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Analysis Numerical Literacy Ability in Middle School Students in Material Set

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Abstract

This study identified the numeracy literacy skills of Almuttaqin MTS students in a rigid material. A hallmark of numeracy literacy is the capacity to apply numbers and related symbols to operations on algebraic forms, analyze data, and understand analysis findings to predict and make judgments. Tests and interviews were used to collect data, which were then analyzed through data reduction, presentation, and conclusion. Based on the findings, the numeracy literacy skills of MTS Almuttaqin students, one student (4%) is included in the excellent group for numeracy literacy, nine students (34%) are included in the excellent category, 15 students (50%) are included in the good category, and five students (11)% is included in the less category. Students with high numeracy literacy (ST) can use various numbers and symbols to solve problems, analyze information to make predictions, evaluate the findings of their analysis, and make decisions when handling the challenges of the given material. Using various numbers and symbols to solve problems and analyze information is the only marker that satisfies students with moderate numeracy literacy (SD). They have not yet reached the stage where they can make the best choices regarding their assigned content. Students with limited numeracy literacy (SR) only write numbers and are identified when completing assignments. As a result, SD and SR have not fully learned numeracy skills. The indications that were not fulfilled were caused by mistakes made by students, including not carefully recording known and asked data, choosing an inappropriate problem-solving approach, and not understanding ideas well enough to answer questions problem.

INTRODUCTION

Ability to use various types of corresponding numbers and symbols with mathematics base: solve real-world problems [1], [2], judge information offered in various forms, and use conclusion analysis to predict and create decisions known as literacy numeric. Literacy counting is related to the ability to work with numbers, data, and symbols in mathematics. Ability and knowledge of a student to 1) apply mathematics essentials, like using numbers and symbols to solve problems in life every day [3], 2) study information in the form of charts, graphs, and tables, and 3) present number information and infographics in a manner clear and concise is also considered as aspect literacy numeric [4]. Solving mathematics problems also uses the ability of numeracy and literacy

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students, especially when face-to-face with real-world problems in which students must evaluate data, process it, and draw conclusions.

According to the definition above, literacy counting effectively uses numbers, numbers, and math. This ability is essential for solving difficulties in life every day. The Program for International Pupils Assessment findings also shows ability literacy counting Indonesian students (PISA) who are inadequate. According to the results PISA test in 2018, Indonesia obtained 379 out of 79 possible points in mathematics [5]. Significant literacy development is essential to note because literacy benefits each individual in the future, so literacy becomes the initial ability every individual must possess [13].

Remember that students struggle to finish math questions as the story shapes them, significantly enhancing their ability to count and read students [6]. The student school medium is first too challenging to understand and analyze data from the chart [7]. Hartatik and Nafiah [8], the objective of gifting question mathematics to the student is to develop the cognitive ability to understand, organize, implement, and discover settlement from various questions; related to the matter that increases ability literacy counting student must be pursued in the environment school, family, and community. Skills literacy counting is essential for representing problem math, using symbol math, translating problem story math, and choosing the best approach to solve problem math,

Many mathematics materials in class VII junior high school use symbols, notations, and diagrams. Students focus more on specified material. A strong understanding of ideas is also essential. Claim [9] Inability of students to solve problems covers identifying wrong questions, oversight of the resolution process, and corrections result. Lusiana [10] stated that many students still make an error in answering the question given material. Remember, matter this very important to recognize the lack of to increase presentation theme collection.

[11] class VIII children have adequate numeracy literacy and can understand mathematical ideas in the low, medium, and high categories. Every student must have the numeracy literacy skills necessary to teach mathematics to fulfill the importance of these abilities [12]–[14]. The researcher emphasizes the need to analyze students' numeracy skills on the assigned problems considering the importance of numeracy literacy skills and the need to improve students' abilities on assigned topics.

METHOD

Ability to use various types of corresponding numbers and symbols with mathematics base: solve real-world problems, judge information offered in various forms, and use conclusion analysis To predict and create decisions known as literacy numeric. Literacy counting is related to the ability to work with numbers, data, and symbols in mathematics. Ability and knowledge of a student to 1) apply mathematics essentials, like using numbers and symbols to solve problems in life every day, 2) study information in the form of charts, graphs, and tables, and 3) present number information and infographics in a manner clear and concise is also considered as aspect literacy numeric. In solving problems, Math also uses the ability of numeracy and literacy students, especially when face to face with real-world problems in which students must evaluate data, process it, and draw conclusions.

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RESULTS AND DISCUSSION

Based on the findings of data analysis on students' numeracy skills, one student (4%) had excellent numeracy skills, nine students (34%) had good numeracy skills, and fifteen students (50%) had sufficient numeracy skills. Moreover, five students (11%) can count not enough. Besides, literacy data is obtained from numeration, as shown in Table 2, if divided based on indications of numeracy literacy.

Table 2. Percentage of students who answered every indicator accurately and completely

No	Indicator	Problem 1	Problem 2	Problem 3
1	Students can utilize various associated numbers and symbols	97%	93%	67%
2	Students can analyze information	93%	67%	23%
3	Students can interpret results analysis to make predictions and take a decision	97%	60%	13%

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Based on the data in Table 2, not all students successfully answered the predetermined subject questions using numeracy and reading skills indicators. With percentages between 20 and 29, the first signs of numeracy literacy using various numbers and symbols associated with algebraic operations are the most common. The second indicator is that 7 to 28 students can interpret information in various formats (graphs, tables, charts, diagrams, etc.), indicating their needs are met. There are 4 to 29 students fulfill the third indicator, namely analyzing the analysis findings to predict and make judgments. Many students in this scenario failed to record their final grades after the completion procedure because they made mistakes in mathematics and lacked thorough decision-making. Given that students are considered to have high numeracy skills if they fulfill the three markers, this fact indicates that students who can utilize numbers and related symbols and evaluate information (known and asked) do not yet have these skills.

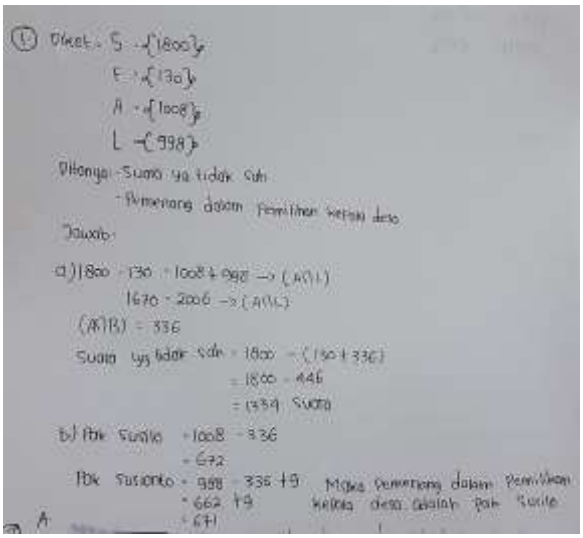

Figure 1. ST Answers For Question Number 1

Results work students in on a show that, based on knowledge student, st can use numbers or symbols to finish the question. Indicator second shows that ST can evaluate relevant data before compiling a plan of action. For metric third, ST chooses operation, Which is used to develop a strategy that allows it to overcome problems better on the analysis. Based on the outlook of the results interview, st must clarify what is known.

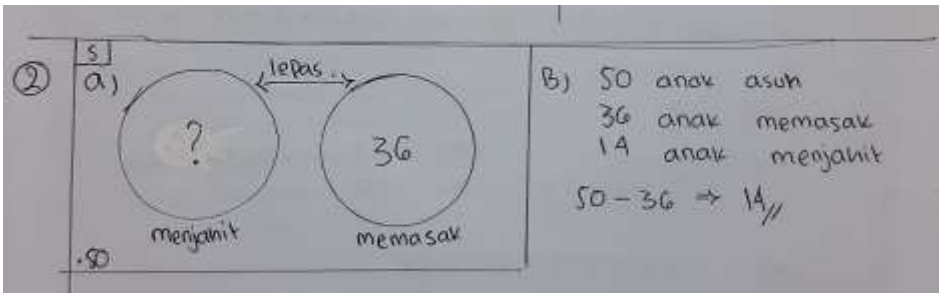

Figure 2. ST Answers For Question Number 2

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Results of the working student above show that ST can use symbols or numbers to create pictures based on understanding. On indicators, both STs can analyze information to make what is known and make details so that problems are drawn with clearly. On the third indicator, ST can determine strategy by deciding operation what to use so that he Can finish the question reasonably and right based on the analysis that he did. Based on the results, the ST interview can explain the problems in the question and how the method finishes it.

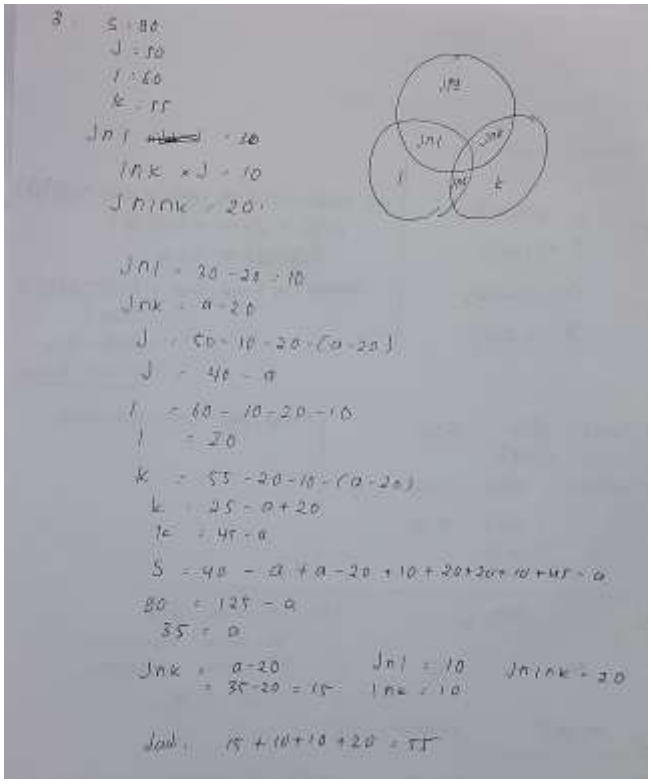

Figure 3. ST Answers for Question Number 3

Work students above show that ST can use numbers or symbols depending on knowledge they created in visual form. On indicators, both STs are already capable of analyzing given information, and ST can make the picture so that the problem becomes apparent. On indicators third, ST has chosen a procedure to solve the problem correctly and has decided what to do. Based on the findings interview, ST can describe what is known, ask about the challenges presented, and describe the solution method.

Student capable of applying various types associated numbers and symbols with operation on the indicator first, fit with discussion ST answers on questions 1, 2, and 3. Even at different levels, ST gets used and uses numbers or symbols depending on the understanding that they solve a specific situation. Second sign show that ST is capable of analyzing the information presented in various forms (graph, table, chart, diagram, etc.) and generating solutions to problems. Indicator third involves forecasting and retrieval decision based on findings analysis. ST is capable of determining the best-planned settlement. This result is consistent with studies [18] confirming that students with talent have tall ability and superior numeracy.

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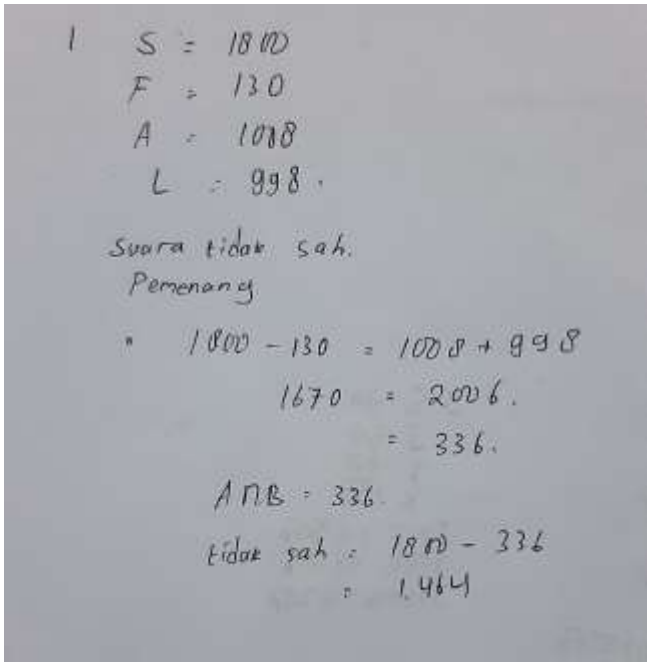

Figure 4. SD Answers For Question 1

Results of the working student above show that SD can use numbers or symbols in context, solving problems based on fulfilling knowledge indicators first. On indicators second, SD could evaluate the information presented about a problem and then make a plan of action. However not enough detail, and there were several leftover materials. On the third indicator, SD lacks thoroughness in observing where SD is wrong in operating and not finished, so that causes SD's answer is not correct. Following findings interviews, they can answer questions with what is already known; however, there is still uncertainty.

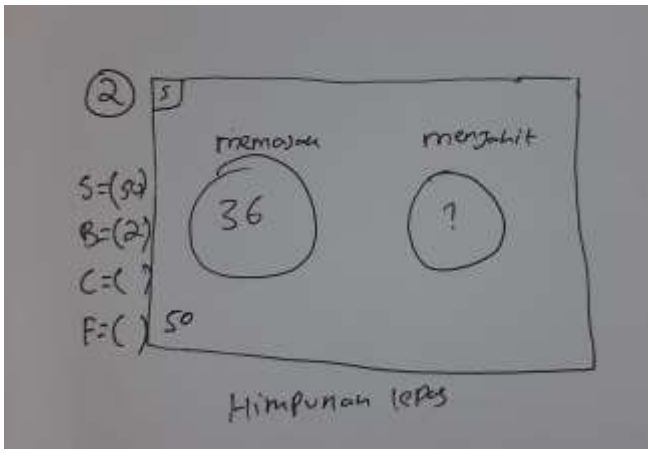

Figure 5. SD Answers For Question 2

Results of work students show that SD fulfills indicator first, i.e., the ability to use numbers or symbols based on understanding to solve problems. On the second indicator, SD is already capable of analyzing information from a problem and developing a strategy for solving it

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used, but not thorough enough so that there is data left behind. On the third indicator, SD lacks care, where the student already describes the problem in the form picture but has not resolved it.

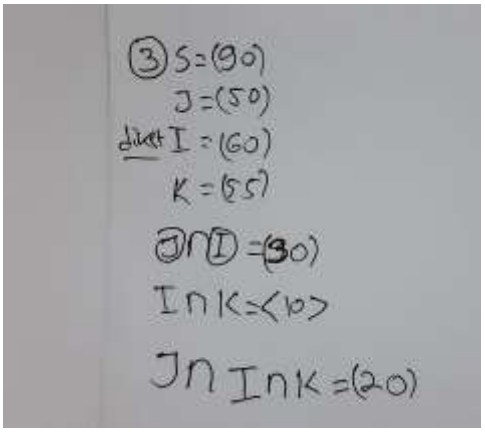

Figure 6. SD Answers For Question 3

Figure 6 shows that students can use symbols or numbers based on the understanding that they solve problems. Temporary students can assess the data in question and choose which approach will take. There is information that is not recorded. On the third indicator, SD lacks specific problems. No, he finished until finished because SD's answer was not correct. SD does not meet the third indicator.

Students can use various associated numbers and symbols with operation on the indicator first, fitting with results SD discussion No. 1, 2, and 3. Indications both SD can evaluate the data presented in various formats (graphs, tables, charts, diagrams, etc.). Problem and then develop a solution strategy that will be applied. SD has developed a settlement strategy based on analysis questions on indicators third, interpret results analysis For predict and take decisions, though fewer SD answers appropriate Because error operational causes SD answers to be incorrect enough. Nurjanatin [19], students often do not believe in themselves enough and are reluctant to question, so we can conclude that matters can impact numeracy and literacy student abilities.

The results of student work on question number 1 did not answer anything. This shows that SR cannot analyze existing information in the question in the form of symbol and lift, so SR cannot determine the strategy used. SR explained what is known and asked questions based on the findings interview but forgot to reveal it in symbol. The student's work results on question number 3 did not answer anything. Because SR does not can write whatever during the process, so according to the student's results work above, SR does not fulfill the indicator literacy count. SRs no can explain questions based on the results interview.

Findings processing student question number 3 shows SR does not write whatever inside it only writes number course, so SR is not meet literacy indicators numeration. Based on the results, SR interview does not know how method do it. SR students could not use numbers or similar symbols in the first indicator, according to the discussion of SR's answers in questions 1, 2, and 3 above. The second indicator is the ability to assess data presented in various formats. SR has not been able to assess the data provided. It is clear from SR's response that only writing

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is understood. In the third indicator, SR failed to determine the settlement technique to be used to conclude. One of the reasons is that the SR cannot fully understand the concept, which makes it unable to solve problems effectively. The study Komalasari [20] claims that the inability of students to read and understand the questions carefully, their lack of knowledge of the subject matter, and their lack of confidence in their ability to answer questions are the main reasons why they experience difficulties and end up getting the wrong question. Studies Mahmud [21] show that students struggle to understand problems, understand inadequate preparatory material, explain solution strategies, and draw conclusions. It can be concluded that this can impact students' numeracy skills and literacy.

CONCLUSION

Ability literacy numeration Almuttaqin MTS students, one student (4%) is included in the excellent group for numeracy literacy, nine students (34%) are included in the excellent category, 15 students (50%) are included in the good category, and five students (11%) is included in the less category. Students with high Numerical Literacy (ST) can use various numbers and symbols to solve problems, analyze information to make predictions, evaluate the findings of their analysis, and make decisions when handling the challenges of the given material. Using various numbers and symbols to solve problems and analyze information is the only marker that satisfies students with moderate numeracy literacy (SD). They have not yet reached the stage where they can make the best choices regarding their assigned content.

Furthermore, students with low numeracy literacy (SR) only write numbers and are identified when completing assignments. As a result, SD and SR have not fully learned numeracy literacy skills. The non-fulfillment of these indications was caused by errors made by students, including not carefully recording known and asked data, choosing an inappropriate problem-solving approach, and not understanding ideas well enough to be able to answer questions. Suggestions for the next researcher who will conduct research relevant to this research are to use different materials and develop more contextual test questions so that the research results are more in-depth and varied.

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