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Enhancing the Learning Activities of First-Grade Elementary Students through the Drill and Practice Method in the Topic of Object Length Comparison

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Abstract

This study investigates the effectiveness of the drill and practice method in enhancing the learning activities of first-grade elementary students on the topic of object length comparison. Implemented at SD Negeri Kedunggebang, Banyuwangi Regency, the research employed a qualitative descriptive approach involving 26 students and their homeroom teacher. Data were collected through observations, interviews, and documentation to capture students' engagement, comprehension, and accuracy in using measurement tools. The results indicate that repetitive and structured practice significantly improved students' understanding and performance in measuring and comparing object lengths. The method not only enhanced students' accuracy in using rulers but also increased their enthusiasm for learning. Group division and contextual practice further supported student learning outcomes. Despite challenges related to students' early cognitive development and learning motivation, the drill and practice method proved to be an effective instructional strategy for developing foundational mathematics skills, particularly in measurement.

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INTRODUCTION

Elementary education is a crucial phase in children's cognitive development, where they are introduced to various scientific concepts, including mathematics. Mathematics is one of the fundamental subjects continuously taught from elementary school to higher education. However, in the learning process, not all students exhibit the same level of interest in mathematics. Some students encounter difficulties in understanding basic concepts due to the subject's nature, which requires high concentration, logical reasoning,

and strong numerical skills (Megawati & Sutarto, 2021; Mustakim et al., 2020; Rohmah et al., 2022). This presents a challenge for educators in designing effective learning methods to encourage students to be more engaged and motivated in learning mathematics.

The drill and practice method is one of the learning strategies that can be applied to improve students' understanding of mathematical concepts. This method involves repetitive activities that help students memorize, spell and practice concepts across a range of subjects. This method aims to provide intensive practice to students to strengthen their understanding of a particular topic. Furthermore, repetitive practice can contribute to the development of more effective study habits among students (Azzahro et al., 2023; Kurnia, 2024; Laleye & Ogunboyede, 2023; Lugina et al., 2023; Qutratuain & Ariyanto, 2023; Santosa & Prahesti, 2022).

In the first-grade elementary mathematics curriculum, particularly in comparing and ordering object lengths, students often struggle to grasp the concept of measurement. Therefore, the implementation of the drill and practice method is expected to facilitate students' comprehension of object length concepts through consistent and repetitive exercises. Consequently, this method not only improves students' understanding but also encourages them to be more active in the learning process (Ali, 2023; Misbahuddin & Kurniawan, n.d.; Rosanti et al., 2022).

Several previous studies have examined the effectiveness of the drill and practice method in teaching mathematics at the primary school level. This method has been widely applied in teaching various basic mathematics concepts, such as counting operations, multiplication, as well as greatest common factor (GCD) and least common multiple (LCM). Among others, the application of the drill and practice method in teaching GCD and LCM using audiovisual-based learning provides positive results on student understanding. The combination of repetitive practice and instruction supported by technology allows students to understand numerical patterns more easily and solve problems effectively (Amallia et al., 2025; Mustakim, 2019; Mutmainnah et al., 2025; Siregar et al., 2023; Sriyono et al., 2024; Wati & Sumadi, 2025).

Furthermore, the drill and practice method improved students' accuracy and speed in solving basic arithmetic problems. The study highlighted a significant improvement in students' understanding of basic math concepts after structured and routine practice sessions. Meanwhile, a study revealed that this method not only improves students' understanding but also builds their confidence in solving math problems (Hanik et al., 2021; Hazima et al., 2022; Noviyanti, 2022).

Although the drill and practice method has been extensively utilized in mathematics instruction, most studies have focused on arithmetic and numerical operations. Research specifically examining the application of this method in teaching object length comparison and ordering among first-grade elementary students remains limited. Therefore, this study seeks to explore the implementation of the drill and practice method in helping first-grade students develop a better understanding of object length measurement.

This study aims to analyze the effectiveness of the drill and practice method in enhancing first-grade elementary students' learning activities in mathematics, particularly in the topic of comparing and ordering object lengths. The study will investigate the extent to which this method improves students' ability to recognize object lengths, arrange objects based on their size, and estimate lengths using non-standard units.

The scope of this research includes first-grade students at SD Negeri Kedunggebang, Tegaldlimo District, Banyuwangi Regency. The study will focus on the implementation of the drill and practice method during learning activities, observing how this method contributes to increased student engagement and understanding of object length concepts. Data collected will be analyzed to evaluate the effectiveness of the method in enhancing first-grade students' measurement skills.

This study introduces novelty in the application of the drill and practice method in first-grade elementary mathematics learning, particularly in the topic of comparing and ordering object lengths. Most previous studies have concentrated on applying this method to numerical operations, whereas research on its implementation in measurement concepts remains limited. Therefore, this study provides a new contribution by exploring the effectiveness of the drill and practice method in enhancing first-grade students' learning activities in the context of object length measurement. The findings of this study are expected to offer insights into innovative instructional approaches that improve early mathematical comprehension.

METHOD

This research uses a qualitative descriptive method. Qualitative research serves as a source of comprehensive description, based on strong data, and provides an explanation of the processes that occur in a particular environment. Through this approach, researchers can gain an in-depth understanding of the phenomena, assess causal relationships within a given context, and obtain rich and meaningful insights. The objective of this study is to describe and analyze the implementation of the drill and practice method in enhancing the learning activities of first-grade elementary students in mathematics, particularly in the topic of comparing and ordering object lengths. The researcher aims to present a factual, systematic, and accurate depiction of how this method is applied in the classroom and its impact on students' understanding of length measurement concepts.

The population of this study consists of all first-grade students at SD Negeri Kedunggebang, Tegaldlimo District, Banyuwangi Regency. The research sample is selected using a purposive sampling technique, in which participants are deliberately chosen based on specific criteria. The selection criteria include first-grade students currently studying the topic of comparing and ordering object lengths in mathematics, the first-grade teacher responsible for instructing and implementing the teaching method, and a learning context that employs the drill and practice method as the primary instructional strategy. The sample for this study includes one first-grade class comprising approximately 25–30 students, along with one classroom teacher who plays a key role in the mathematics learning process.

The research instruments used in this study include observation, interviews, and documentation. Direct classroom observations are conducted to monitor the implementation of the drill and practice method, record students' activities, and analyze interactions between teachers and students. Interviews are conducted with the first-grade teacher to gain deeper insights into the application of the drill and practice method and the challenges encountered during its implementation. Additionally, documentation is used to collect data in the form of learning records, photographs of teaching activities, and students' practice exercises to track their learning progress. These instruments are employed to ensure the validity and depth of the data regarding the effectiveness of the drill and practice method in mathematics instruction for first-grade students.

The data collection techniques in this study include participatory observation, structured interviews, and documentation. Direct classroom observations are conducted to examine how the drill and practice method is applied and how students respond to the learning process. Structured interviews with the first-grade teacher provide information regarding the effectiveness of the method, challenges encountered, and strategies used in instruction. Documentation involves gathering data in the form of photographs, videos, and students' practice work to support the findings from observations and interviews.

The collected data were analyzed using qualitative descriptive analysis techniques, namely data reduction, data presentation, and conclusion drawing. Data reduction involves filtering, categorizing, and summarizing information from observations, interviews, and documentation to focus on aspects relevant to the research. The reduced data was then presented in the form of descriptive narratives, tables, or graphical representations to facilitate understanding of the research findings. The last stage is drawing conclusions based on the data that has been analyzed, thus providing a clear picture of the implementation of the drill and practice method and its impact on increasing the learning activities of first grade students on the topic of comparing and ordering the length of objects. Through this methodology, this study aims to provide a comprehensive insight into the effectiveness of the drill and practice method in mathematics education for grade one students.

RESULTS AND DISCUSSION

Mathematics is one of the essential subjects in education as it helps students develop logical thinking, critical reasoning, perseverance, and the ability to generate new ideas while completing exercises without procrastination. These cognitive skills are expected to evolve throughout mathematics learning, both in elementary school and at higher educational levels. Additionally, mathematics serves as a fundamental discipline closely related to various other fields of study. Therefore, a strong foundation in mathematics from an early age is crucial for students to develop complex problem-solving and higher-order thinking skills in the future.

At the elementary school level, mathematics education focuses on conceptual exploration, pattern recognition, problem formulation, problem-solving, and systematic presentation of results. However, in first grade, introducing mathematical concepts presents unique challenges, as students are still in the early stages of cognitive development. One of the common difficulties encountered by first-grade students is measuring and comparing object lengths. The use of measuring tools such as rulers often confuses them, particularly in understanding scale readings

and accurately measuring objects. Thus, an effective teaching method is necessary to enhance students' comprehension of measurement concepts.

At SD Negeri Kedunggebang, Tegaldlimo District, Banyuwangi Regency, the first-grade class consists of 26 students (10 boys and 16 girls). Observations and interviews with the homeroom teacher revealed that students' understanding of mathematics varies. Approximately 50% of students demonstrated proficiency in mathematics, 25% were in the process of grasping concepts, and 25% had significant difficulties. The main challenge encountered was using measuring tools like rulers in their assignments. The homeroom teacher had taught basic techniques such as drawing straight lines with a ruler, yet students' comprehension levels remained inconsistent due to their varying cognitive abilities. This indicates that instructional methods should be more tailored to first-grade students' learning characteristics.

The interview with the principal further confirmed that despite teachers' efforts in teaching length measurement, many students still struggle with the concept. A more structured and repetitive approach is needed to strengthen students' understanding. previous research mentioned, educators should develop creative teaching strategies to help students achieve a more comprehensive understanding of mathematical concepts (Putri et al., 2024).

The drill and practice method involves repetitive exercises to reinforce students' understanding and skills in a given subject. As part of the implementation, the researcher, who also acts as the instructor, first familiarized themselves with students' characteristics. Among the 26 students, 50% had a basic understanding of mathematics (e.g., recognizing numbers and performing simple addition and subtraction), while the remaining 50% were still developing these skills. When introduced to measuring tools such as rulers, most students recognized them; however, 14 students struggled with understanding their usage and the scale on the ruler.

At an early stage, a 30 cm ruler is introduced as a tool to draw straight lines in their exercise books. Teachers should be innovative, creative and inspiring in choosing appropriate teaching methods for their students. Therefore, the researcher provided step-by-step instructions in measuring a line from the zero mark on the ruler, such as drawing a 5 cm or 10 cm line. The observation results showed that 14 students successfully followed the instructions, while 12 students still had difficulties in drawing a straight line using a ruler (Andriastuti, 2024).

To address this learning gap, the researcher divided students into two groups:

1. Group 1 – Students who had mastered ruler usage.
2. Group 2 – Students who needed additional guidance.

Group 1 was assigned additional tasks to draw lines of varying lengths, while Group 2 received intensive training using the drill and practice method, practicing straight-line drawing repeatedly. After two sessions, Group 2 showed significant improvement, successfully drawing straight lines. By the third session, a practical exercise was given where all 26 students were required to draw lines of different lengths. Results indicated that all students successfully created straight-line patterns.

Following mastery of straight-line drawing, students proceeded to measure object lengths. Initially, students were asked to measure a book using a ruler. 14 students correctly placed the ruler at the zero mark and read the measurement accurately, while 12 students struggled with identifying the starting point. To address this, drill and practice sessions were reintroduced,

emphasizing repeated measurement activities. To prevent monotony, lessons were conducted both inside and outside the classroom. Students were tasked with measuring various objects in their environment, such as desks, chairs, and whiteboards. Additionally, they were introduced to measuring objects longer than a single ruler length by using a cumulative measurement approach. This technique not only reinforced measurement skills but also reinforced addition concepts in mathematics.

After one month, the findings showed that the drill and practice method significantly improved students' understanding in measuring the length of objects using a 30 cm ruler. In addition, the researcher observed that each student showed different learning speeds in understanding math concepts. An educator's success in delivering learning materials can be measured by his or her ability to create a conducive learning environment and build strong engagement with students. During the study, the researcher emphasized effective communication to optimize the drill and practice approach (Astuti, 2022). However, the study also identified some challenges:

1. Transition from Kindergarten to Elementary School – Many students were accustomed to receiving assistance from teachers in completing tasks, making it necessary to guide them towards independent learning.
2. Lack of Persistence in Learning Mathematics – Some students lacked the motivation to engage with repeated exercises, requiring educators to implement diverse teaching strategies to foster perseverance and enthusiasm.

CONCLUSION

The drill and practice method effectively enhances the learning activities of first-grade elementary students in comparing and ordering object lengths. Repetitive exercises help students grasp the concept of measurement and improve their accuracy in using measuring tools. Before implementation, many students struggled with the concept; however, after intensive practice, they were able to measure and draw lines correctly. Strategies such as hands-on practice and group division further increased the method’s effectiveness. Although challenges such as variations in students’ cognitive abilities were present, this method proved to enhance understanding and independent learning, making it applicable to other subjects requiring repetitive practice.

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