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Numeracy: How About Students of Junior High School Ability to Solve Problems Use Uncertainty and Data Content with Personal Contex?

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Abstract

Numeracy is part of the Minimum Competency Assessment (MCA), defined as the ability to think using mathematical concepts, procedures, facts, and tools to solve everyday problems in various relevant contexts. The assessment components in numeracy include content, context, and cognitive processes. Content in numeracy includes coverage of Algebra, numbers, Geometry and measurement, and data and uncertainty. Components in the mental process include understanding, application, and reasoning. The context of numeracy is related to personal, socio-cultural, and scientific. The low numeracy scores of Indonesian students make it necessary to find out the causes of the low numeracy skills of Indonesian students, especially in the domain of data and uncertainty. This research aimed to determine students' ability to solve numeracy problems using data content and uncertainty. The study was qualitative, with data collection using task-based interviews conducted twice with one issue for each test. Subjects were selected based on students' mastery of data and uncertainty material, and the chosen subjects were students who had good communication. Data collection was carried out by giving written tests and followed by interviews. The results of the task-based interview were then analyzed, and conclusions were drawn. The results show students' ability to solve numeracy problems on data content and uncertainty with personal contexts, including the application cognitive process. Indicators of abilities that students master include the following: Students can master indicators of mathematical facts and indicators of mathematical tools.
Keywords: Numeracy, Uncertainty and Data, Personal

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INTRODUCTION

The quality of education in Indonesia can be said to be still not good; the low quality of education in Indonesia occurs due to many factors, such as various problems in the concept of education, education regulations, budgets, curriculum, competence, leadership problems at both the top and bottom levels (Amelia, 2019; Afifah, 2017). The Indonesian government made efforts to improve the quality of education through policy learning independence known as "*Merdeka Belajar," adapted from the philosophy initiated by Ki Hadjar Dewantara using the among system method (Sugiarta et al.*, 2019). The realization of this policy is embodied in Government Regulation known as PP of the Republic of Indonesia Number 57 of 2021 concerning National Education Standards (NES) known as SNP Article 6 Paragraph (1) relating to the evaluation of students' literacy and numeracy competencies through national assessments in the form of Minimum Competency Assessment (MCA) known as *Asesmen Kompetensi Minimum* (AKM) and character surveys.

Minimum Competency Assessment (MCA) is one of the policy realizations that aims to prepare students to have 21st-century skills to improve the quality of Indonesian education by assessing the ability to reason using language (literacy) and the ability to reason using Mathematics (numeracy) to measure basic skills (Pusmenjar, 2021; Handayani et al., 2021; Ahmad et al., 2021). Numeracy is part of AKM, which is defined as the ability to think using mathematical concepts, procedures, facts, and tools to solve everyday problems in various relevant contexts (Ministry of Education and Culture, 2020; Puspaningtyas & Ulfa, 2020; Nurgiyantoro et al., 2020; Zua, 2021). Numeracy has three assessment components: content, thinking process, and context (Ministry of Education and Culture, 2020). Content in numeracy includes coverage of Algebra, numbers, Geometry and measurement, and uncertainty and data. Components in the cognitive process include three aspects, namely understanding, application, and reasoning. The context of numeracy is related to personal, socio-cultural, and scientific (Pusmenjar, 2021).

Numeracy has a vital role in fostering students' interest in Mathematics, making the right decisions, and contributing significantly to applying mathematical understanding in the context of economics, engineering, science, social, employment, and welfare, and numeracy can be applied to solve problems and be developed in various subjects (Mahmud & Pratiwi, 2019; TIMSS, 2019; Sa'adah et al., 2021). Ministry of Education and Culture (2017) also describes the critical role of numeracy, where numeracy can help in understanding the world, which includes numbers and data, and being able to reason systematically and critically in solving a problem and making decisions in various contexts.

The importance of numeracy is not related to students' ability; this is shown based on the acquisition of TIMSS 2015 results, where the numeracy score of Indonesian students is 445, ranking third from the bottom. The PISA scores of Indonesian students in 2015 and 2018 also show a similar thing: the scores obtained respectively are 386, 63rd out of 71 countries, and 379, 72nd out of 79 countries. The scores obtained by Indonesian students are still said to be low. The low numeracy of students is also shown based on previous research, which shows that students are still at the level of understanding, students are also still low on similar PISA questions for space and shape content (Tanudjaya & Doorman, 2020; Masfufah & Afriansyah, 2021; Ate & Lede, 2022).

The numeracy achievement of Indonesian students is also shown based on the national assessment results released on April 1, 2022. The results of the education report card show that in the Pemalang Regency area, less than 50% of students reach the minimum limit for numeracy skills. One of the favorite schools in Pemalang Regency, SMP Negeri 1 Petarukan, also shows this. Table 1 shows the results of the SMP Negeri 1 Petarukan education report card for the numeracy competency indicator, as follows:

Table 1. Percentage Results of the Value of Each Student's Numeracy Competency

Numeracy Indicator		School Score
Numeracy Skills		1,67
Domain competency	Number	54,81
	Algebra	54,4
	Geometry	55,32
	Uncertainty and data	52,76

Based on the data in Table 1, the numeracy acquisition score is 1.67, which shows that less than 50% of students have achieved the minimum competency for numeracy based on the ability to think using mathematical concepts, procedures, facts, and tools to solve everyday problems in various types of relevant contexts. The lowest

student domain competency score in the uncertainty data domain was 52.76, indicating that thinking about using mathematical concepts, procedures, facts, and tools in uncertainty and data content to solve everyday problems has not yet been measured. The highest student domain competency score in the number domain, 54.81, indicates thinking using mathematical concepts, procedures, facts, and tools in number content to solve everyday problems that are still below the measurement achievement.

Indonesia's low score is due to several things, such as the inability of students to solve non-routine problems, the inability to design mathematical tasks, the inability to relate mathematical concepts to everyday life, the inability to connect old knowledge with new knowledge, and the lack of habituation in developing questions with PISA characteristics (Hawa, 2014; Waskitoningtyas, 2016; Murtiyasa, 2018; Zulkardi & Kohar, 2018; Putri & Zulkardi, 2018; Hasibuan, 2018; Misu et al., 2023). Based on some of the previous things, it is necessary to find out the causes of the low numeracy ability of Indonesian students, especially in the domain of uncertainty and low data. These efforts can be made by identifying numeracy problems that can be used to find out more about students' abilities in numeracy so that further efforts can be made to improve students' abilities in numeracy. Giving numeracy problems can provide habituation, improve, know, and assess student's ability to solve everyday problems (Pulungan, 2014; Kohar et al., 2014; Cahyanovianty & Wahidin, 2021).

METHODS

The research conducted was qualitative. The implementation of the research was carried out at 1 Petarukan Junior High School, considering that the school is a favorite school with the ability of its students to be classified as medium and above. The research subjects taken were class IX students of 1 Petarukan Junior High School in the 2022/2023 academic year. The research data was obtained through task-based interviews to determine students' ability to solve numeracy problems on uncertainty and data content using personal context. In contrast, the cognitive process measured students' ability to solve numeracy problems. Subjects were selected based on students' mastery of uncertainty and data material, and the subjects selected were students who had good communication. The subjects selected in this research were two chosen students because they had obtained uncertainty and data material, and the subjects could cooperate. The selected subjects were given task-based interviews twice. The instruments used consisted of questions for the written test (in the form of descriptions for each question to reveal mastery of concepts, procedures, facts, and mathematical tools), discussion of answers to numeracy questions, and interview guidelines. Each test consists of one question. The question indicator refers to the indicators Pusmenjar (2020) developed, for the indicator is to justify the value of opportunities related to quality control. The following are the indicators for analyzing the answers given by students in Table 2.

Table 2 Student Numeracy Mastery Indicators

Numeracy Indicators	Mastery Indicators
Mastery of maths facts Mastery of maths concepts	• Able to know what is known from the question given • Able to know what is asked from the question given • Able to determine outcomes (n(A)) • Able to determine the number of sample points (n(S)) • Able to determine the formula for finding the probability value

Numeracy Indicators	Mastery Indicators
Mastery of maths procedures	• Able to obtain outcomes(n(A)) • Able to obtain the number of sample points (n(S)) • Able to substitute the value obtained in the formula to find the probability value
Mastery of using maths tool	• Able to correctly calculate each solution performed • Able to use maths tools such as calculators

RESULTS & DISCUSSION

Results

The research results were then analyzed to describe students' ability to solve numeracy problems related to uncertainty and data content using personal contexts.

1. Result of the first task-based interview

Figure 1 The question of the first task-based interview

Figure 1 is the first task-based interview question. The question shows data on monitoring the quality of tilapia based on the weight of tilapia and color tilapia; students are asked to justify the probability of fish being taken based on their quality.

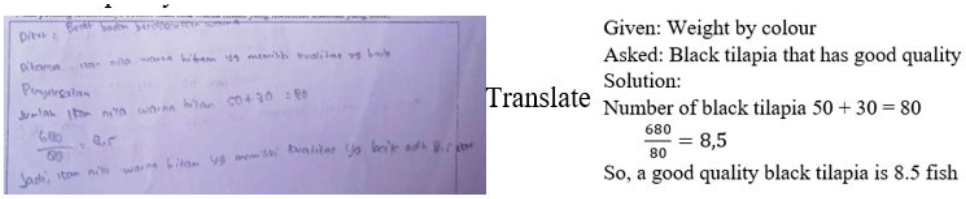


Figure 2 Subject 1's answer for data 1

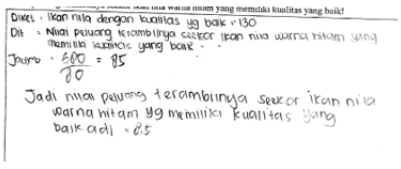
Subject 1 showed that he could master the mathematical facts shown by the subject being able to write what was given and asked from the problem. The subject began to be able to master the concept of completion, shown by the subject being able to write the number of tilapia fish that have good quality as outcomes (n(A)), being able to determine the total number of all fish as sample points (n(S)), and able to determine the formula for the value of probability. However, the subject was incorrect in determining the result of the probability value, which must be between 0-1. In contrast, the subject obtained more than one result, and units were used in the

answer. In contrast, the probability value did not use units in the final result. The subject began to master the solution procedure, as shown by the subject being able first to determine the outcomes (n(A)) and then substitute it into the formula. However, the subject reversed in substituting the formula given, so the results were incorrect, showing that the subject can use a calculator. The subject can use mathematical tools, as shown by the results of the calculations, which the subject has done correctly. The results of the written test conducted by the subject were then interviewed in Figure 3 as follows:

P : What is known for number 1?
S1 : We know the weight based on color, the weight of tilapia based on color. The number of red tilapia is 50, 125, 100, 40, and 10. The black tilapia is 25, 100, 150, 50, and 30.
P : What is the question?
S1 : The black tilapia that has good quality.
P : For that question, how do you do it?
S1 : So, black tilapia that is more than 400gr is 50 and 30.
P : Why not 40 and 10?
S1 : Because this one is the red color, the one asked is the black color.
P : What's next? How is the calculation using a calculator or not?
S1 : Yes, use a calculator (while using a calculator) 50 plus 30 the result is 80, then later that is less than 400gr plus after that divided by that the result is 80. The total of all the fish is added up so 50 plus 25 plus 125 plus 100 plus 100 plus 150 plus 40 plus 50 plus 10 plus 30 equals 680. Then 680 is divided by 80 and the result is 8.5. So, the black tilapia that has good quality is 8.5 fish.
P : What is the probability value?
S1 : The probability value means 8.5 fish.

Figure 3 Subject 1's interview for data 1

Subject 1 shows mastery of mathematical facts, shown by the subject's ability to describe what is given and asked nicely. The subject began to master mathematical concepts, as shown by correctly determining the outcomes (n(A)), such as determining good-quality black tilapia fish. The subject can also determine sample points (n(S)) as the subject can determine the total number of fish, and the subject can determine the formula for the probability value. However, the subject is not yet correct in obtaining the value of probability obtained, where the value of probability does not range between 0-1, and the subject uses units in the answers obtained. In contrast, the value of probability does not use units. The subject is starting to master the solution procedure, which shows that the subject can first determine the outcomes (n(A)) and then add up the data (n(S)). However, the subject is not yet correct in using the value of probability formula where the subject divides 680, which shows n(S) divided by 80, which shows n(A). The subject can use the mathematical tools conveyed by the subject and shown from the results of the calculations that the subject is correct, as shown by the results of the calculation of finding n(S) and n(A).



Translate

Given: Tilapia with good quality = 130
Asked: the probability that a black coloured tilapia fish of good quality will be picked up
Answer:
$\frac{680}{80} = 8{,}5$
So, the probability that a black-coloured tilapia of good quality is picked is 8.5.

Figure 4 Subject 2's answer for data 1

Subject 2 showed that he was able to master mathematical facts indicated based on the solution where the subject was able to write down what was known and asked from the problem correctly. The subject began to be able to master the concept of completion, where the subject was able to determine the members of the event (n(A)) shown the subject was able to calculate the number of black tilapia fish that had good quality, able to determine many data (n(S)) shown the subject was able to calculate the entire number of tilapia fish. The subject was able to determine the formula for the odds value. However, the subject is incorrect in the answer obtained, where the subject writes that the probability value obtained is 8.5, indicating it is not the probability value because it ranges from 0-1. The subject began to be able to master the solution procedure where the subject was able to determine the members of the event (n(A)) used and was able to determine a lot of data (n(S)). However, the subject was incorrect in substituting the value obtained into the odds value formula, so the results were incorrect. The subject can use mathematical tools, indicated by the subject's ability to perform calculations correctly, which shows the subject can use a calculator. The results of the written test conducted by the subject were then interviewed in Figure 5 as follows:

P : What is known in number 1?
S2 : What is known is that the tilapia with good quality is 130. The red tilapia is 50, 125, 100, 40, and 10, while the black tilapia is 25, 100, 150, 50, and 30.
P : What is being asked?
S2 : The probability value of a black tilapia fish that has good quality. So the total amount of everything is divided by the tilapia that has good quality which is more than 400gr. So 680 divided by 80 equals 85.
P : How was the calculation done earlier? Didn't you use a calculator? Where did you get 680 from?
S2 : From the sum of all the totals. Yes, I used it, so I calculated it (while using a calculator) 680 is from 50 plus 25 plus 125 plus 100 plus 100 plus 150 plus 40 plus 50 plus 10 and plus 30.
P : What about the 80?
S : This one, 50 and 30 are added and the result is 80 (calculating using a calculator).
P : Why not 40 and 10.
S2 : Mmmm no because what is asked is black tilapia

Figure 5 Subject 2's interview for data 1

Subject 2 showed that he could use mathematical facts, as shown by the subject's ability to correctly describe what was known and asked from the problem. The subject can use mathematical concepts, as shown by the subject being able to correctly determine the members of the event (n(A)), being able to determine many sample points (n(S)), and being able to determine the formula of the probability value. The subject is starting to be able to use mathematical procedures where the subject can determine the number of members of the event (n(A)) by counting the number of black tilapia that are more than 400gr and able to determine the number of sample points (n(S)) by counting all the fish. However, the subject is not yet correct in substituting the value obtained into the formula of the probability value. The subject can use mathematical tools where the subject can do the calculations correctly and convey that the calculations are carried out using a calculator.

2. Result of the first task-based interview

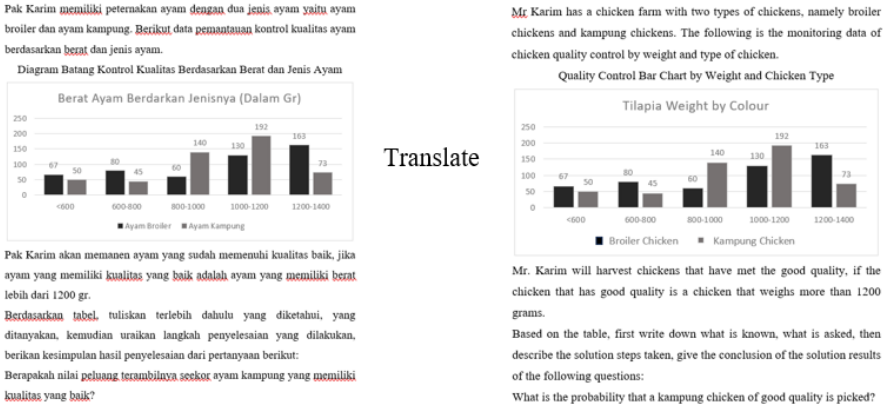
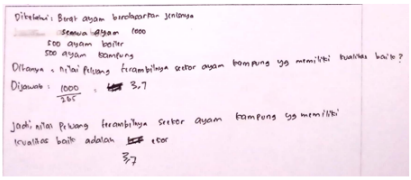


Figure 6 The question of the second task-based interview

Figure 6 is the second task-based interview question. The second task-based interview question shows broiler and kampung chickens' quality control data based on the chicken's weight and type. The second task-based interview question asked students to justify the probability of taking chicken based on its quality.



Translate

Given: chicken weight by breed
All chickens 1000
500 broiler chicken
500 kampung chicken
Asked: what is the probability of picking up a good quality kampung chicken?
Answer
$\frac{1000}{265} = 3,7$
So, the value of the probability that a kampung chicken of good quality will be picked is 3,7.

Figure 7 Subject 1's answer for data 2

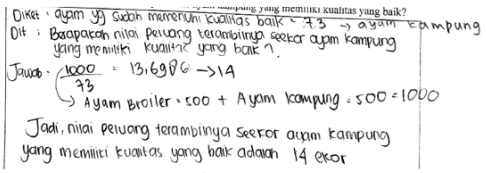
Subject 1 showed that she could master mathematical facts, as shown by the subject's ability to write what was given and asked from the problem correctly. The subject began to be able to master mathematical concepts, shown by the subject's ability to determine the total number of chickens as sample points (n(S)), being able to determine the outcomes (n(A)), and being able to determine the formula for the value of probability. However, the subject is not correct in obtaining the probability value because the probability value ranges from 0-1, while the subject obtained more than 1. The subject uses units in the final result, but the probability value has no units. The subject began to master the solution procedure, where the subject could determine sample points (n(S)) by calculating the total number of chickens. However, the subject did not write the determination of the outcomes (n(A)), and what was written was not correct for the value of n(A). The subject was also incorrect in substituting the value obtained into the probability formula. The subject can use mathematical tools, as indicated by the subject's ability to perform

calculations correctly, which shows that the subject can use a calculator. The results of the written task conducted by the subject then interviewed Figure 8 below:

P : What is known from question number 1?
S1 : Given the weight of the chicken based on its type. All 1000 chickens, 500 broiler chickens consist of 67 plus 80 plus 60 plus 130, and plus 163 (using a calculator), 500 kampung chickens consist of 50 plus 45 plus 140 plus 192, and plus 73 (using a calculator).
P : What is the question for question number 1?
S1 : The probability value of taking a kampung chicken that has good quality.
P : What is the solution?
S : So all the chickens are divided by this one, divided by the kampung chicken that is more than 1200gr. This is the native chicken that is more than 1200gr, 130 and 163, 265 (while using a calculator). Then the result, 1000 divided by 265 equals 3.7.
P : What is the conclusion of solving problem number 1?
S1 : So the probability value of taking a kampung chicken that has good quality is 3.7.
P : Do you still remember how to determine the probability value?
S1 : The probability value is divided by

Figure 8 Subject 1's interview for data 2

Subject 1 showed that she was able to master the facts, indicating that the subject was able to describe what was given and ask about the problem correctly. The subject began to be able to master the concept where the subject was able to determine the outcomes (n(A)) by counting chickens that weighed more than 1200gr to determine the sample points (n(S)) the subject calculated from the entire number of chickens available, and the subject was able to determine the value of probability formula. However, the subject obtained the probability value incorrectly, whereas the subject obtained the probability value of 3.7 chickens. In contrast, the probability value should range from 0-1, and the probability value did not use units. The subject began to use the solution procedure, as shown by being able to determine sample points (n(S)) by adding up all the chickens correctly. However, the subject was incorrect in determining the outcomes (n(A)), which was incorrect in choosing the type of chicken for which the probability value was sought. The subject was incorrect in substituting the value obtained into the value of the probability formula. The subject can use mathematical tools, showing that the subject is correct in obtaining the calculation results and conveying that the subject uses a calculator to perform calculations.



Translate

Given: chickens that have fulfilled good quality = 73 (kampung chickens)
Asked: what is the probability value of taking a kampung chicken that has good quality?
Answer
Broiler chicken = 500 + kampung chicken = 500 = 1000
$\frac{1000}{73} = 13{,}6986 \rightarrow 14$
So, the value of the probability that a kampung chicken with good quality is 14 chickens.

Figure 9 Subject 2's answer for data 2

Subject 2 showed that she could master the mathematical facts shown by the subject being able to write what was given and asked from the problem. The subject began to be able to master the concept of completion shown to be able to determine the outcomes (n(A)) as the number of kampung chickens that have good quality, the subject is also able to determine sample points (n(S)) as the total number of

chickens, and the subject can determine the value of probability formula. However, the subject was incorrect in obtaining the probability value, where the subject obtained the probability value of 14 chickens. In contrast, the probability value should range from 0-1, and the probability value does not use units. The subject began to be able to master mathematical procedures, shown that the subject is correct in calculating the outcomes (n(A)) and the subject is also correct in calculating the sample points (n(S)), but the subject is not correct in substituting the value obtained into the existing formula. The subject can use mathematical tools indicated by the subject to obtain the calculation results correctly, showing that the subject can use a calculator. The results of the written task conducted by the subject then interviewed Figure 10 below:

P : What is known from question number 1?
S2 : There are 73 kampung chickens that have the good quality.
P : What is the data from the table?
S2 : There are 67, 80, 60, 130, and 163 broiler chickens. For kampung chickens, there are 50, 45, 140, 192, and 73.
P : What is the question from question number 1?
S2 : What is the probability value of taking a kampung chicken that has good quality.
P : What is the solution? Did you use the calculator?
S2 : Using, so first look for kampung chickens that have good quality is 73. 1000 because there are 500 broiler chickens plus 500 kampung chickens so 1000. (while using a calculator) 500 broilers are obtained from 67 plus 80 plus 60 plus 130 plus 163, while for 500 kampung chickens it is obtained from 50 plus 45 plus 140 plus 192 plus 73. Then 1000 is divided by 73 the result is 13.698 so rounded up to 14.
P : What is the conclusion for question number 1?
S2 : So, the probability of a kampung chicken that has good quality is 14

Figure 10 Subject 2's interview for data 2

Subject 2 showed that he could use mathematical facts, as shown by the subject's ability to correctly describe what was given and asked of the problem. The subject began to be able to master the concept of completion, shown that the subject was able to determine the outcomes (n(A)) as chickens that have good quality, was able to determine sample points (n(S)) as the total number of chickens, and was able to determine the formula for the value of probability. However, the subject was incorrect in obtaining the probability value, where the subject obtained the probability value of 14 chickens. In contrast, the probability value should range from 0-1, and the probability value does not use units. The subject began to be able to use the solution procedure, showing that the subject was able to obtain the number of outcomes (n(A)), as chickens that have good quality and were able to obtain the sample points (n(S)), as the total number of chickens. However, the subject was incorrect in substituting the value obtained into the probability value formula, so the results were incorrect. The subject can use mathematical tools shown based on the results of the calculations that the subject did, and the subject conveyed the calculations carried out using a calculator.

Based on the results of the research conducted, triangulation is then carried out. The triangulation used is time triangulation, which is done by comparing data 1 and 2 to determine whether or not it is valid with the indicators of numeracy questions that have been compiled to get the correct conclusions. Triangulation of research results is presented in Table 3.

Table 3 Triangulation of Research Results

Data 1	Data 2	Valid Data
Able to master math facts	Able to master math facts	Able to master math facts
Began to be able to master mathematical concepts	Began to be able to master mathematical concepts	Began to be able to master mathematical concepts
Began to be able to master mathematical procedures	Began to be able to master mathematical procedures	Began to be able to master mathematical procedures
Able to master math tools	Able to master math tools	Able to master math tools
Able to master math facts	Able to master math facts	Able to master math facts
Began to be able to master mathematical concepts	Began to be able to master mathematical concepts	Began to be able to master mathematical concepts
Began to be able to master mathematical procedures	Began to be able to master mathematical procedures	Began to be able to master mathematical procedures
Able to master math tools	Able to master math tools	Able to master math tools

Based on the results of the research conducted, triangulation is then carried out. The triangulation used is source triangulation, which is done by comparing Subject 1 and Subject 2 to determine whether or not it is valid with the indicators of numeracy questions that have been compiled to get the correct conclusion. Triangulation of research results is presented in Table 4 below:

Table 4 Triangulation of Research Results

Subject 1	Subject 2	Valid Data
Able to master math facts	Able to master math facts	Able to master math facts
Began to be able to master mathematical concepts	Began to be able to master mathematical concepts	Began to be able to master mathematical concepts
Began to be able to master mathematical procedures	Began to be able to master mathematical procedures	Began to be able to master mathematical procedures
Able to master math tools	Able to master math tools	Able to master math tools
Able to master math facts	Able to master math facts	Able to master math facts
Began to be able to master mathematical concepts	Began to be able to master mathematical concepts	Began to be able to master mathematical concepts
Began to be able to master mathematical procedures	Began to be able to master mathematical procedures	Began to be able to master mathematical procedures
Able to master math tools	Able to master math tools	Able to master math tools

Discussion

The task-based interviews show that Subjects 1 and 2 can master mathematical facts, and both subjects can write and explain what is given and asked. Subjects 1 and 2 can use mathematical tools, which are shown based on the results of the calculations that the subjects do are correct, and both subjects convey calculations using a calculator. Subject 1 and Subject 2 began to be able to master mathematical concepts based on

students' mastery in determining outcomes (n(A)), being able to determine sample points (n(S)), and being able to determine the value of the probability formula. However, the results of the solution did not show the results of solving the value of the probability ratio. Subjects 1 and 2 began to be able to determine the indicator of mastery of mathematical procedures, which showed that both subjects were able to determine outcomes (n(A)) and sample points (n(S)). However, both subjects were incorrect in substituting the two values obtained into the value of the probability formula.

Referring to the results and theories referenced by Pusmenjar (2020), it is concluded that students can solve numeracy problems in the cognitive process, where they can apply knowledge and understanding of facts, concepts, and procedures in natural contexts in solving problems. Research conducted by Anggraini and Setianingsih (2022) also revealed that students at the application level could provide solutions to problems. However, some students had difficulty remembering concepts and formulas when solving problems. The results of the research also show that the subjects have not been able to use the formulas that students have mastered, in line with previous research that has difficulty in using formulas in solving numerical problems (Umar & Widodo, 2021; Setyaningsih & Munawaroh, 2022; Muhaimin et al., 2023)). The results of the analysis show that not all indicators of students' ability to solve numeracy can be mastered by students. Two indicators of ability have not been mastered, indicators of mastery of mathematical concepts and mathematical procedures, because both subjects can determine outcomes (n(A)) and can determine sample points (n(S)), but the subject is not correct in substituting the value obtained into the odds value formula and is not correct on the odds value obtained, which is not in the range of 0-1 and uses units in the final result. This is in line with previous research, which shows that the skills mastered by students are not yet optimal, which is also seen based on the ability indicators measured (Sujadi et al., 2023; Son et al., 2023).

CONCLUSION

Based on the results of the research and discussion, it is concluded that students of SMP Negeri 1 Petarukan with good communication skills can solve numeracy problems in the applying thinking process with indicators mastered in solving numeracy problems on data content and uncertainty with personal contexts, among others: being able to master mathematical facts and being able to master mathematical tools. It is hoped that the development and habituation of giving numeracy problems will improve students' ability to solve numeracy problems so that students can also apply them in solving problems in everyday life.

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