$" which refers to the rectangular formula. This shows that ST can plan the completion of question number 1 well.

However, in terms of writing plans, the subject of ST did not write down the completion plan in a clear and coherent manner. ST's plan writing is not well organized. According to Mcleod (2013), children who are at the elementary level of education still have difficulty in organizing answers in a clear and coherent manner. The results of another study conducted by Danişman & Erginer (2017) stated that the consistency in writing the results of students' answers is an indication that the student fully understands the content of the questions given. In this case, even though ST could not write a resolution plan well, ST seemed to understand the question, and carried out the settlement plan appropriately.

3. Executing the Plan

At this stage, ST is easy to complete and the calculation of the questions carried out by ST is precise and clear. In this case, ST is quite good at compiling the calculation process in solving problems. ST is quite good at compiling the results of the calculation of number 1 carried out by ST. When writing symbols for units of length, ST is inconsistent where ST writes units of $cm^2$when writing area of rectangle A, and area of rectangle B. Meanwhile, when placing the difference result, ST does not write units of cm^2. This is in line with the opinion of Mueller & Brand (2018) that the writing of units is very important to show the number that is written to represent what it is. Nevertheless, the calculation process carried out by ST is correct and in accordance with the purpose of the question. The subtraction operation used by ST can also represent a request to find the difference between the two rectangles.

4. Looking Back

At this stage, ST is required to be able to write conclusions or statements that can answer the objectives of the questions given. The writing of this statement also indicates an indication of a re-examination process carried out by ST, although it will be confirmed again through interviews. In this case, ST seems not to have written a conclusion statement. ST subject did not clearly

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write a conclusion statement as an indication of re-checking the results of the work on question number 1. To confirm the implementation of this stage, an interview was conducted with ST with the following results:

Q : What does this "139 $difference$" mean?
ST : Yes, what is the difference, sir, that's the result. Because the time is a bit short, I wrote it down, sir.
Q : Oh yeah, why did you write that?
ST : To be clear, sir.
Q : Did you check again the results of your work?
ST : I checked the calculations, sir, I'm afraid I'm wrong.

From the results of the interview above, it can be seen that ST is actually doing re-checking activities on the results of his work. However, due to running out of time, ST did not write down the sentences in detail and clearly. In this case, ST checks the calculations made previously. Even so, ST in this case still makes mistakes, where ST does not write down the unit of the result of the difference in the area of the rectangular shape in question. ST should have written "139 cm^2" not just "139".

b. Pragmatic Learning Style

The results showed that the number of subjects with pragmatic learning style was 5 subjects. From these 5 subjects, 1 subject will be selected randomly for further research. The selected subject is given a SP code. The results of SP work will be analyzed based on mathematical communication indicators as follows:

1. understand the problem

At this stage, the SP is required to be able to describe what information is contained in the questions. In addition, SP is also expected to be able to write down the purpose of completing the research results, or to be able to write down what was asked from the questions given. In this case, SP has written down what is known and what is well asked. It can be seen that the content written by SP is in accordance with the information contained in the questions. In addition, SP also correctly writes centimeters (cm) as shown in Figure 6 which is marked in blue. In this case, SR did not forget to write down the units of length at this stage, such as 13 cm, 7 cm, 23 cm, and 10 cm. This finding contradicts the results of the study of Kamid et al. (2020) where elementary school students often forget to write units of length or width when solving math problems. Not only that, the results of Klosterman's research (2017) also found that writing signs for units of length, weight, or other units indicates that the student fully understands the problem given. From Figure 6, it can also be seen that the subject of SP wrote clearly what was asked. This shows that SP can understand all the information contained in the questions well. This is reinforced by the results of interviews with SP subjects as follows:

Q : What was the first step you took to solve this problem?
SP : Write down what you know and ask about sir
Q : What do you know and ask?
SP : Rectangle A is 13 in length and 7 in breadth, and rectangle B is 23 in length and 10 in breadth.
Q : How did you know all that?
SP : Here, it's in the problem, sir.

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From the results of the interviews above, it can be seen that SP worked on the questions carefully and systematically. The results of the interviews also showed that students observed the questions carefully before writing down what they knew and what the questions asked. This is in line with the results of research Wilson (2019) that students who have a pragmatic learning style are able to write well what is known, and what is asked.

2. Make a plan

At this stage, SP is required to obtain the method, method or formula used by the subject in solving the problem. In this case, SP is less explicit in writing the problem-solving method used in solving the problem. At the stage of drawing up the plan, the SP did not write down the settlement plan at all to solve the problem. Tt can be seen that the SP did not write the rectangular formula A and the rectangular formula B. Furthermore, the SP also did not write down the word "difference" to find the final answer. This shows that SP cannot plan the problem solving properly. This is in accordance with the results of another study conducted by Danişman & Erginer (2017) which states that the consistency in writing student answers is an indication that the student fully understands the content of the questions given.

3. Carry out the plan

At this stage the SP is to be able to complete the completion and calculation of the questions carried out by the SP in a precise and clear manner. In this case, it is good for SP to wait for the calculation process in solving the problem. SP is good at calculating. When writing the symbol for the unit area when writing the symbols for the unit length, the SP is still inaccurate where the SP does not write down the unit cm^2 when placing the area of the rectangle A and the area of a rectangle B. Subject SP only writes the symbol cm when writing the unit area. This error indicates that SP is not perfect in communicating the results of its work. According to Mueller & Brand (2018), the writing of units is very important to show what the numbers written represent. However, the calculation process carried out by SP is correct and in accordance with the purpose of the question. The subtraction operation used by SP can also represent a request to find the difference between the two rectangles.

4. Check Back

At this stage, SP is required to be able to write conclusions or statements that can answer the objectives of the questions given. The writing of this statement also indicates an indication of a re-examination process carried out by ST, although it will be confirmed again through interviews. In this case, ST does not appear to have written a conclusion statement. Figure 9 shows that the subject of the SP did not write a conclusion statement as an indication of re-checking the results of the work. To confirm the implementation of this stage, interviews were conducted with SP with the following results:

Q : Are you sure about the answer?
SR : Yes sir, hehe
Q : Did you check again the results of your work?
SR : Yes sir, you have got the difference in area.

From the results of the interviews above, it can be seen that the SP actually carries out re-checking activities on the results of their work.

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However, SP did not write a conclusion sentence. In this case, SP checks the methods and calculations that were done previously. However, SP in the context of mathematical communication, the conclusion sentence is quite important to show that the subject can represent the purpose of the problem properly and precisely.

c. Activist Learning Style

The results showed that the number of subjects with an activist learning style was 3 subjects. This shows that the number of subjects with active learning styles is the least compared to the number of subjects with other learning styles. From these 3 subjects, 1 subject was chosen to be studied. Selected subjects were coded SA. To deepen the research results, SA work will be analyzed based on the following mathematical communication indicators:

1. Understand the problem

At this stage, the SA is required to be able to describe what information is contained in the questions. In addition, SA is also expected to be able to write down the purpose of solving the problem or what is asked in the given question. in this case the SA does not write down what is known and what is being asked. As can be seen in Figure 3.

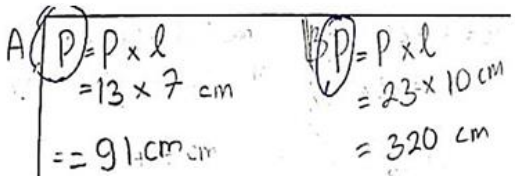

Figure 3. Stages of understanding the problem of SA

Based on Figure 3, it can be seen that the SA subject did not write down at all what was known and what was asked. SA subjects only wrote the letter "*A*" and the letter "*B*" without clearly writing "Rectangle *A*" and "Rectangle *B*". This can cause errors in interpreting the meaning of the text. However, based on the results of the researcher's interview with the SA subject, it shows that the SA subject actually knows what is known in the question. However, the subject of SA did not write it down when working on the problem. To clarify the results of the job analysis of the SA subject in question number 1, the following are the results of the interview with the SA subject:

Q : What was the first step you took to solve this problem?
SA : Calculate the area value of rectangle A and rectangle B Sir.
Q : What is known?
SA : What is known is that the length of the rectangle A is 13 cm and the breadth is 7 cm. then rectangle B is 23 cm long and 10 cm wide.
Q : Why don't you write it in the answer?
SA : Forgot sir
Q : What did you ask about that question?
SA : Area of rectangle A and area of rectangle B Sir

From the results of the interview above, it can be seen that the SA subject did not work on the questions carefully and systematically. This can be seen from the answers of the SA subjects who actually already know what is known but do not write it down in the answer. The subject of SA continues to look for the value of the area of rectangle A and the area of rectangle B. From the results of the interview, it is also known that the subject of SA does not understand what is being asked of the question. This can be seen from SA's answer which only mentions that

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what is being asked is the area of the rectangle. The correct answer should be that what is asked is the difference in area of rectangle A and rectangle B. This is not in line with the results of research Kalantaievska et al. (2019) that students who have an activist learning style have the ability to understand and write the problem well. This is not the case for AT subjects. However, the subjects studied by Young et al. (2018) were students at the high school (SMA) level. This is a new finding that there are differences in the ability to understand problems between subjects with activist learning styles at different school levels.

2. Make a plan

At this stage the subject of SA is required to be able to describe the method, method, or formula used by the subject in solving the problem. In this case, the subject of SA was wrong in writing the formula for the area of a rectangle as shown in Figure 4.

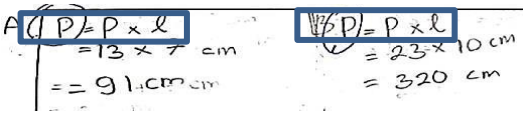

Figure 4. Stages of drawing up a plan for the subject of SA

From Figure 4 above, it can be seen that the subject of SA was wrong in writing the formula for the area of a rectangle. The error lies in the error in writing the broad symbol with the letter "P" symbol which should use the letter "L" symbol. This error can result in errors in interpreting the written formula and the conclusion of the calculation results. This shows that the subject of SA is less careful and thorough in planning problem solving. This is in accordance with the results of research Wahyono et al. (2018) that the error with the highest percentage that is often made by elementary school students is an error in writing the formula used to solve the problem.

3. Execute the plan

At this stage, SA subjects are required to be able to write solutions and perform calculations to answer questions. From the results of SA's answers, it can be seen that the calculations carried out by SA in finding the area of rectangle A and rectangle B are good. This can be seen in Figure 5.

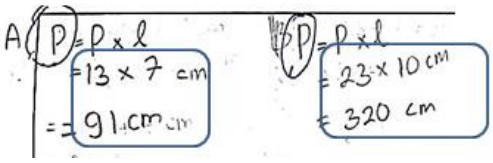

Figure 5. Stages of implementing the SA plan

Figure 5 above shows that SA is quite good in compiling the results of the calculation of the questions. However, the subject of SA is still wrong in writing the symbol at "91 cm". which should use the unit "cm^2" because it is a unit area. SP subjects only write cm symbols when writing area units. This error indicates that the SP has not been perfect in communicating the results of his work. According to Mueller & Brand (2018), the writing of units is very important to show what the numbers written represent. Nevertheless, the calculation process carried out by SA is correct and in accordance with the purpose of the question. The next mistake was that the subject of SA did not continue his calculations to find the difference between rectangle A and rectangle B. This was because the subject of SA did not understand what was actually being asked in the question from the start.

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This has an impact on the incomplete problem-solving process.

4. Looking Back

At this stage. SA is required to be able to write conclusions or statements that can answer the objectives of the questions given. The writing of this statement also shows an indication of a re-examination process carried out by the SA. In this case, the subject of SA did not write a conclusion statement. This can be seen from Figure 11 above. The SA subject's answer stopped only until he calculated the value of the area of rectangle A and rectangle B. The root of the problem was still the same, namely the subject of SA did not understand what was being asked. Therefore, the subject of SA does not know the goal to be achieved in solving the problem. This is reinforced by the results of the interview above that the SA subject looked confused and wrong in answering the researcher's questions about what was asked of the question.

d. Reflective Learning Style

The results showed that the number of subjects with a reflective learning style was 9 subjects. From these 9 subjects, 1 subject was selected to be given the SR code. To deepen the research results, the results of SR's work will be analyzed based on the following mathematical communication indicators:

1. Understanding the Problem

At this stage, SR is required to be able to describe what information is contained in the questions. In addition, SR is also expected to be able to write down the purpose of solving the problem or what is asked in the given question. In this case, SR has written down what is known and what is well asked. Based on Figure 13, it can be seen that the content written by SR is in accordance with the information contained in the question. This shows that SR can understand all the information contained in the questions well. In addition, ST also writes the unit of length in centimeters (cm) as shown in Figure 4.10 which is marked in yellow. In this case, SR did not forget to write down the units of length at this stage, such as 13 cm, 7 cm, 23 cm, and 10 cm. This finding contradicts the results of the study of Kamid et al. (2020) where elementary school students often forget to write units of length or width when solving math problems. Not only that, the results of Klosterman's research (2017) also found that writing signs for units of length, weight, or other units indicates that the student fully understands the problem given.

In addition, there are a few typos made by SR. It can be seen that SR does not clearly write the length of the rectangle. The subject of SR immediately wrote "Rectangle $A =$ 13 cm" even though what was meant was "Rectangle A has a length of 13 cm". To clarify the results of ST's work on the questions, here are the results of an interview with ST:

Q : What was the first step you took to solve this problem?
ST : First, write down what you know and what you ask, sir.
Q : What do you know and ask?
ST : Rectangle A is 13 in length and 7 in breadth, sir, if B is 23 the length and the width is 10.
Q : How did you know all that?
ST : I read it first because Sir.

From the results of the interviews above, it can be seen that students work

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on the questions systematically and carefully. The results of the interviews also showed that students observed the questions carefully before writing down what they knew and what the questions asked. This is in line with the results of Dina & Ikhsan (2019) that students with reflective learning styles have several characteristics such as, these students like to collect as much information as possible before making a decision, these students always "see before acting", and these students like monitor the big picture. This causes students to see how a problem is solved clearly. In addition, one of the characteristics of students with a reflective learning style has systematic thinking (Rusli & Soegiharto, 2015; (Morphew et al., 2020).

2. Making a Plan

At this stage, SR is required to be able to describe the method or formula used by the subject in solving the problem. In this case, SR is less explicit in writing the problem-solving method used in solving the problem. At the planning stage, SR did not clearly write down the settlement plan carried out to solve problem number 1. In Figure 14 it can be seen that SR first looks for the area of rectangle A and rectangle B. Next, SR looks for the difference between the shapes of rectangle A and square length B. This shows that SR can plan problem solving well.

Furthermore, in terms of writing a plan, the subject of SR wrote a settlement plan in a sequential and clear manner. The writing of the plan carried out by SR was quite well organized. According to Kadir et al. (2020) children with reflective learning style have the ability to organize answers in a sequential and clear manner. The results of another study conducted by Pourdavood et al. (2020) states that the consistency in writing the results of student answers is one indication that the student fully understands the content of the questions given. In this case, SR can write a resolution plan well. Thus, SR seems to understand the question, and carry out the settlement plan appropriately.

3. Executing the Plan

At this stage, SR is required to be able to write down the solution and calculation of the questions carried out by ST in a precise and clear manner. In this case, SR is quite good at compiling the calculation process in solving problems. SR is quite good at compiling the results of the calculation of the questions. When writing symbols for units of length, SR is still inaccurate where SR does not write units of cm^2 when writing area of rectangle A, and area of rectangle B. SR subject only writes symbol of cm when writing area unit. This error shows that SR is not perfect in communicating the results of his work. According to Mueller & Brand (2018), the writing of units is very important to show what the numbers written represent. Nevertheless, the calculation process carried out by SR is correct and in accordance with the purpose of the question. The subtraction operation used by SR can also represent a question request to find the difference between the two rectangles.

4. Looking Back

At this stage, it is easy for SR to write conclusions or statements that can answer the questions given. The writing of this statement also shows an indication of a re-examination process carried out by SR, although it will be confirmed again through interviews.

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The subject of SR did not submit a conclusion statement as an indication of re-checking the results of the work. To ensure the implementation of this stage, interviews were conducted with SR with the following results:

Q : Are you sure about the answer?
SR : Hmmm I'm sure sir, the difference will mean the area of the square minus the area of the small square.
Q : Did you check again the results of your work?
SR : I checked, sir, from beginning to end.

From the results of the interview above, it can be seen that SR actually did not re-check the results of his work. However, due to running out of time, SR did not write a conclusion sentence. In this case, SR checks on the methods and calculations that were done previously. However, SR in the context of mathematical communication, the conclusion sentence is quite important to show that the subject can represent the purpose of the problem properly and precisely.

CONCLUSION AND SUGGESTION

Based on the results of the research conducted, it can be concluded several things, including: (1) Of the 34 research subjects, 17 of them have a theoretical learning style. This shows that most students have a theoretical learning style compared to other learning styles; (2) writing errors made by each type of learning style are different, but there are similar errors between theoretical and activist learning style students who often make mistakes in writing unit length symbols; (3) Mathematical communication errors made by the four types of learning styles are errors in writing the arrangement of plans where the subject does not write the formula first, and errors in writing the conclusion sentence at the end.

In addition to the conclusions above, the results of the study also produce several suggestions as follows: (1) Quantitative research with large-scale subjects is carried out to explore the correlation between mathematical communication skills and student learning styles; (2) Teachers should pay attention to students' learning styles because they may have an influence on what students write and describe.

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