



ANALYSIS OF NUMERACY LITERACY SKILLS OF FIFTH GRADE ELEMENTARY SCHOOL STUDENTS

Muhammad Ilman Nafi'an

Prodi PGMI, Fakultas Tarbiyah, Institut Agama Islam Negeri Kediri,
Jl. Sunan Ampel 07, Ngronggo Kediri, Jawa Timur, 64127, Indonesia.
e-mail: ilman@iainkediri.ac.id

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Abstract: Elementary school numeracy literacy skills play an important role in mathematics learning outcomes, but some studies only reveal quantitatively, so an in-depth analysis of the numeracy literacy skills of elementary school students is needed. This study aims to analyse the numeracy literacy skills of elementary school students. This research uses a descriptive approach, conducted on class V PKBM Quins, Tulungagung as many as 10 students, the selection of subjects is taken based on numeracy literacy skills and the ability to communicate well, from the existing subjects there is one subject who has the best numeracy literacy skills, namely subject N. then the instruments used are numeracy literacy tests, interviews, observation, and documentation. With data analysis, namely data reduction, data presentation, and data verification. While in checking the validity of the research data using source triangulation techniques. The results of this study indicate that students' numeracy literacy skills are as follows. the subject is able to analyse the information contained in the problem, use symbols and numbers and understand in solving the problem. the subject is able to operate well, easily manipulate numbers and symbols, the subject can conclude the results of the analysis and convert them into narrative form.

Keywords: numeracy; literacy skills

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Introduction

Primary school students' numeracy literacy skills are essential for their mathematical development. In addition, Susanta (2023) stated that the importance of numeracy literacy in improving learning outcomes, especially in mathematics, because it improves problem-solving skills related to numbers and symbols in everyday life. Learning mathematics at the primary school level is currently the focus of educational development. Based on Piaget's developmental theory of intellectual development, primary school students aged 6-11 years are at the concrete operational stage, where children begin to think about solutions to concrete problems logically, but cannot yet think about things that are still abstract. This is the reason for the need to habituate numeracy at primary school age as an effort to get children used to thinking (Wiryanto, 2020). Based on the TIMSS and PISA study reports in general, PISA (2011) concluded that students in Indonesia are still unable to develop their critical thinking skills to the fullest, tend to be indifferent in reading activities and often forget previously received information. This shows that solving mathematics problems that contain elements of numeracy literacy is one of the weaknesses of students in Indonesia (Hapsari, 2019).



According to Saputri et al. (2021), the demand for skills in mathematics is not only skills in counting, but the ability to reason logically, critically and systematically in solving problems related to everyday life. This is based on the framework in PISA, where literacy related to mathematics has an important role in assessing information to be managed that appears in society even in the smallest scope, namely the family. According to Zahid, (2020) mathematical literacy also plays an active role in assessing whether information is valid or not. According to Prince & Frith, (2020) mathematical literacy includes the ability to understand, participate, and contribute to understanding numerical-based arguments and data so that they are not misinterpreted.

Based on observations at PKBM Quins at the elementary school level, it is found that students' numeracy literacy skills are low, students have difficulty dealing with story-shaped problems and simple mathematical problems, while Maulidina & Hartatik (2019) students in grade II in Sidoarjo Regency still have difficulty in solving problems related to problems that require mathematical thinking skills, especially mathematical story problems. Therefore, it is necessary to examine further about numeracy literacy skills. Many students have attempted to complete numeracy literacy problem-solving tasks, but they struggle with the aspects of planning strategies and applying solutions due to inadequate mathematical concepts and skills (Rahmawati, 2022). In addition, the use of HOTS-type mathematical problems has shown improvement in problem solving, mathematical application and communication skills, but some students still face challenges in articulating logical responses and clear problem-solving strategies (HARum, 2022). students' mathematical literacy ability in solving story problems remains low, with most unable to accurately identify, formulate and solve problems using mathematical concepts (Risnawati, 2023; Riana, 2022). These findings collectively emphasise the need for more in-depth identification of numerical literacy in basic education.

Numeracy literacy is part of mathematics so that the components in the implementation of numeracy literacy cannot be separated from the material contained in mathematics (Nahdi et al., 2020). Some research on numeracy literacy includes Friehat & Al-Khresha (2021) which states that numeracy literacy skills can develop higher skills, according to this study there are weaknesses in a person's basic skills, some of which are caused by weaknesses in the formation process in the first stage of education. The starting point for improving the learning process is to pay attention to reading, writing and counting skills at a minimum basic stage. This opinion is supported by research conducted by Piper et al., (2018) where the skills acquired in learning at primary age can support students in following learning at the next level. The research conducted by Adams et al., (2020) concluded that there is a need for early identification and effective intervention regarding the determination of children's abilities in literacy and numeracy in order to reduce the number of students who have difficulties in literacy and numeracy. The research is supported by Hellstrand et al. (2020) who revealed that "Identifying children at risk for learning difficulties is the first step in supporting them." This is the basis for analysing numeracy literacy skills in primary schools.

Irwan's (2023) research on analysing primary school students' numeracy literacy skills revealed significant findings. One study highlighted that male and female primary school students showed almost the same numeracy skills in mathematics learning, both achieving very high scores. Febrinna's (2023) research emphasised the important relationship between numeracy literacy and learning outcomes in schools, especially in the primary environment, showing that numeracy literacy positively affects student learning outcomes, especially in mathematics, by improving problem-solving abilities related to numbers and symbols in everyday life. In addition, a study comparing interactive STEM learning and paper and pencil STEM learning found that interactive STEM was highly effective in improving the mathematical literacy skills of primary school students, especially in urban schools, demonstrating the importance of innovative teaching methods in improving students' numeracy skills (Masyitoh, 2023). Some of these studies have not revealed in detail how students' numeracy literacy skills in solving mathematics problems so it is necessary to examine more deeply about students'

numeracy literacy skills. Simply put, this research aims to analyse the numeracy literacy skills of PKBM Quins elementary school students.

Methods

This research uses a qualitative approach with descriptive methods. qualitative research explores and understands meaning in a number of individuals or a group of people derived from social problems (Creswell, Jhon W. 2016; Emily, Weyant, 2022). In this case is to describe the characteristics of numeracy literacy skills of elementary school students in learning mathematics, Numeracy Literacy Skills This research was conducted by taking data from grade 5 students as many as 10 students, of the 10 subjects there was only 1 subject who met the indicators of numeracy literacy skills, namely subject N, this subject has good numeracy literacy skills and can communicate well, connect symbol concepts and express narratives well, so subject N is enough to represent numeracy literacy skills. then the instruments used are numeracy literacy test questions, interviews, observation and documentation.

With data analysis in the form of data reduction, data presentation, and data verification. While in checking the validity of the data the research results used source triangulation techniques. To analyse literacy skills using indicators from a combination of Hellstrand et al's theory, (2020) and Maulidina & Hartatik's theory, (2019) so as to describe students' numeracy literacy skills in more detail. The following are the indicators used by researchers.

Tabel 1. Indicators of numeracy literacy skills

Number	Indicators of numeracy literacy skills
1	Students are able to analyse the information presented in the problem.
2	Students are able to understand the relationship between concepts in mathematical problems.
3	Students are able to use symbols and numbers in mathematics to solve problems related to daily life.
4	Students are able to use mathematical number operations of multiplication, division, addition and subtraction in solving mathematical problems.
5	Students are able to present the results of mathematical information analysis as an effort in predicting and making decisions in solving problems.

Results and Discussions

Sub-Section 1

In sub-section 1, we will analyse the numeracy literacy skills of Subject N. The results of Subject N's answers about numeracy literacy skills presented in Figure 1 show that.

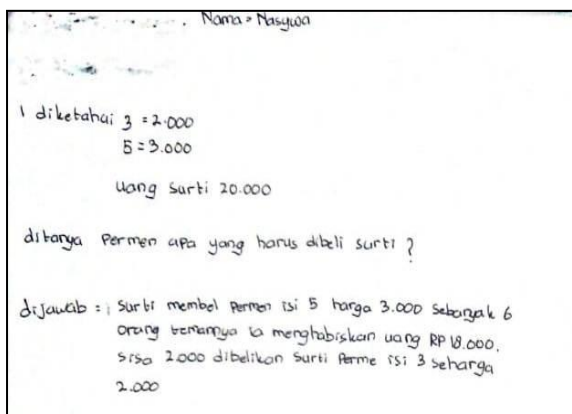


Figure 1

To support the data on the results of problem solving, the following interview excerpts are also attached.

Interview with subject N.

G: *What is known in the problem?*

N: *Jelly candy with 3 contents and 5 contents.*

G: *Then what is asked in the question?*

N: *The number of candies that Surti can buy for her friend.*

G: *How do you do it?*

N: *Well, Surti's 20,000 is divided by 6, then I found the result.*

Ability to Analyse Information on the Problem, In the answer to the numeracy problem, student N conducted an analysis first to determine the purpose of the numeracy problem. Student N is able to analyse the information contained in the problem, so student N meets the first numeracy literacy indicator, namely analysing numeracy information.

Ability to interpret symbols and numbers based on the results of student work, it shows that Student N understands what symbols and the use of numbers are contained in the information in the problem. Ability to interpret symbols and numbers, Based on the results of student work, it shows that student N understands the symbols and the use of numbers contained in the information in the problem. Student N is able to interpret and use symbols and numbers. This shows that Student N fulfils the indicator of interpreting symbols and numbers. Ability to operate numbers Based on the results of student work, it shows that student N is able to use number operations well. Student N understands that the operation used is a number operation in the form of division. in accordance with the opinion of Suminar (2022); Maulidina & Hartatik's theory, (2019) which states that this shows that Student N fulfils the indicators in determining number operations and using them.

Ability to Present Analysis Results Based on the results of student work, it shows that student N presents the results of his analysis in the answer sheet given by the researcher. In the presentation process when viewed from the results of student work, student N has not been able to present what he has analysed into the answer sheet then from the writing of the results of student analysis on the answer sheet such as the example of writing the division operation is only displayed in the form of a narrative. so it can be concluded that Student N has not been able to present the results of the analysis.

Sub-Section 2

In subchapter 2, the numeracy literacy skills of Subject N will be analysed. The results of Subject N's answers about numeracy literacy skills are presented in Figure 2.

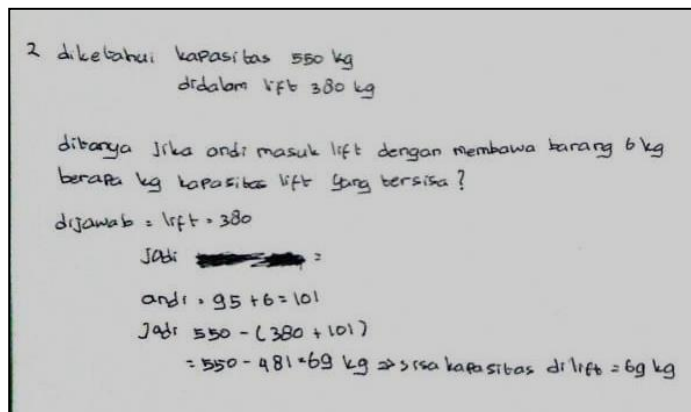


Figure 2

to support the data on the results of solving the problem, the interview excerpts are also attached as follows.

Interview with subject N

G: *What is known in the problem?*

N: *Jelly candy with 3 contents and 5 contents.*

G: *Then what is asked in the question?*

N: *The number of candies that Surti can buy for her friend.*

G: *How do you do it?*

N: *Well, Surti's 20,000 is divided by 6, then I found the result.*

Ability to Analyse Information in the Problem Based on the results of student work and interviews above, it shows that in working on the second numeracy problem, the second student N began to analyse the numeracy information contained in the problem by looking for relationships between information so as to create a problem in the problem. This shows that student N meets the indicator of analysing the second numeracy problem. Ability to Interpret Symbols and Numbers After identifying the necessary information, students begin to interpret the information in the form of symbols and numbers and identify them for the problem solving process. N students classify information and interpret what symbols and numbers are contained in the problem. Students fulfil the indicator of interpreting symbols and numbers. This is in accordance with the opinion of Hellstrand et al., (2020), that this information analysis is part of numeracy literacy skills.

Ability in Number Operation. Based on the results of student work, it shows that at the stage of determining what number operations are needed to solve the second numeracy problem. Student N concluded that the second numeracy problem requires number operations in the form of subtraction and addition. In the process, student N began to group the symbols and numbers that had been analysed into mathematical formulas. In accordance with the third indicator, student N is able to use number operations for the problem solving process. Ability to Present Analysis Results Based on the results of student work and interviews above, student N shows that students are able to present the results of their analysis and determine decisions to solve numerical problems in the second problem. This shows that student N fulfils the indicators in presenting the results of the analysis in determining the decision.

Conclusion

The numeracy literacy skills of madrasah ibtidaiyah students in solving problems are as follows. the subject shows that he is able to analyse the information contained in the problem. This is in accordance with the opinion of Hellstrand et al., (2020), that this information analysis is part of numeracy literacy skills. besides that the subject also uses symbols and numbers and understands in solving problems, this is in accordance with the opinion of Prince & Frith, (2020) in mathematical literacy contains the ability to understand. In operating numbers the subject operates well, and easily manipulates numbers and symbols. When presenting the results of the analysis, the subject can conclude the results of the analysis and convert them into narrative form. For further research, it should be related to students' metacognition skills, because numeracy literacy skills are closely related to metacognition in which there is a reasoning process.

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