



An Analysis of Teachers' Strategies for Improving the Literacy and Numeracy Skills of First-Grade Elementary School Students

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Abstract. Literacy and numeracy are interrelated basic skills that are crucial to develop starting in elementary school. They play a vital role in fostering logical thinking and problem-solving skills. This study aims to determine: (1) the factors contributing to low literacy and numeracy levels among first-grade elementary school students; (2) the strategies teachers use to improve the literacy and numeracy skills of first-grade elementary school students. Data analysis was conducted using the Miles and Huberman model, which consists of data collection, data reduction, data presentation, and conclusion. Several factors hinder students' literacy and numeracy skills, namely internal and external factors. First-grade elementary school teachers employ several strategies to improve students' literacy and numeracy skills, including mapping students' initial abilities, traditional classroom instruction, individualized instruction, and collaboration with parents.

Keywords: Literacy, numeracy, elementary school

1. Introduction

Literacy and numeracy are interrelated foundational skills that are essential to develop starting in elementary school. These skills must be mastered by lower-grade students, particularly first-graders, to prepare them for understanding more complex subject matter [1].

For first-grade elementary school students, literacy skills mark the initial stage of learning letters, reading simple words, and understanding the meaning of information presented in a straightforward manner, whether through text or other learning materials. Literacy skills are defined as the ability to think using knowledge sources in print, visual, digital, and auditory forms [2]. Literacy skills are required in all aspects of human life, including education, which demands various complex comprehension and thinking skills from both educators and students.

Numeracy skills are not limited to counting but also encompass an understanding of number concepts and their application in various everyday situations. [3] states that numeracy involves the ability to understand, apply, and interpret numerical and mathematical concepts in daily life. Children need to understand how to read and write information in the form of written numbers [4]. Thus, literacy and numeracy skills play a crucial role in developing logical thinking and problem-solving abilities.

On the other hand, students' literacy and numeracy skills in Indonesia remain relatively low, as evidenced by various national and international assessment surveys [5]. The Indonesia National Assessment Programme (INAP) measures students' literacy, mathematics, and science skills, reporting that students performed reasonably well, with a mathematics score of 77.13% and a science score of 73.61% [6]. The 2022 Programme for International Student Assessment (PISA) released results showing that 18% of students achieved at least Level 2 proficiency in numeracy, far lower than the OECD average of 69%. Furthermore, regarding literacy, 25% of students in Indonesia reached Level 2 or higher in reading (OECD average: 74%) [7].

Previous research conducted by [8] focused on school-wide literacy and numeracy programs. In contrast, this study focuses on teachers' direct strategies in the classroom learning process. It will highlight teachers' pedagogical practices in addressing the heterogeneity of early-grade students' literacy and numeracy skills.

Interviews with first-grade elementary school teachers revealed that first-grade students' literacy and numeracy skills remain low. As a result, some students are unable to fully engage in learning, particularly when activities require them to read questions or perform calculations independently. These low skills are influenced by various factors, both internal and external.

This phenomenon indicates that Indonesia faces significant challenges in the areas of literacy and numeracy. These challenges can be addressed by improving the teaching methods employed by teachers. Teachers must be able to develop instructional strategies tailored to the individual needs of each student. Therefore, this study aims to analyze the strategies employed by first-grade elementary school teachers to improve their students' literacy and numeracy skills.

2. Research Methodology

This study employed a descriptive qualitative method to examine teachers' strategies for improving students' literacy and numeracy skills. Data analysis was conducted using the Miles and Huberman model, which consists of data collection, data reduction, data presentation, and drawing conclusions.

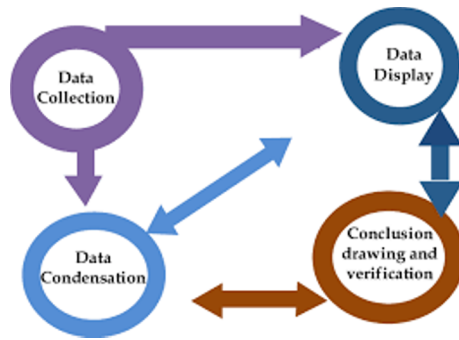


Figure 1 Miles and Huberman model

Data was collected through interviews with first-grade elementary school teachers. Subsequently, the research findings were analyzed to select, simplify, and focus on data relevant to the research objectives, namely the factors contributing to low literacy and numeracy skills and the strategies teachers employ to improve the literacy and numeracy skills of first-grade elementary school students. Next, the data were presented in descriptive form, and conclusions were drawn based on the results of the data analysis conducted by the researcher.

3. Result and Discussion

Before discussing the strategies teachers use to improve the literacy and numeracy skills of first-grade elementary school students, it is necessary to first analyze the factors contributing to these low skill levels. This analysis is important for providing a clear picture of the students' initial conditions and the various challenges they face in the learning process.

1. Factors Contributing to Low Literacy and Numeracy Skills

Based on the interview results, low literacy and numeracy skills are influenced by various factors, both internal and external. Internal factors are those that originate within the student. External factors, on the other hand, stem from outside the student or the surrounding environment. Each factor will be discussed in greater detail, drawing on relevant references.

a. Internal factors related to literacy and numeracy skills

Internal factors, such as students' motivation and interest in learning, remain relatively low. This lack of motivation and interest makes it difficult for students to understand the practice problems assigned by teachers. Conversely, students with strong literacy and numeracy skills find it easier to complete practice problems without

teacher assistance. This is also explained by [9], who note that learning motivation plays a crucial role in improving students' academic performance in specific subjects. Students with high motivation in learning are more likely to achieve high academic outcomes.

This means that teachers need to foster students' motivation and interest in learning. Teachers can give rewards to students who successfully answer questions correctly. This can motivate other students who have not yet answered the questions correctly. [10] explains that giving rewards can provide encouragement and motivation to learn for students who have not yet received a reward from the teacher.

b. External factors affecting literacy and numeracy skills

External factors that hinder students' literacy and numeracy skills include the fact that preschool education does not yet teach proper reading and counting methods. This situation affects children's cognitive development as they enter elementary school. Meanwhile, preschool serves as the foundation for understanding material before moving on to more complex topics. This is consistent with the view that [11] which states that one of the primary goals of early childhood education is to improve children's literacy and numeracy skills (reading, writing, and arithmetic).

Another contributing factor is the lack of parental availability to provide guidance and support to children at home. This is because some parents have limited education, resulting in a lack of understanding regarding the importance of the parental role in supporting children's learning. In fact, parents play a crucial role in motivating their children—whether through praise or material rewards—to encourage them to study with greater enthusiasm [12].

In addition, many parents are unable to provide their children with tutoring services. This situation arises because each family has a different level of economic development. This affects students' understanding, as tutoring plays a key role in supporting academic success by guiding children according to their areas of potential [13]. Tutoring also helps children grasp material they have not yet understood in school.

Furthermore, the use of appropriate instructional media also influences students' ability to understand the material. Teachers must select instructional media that align with learning objectives to prevent misunderstandings among students. Instructional media serve as tools that teachers use to support students' understanding [14]. Such media may include picture cards, letters, storybooks, and educational videos.

2. Teachers' Strategies for Improving Literacy and Numeracy Skills

a. Assessing students' initial skills

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The purpose of assessing students' initial skills is to determine the level of basic literacy and numeracy skills they bring from kindergarten. This is reflected in the following statement:

"Before teaching, we first assess the students to determine what initial skills they brought from kindergarten."

This is important given that first-grade elementary school students have diverse abilities. The goal is to help teachers identify differences in student abilities as a basis for determining appropriate teaching strategies. This is supported by oleh [15], which states that mapping student abilities is not merely an administrative matter but also serves as the foundation for developing inclusive, effective, and student-centered teaching strategies.

b. Classroom-based learning

Classroom-based learning is conducted using engaging methods to increase student participation. This was explained by the speaker as follows:

"For classroom activities, we introduce letters and numbers through singing, counting, and guessing games to familiarize students with various letters and numbers."

Based on the quote, the teacher integrated singing, counting, and guessing games as part of the learning strategy. The use of these activities is categorized as a form of gamification, the application of game elements to enhance student motivation and engagement. This aligns with the view [16] that gamified learning methods can create a fun, interactive learning environment and foster healthy competition among students.

c. Individualized learning

Teachers also employ an individualized approach by tailoring instruction to students' abilities. This approach aligns with the concept of differentiated instruction, which views students as learners who need to receive instruction tailored to their characteristics and ability levels [17]. This was explained by the interviewee as follows.

"In this one-on-one learning setting, students come up to the teacher's desk one by one to be assessed on their literacy and numeracy skills."

This approach allows teachers to assist students who are struggling while also maximizing their potential. Additionally, students who lack confidence will benefit because the assessment process is conducted individually, so their peers are not aware of their performance.

d. Collaboration between teachers and parents

Equally important, teachers also maintain close communication with parents regarding their children's progress and the homework assigned for completion at home. This is done so that parents can follow up on the work at home.

"So that parents know what activities are taking place at school, and so they know what to do at home—whether to enroll their children in tutoring or have them study with parental guidance."

"I also communicate information about tests and homework so that parents can help their children study and know how far they've progressed with the school material."

It is hoped that parents will support their children and stay aligned with the lessons taught by teachers at school. This collaboration is essential because parental support plays a crucial role in fostering children's development. Research shows that active parental involvement in supporting and communicating with their children, as well as collaborating with the school, can enhance students' literacy skills and academic success [18].

4. Conclusion

The low literacy and numeracy skills of first-grade elementary school students are influenced by internal factors, such as low motivation to learn, as well as external factors, including immature early childhood education methods, lack of parental guidance due to economic/educational limitations, and the use of inappropriate learning media. As a solution, teachers implement comprehensive strategies, ranging from initial assessments, interactive classroom-based learning, individual approaches, and close collaboration with parents to support the learning process.

Authors' Contributions

The first author conceived the study, developed the research instruments, collected the data, and wrote the manuscript. The second, third, and fourth authors critically reviewed and revised the manuscript. The fifth author reviewed the final manuscript, approved the submitted version, oversaw the research design, and validated.

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