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NUMERACY ANALYSIS OF CLASS V STUDENTS IN SOLVING MINIMUM COMPETENCY ASSESSMENT TYPE NUMERACY PROBLEMS

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Abstract
This research aims to measure and analyze the numeracy abilities of class V students in solving Minimum Competency Assessment (MCA) type numeracy questions. The research design used was descriptive quantitative with a sample of 9 fifth-grade students from an elementary school in Bandung, selected purposively based on high, medium, and low ability categories. The instrument used is the MCA type numeracy test which consists of 17 questions covering various numeracy content such as numbers, geometry and measurement, data and near distances, and algebra. The research results showed that 11.11% of students were in the low ability category, 55.56% in the medium category, and 33.33% in the high category. The reliability test was measured with a Cronbach's Alpha value of 0.574, indicating moderate reliability. The question with the highest corrected item-total correlation is question number 9 (0.762), while question number 2 has the lowest correlation (-0.283). These findings show that the majority of students are in the medium ability category, but there are several questions that need to be evaluated and revised to increase the consistency and validity of testing. Recommendations for improving the quality of learning include evaluating and revising questions, increasing the number of questions, providing additional guidance, and collaborating with parents. With these steps, it is hoped that students' numerical abilities can be improved significantly.
Keyword: *Numeracy abilities, MCA, educational evaluation, mathematics learning.*

Abstrak
Penelitian ini bertujuan untuk mengukur dan menganalisis kemampuan numerasi peserta didik kelas V dalam menyelesaikan soal numerasi tipe AKM (Asesmen Kompetensi Minimum). Desain penelitian yang digunakan adalah deskriptif kuantitatif dengan sampel berjumlah 9 peserta didik kelas V di salah satu sekolah dasar di Kota Bandung, yang dipilih secara purposive berdasarkan kategori kemampuan tinggi, sedang, dan rendah. Instrumen yang digunakan adalah tes numerasi tipe AKM yang terdiri dari 17 soal yang mencakup berbagai konten numerasi seperti bilangan, geometri dan pengukuran, data dan ketidakpastian, serta aljabar. Hasil penelitian menunjukkan bahwa 11.11% peserta didik berada pada kategori kemampuan rendah, 55.56% pada kategori sedang, dan 33.33% pada kategori tinggi. Reliabilitas tes diukur dengan nilai Cronbach's Alpha sebesar 0.574, menunjukkan reliabilitas yang moderat. Soal dengan korelasi item-total terkoreksi tertinggi adalah soal nomor 9 (0.762), sedangkan soal nomor 2 memiliki korelasi terendah (-0.283). Temuan ini menunjukkan bahwa mayoritas peserta didik berada pada kategori kemampuan sedang, namun terdapat beberapa soal yang perlu dievaluasi dan direvisi untuk meningkatkan konsistensi dan validitas tes. Rekomendasi untuk peningkatan kualitas pembelajaran mencakup evaluasi dan revisi soal, penambahan jumlah soal, pemberian bimbingan tambahan, serta kolaborasi dengan orang tua. Dengan langkah-langkah ini, diharapkan kemampuan numerasi peserta didik dapat ditingkatkan secara signifikan.
Kata kunci: Kemampuan numerasi, AKM, evaluasi pendidikan, pembelajaran matematika.

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Introduction

Numeracy abilities are one of the important aspects in basic education that need to be developed optimally (Deviana & Aini, 2022; Prasetia, 2023). Numeracy not only involves numeracy abilities, but also includes the ability to apply mathematical concepts in various contexts of daily life (Barokah et al., 2021; Chesa & Binti Azizatun Nafi'ah, 2022). In the era of globalization and rapid technological development, numeracy abilities are one of the basic competencies that must be possessed by every individual to be able to participate effectively in society (Mubarak, 2023; Nurgiyanto et al., 2022). Therefore, it is important to know the extent of students' numeracy abilities, especially at the elementary school level.

Numeracy consists of several components. The first component is number sense, which includes the ability to understand, use, and compare numbers flexibly (Council, 2001). This involves skills such as pattern recognition, relationships between numbers, and estimation. Numeracy is not just about calculation but also the ability to grasp the meaning of numbers in various contexts. The next component is number operations. According to Kilpatrick et al. (in Council, 2001), number operations involve the ability to perform basic mathematical operations such as addition, subtraction, multiplication, and division. These skills are essential for solving everyday problems involving numbers. The third component is problem-solving. Stacey (2005) emphasizes that numeracy includes problem-solving. This involves using logic and reasoning to find solutions, as well as the ability to choose the appropriate methods for solving problems in real-world contexts. The next component is mathematical reasoning. According to OECD (2023), mathematical reasoning is one of the key components of numeracy. It includes the ability to make valid arguments, understand and interpret mathematical information, and use mathematical tools to solve problems. The final component is representation and communication. Numeracy also involves the ability to represent numerical information in various formats, such as tables, graphs, or diagrams. Additionally, the ability to communicate numerical results is important in conveying solutions or mathematical information.

This study is focused on students in grade V, which is a transition period from basic learning to more complex learning at the next level. At this stage, students are expected to have strong numeracy basics so that they can understand and apply more abstract mathematical concepts (Mardiah et al., 2021; Yetri et al., 2019) However, the reality is that there are still many students who have difficulty mastering numeracy material. This can be caused by various factors, such as less effective teaching methods, lack of practice questions, or even psychological factors such as anxiety about mathematics (Ningsih & Hayati, 2020)

The Minimum Competency Assessment (MCA) is one of the instruments used to measure student's numeracy abilities (Mubarak, 2023; Sari & Sayekti, 2022; Septianisha et al., 2023) MCA is designed to measure various aspects of numeracy competencies, from understanding basic concepts to application and reasoning abilities (Fauziah, A. et al., 2021; Fauziah, N. et al., 2022; Sholehah et al., 2022) The use of MCA as an evaluation tool is expected to provide a more comprehensive picture of student's numeracy abilities (Astuti et al., 2022; Junaedi et al., 2024) Through the results of the MCA, educators can identify areas that need to be improved and develop more effective learning strategies.

The results of the MCA are also important as a material for evaluating the curriculum and teaching methods applied in schools (Mubarokah et al., 2023; Winata et al., 2021) By knowing the level of numeracy ability of students, schools can make adjustments to the curriculum and provide remedial programs for students in need (Anggraini & Setianingsih, 2022; Rosita & Nopriana, 2016) In addition, the results of the MCA can also be used as a basis to develop teaching materials that are more in line with the needs and abilities of students. Thus,

it is hoped that a learning environment can be created that is more supportive of the development of students' numeracy abilities.

This study also seeks to identify the correlation between MCA results and other factors that may affect student's numeracy abilities (Kristianti & Handayani, 2023; Syafriah & Muhammad, 2023) For example, is there a relationship between the teaching method used and the level of numeracy ability of students? Does the socioeconomic background of the students play a role in influencing their MCA results? By answering these questions, it is hoped that more in-depth insights can be obtained about the factors that affect students' numeracy abilities (Ali & Ni'mah, 2023; Patri & Heswari, 2022)

In addition, this study is expected to contribute to the development of more accurate and reliable evaluation instruments (Nurhanifa et al., 2021; Tresnasih et al., 2022) Although the MCA has been designed in such a way as to measure numeracy competence, there is still room for improvement in terms of the validity and reliability of the instrument. By analyzing the results of the MCA in detail, it is hoped that the weaknesses of the instrument that need to be improved can be found to improve the quality of the evaluation (Indra & Rahadyan, 2021; Klarita & Syafi'ah, 2022)

This study also has practical implications for educators and education policymakers. For educators, the results of this research can be a reference to develop more effective learning strategies that are in accordance with the characteristics of students. For policymakers, the results of this study can be used as a basis to formulate educational policies that better support the development of numeracy abilities in elementary schools. Thus, it is hoped that a better education system can be created and able to produce a competent young generation in the field of numeracy.

Overall, this study aims to provide a comprehensive overview of the numeracy ability of class V students and the factors that affect it. Through this study, it is hoped that practical solutions can be found to improve students' numeracy abilities and develop better evaluation instruments.

Method

This study uses a quantitative descriptive design that aims to measure and analyze the numeracy ability of class V students in solving MCA (Minimum Competency Assessment) type numeracy problems (Creswell, 2016; Sugiyono, 2020; Waruwu, 2023) The population in this study is all grade V students in an elementary school, with a sample taken purposively, namely students who are willing to take a numeracy test (Marlita, 2018; Sugiyono, 2014). The sample used was 9 students consisting of 3 representatives of students with high, medium, and low ability categories. The instrument used is an MCA-type numeracy test consisting of 17 questions, covering various types of numeracy content such as numbers, geometry and measurements, data and uncertainty, and algebra. Each question is designed to measure students' ability to understand concepts, applications, and mathematical reasoning.

Data is collected through tests given to students in a single session in the classroom with strict supervision to ensure honesty and accuracy of results. Each student was asked to answer 17 questions that had been provided. Student's answers were then collected and analyzed using descriptive statistical techniques. The analysis included the calculation of the number of correct answers for each student, the percentage of numeracy ability (low, medium, high), and reliability analysis using Cronbachs' Alpha. This analysis technique aims to determine the distribution of students' numeracy abilities as well as the internal consistency of the test instruments used.

The validity of the instrument is tested through a content validity test conducted by a mathematic's education expert to ensure that the questions given have covered all aspects measured. The reliability of the instrument was tested using Cronbach's Alpha, which provides an overview of the internal consistency of the instrument. Cronbach's Alpha value of 0.574 indicates moderate reliability. This study method aims to provide a clear picture of the numeracy ability of class V students in solving MCA-type numeracy problems. By using a quantitative descriptive approach and statistical analysis techniques, this study is expected to provide useful information for educators in identifying and overcoming weaknesses and strengthening advantages in numeracy learning.

This study analyzed the results of the answers from 9 respondents to 17 MCA-type numeracy questions. The distribution of answers shows that the questions with the highest number of correct answers are questions 5 and 13, with 9 correct answers each. In contrast, the questions with the least number of correct answers are questions 8 and 10, with only 3 correct answers. This analysis provides an overview of the level of students' understanding of the numeracy material being tested. The reliability of the test was measured using Cronbachs' Alpha, which showed a value of 0.574, indicating moderate reliability. In addition, Cronbach's Alpha Based on Standardized Items is 0.623. Question number 9 had the highest corrected item-total correlation of 0.762, indicating that this question was very consistent with the overall test. In contrast, question number 2 had the lowest correlation of -0.283, indicating significant inconsistencies and the need for evaluation or revision.

Results and Discussion

The result of this study is to measure the level of numeracy ability only, which contains 4 components, namely numbers, geometry and measurement, data and uncertainty, Algebra. From the acquisition of score scores on 9 students presented in the form of a pie chart as shown in the figure below:

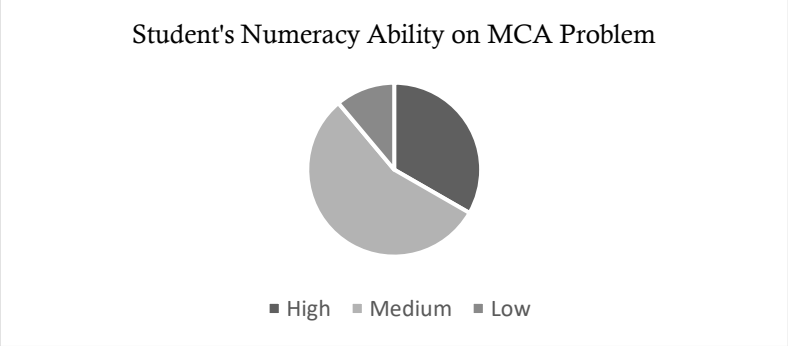

Figure 1. Students' Numeracy Abilities in MCA

From the chart above, it can be seen that the percentage of numeracy of students classified as low level is 11.1%, at the medium level 55.6% and at the high level as much as 33.3%. From the results of these percentages, it can be concluded that the most percentage is a moderate percentage. After getting the test results, the researcher took the research subjects, the subjects taken were 1 student from low level numeracy abilities, 5 students from medium level numeracy abilities and 3 students from high level numeracy abilities to be interviewed online so that they could find out the difficulties experienced by each subject. The following score data that will be used as the subject of the study can be seen in Table 1 below:

Table 1. Sample Score of Numeracy Ability in MCA Questions

No	Name	Question Number																	Total Correct	Ability level
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
1	AHM	1	1	1	0	1	0	1	1	1	0	0	0	1	1	1	0	1	**11**	**Medium**
2	A	0	1	0	0	1	0	1	0	0	0	0	0	1	1	0	0	0	**5**	**Low**
3	B	1	1	0	1	1	1	0	0	1	0	0	1	1	1	0	1	1	**11**	**Medium**
4	FYI	1	0	0	1	1	1	1	1	1	1	1	1	1	0	0	1	1	**13**	**High**
5	KPS	1	1	1	1	1	1	1	0	1	0	0	1	1	1	1	1	1	**14**	**High**
6	KS	1	0	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	**10**	**Medium**
7	RAG	1	0	0	1	1	1	1	0	0	0	0	1	1	0	0	1	0	**8**	**Medium**
8	SPA	1	0	0	1	1	1	0	1	1	0	0	1	1	0	0	1	1	**10**	**Medium**
9	SA	1	0	1	1	1	1	0	0	1	1	1	1	1	0	1	1	1	**13**	**High**
Total Correct for Each Problem		**8**	**4**	**4**	**6**	**9**	**6**	**6**	**3**	**7**	**3**	**3**	**6**	**9**	**4**	**4**	**6**	**7**	**95**	

Description

Number : 2,3,6,7,8,9,10
Geometry and Measurements : 14,15,17
Data and Uncertainty : 11,12,16
Algebra : 1.13

After the research subjects were obtained, each subject was admitted to a guided interview which aimed to explore how far the difficulties experienced by each subject were. To make it easier to discuss, subjects with low numeracy abilities are symbolized as low, subjects with medium numeracy abilities are symbolized as medium, and subjects with high numeracy abilities are symbolized as high. The following are the results of guided interviews conducted with research subjects:

The Result of Analysis of Students with Low Numeracy Abilities

Students with low numeracy abilities are those who answer less than 50% of the questions correctly. In this study, there is 1 student, namely A (5 correct questions), who is included in this category. The percentage of low numeracy ability was 11%. Students with low numeracy abilities showed that they needed more attention in understanding the numeracy material. Factors that may affect this low numeracy ability can include a lack of understanding of the basic concepts of numeracy, a lack of adequate practice, or teaching methods that are not suitable for the learner's learning style.

Therefore, it is important for educators to identify these obstacles and provide additional support, such as special tutoring sessions or the use of more interactive and engaging learning media. In addition, it is also important to involve parents in the learning process, providing them with guidance on how they can help their children at home. For example, parents may be provided with additional resources such as exercise books or educational apps designed to improve numeracy abilities. With good cooperation between educators and parents, it is hoped that students with low numeracy abilities can improve their understanding and abilities so that they reach a higher level. In accordance with the results of research conducted by Harris & Goodall (2008) which stated that cooperation between educators and parents has proven to be very effective in improving children's academic ability, including in the field of numeracy. Good communication between teachers and parents can ensure that the support provided at school and at home is aligned (Hornby & Lafaele, 2011).

The Results of Analysis of Students with Moderate Numeracy Abilities

Students with moderate numeracy abilities are those who answer between 50% and 75% of the questions correctly. In this study, there are 5 students, namely AHM, B, KS, RAG, and SPA who are included in this category. The percentage of moderate numeracy ability is: 55.56%.

Students with moderate numeracy abilities show a fairly good understanding of numeracy material, but still have some weaknesses. Students in this category need reinforcement on several numeracy concepts that have not been fully understood. The use of more varied teaching strategies, such as the use of props or educational games, can help improve their understanding. In addition, providing more diverse and in-depth practice questions can also help hone their numeracy abilities. This is in line with the research of Siegles & Forgues (2014) which states that students with moderate numeracy skills have a sufficient understanding of basic mathematical concepts, but they may still experience difficulties in certain aspects, such as the application of concepts in new or more complex situations. The use of more varied teaching strategies, such as the use of props or educational games, can help improve their understanding. In addition, providing more diverse and in-depth practice questions can also help hone their numeracy skills.

Analysis Results of Students with High Numeracy Abilities

Students with high numeracy abilities are those who answer more than 75% of the questions correctly. In this study, there are 3 students, namely FYI, KPS, and SA who are included in this category. The percentage of high numeracy ability is: 33.33%. Students with high numeracy abilities show a good understanding of numeracy material and are able to apply problem-solving strategies effectively. They demonstrate strong analytical and problem-solving abilities. To continuously improve their abilities, educators can provide additional challenges in the form of more complex problems or projects that involve the application of numeracy in real life. This can help students with high abilities to stay motivated and continue to grow. This is in line with the research of Uyen et al., (2022) which stated that experiential learning activities have a positive effect on mathematics learning attitudes and the progress of students' achievement in the classroom.

Recommendations

To improve the quality of the test and student's understanding of the numeracy material, it is recommended to increase the number of questions and make revisions to questions that have a negative or low corrected item-total correlation. Additionally, the addition of items in the test can increase Cronbach's Alpha score and overall reliability. Further evaluation of the material taught is also needed to ensure that students understand the material well. In conclusion, this test has moderate reliability and needs some improvement to improve the overall quality and understanding of the numeracy material.

This study aims to measure and analyze the numeracy ability of class V students in solving MCA (Minimum Competency Assessment) type numeracy problems. The results showed that the percentage of students' numeracy abilities was divided into three categories, namely low (11.11%), medium (55.56%), and high (33.33%). This study found that most students are in the category of moderate numeracy abilities, which shows a fairly good understanding of numeracy material, but still has some weaknesses that need to be improved.

These results are in line with research that found that the numeracy abilities of elementary school students in Indonesia are generally at a moderate level, with some students showing high comprehension while others need additional guidance (Kristianti & Handayani, 2023) In addition, the distribution of students' numeracy abilities varied with most students in the medium category, similar to the results of this study (Fauziah, A. et al., 2021)

The reliability of the instrument used in this study was measured using Cronbach's Alpha, which showed a value of 0.574. This value indicates moderate reliability, similar to the results of finding that the numeracy test instrument has a moderate reliability value and needs some improvement to improve its consistency (Mayasari et al., 2023) Improvements can be made by increasing the number of questions and revising questions that have a negative or low corrected item-total correlation.

In this study, it was found that question number 9 had the highest corrected item-total correlation of 0.762, indicating that this question was very consistent with the overall test. In contrast, question number 2 had the lowest correlation of -0.283, indicating significant inconsistencies and the need for evaluation or revision. These results are in line with several questions in the numeracy test that require revision to improve the overall consistency and validity of the test (Sari & Sayekti, 2022; Winata et al., 2021)

Conclusion

This study aims to measure and analyze the numeracy ability of class V students in solving MCA (Minimum Competency Assessment) type numeracy problems. The results showed that 11.11% of students were in the low ability category, 55.56% in the medium category, and 33.33% in the high category. The reliability of the test was measured by a Cronbach's Alpha value of 0.574 and Cronbach's Alpha Based on Standardized Items of 0.623, which indicates moderate reliability. The question with the highest corrected item-total correlation is question number 9 with a value of 0.762, while question number 2 has the lowest correlation of -0.283, indicating inconsistencies that require evaluation. The total correct answers from all students were 95 out of 17 questions, with questions number 5 and 13 having the highest percentage of correct answers (52.94%) and questions number 8 and 10 being the lowest (17.65%). The majority of students are in the medium ability category, while a small part are in the low and high categories. To improve the quality of learning and numeracy test results, it is recommended to evaluate and revise questions with low correlation, increase the number of questions, provide additional guidance to students with low and medium abilities, and involve parents in the learning process. With these steps, it is hoped that student's numeracy abilities can be significantly improved.

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