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Analysis of Literacy and Numeracy Achievements of Students of SD NEGERI 040454 Peceren, in the Odd Semester 2024/2025

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A B S T R A C T

This study aims to describe the trend of literacy and numeracy achievement of elementary school students in odd semesters of the 2024/2025 school year. A quantitative descriptive approach was used by analyzing the Indonesian and Mathematics report card scores of students in grades I to VI. The results showed that literacy achievement was consistently higher than numeracy, with the achievement gap being the largest in the lower class and narrowing in the upper class. The average literacy score ranges from 78–85, while numeracy is 74–83. These findings confirm the need for a more contextual numeracy learning strategy, especially at the early stages. This research provides a basis for schools to design more balanced and adaptive learning to the development of students

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INTRODUCTION

Basic education plays a strategic role in forming the foundation of students' literacy and numeracy abilities. These two competencies, namely the ability to read, understand, and use language (literacy), and the ability to understand and apply mathematical concepts (numeracy), are part of 21st century life skills that are indispensable in daily life and cross-disciplinary learning. The Indonesian government through various education policies, such as the National Assessment, continues to emphasize the importance of strengthening literacy and numeracy from the elementary school level. This is not only intended to improve the quality of learning, but also to prepare young people who are adaptive to change and globally competitive.

However, the literacy and numeracy achievements of Indonesian students in general still show considerable challenges. Data from various educational surveys, including the results of the National Assessment and international studies such as PISA, show that many Indonesian students have difficulty in understanding reading and solving basic math problems. This problem is exacerbated by the impact of the COVID-19 pandemic which has caused significant learning loss at various levels of education. In this context, it is important to evaluate students' literacy and numeracy achievements on a regular basis as a basis for designing more effective and data-driven learning strategies.

One of the main problems faced is the achievement gap between literacy and numeracy. Some studies show that students tend to achieve literacy competencies more easily than numeracy. Factors such as a less contextual approach to learning in mathematics, lack of numeracy integration in cross-subject learning, and limited relevant learning resources are the main causes. Therefore, the evaluation of numeracy achievement is urgent so that teachers and schools can develop appropriate intervention strategies.

In general, solutions that have been developed to address low literacy and numeracy achievement include the implementation of context-based learning, the integration of literacy and numeracy in all subjects, and the use of educational technology to strengthen students' learning processes. Project-based learning and differentiated learning approaches have also been widely applied to address the diverse learning needs of students. In addition, strengthening the role of teachers through data-based pedagogic training is an important strategy in ensuring the success of literacy and numeracy programs in schools.

In the scientific literature, various studies have highlighted the importance of systematic support for strengthening literacy and numeracy in primary schools. For example, Pratiwi et al. (2020) emphasized the need for a contextual and applicative numeracy learning model in daily life. The INOVASI and ACER (2022) study highlights the impact of the pandemic on the decline in students' basic achievement, and the importance of redesigning learning approaches. Hazin et al. (2025) offer a comprehensive intervention model that blends classroom strategies and school policies to improve students' basic abilities. This shows that successful solutions are generally multi-level, involving interaction between policies, classroom practices, and learning community support.

Several studies also indicate that literacy achievement generally increases faster than numeracy. This phenomenon can be explained through a theoretical approach to cognitive development, where language skills tend to develop earlier than logical and mathematical thinking skills. Zainudin et al. (2023) in their systematic review study stated that literacy programs have been implemented in schools for longer and more systematically than numeracy programs, which are still in the development stage. Therefore, it is important to identify the gap between literacy and numeracy in detail, as well as determine the most relevant strategies to balance the development of both.

This study tries to answer this gap by analyzing the literacy and numeracy achievements of elementary school students in the odd semester of the 2024/2025 school year. The focus of the research is directed at the analysis of student achievement at each grade level, starting from grade I to grade VI. With a quantitative descriptive approach, this study provides an overview of students' academic achievements in the two basic competencies based on odd-semester report card score data. The results of this analysis are expected to provide an empirical basis for teachers and schools in developing appropriate interventions to improve the quality of learning.

The purpose of this study is to describe the literacy (Indonesian) and numeracy (Mathematics) achievements of elementary school students in grades I–VI, as well as to compare the achievements between grade levels. The novelty of this study lies in the specific context of time and location, namely the odd semester of the 2024/2025 school year at the elementary school level, which was rarely the focus of previous research. The scope of the study covers all grades at the elementary level, with an emphasis on achievement trends between classes and the gap between literacy and numeracy. The findings of this study are expected to contribute to the development of more balanced and data-driven learning strategies at the primary education level.

LITERATURE REVIEW

Literacy and Numeracy in Primary Education

Literacy is the ability to understand, use, evaluate, and reflect on various forms of texts in order to develop individual capacity and participate effectively in society (OECD, 2018). In the context of basic education, literacy is not limited to reading skills, but includes the ability to think critically and understand information from various sources. Numeracy, on the other hand, is defined as the ability to access, use, interpret, and communicate mathematical information and mathematical ideas in order to actively engage in daily life (Pratiwi et al., 2020).

Strengthening literacy and numeracy has become the focus of national education policy. The National Assessment Program developed by the Ministry of Education, Culture, Research, and Technology emphasizes the importance of these two competencies as the main indicators of learning quality. Literacy and numeracy are not only learning goals in themselves, but also cross-curricular competencies that support student success in all subjects (Ministry of Education and Culture, 2025).

Recent Studies on Literacy and Numeracy

Various studies have shown that students' literacy achievement at the primary school level tends to be higher than numeracy. A study by INOVASI and ACER (2022) found that Indonesian students reach the minimum standard in literacy faster than numeracy, especially in the early grades. This is due to students' greater exposure to reading and writing activities than counting activities. Research by Zainudin et al. (2023) also stated that literacy programs in elementary schools received more support both in the form of teaching materials and teacher training, compared to numeracy programs.

On the other hand, numeracy achievement still faces major challenges. Research by Hazin et al. (2025) shows that students need a contextual and applicative approach to numeracy learning to more easily understand basic mathematics concepts. Meanwhile, Audia & Mastoah (2025) highlight the need for the integration of digital technology in numeracy learning to increase student interest and participation.

Strategies to Improve Literacy and Numeracy

Several strategic approaches have proven effective in improving students' literacy and numeracy. The project-based learning model and integrative thematic approach are considered to be able to increase student involvement in meaningful learning. Research by Students (2025) in Bandung shows that students who take part in real-life context-based numeracy learning show a significant improvement in numeracy skills.

In addition, differentiated learning that adapts to the learning needs of students is an important strategy, especially in heterogeneous classroom contexts. The study of Pratiwi et al. (2020) emphasizes the importance of continuous teacher training to increase the effectiveness of such learning strategies.

Conceptual Framework

This study uses a quantitative descriptive approach to analyze the literacy and numeracy achievement of elementary school students. The conceptual framework used focuses on comparing the achievement between literacy and numeracy based on data on report cards for students in grades I to VI in the odd semester of the 2024/2025 school year. The indicators used include average grades, highest grades, lowest grades, and achievement trends between grade levels. The findings of this study are expected to provide an empirical basis for developing a more effective and contextual literacy and numeracy improvement strategy.

METHODOLOGY

Types and Approaches of Research

This study uses a descriptive quantitative approach with the aim of describing the literacy and numeracy achievements of elementary school students in the odd semester of the 2024/2025 school year. This approach was chosen because it is suitable for describing phenomena based on the data collected without performing variable manipulation. Descriptive research provides a systematic, factual, and accurate picture of the facts that occur in the

field, especially those related to students' academic achievements in literacy and numeracy competencies.

Population and Research Sample

The population in this study is all elementary school students who are in grade I to grade VI in the odd semester of the 2024/2025 school year at the school where the research was conducted. The research sample was taken in total sampling, namely all students from each class were used as objects of observation. This approach was chosen because the number of affordable students is still within the limits that allow for a thorough analysis, as well as to ensure a comprehensive picture of all grade levels.

The Data Collection

Technique used in this study is sourced from official school documents, namely the odd semester report card scores for the 2024/2025 school year in Indonesian and Mathematics subjects. This score is used as an indicator of students' literacy and numeracy achievements. Documentation techniques are used in data collection, because the data needed is in the form of quantitative data that is already available in school administrative documents. The validity of the data is maintained through cross-verification between the report card score and the official recapitulation from the school.

Data Analysis Techniques

The data obtained was analyzed in a quantitative descriptive manner by calculating the average, highest score, and lowest score for each grade level. The analysis was carried out for each competency, namely literacy (Indonesian) and numeracy (Mathematics). Comparisons between classes were also carried out to see an increase or decrease in achievement from class I to class VI.
The formula used to calculate the average value is as follows:

$$X^-=\sum Xn\bar{X} = \frac {\sum X} {n}X^-=n\sum X$$

Information:
X-\bar{X}X- = average value
∑X\sum X∑X = sum of the whole value
nnn = number of students

In addition, a gap analysis was also carried out between literacy and numeracy scores to see the difference in the level of achievement of the two competencies. The difference between literacy and numeracy average scores is calculated to identify the class with the highest gap and the class with the most balanced achievement.

Here is a chart of the research:

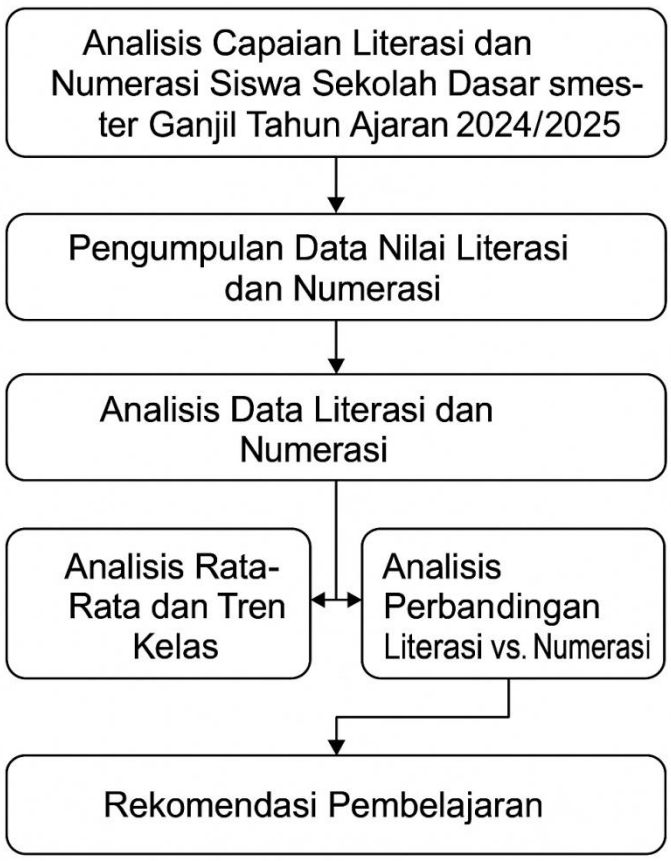

Figure 1. Literacy and Numeracy Research Chart

Research Ethics

In the research process, the researcher ensures that all data used is anonymous and does not harm any party. Approval has been obtained from the school for the use of report card score data as analysis material. All analysis results are presented without mentioning the individual identity of the students, thus maintaining the principles of confidentiality and research ethics.

Research Limitations

This research has limitations in terms of area coverage and analysis approach. Since the research was only conducted in one school, the generalization of the results needed to be done carefully. In addition, the analysis used is descriptive and does not reach the factors that cause achievement, so these results are more of a preliminary picture for the purpose of evaluation and development of learning programs.

RESEARCH RESULTS

Overview of Literacy and Numeracy Achievement

The results of the analysis of data on the report cards of elementary school students in the odd semester of the 2024/2025 school year show that there is a difference in achievement between literacy and numeracy. The data was analyzed based on Indonesian values as literacy indicators and Mathematics

scores as numeracy indicators. Each grade level from grade I to grade VI is analyzed based on the average score, highest score, and lowest score for each competency. The following is a table of Average Literacy and Numeracy Scores per Class.

Table 1. Average Literacy and Numeracy Scores per Class

Class	Literacy Average	Numeracy Average	Difference
I	78	74	4
II	80	76	4
III	82	78	4
IV	83	79	4
V	84	81	3
YOU	85	83	2

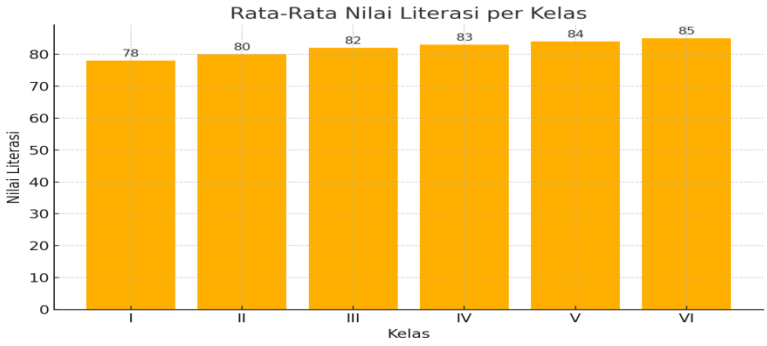

Figure 2. Average Literacy Score Histogram per Class

Table 2. Highest and Lowest Literacy Scores

Class	Highest	Lowest
I	92	65
II	93	67
III	94	69
IV	95	70
V	96	72

Class	Highest	Lowest
YOU	97	74

Table 3. Highest and Lowest Values of Numeracy

Class	Highest	Lowest
I	88	60
II	89	63
III	90	66
IV	92	65
V	93	68
YOU	94	70

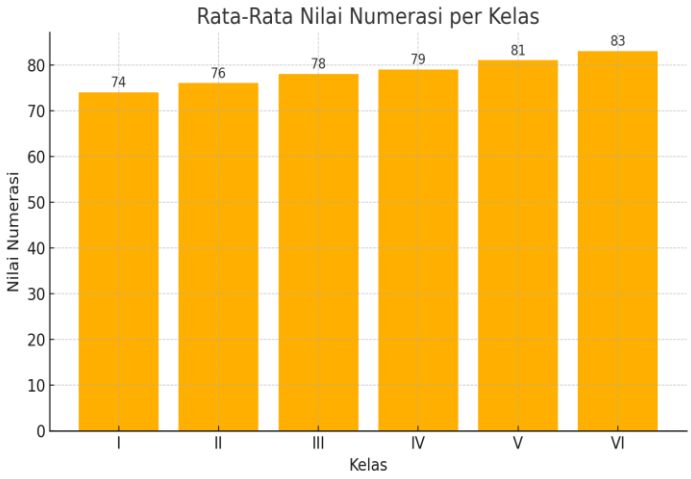

Figure 3. Histogram of Average Numeracy Value per Class

Comparison of Literacy and Numeracy AverageAll classes show that literacy achievement is higher than numeracy. The average difference in grades in each class is:

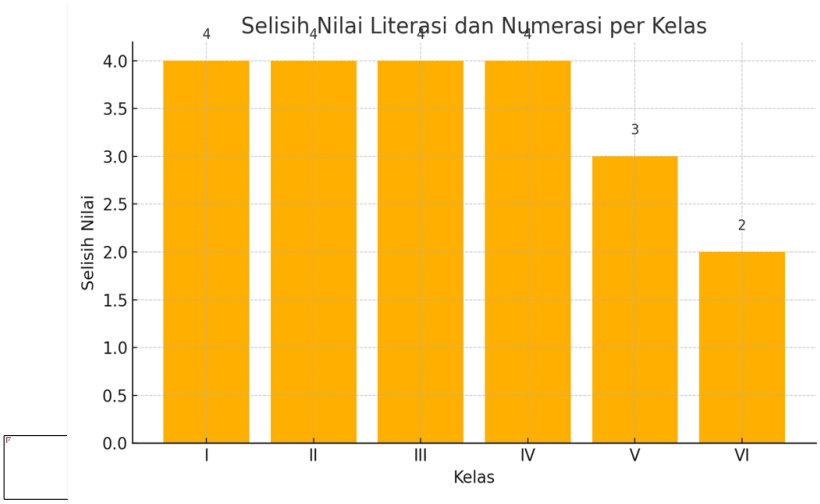

Figure 4. Histogram of Literacy and Numeracy Value Difference by Class

This shows that the achievement gap between literacy and numeracy is narrowing at the higher grade level.

Trend of Improvement Between Classes

Both literacy and numeracy show a consistent trend of improvement from grades I to VI. The increase in numeracy is slightly behind literacy in the early classes, but is starting to approach the upper class. This can be attributed to students' cognitive development as well as more complex learning approaches at higher levels.

Identify Students with Extreme Achievement

1. **Highest Literacy Achievement**: The highest score of 97 was recorded in grade VI, indicating that there are students with very high abilities in understanding and processing texts.
2. **Lowest Literacy Achievement**: The lowest score of 65 was recorded in grade I, which indicates the need for special attention in basic reading learning.
3. **Highest Achievement in Numeracy**: The highest score of 94 is also found in class VI.
4. **Lowest Achievement of Numeracy**: The lowest score of 60 appears in grade I, indicating that early numeracy skills still need significant support.

Summary of Results

Overall, the results of this study reveal that the literacy achievement of elementary school students is consistently higher than the numeracy achievement at each grade level. However, the gap between the two competencies shows a tendency to shrink as the grade level increases, which indicates a process of improvement in students' numeracy skills at a higher level. These findings confirm the need for more specific and focused learning strategies to strengthen numeracy, especially in early grades. On the other hand, both literacy and numeracy showed a steady upward trend from grade I to grade VI. Thus, the results of this study provide an important empirical basis for schools

and teachers in developing learning programs that are more balanced and adaptive to the developmental needs of students at each stage of basic education.

DISCUSSION

The results of this study show that the literacy achievement of elementary school students in the odd semester of the 2024/2025 school year is consistently higher than the numeracy achievement. These findings reinforce the results of previous studies that stated that literacy skills tend to develop earlier and faster than numeracy skills in elementary school-age children (Sari, 2023; Zainudin et al., 2023). This can be explained through Piaget's theory of cognitive development, in which children aged 7–11 years are in a concrete operational stage that allows them to understand the text literally faster than by thinking logically against more abstract numerical concepts.

The achievement gap between literacy and numeracy found in this study, especially in grades I to III, is an important indicator that numeracy learning still requires special attention. A gap of 4 points in grades I–IV indicates that students have greater difficulty in understanding and applying basic concepts of mathematics compared to reading and comprehension skills. These findings are in line with the results of the INOVASI and ACER (2022) studies which stated that literacy programs in elementary schools are generally more systematic and receive better resource support than numeracy programs.

The increase in numeracy achievement that began to approach literacy achievement in grades V and VI showed a positive influence of cumulative learning and student cognitive development. In this context, numeracy skills and understanding of mathematical concepts seem more easily achieved when students have a stronger learning foundation and are accustomed to more complex problem-solving tasks. This is in line with the findings of Hazin et al. (2025) who emphasize the importance of learning numeracy based on real and tiered contexts.

The finding that the highest scores for literacy and numeracy were both recorded in grade VI shows that there is great potential at the end of elementary school, which can be used to develop transition programs to the secondary level. Nevertheless, the lowest scores that appeared in grade I, both in literacy (65) and numeracy (60), underscored the importance of early intervention. This shows that the foundation of learning in the early grades greatly determines the next achievement.

In general, the trend of increasing achievement from grades I to VI in these two basic competencies gives a positive signal that the learning system in schools has had a consistent impact. However, the more prominent advantages of literacy indicate that numeracy has not received equal learning treatment. Therefore, there is a need to design numeracy learning strategies that are more contextual, fun, and easy for students to understand, such as the use of concrete media, play-while learning approaches, and the integration of numeracy in other subjects.

In addition, teachers need to receive continuous training to improve pedagogic competence in teaching numeracy. Project-based learning,

exploratory tasks, and group activities that demand problem-solving are believed to help students develop numerical skills more naturally and meaningfully (Pratiwi et al., 2020; Audia & Mastoah, 2025).

This discussion strengthens the conclusion that strengthening numeracy needs to be a top priority in learning strategies in elementary schools, without ruling out strengthening literacy. The equality of strengthening these two basic competencies will create a more balanced student profile and be ready to face learning challenges at the next level.

CONCLUSIONS AND RECOMMENDATIONS

This study analyzes the literacy and numeracy achievements of elementary school students in the odd semester of the 2024/2025 school year. The results of the analysis show that literacy achievement is consistently higher than numeracy at each grade level. The achievement gap between the two is most noticeable in the lower class and tends to narrow in the upper class. These findings indicate that students tend to master literacy skills faster than numeracy, and that numeracy learning requires special attention, especially in the early grades.

The trend of increasing achievement from grade I to grade VI in both competencies shows that the learning process that takes place has had a positive impact gradually. Therefore, the results of this study provide an important basis for schools and teachers to balance strategies to strengthen literacy and numeracy. The focus on future learning development should be directed to designing numeracy interventions that are more contextual, fun, and applicative, while maintaining literacy programs that have been running well.

ADVANCED RESEARCH

This research was only conducted in one school and used a descriptive approach, so the results could not be generalized widely. For further research, it is recommended:

1. Analyze the Causes of GapExamine what causes lower numeracy, such as teaching methods, student motivation, parental roles, or the learning environment at home.
2. Develop Learning StrategiesTry new methods such as project-based learning or interactive media to see if it can improve numeracy, especially in lower grades.
3. Conducting Long-Term StudiesMonitoring the development of literacy and numeracy of students from grades I to VI to see the pattern of achievement and impact of school programs.
4. Compare with Other SchoolsExpand the scope of the research to multiple schools or regions to see differences in achievement and best practices.

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