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Numeracy Literacy of Spatial Geometry: A Case Study of Elementary School Teacher

Nurafni[1,2*], Dadang Juandi[3], Darhim[4]
[1,3,4] Universitas Pendidikan Indonesia, Indonesia
[2] Universitas Muhammadiyah Prof. Dr. Hamka, Indonesia

e-mail: **nurafni@upi.edu**

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Abstract
This study aims to describe the numeracy literacy of mathematics teachers in teaching spatial geometry at Ruhama Islamic Elementary School. Numeracy literacy is a fundamental competence that influences teachers' ability to interpret and apply mathematical concepts in classroom instruction. This study employed a qualitative descriptive approach involving two fifth-grade teachers as research subjects. Data were collected through numeracy literacy tests and semi-structured interviews. The validity of the data was ensured through triangulation techniques. Data analysis followed the Miles and Huberman model, including data reduction, data display, and conclusion drawing. The findings reveal that the first subject was able to use various numbers but experienced difficulties in understanding mathematical symbols. The subject was also misled by visual representations, resulting in incorrect interpretation and decision-making. In addition, the subject demonstrated weaknesses in unit conversion and basic multiplication. Meanwhile, the second subject was able to use numbers and mathematical symbols related to basic operations and showed an ability to analyze given information. However, the subject lacked depth in interpreting information, leading to errors in answering several questions. In conclusion, both subjects exhibited limitations in numeracy literacy, particularly in interpreting visual information and applying mathematical concepts accurately. Therefore, future research should investigate the underlying factors contributing to these difficulties and explore strategies to enhance numeracy literacy among elementary school teachers.

Keywords: Literacy, Numeracy, Spatial Geometry, Elementary School Teacher

1. Introduction

Education is the basic right of every Indonesian citizen and it is the government's duty to seek and implement a quality and equitable national education system for every Indonesian citizen so that it can encourage the formation of whole human development as well as civil and modern society that animates Pancasila. The education system in Indonesia is managed by the Ministry of Education and Culture (Kemdikbud). In the context of global education, Habibi & Suparman (2020) state that an assessment of mathematical literacy is carried out through PISA organized by the OECD. Indonesia has a low level of literacy, based on measurements taken from 2000 to the most recent measurement in 2012. (OECD, 2003; The OECD, 2004; OECD, 2007; OECD, 2010; OECD, 2013). The survey results show that the average score of mathematical literacy is still below the average score of other countries. Thus, the position of Indonesian students' mathematical literacy is still below that of other countries. The demand to improve literacy learning across various fields of study is an important issue for the education system in Indonesia today. (Abidin, Mulyati, Yunansah, 2017). Misunderstandings about the meaning of literacy can lead to the inappropriate application of literacy acculturation. (Fauzan, Eriyanti, Asih, 2023)
The OECD released the results of the 2018 PISA study which showed that for reading ability, the average score was 371, with an average OECD score of 487. Furthermore, for science, the average score reached 396 with an average OECD score of 489. The average earned score is 379, with an average score of 489 for math ability. The PISA calculation conducted by the OECD involved 399 educational units with 12,098 students. According to international research, Indonesian students' ability to understand mathematics is still inadequate (Fathani's statement, 2016). Numerical ability is the ability to apply concepts with mathematical principles and processes so as to produce a process of thinking and acting to overcome various problems that occur in everyday life. With numeracy skills students can understand information as a basis for making decisions. Content on numeracy literacy in elementary schools is divided into several groups, namely Numbers, Measurement and Geometry, Data and Uncertainty, and Algebra (Abdoeloh & Suryana, 2023).

Then why is Geometry important to study? Geometry is a part of elementary school mathematics that cannot be separated from problems in everyday life. Geometry is a branch of mathematics that has existed for hundreds of years, emerging from the daily lives of a group of people, and is considered a form of abstraction from the real world or a tool that aids the mind and logic. (Kemendikbud, 2016). Nopriana (2015) argues that the role of geometry in the field of mathematics is very strong, not only because geometry fosters students' thinking processes, but also supports many other topics in mathematics.

Why literacy? ourselves, society and the country become part of the benefits when numeracy literacy skills can be well understood. Wherever you are, mathematics can always be applied, such as in trading and other activities (Steen et al. 2001; Erickson 2016; Hamman 2017; Briggs 2018; Mellow 2018; Karaali 2020). Baroroh, Trirenika, Yuliani (2019) explained that Literacy is one of

the abilities that students should have in preparing for competitiveness due to the development of knowledge and technology in the 21st century. The arguments that strengthen this study include, among others. Oktiningrum, Zulkardi and Harton (2016) which states that mathematical literacy's process starts from identifying realistic problems and formulating problems mathematically based on the concepts and relationships attached to these problems, then after getting the appropriate mathematical form of the problem, the next step is to apply the procedure certain mathematics to get mathematical results, which are then reinterpreted into the original problem. Literacy skills are currently a hot topic of conversation and have become a lot of current research references. One of them is related to research on functional literacy skills and their relationship to the ability to access and utilize digital libraries (Olaniran, 2020; Handley, 2018; Bohannon, 2015), learning to write (Sheperd & Goggin, 2012), and reading comprehension (Dolenc, Aberšek, & Aberšek (2015), Mallows & Litster (2016) and Rabušicová & Oplatková (2010) revealed that people with low functional literacy competencies tend to have low chances of getting the desired job. In addition, Rismen, Putri, Jufri (2022) states that mathematical literacy skills are important for students understand the role of mathematics in daily activities and make judgments and decisions rationally and logically. Stacey, K. (2011) states, through many major and minor data analyzes that are now publicly available, PISA provides a body of information about education in mathematics. So that digital literacy skills are also a must to support mathematical literacy.

In his article OECD (2016) provides the view that mathematical literacy is a person's ability to formulate, use, and interpret various contexts by using mathematics. This includes using mathematical concepts, procedures, facts, and tools to describe, explain, and predict phenomena. so that it can be interpreted "Mathematical literacy is a person's ability to formulate, use, and interpret mathematics. In PISA 2021 it is also said that mathematical literacy is defined as follows: Mathematical literacy is an individual's capacity to reason mathematically and to formulate, employ, and interpret mathematics to solve problems in a variety of realworld contexts. It helps individuals to know the role that mathematics plays in the world and to make reasoned judgments. Analyzing the teacher's numeracy skills leads to an understanding of the extent to which the learning process succeeds in improving students' numeracy skills, especially in geometry material. In addition, the results of the analysis can be used as a reference for designing further learning and can choose material that needs to be prioritized. For this reason, further studies are needed regarding the teacher's numeracy skills in solving geometry problems. With this understanding, it is hoped that it can create a learning process that is able to improve students' abilities in the field of numeracy literacy. Habibi & Suparman (2020) state that one of the most important skills today is the ability to understand mathematics. Mathematical literacy means the ability to create, use and understand mathematics in various situations by mastering information technology. In addition, A'yuni (2015) strengthens the argument that literacy is not just reading, but also understanding the meaning in the reading. Numerical ability is the ability to think using concepts, procedures, facts and mathematical tools to solve contextual problems in everyday life that suit individuals as good citizens (Kemendikbud, 2021). Basically, numeracy literacy is an ability in the form of the ability to (1) apply mathematical concepts in everyday life, (2) interpret quantitative information

contained around it, and (3) appreciate and understand information expressed mathematically, for example graphs, charts, diagrams, and tables (Pangesti, 2018, p.268). Mathematical literacy (numeration) is an important goal in learning mathematics. Learning mathematics does not only aim to help students understand mathematics as a subject that stands alone and is separate from life, but has a broader goal, namely to make students have reasoning power and the ability to think mathematically for the benefit of individuals and as part of society and as citizens.

Learning mathematics is expected to support the development of students' mathematical literacy abilities. Numerical literacy can be interpreted as the ability to identify and understand the role of mathematics in life, use reasonable judgment and use and engage with mathematics in such a way as to meet individual needs as citizens in a constructive, caring and reflective manner (OECD, 2009). Based on the urgency described above. For this reason, this research focuses on teaching numeracy literacy for teachers in geometry material.

2. Methods

This study employed a descriptive qualitative approach aimed at exploring in depth the numeracy literacy of mathematics teachers in spatial geometry. The research was conducted at Ruhama Islamic Elementary School, a laboratory school of Universitas Muhammadiyah Prof. DR. HAMKA. The subjects of this study consisted of two fifth-grade teachers who teach geometry, particularly spatial geometry. The selection of participants was conducted purposively based on their direct involvement in teaching the relevant material. Although the number of participants is limited, this study does not aim for generalization but rather seeks to provide an in-depth understanding of teachers' numeracy literacy profiles within a specific context, which is a common characteristic of qualitative inquiry. In qualitative research, the researcher acts as the primary instrument, responsible for data collection, analysis, and interpretation. To support data collection, two instruments were employed: a numeracy literacy test and semi-structured interviews. The numeracy literacy test was developed based on three key indicators: (1) the ability to use numbers and mathematical symbols in solving contextual problems, (2) the ability to analyze information presented in various forms such as graphs, tables, diagrams, and visual representations, and (3) the ability to interpret results to identify patterns and make decisions.

The test consisted of open-ended items related to spatial geometry contexts. For example, one item required teachers to interpret a three-dimensional figure and determine its volume by applying appropriate unit conversions, while another item required analysis of visual representations to support decision-making. Prior to implementation, the instrument underwent expert validation involving specialists in mathematics education and was revised based on their feedback. A readability test was also conducted with comparable subjects to ensure clarity. Interviews were conducted using a semi-structured format to explore participants' reasoning processes and to gain deeper insights into their responses to the test items. The interview protocol was developed based

on the same numeracy literacy indicators to ensure alignment between instruments. During the interviews, participants were encouraged to elaborate on their thinking processes, difficulties encountered, and strategies used in solving problems.

To ensure the credibility of the data, this study applied triangulation techniques, specifically methodological triangulation and data source triangulation. Methodological triangulation was achieved by comparing findings obtained from the numeracy literacy test and interviews, while data source triangulation involved cross-checking responses between participants. The consistency of the findings across different data sources and methods strengthened the validity of the results. Data analysis followed the procedures proposed by Miles and Huberman, which include data reduction, data display, and conclusion drawing. In the data reduction phase, irrelevant information was removed, and essential data were coded and categorized based on numeracy literacy indicators. In the data display phase, the organized data were presented narratively and systematically to facilitate interpretation. Finally, conclusions were drawn by identifying patterns and relationships in the data, leading to a comprehensive description of teachers' numeracy literacy in spatial geometry.

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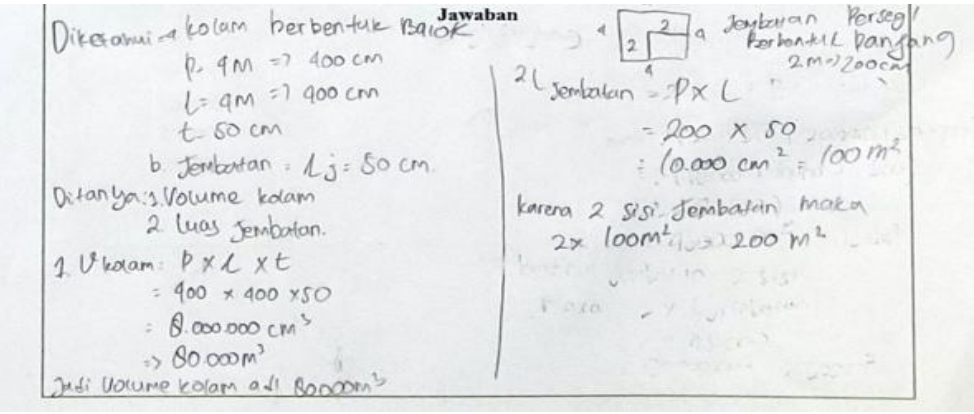
3. Result and Discussion

Result

Based on the reduced results of written tests and interviews, the written data and interview data regarding the subject's numeracy literacy in geometry material can be described as follows:

1. Subject 1 (S1) when using various kinds of numbers and symbols related to basic mathematical operations to solve problems in the context of everyday life.

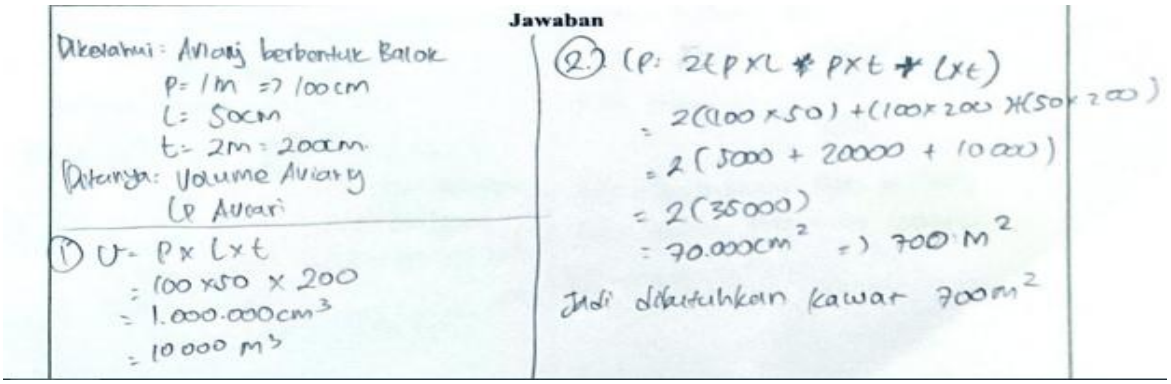
S1 written test results when using the 1st indicator on question number 1.



S1 interview snippet when using the 1st indicator of question number 1.

PS1n2: What are the mathematical operations in the problem that S1 uses?
JS1n2: There is a square formula and a beam formula
PS1n2: What's the formula?
PS1n3: What are the mathematical symbols used?
JS1n3: There is p as the length, L as the width, t is the height and V is the same volume as the area of the bridge

Based on the results of the first test and interview, there appears to be consistency in the use of various types of numbers and symbols related to basic mathematical operations to solve problems in everyday situations.
S1 written test results when using the 1st indicator on question number 2.

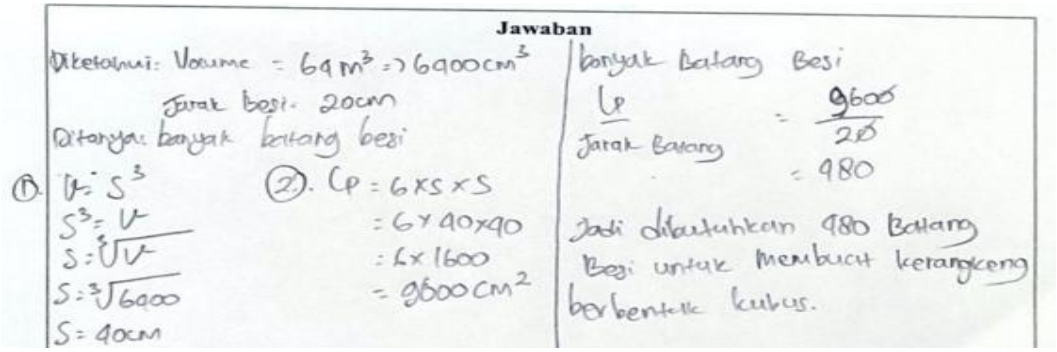


S1 interview snippet when using the 1st indicator, question number 2.

JS1n7: Continue, okay, the operation is the same as a rectangle, but at that time it was a bit rectangular too, but at that time, I was a bit confused because there were words, if the entrance area is a quarter, I was fooled, it turned out that when I read it to the end, it turned out that the volume of the entire aviary so, thank God, I was almost fooled, I read it well, oh it turns out that's all
PS1n8 : OK, what symbols do you use, sir, about number 1
JS1n8: It still uses the same length, height and volume. What's different is that this one uses surface area because of the entire volume and so that the wire is finished. To find out the number of wires needed, there's a picture, right? Aviary

Based on the test and interview results for question no 2 there is consistency when using various kinds of numbers and symbols related to basic mathematical operations to solve problems in the context of everyday life.

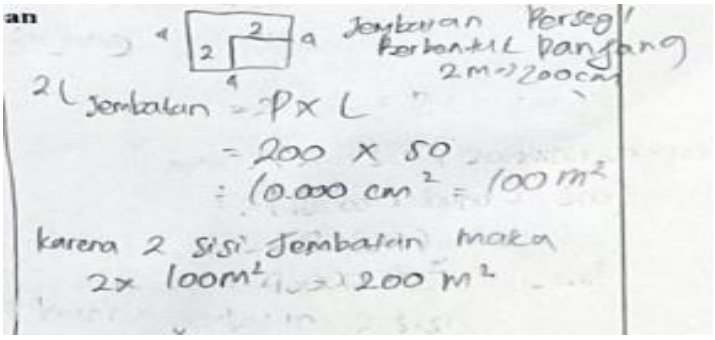
S1 written test results when using the 1st indicator on question number 3.



S1 interview snippet when using the 1st indicator, question number 3.

> PS1n11: Let's go to number 3, yes, number 3, now number 3, I will ask about the operation first, what are the operations there, S1
> JS1n11 : Here's the volume of the cube Ma'am there if you want the same cube because what is needed is an iron rod, it means he needs the whole because if it's like in question number 2, that's the fence. after that it's just the same surface too.
> PS1n12 : What are the symbols S1?
> JS1n12 : The symbols have volume and surface area equal to S, the sides or edges of the cube

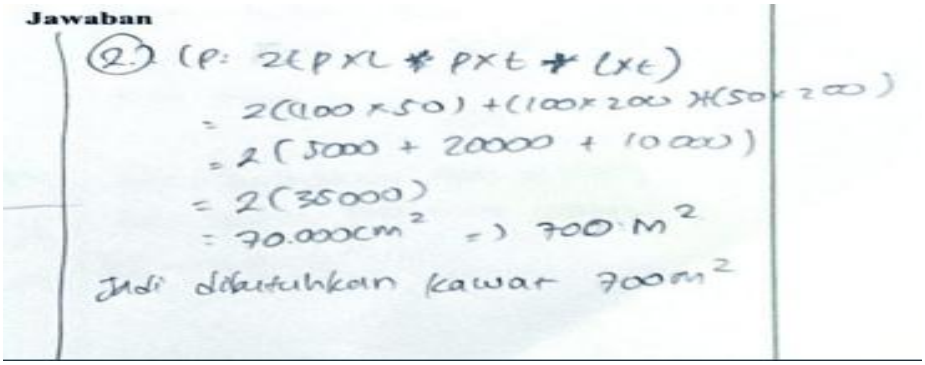
Based on the test and interview results for question no 3 there is consistency when using various kinds of numbers and symbols related to basic mathematical operations to solve problems in the context of everyday life.
Based on the results and interviews for questions no. 1,2,3 in S1 it can be concluded that the data is valid, namely S1 is consistent when using various kinds of numbers and symbols related to basic mathematical operations to solve problems in the context of everyday life.
2. Subject 1 when analyzing information (graphs, tables, charts, diagrams, and so on).
S1 written test results when using the 2nd indicator for question number 1.



S1 interview snippet when using the 2nd indicator of question number 1.

PS1n4: In question number 1, there is information related to the picture, what is the picture presented in S1?
JS1n4 : It's a pond with a bridge in the middle of it Ma'am
PS1n5: From the pictures of the questions presented by S1, what do you do, apart from calculating, you also make sketches
JS1n5 : Yes, I made a sketch, I'll analyze it first.

Based on the results of tests and interviews for question no 1, indicator 2 is consistent when analyzing information (graphs, tables, charts, diagrams, etc.)
S1 written test results when using the 2nd indicator of question number 2.

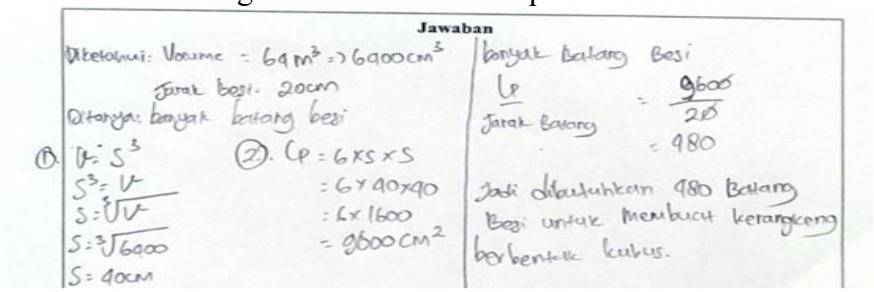


Snippet of S1 interview when using the 2nd indicator of question number 2.

PS1n9: So from the picture, S1 can get any information. What do you do?
JS1n9 : So because the ending makes it surprising if we don't read it, the problem is that when you look at it it looks like it's in the shape of the letter L, right Ma'am there is a door in front of it, so I was fooled because a quarter of the entrance was equivalent to a quarter of the entire volume of Aviary, that's new at the entrance, it turns out that I had counted wrong too, I think at that time, I first calculated the area of the aviary using the beam formula, after knowing the volume, I used it to measure the surface area of the beam because he was asked about the area of the wire fence.

Based on the results of tests and interviews for question no 2, subject is when using second indicator.

S1 written test results when using the 2nd indicator of question number 3.

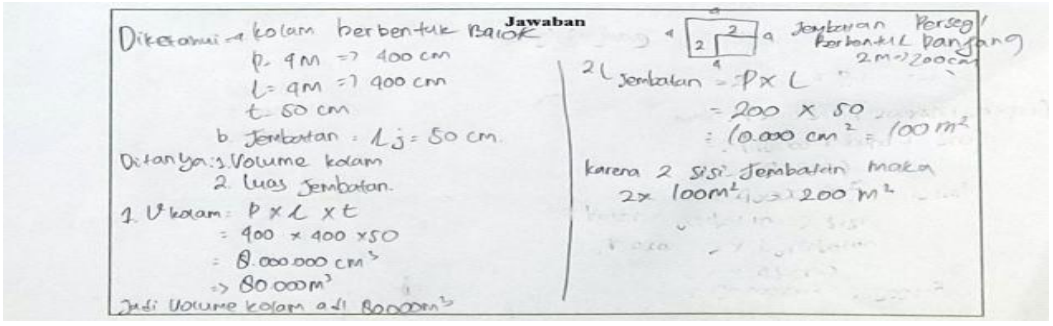


S1 interview snippet when using the 2nd indicator of question number 3.

> PS1n13: S1, the picture tells what and what information can be captured from the picture
> JS1n13: So from the picture it looks like a vehicle provided by a wildlife park for visits to see the animals, so the person made an iron cage or an iron cage like that. There the information is stems with a distance of 20 cm while the skeleton is in the shape of a cube.

Clear that S1 is consistent when analyzing information.
3. Subject 1 when interpreting the results of the analysis to predict and make decisions.

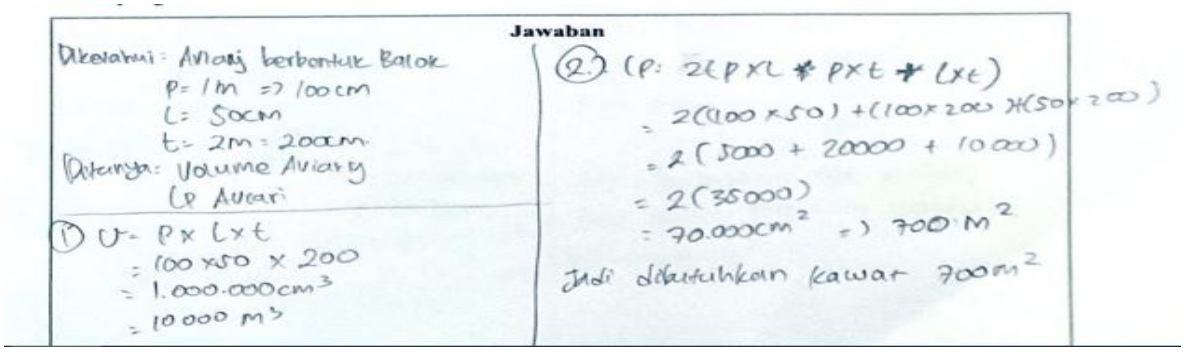
S1 written test results when using the 3rd indicator, question number 1.



S1 interview snippet when using the 3rd indicator, question number 1.

> JS1n5: Yes, I made a sketch, I'll analyze it first. First if the length of each side is 4 m with the height of the pool means that the pond is rectangular in shape, so the length is the same as the width of 4 m, then the height of the pool is 5 cm and then it's finished, you want a bridge to be made exactly in the middle of both sides, meaning I've drawn that in number 2 above it, so it's in the middle- in the middle I cut 2 cm 2 meters 2 meters with a length uh with a width of 50 cm so that's why I immediately Oh means use the first one because I calculated the volume of the water then I calculated the volume first for the volume of the pool while for the bridge I used a square area
> PS1n6: Okay sip so that's the answer
> JS1n6: So the answer is if the answer isn't wrong for that volume 80,000 and the bridge is 10,000 cm or 100 m²

Shown that subject one is consistent.
S1 written test results when using the 3rd indicator, question number 2.

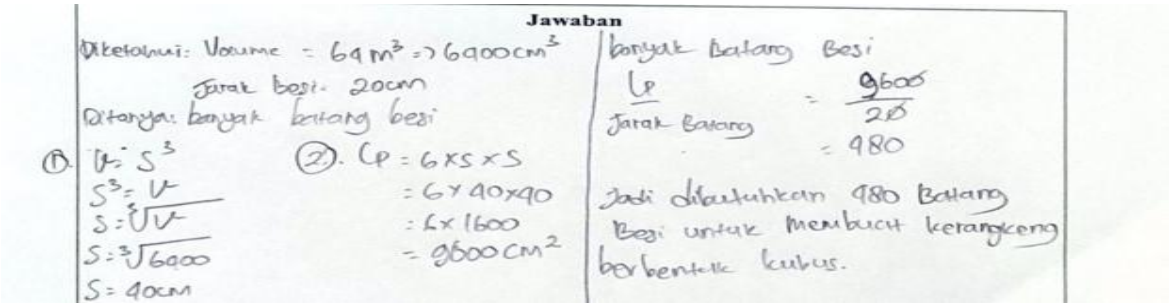


Snippet of S1 interview when using the 3rd indicator, question number 2

> JS1n9: So because of the ending, it surprised us if we didn't read it, the problem became if you look at it, it looks like it's in the shape of the letter L, right, ma'am, in front of it there is a door, so it was the smallest because a quarter of the entrance was equivalent to a quarter of the volume of the entire volume of Aviari, just the entrance, it turns out I had miscalculated too, I think at that time it was I first calculated the area of the aviary using the beam formula after knowing the volume then I used it for the surface area of the blocks because what was asked was the area of the wire fence Ma'am I see so I used the surface area which is 2 p x t + l x t length times width times height I haven't been asked for steps The steps are already being discussed
> PS1n10: So in conclusion
> JS1n10: So in conclusion the volume of the fire is 10,000 m² then the area of the wire fence
> it takes 700 meters, oh yeah sorry the volume is 10,000 m³. Then while the required wire area is 700 m²

According to the tests and interviews for question no 2, subject is consistent when using third indicator.

S1 written test results when using the 3rd indicator, question number 3.

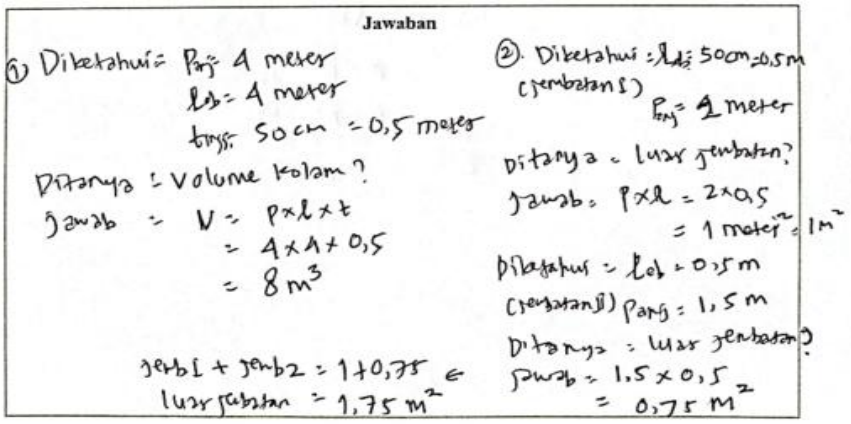


S1 interview snippet when using the 3rd indicator, question number 3.

JS1n13: So, from the picture it looks like a vehicle provided by a parkwildlife for visits to see the animals, distance of 20 cm while the skeleton is in the form of a cube. So here it turns out there is a typo maybe 64 m², right?
PS1n14: The steps are also good So the conclusion
JS1n14: What's the conclusion, Ma'am, about number 3? So, the first conclusion is because he knows that is the volume of the cage, so we will find the volume of the cage first, because the sides or ribs are needed to make iron rods.
JS1n14: Because it's impossible to make a closed cage but he wants to see animals, iron cages are made there which are stacked each rod having a distance of 20 cm. So, I'm looking for the volume first, because the formula is volume, so if the cube is formulated in math, I'll explain that side is equal to the cube root of the volume, so 6,400 √3 of 6400 is 40 cm from 40 cm. This has been found out from the side, so enter to the surface area because the whole is there In 6 times the Side there is 9,600 now because each stick has a distance so the distance for the whole is the surface area of the cube is 9,600 cm² so I divide by 20 cm because in the information I get each iron rod has a distance of 20 so 9,600 cm divided by 20 cm the result is 480 rods to make a series of iron

The results of tests and interviews shown that subject is consistent.

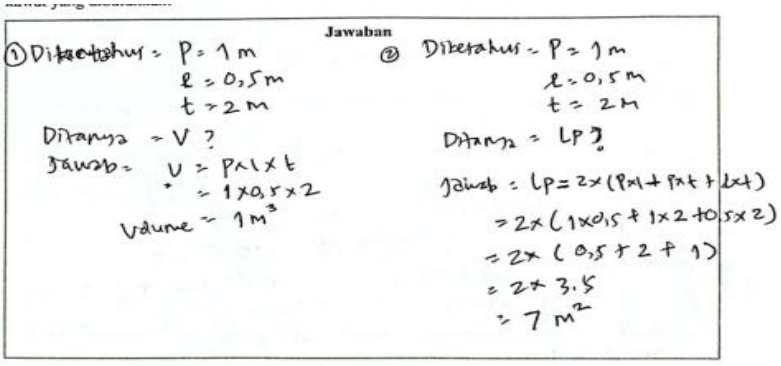
4. Subject 2 (S2) when using first indicators.
S2 written test results when using the 1st indicator on question number 1.



Interview snippet S2 when using the 1st indicator of question number 1.

PS2n1: When you saw question number 1, did you immediately use any mathematical operations? so see directly what comes to mind?
JS2n1: That's a question of volume and area, ma'am. Yes, so what shape is it in the shape of a block, yes, the volume of the pool is in the form of a block. Yes, I will immediately promote it at length times the height, I will give it all right away, but there are stages, namely there is cm, ma'am, cm must be changed to m because most of the units are meters, the the length is 4 m, the width is 4 m, the height is 50 cm, the meter is changed to 1/2 m. So, all you have to do is multiply it all so it's 8 m^3
PS2n2: Yes, what kind of symbols do you use for math?
JS2n2: I used the stages like this at length L P L T this should be Ma'am it's just me L, I differentiate this, the L is wide and wide, the difference is wide like this.

The results of tests and interviews shown there is consistency when using 1st indicator.
S2 written test results when using the 1st indicator on question number 2.

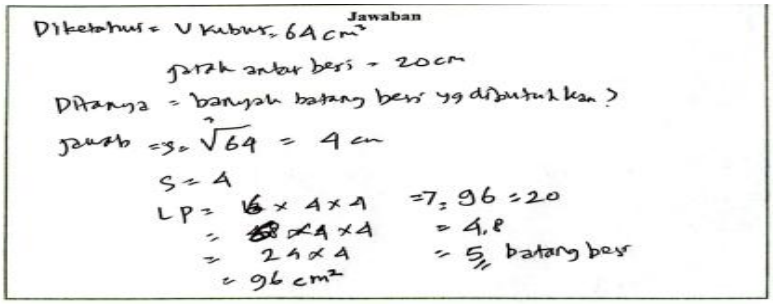


Snippet of the second subject's interview when using the 1st indicator, question number 2.

> PS2n6: We will continue, if in number 2 there is a mathematical operation, what are you using?
> JS2n6: For what I use, if there is an entrance, I will use 1/4 of the total volume. Assume this is what you're asking about the overall volume, so I won't ignore this, Ma'am, this 1/4 is the one that is calculated for the length and height, now the length is 1 m, the width is 50 cm, changed to meters, so it's 0.5 m and the height is 2 m, so the volume is all you have to do is press it down to 1 m^3, for the volume, for the surface area B, the surface area of 1 m long x 0.5 m wide is the same as 2 m high, now the formula is different if the surface area is the formula 2 x (p x l + p x t + l) and height and the formula for keeping the surface area of this surface what is it called?
> PS2n6: Aviaries
> JS2n6: Aviary yes, just add 2 x (1 x 0.5 + 1 x 2 + 0.5 x 2) how many then multiplied by 2 the result below is 7 meters
> PS2n7: What symbol do you use sir?
> JS2n7: The symbol used is length p l t length width times height for length for the width for the height of the volume *l,p* the surface area, that is, for those changes, the width of 50 cm is changed to meters so that it is the same when multiplied by all, for the surface area use a square, for the volume use a cubic

Based on the test and interview results for question no 2 there is consistency when using indicator one.

S2 written test results when using the 1st indicator on question number 3.

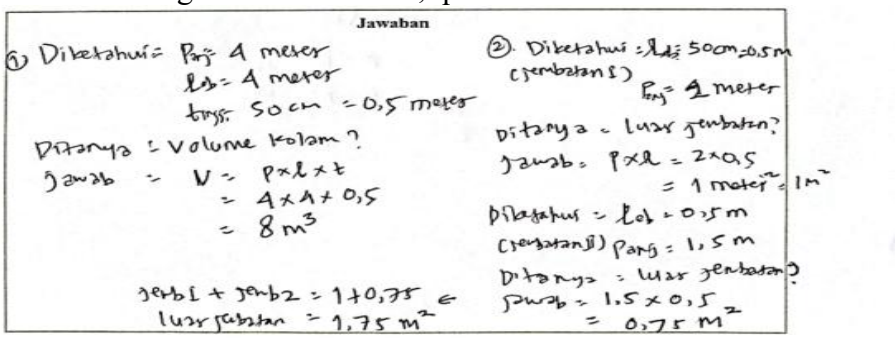


Snippet of the 2nd subject's interview, when using the 1st indicator, question number 3.

> PS2n14: What are the mathematical operations?
> JS2n14: The mathematical operation is to find the side length of this cube, right? So you have to find the length of the side of this cube. Look for the side length of the cube. This is the volume of the cube root of 3. How much is that volume, so it's 4 cm
> PS2n15: What are the symbols?
> JS2n15: This side of S continues the cube root of this surface area of LP as possible below it
> the surface area is 6 x S, this is the surface area for a cube, the formula is 6 x s x s (s ^ 2)

Based on the test and interview results for question no 3 there is consistency when using first indicator.

5. Subject 2 when analyzing information (graphs, tables, charts, diagrams, and so on).
S2 written test results when using the 2nd indicator, question number 1.

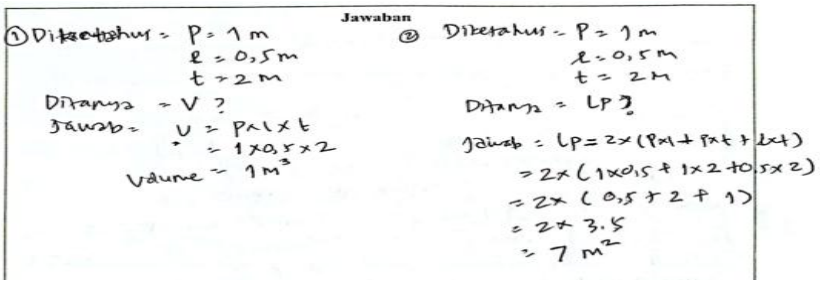


Snippet of the 2nd subject's interview, when using the 2nd indicator, question number 1.

> PS2n3: In that question, a picture is presented, sir, from the information on the picture that was given, it can. What did you catch?
> JS2n3 : This information determines the volume of the pool and the area of the Cuma bridge here want the bridge to be made exactly in the middle of the two sides as shown in the picture. So, there are two, there are two, there are two bridges in the middle, so I'll share them here. For the width, the area of the bridge, the first bridge is the length times the width, twice as long as the other one, ½ x 0.5, so there is this one, this straight one is the same as the one that is cut here, with the letter L like this.

According to the results of tests and interviews for question no 1, indicator 2 is consistent when analyzing information (graphs, tables, charts, diagrams, etc.)

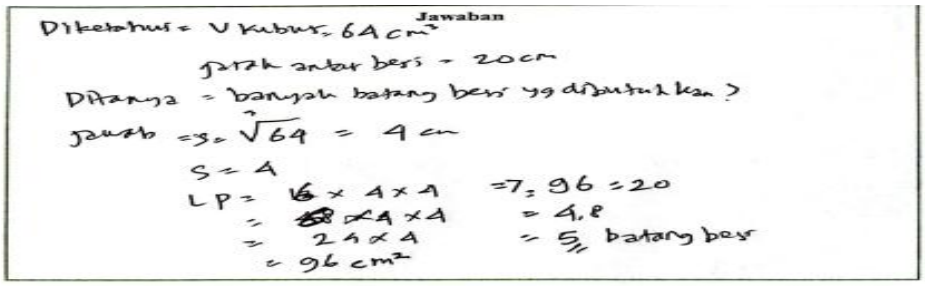
S2 written test results when using the 2nd indicator of question number 2.



S2 interview snippet when using the 2nd indicator of question number 2.

PS2n6: We will continue, if in number 2 there are any mathematical operations used?
JS2n6: For what I use, if there is an entrance, I will use 1/4 of the total volume. Assume this is what you're asking about the overall volume, so I won't ignore this, ma'am, this 1/4 is the one that is calculated for the length and height, so the length is 1 m, the width is 50 cm, changed to meters, so 0.5 m and the height is 2 m, so the volume all you have to do is press it down to 1 m^3, for the volume, for the surface area B, the surface area of 1 m long x 0.5 m wide is the same as 2 m high, now the formula is different if the surface area is the formula 2 x (p x l + p x t + l) and height and the formula for keeping the surface area of this surface what is it called?
PS2n6: Aviaries
JS2n6: Aviary yes, just add 2 x (1 x 0.5 + 1 x 2 + 0.5 x 2) how many
then multiplied by 2 the result below is 7 meters
PS2n7: What symbols are used?
JS2n7: The symbol used is length p l t length width times height for length for the width for the height of the volume lp the surface area, that is, for those changes, the width of 50 cm is changed to meters so that it is the same when multiplied by all, for the surface area use a square, for the volume use a cubic

S2 written test results when using the 2nd indicator, question number 3.

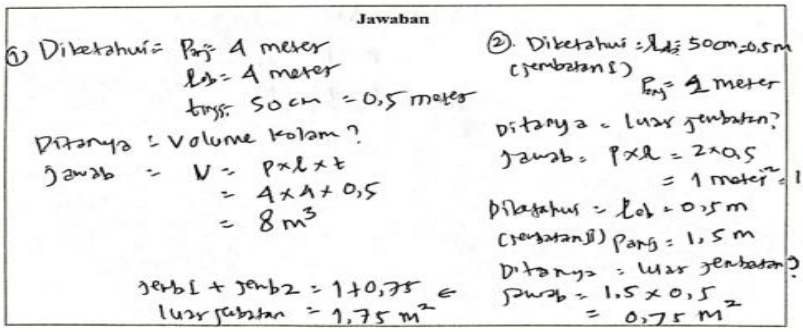


Snippet of the 2nd subject's interview, when using the 2nd indicator, question number 3.

PS2n13: So, from number three of the picture presented, what information did you capture?
JS2n13: You know this, ma'am, the volume is 64 m^3, the distance between the iron is 20 cm, the surface area 6x4x4

Tests and interviews result, indicator 2 is consistent when analyzing information (graphs, tables, charts, diagrams, etc.)

6. Subject 1 when interpreting the results of the analysis to predict and make decisions.
S2 written test results when using the 3rd indicator, question number 1.

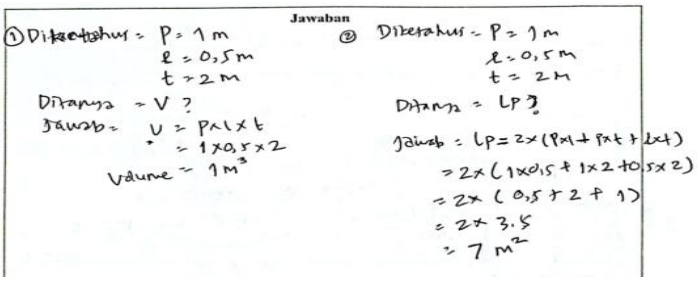


Snippet of postgraduate interview when using the 3rd indicator, question number 1.

> PS2n4: OK, again. Earlier, right, the steps were already there, right? But can you tell me more about the steps used?
> JS2n4: The steps that are used, the steps are what I really look at from this, it's from the editor, the editor requested is the text, right if the length of each side is 4 m and the height of the pool is 50 cm. Well, this was discovered, right, then the width of the bridge is 60 cm, what volume have you found out, the mother here is close to me, there are several heights, so the pool is the same as the bridge, 50 cm, ma'am, so it's 0.5 m
> PS2n5: So, the conclusion?
> JS2n5: The conclusion is that for the area of bridge 1, bridge 2, combine 1+0.75 to become 1.75 m² area while for the volume 8 m² p x w x t for the pool

The results of tests and interviews for question no 1, indicator 3 is consistent when interpreting the results of the analysis to predict and make decisions.

S2 written test results when using the 3rd indicator, question number 2.

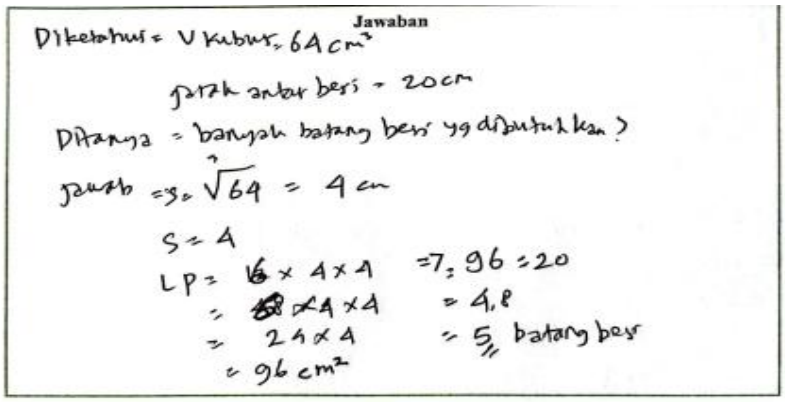


Snippet of the 2nd subject's interview, when using the 3rd indicator, question number 2.

> JS2n6: For what I use, if there is an entrance, I will use 1/4 of the total volume. Assume this is what you're asking about the overall volume, so I won't ignore this, ma'am, this 1/4 is the one that is calculated for the length and height, so the length is 1 m, the width is 50 cm, changed to meters, so 0.5 m and the height is 2 m, so the volume all you have to do is press it down to 1 m^3, for the volume, for the surface area B, the surface area of 1 m long x 0.5 m wide is the same as 2 m high, now the formula is different if the surface area is the formula 2 x (p x l + p x t + l) and height and the formula for keeping the surface area of this surface what is it called?
> PS2n6: Aviaries
> JS2n6: Aviary yes, just add 2 x (1 x 0.5 + 1 x 2 + 0.5 x 2) how many

Tests result and interviews for question no 2, indicator 3 is consistent when interpreting the results of the analysis to predict and make decisions.

S2 written test results when using the 3rd indicator, question number 3.



Snippet of the second subject's interview when using the 3rd indicator of question number 3.

> JS2n15: This side of S continues the cube root of this surface area of LP as possible below it the surface area is 6 x S this is the surface area for the cube the formula is 6 x s x s (s ^ 2) You get the result 96, 96 this is divided by 20 yes 20 this is the distance between iron 20 divided by 20 so 4.8 is rounded up yes forward to the nearest unit it becomes 5 Iron ingots
> PS2n16: So, the conclusion?
> JS2n16: The conclusion is that the surface area is the form of the surface area
> 96: 20 the distance between the irons becomes 5 iron rods needed to make iron twigs

The results of tests and interviews for question no 3, indicator 3 is consistent when interpreting the results of the analysis to predict and make decisions.

Discussion

1. Subject-1 Numeracy Literacy (S1)

   Be based the results of the research that has been done, it was revealed that subject 1's numeracy literacy is about geometry material in the first indicator, namely using various kinds of numbers and symbols related to basic mathematical operations to solve problems in the context of everyday life. The subject was able to use various numbers in mathematical calculations and symbols related to mathematical operations, even though he was silent for a long time but the subject was able to answer and explain properly such as mentioning the symbol "p" as a symbol for length, "l" for area, " t" as a symbol for Height, "V" as a symbol for Volume in question number 1 (JS1n3) and 2 (JS1n8), "s" as a side symbol in question number 3 (JS1n12). The second indicator is analyzing information (graphs, tables, charts, diagrams, and so on). The subject was fooled by the picture presented in Drawn question number 2, then because of the difficulty in analyzing the picture given, the subject had difficulty answering the question as stated in the results of the JS1n7 interview on research findings. The third indicator is understanding the results of the analysis in order to predict future events and make the right decisions. Subject S1 was unable to understand the results of the analysis to make predictions and decisions. This can be seen from the answers to questions 1, 2, and 3, which show errors in the use of units and interpretation of images, causing the subject to make mistakes in the calculations for all the questions given. This can be seen in JS1n6, JS1n10, and JS1n13.

2. Subject-2 Numerical Literacy (S2)

   Repose on the results of the research that has been done, it was revealed that the second subject used type numbers and symbols related to basic mathematical operations to solve everyday life problems. Understanding the numbers and symbols used to solve problems, as well as subject 1. It can be seen from the answers in JS2n2, JS2n7, JS2n15. For the second indicator, this subject seems able to analyze the images given, but when examined more deeply, this subject does not analyze the information in detail and thoroughly. Seen in the answers JS2n3, JS2n6, JS2n13. In the third indicator, this subject has difficulty doing calculations to draw conclusions due to the lack of detail in analyzing the images given, so only answer number one is correct.

4. Conclusion

From the results of the research and discussions, the following conclusions can be drawn:

1. Both subjects fulfilled the first indicator, namely by using numbers and symbols related to basic mathematical operations to solve problems in everyday situations.
2. Subjects S1 and S2, both have difficulty using the information presented in the pictures.
3. S1 subjects as a whole were unable to interpret the results of the analysis so that all answers were wrong. S2 is correct in answering question number 1 but has difficulty answering questions number 2 and 3.

Based on these conclusions, it is necessary to study in depth related to the factors that cause research subjects to have difficulty converting length units and analyzing the images/information presented which causes errors in answering.

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