



Implementation of Line Card Number Media in Improving Elementary School Students' Addition and Subtraction Ability

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Abstract

This research aims to explore the implementation of Line Card Number media in improving the addition and subtraction abilities of elementary school students at MIS Dar Al Tauhid, Cirebon City. This research uses a qualitative method with a case study approach. Data was collected through direct observation, in-depth interviews with teachers and students, as well as analysis of documents related to the learning process using Line Card Number media. The research results show that the use of Line Card Number media helps students understand the concepts of addition and subtraction more easily and interactively. Teachers reported an increase in student participation during learning, as well as a decrease in errors in solving addition and subtraction problems. Students also stated that this media made them more interested and motivated in learning mathematics. The conclusion of this research is that the Line Card Number media is effective as a learning tool to increase students' understanding of addition and subtraction operations. This media not only makes the learning process more interesting but also helps students internalize basic mathematical concepts in a deeper and more enjoyable way.

Keywords : Line Card Number, Media, Elementary school.

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INTRODUCTION

Basic mathematical skills, especially addition and subtraction, are important competencies that elementary school students must master. According to the results of initial observations at MIS Dar Al Tauhid, Cirebon City, it was found that many students had difficulty understanding the concepts of addition and subtraction, especially when they had to solve problems independently. This difficulty has an impact on students' low learning outcomes, which indicates the need for more effective learning methods or media to improve their abilities in mathematics.

Learning media has an important role in helping students understand mathematical concepts better. One of the media that can be used is Line Card Number. Research conducted by Setyaningsih (2021) shows that the use of interactive learning media can improve understanding of basic mathematical concepts in elementary school students. Media such as Line Card Numbers allow students to learn in a more visual and interactive way, so they can understand the process of addition and subtraction more easily.

On the other hand, research conducted by Wahyuni (2020) found that the use of learning media that is interesting and appropriate to the child's level of development can increase students' learning motivation. High motivation will encourage students to be more active in the learning process, so that their learning outcomes also increase. Thus, the application of Line Card Number is expected to improve students' abilities in addition and subtraction at MIS Dar Al Tauhid.

Apart from that, research by Handayani (2019) states that game-based learning media can provide a pleasant learning experience for students. This is relevant to conditions at MIS Dar Al Tauhid, where students tend to be more responsive to learning methods that involve physical and visual activities. Using Line Card Numbers as an interactive learning medium can facilitate more enjoyable and effective learning.

Furthermore, research by Kartika (2022) shows that learning media that involves direct interaction with the material can help students internalize mathematical concepts better. In this context, Line Card Number offers an approach that allows students to directly interact with numbers, so that they can understand the relationship between addition and subtraction in a concrete way.

The results of previous research conducted by Suryani (2023) also indicated that the use of varied learning media could overcome students' boredom in learning mathematics. Media such as Line Card Numbers which provide new learning experiences can attract students' interest and make them more interested in learning mathematical concepts.

From the research above, it can be concluded that learning media that is interactive and appropriate to student characteristics is very important in improving learning outcomes. Therefore, this research will focus on the implementation of Line Card Number at MIS Dar Al Tauhid to improve students' abilities in addition and subtraction.

This research will examine the effectiveness of Line Card Numbers in improving students' mathematics learning outcomes compared to conventional learning methods that have been used so far. Based on previous findings, it is hoped that the use of this media can provide better results in terms of increasing students' addition and subtraction abilities.

In this research, we will also identify factors that support and hinder the implementation of Line Card Number at MIS Dar Al Tauhid. Thus, it is hoped that the results of this research

can make a significant contribution to the development of more effective learning media at the elementary school level.

RESEARCH METHODOLOGY

This research uses a qualitative method with a case study approach, which aims to examine in depth the implementation of Line Card Number media in learning addition and subtraction at MIS Dar Al Tauhid, Cirebon City. The case study approach was chosen because it allows researchers to explore complex phenomena in a specific context, as recommended by Yin (2018), who emphasized that case studies are suitable for research that wants to understand phenomena in their natural environment. Through this approach, researchers can observe and analyze interactions between teachers, students and learning media directly, and gain in-depth insight into the effectiveness of these media in improving students' mathematical abilities.

Data was collected through three main techniques, namely direct observation, in-depth interviews, and document analysis. Direct observations were carried out to capture the dynamics of learning in the classroom, especially how the teacher applies Line Card Number media and how students interact with this media. This technique is relevant to research conducted by Creswell and Poth (2017), who stated that observation allows researchers to see directly the behavior and interactions that occur in a certain context, thereby producing more valid data. In-depth interviews were conducted with teachers and students to explore their experiences, views and challenges they faced while using this media. In line with the findings of Baxter and Jack (2020), interviews in case studies allow for the collection of rich and in-depth data regarding the research subject.

Apart from that, document analysis was also carried out on various teaching materials, student worksheets, and teacher notes related to the use of Line Card Numbers. This document analysis serves to complement and verify data from observations and interviews, as stated by Bowen (2019), which shows that document analysis can provide additional context and strengthen qualitative research findings. By combining these three data collection techniques, this research applies data triangulation to ensure the validity and reliability of the findings, as well as reduce bias that may arise from a single data source.

RESULTS AND DISCUSSION

The results of this research show that the use of Line Card Number media makes a significant contribution in helping students understand the concept of addition and subtraction in an easier and more interactive way. This media allows students to manipulate numbers visually and directly, so they can see the relationship between numbers and the results of mathematical operations more clearly. Research by Kurniawan et al. (2020) supports these findings by showing that learning media that involves visual and interactive elements can improve understanding of mathematical concepts in elementary school students.

During observations, there was a significant increase in student participation during learning. Teachers report that students are more actively involved in class activities and show greater interest in completing mathematics assignments when using Line Card Number media. This finding is in line with research by Astuti and Utami (2021), which found that the use of interesting learning media can increase student involvement and their motivation in the learning process. More details can be seen in the following image:

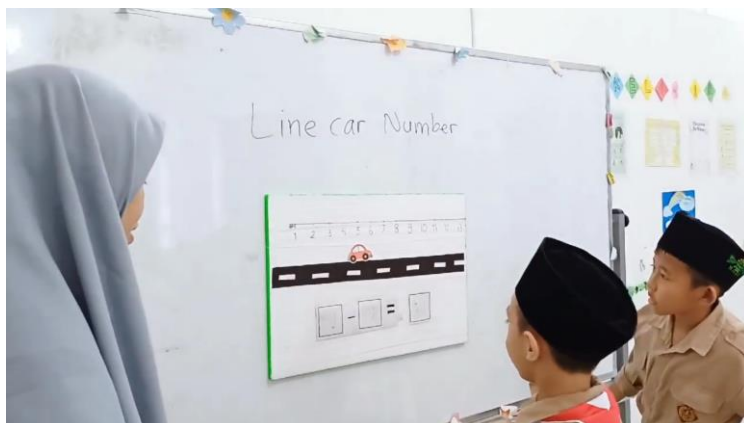


Figure 1. Line Card Number Media

Reducing errors in solving addition and subtraction problems is also one of the main results of this research. By using Line Card Number media, students show a significant reduction in calculation errors, which shows that they can better understand and apply mathematical concepts correctly. Research by Susanto (2022) underlines the importance of learning media that supports understanding mathematical concepts to reduce student errors in solving problems.

Students reported that Line Card Number media made them more interested and motivated in learning mathematics. They stated that activities using this media were more fun than conventional methods usually used in class. This finding is consistent with research by Wulandari (2023), which shows that interactive learning media can increase students' learning motivation and make the learning process more interesting.

Teachers also noted that students showed improvements in their ability to solve math problems more quickly and accurately. Research by Santoso and Pratama (2019) identified that learning media that provides direct feedback can help students correct mistakes and increase their problem-solving speed. Line Card Number media provides visual feedback that helps students understand and correct their mistakes in real time.

Observations also show that students who use Line Card Numbers are faster in mastering the concepts of addition and subtraction compared to those who use conventional methods. This shows that this media is effective in accelerating the mathematics learning process. As explained by Ramadhan and Nugroho (2021), media that allows direct manipulation can accelerate students' understanding of mathematical concepts.

In addition, teachers reported that the use of Line Card Number media helped create a more positive and collaborative learning atmosphere in the classroom. Students work together to complete math tasks using this medium, which increases interaction and cooperation between them. Research by Hadi and Yuliana (2022) found that learning media that encourages collaboration can improve social relations and cooperation in the classroom.

Students also expressed that they felt more confident in their math skills after using Line Card Numbers. This medium provides them with a clearer and simpler way to understand mathematical operations, which has a positive impact on their confidence in solving problems. Research by Maulana et al. (2020) shows that effective learning media can increase students' self-confidence in mathematics subjects.

Overall, the use of Line Card Number media has proven to be effective in improving student learning outcomes in addition and subtraction. This media helps students understand concepts in a more interactive and fun way, and reduces errors in solving questions. This research supports the findings of various previous studies which show the benefits of using interactive learning media in mathematics education.

With these results, it is recommended that the Line Card Number media can be used more widely in the mathematics learning process in elementary schools. The implementation of this media can have a positive impact in increasing understanding of mathematical concepts, learning motivation, and student participation in class. These findings are in line with existing literature which emphasizes the importance of innovation in learning media to improve the effectiveness of mathematics teaching.

Discussion

This research has a significant positive impact in improving elementary school students' abilities in addition and subtraction. This media facilitates understanding of mathematical concepts through concrete visual representations, allowing students to interact directly with learning material. Kurniawan et al. (2020) supports these findings, revealing that visual media can help students understand basic mathematical concepts better. Media that provides visual manipulation allows students to link theory with practice effectively, accelerating understanding of basic mathematical concepts.

Through observations and interviews with teachers and students, it was found that the Line Card Number media provided a clear visualization of the concepts of addition and subtraction. Teachers report that students understand basic mathematical operations more easily when using this medium compared to traditional methods. This is in accordance with research by Hendratno (2022) which identified that interactive visual media can facilitate understanding of mathematical concepts among students.

Students show high enthusiasm during learning activities using Line Card Numbers. The interview results revealed that students felt more interested and enthusiastic in learning mathematics because this media made learning more fun and interactive. Sari, et al. (2021) stated that student engagement can increase significantly when using media that involves physical manipulation.

The data shows that there is a significant increase in students' addition and subtraction abilities after implementing this media. Observations show that students can solve math problems more quickly and accurately after using Line Card Numbers. This finding is consistent with research by Gunawan and Hadi (2020) which found that the use of manipulative media can significantly improve students' mathematics learning outcomes.

During implementation, there were several obstacles such as the need for additional training for teachers in using this media and limited time during lessons. However, teachers report that with appropriate adaptation and adjustment, this medium can be implemented effectively. Research by Rizki and Utami (2023) shows that adequate training and support is very important for the successful use of new learning media.

The results of this research indicate that Line Card Number media can be an effective tool in improving students' basic mathematical abilities. The practical implication of this research is the importance of integrating manipulative media in the mathematics curriculum to support more interactive and effective teaching. Wulandari's (2022) research supports that manipulative media plays an important role in successful mathematics learning at the elementary school level.

CONCLUSION

This research shows that the application of Line Card Number media significantly increases the addition and subtraction abilities of elementary school students at MIS Dar Al Tauhid, Cirebon City. This media has proven effective in helping students understand and master basic mathematical concepts through concrete visualizations, which strengthen their understanding. In addition, the use of this media increases student motivation and engagement, making the mathematics learning process more interesting and interactive. Observation results show a clear increase in students' ability to solve mathematics problems more quickly and accurately after using this media.

However, several obstacles, such as the need for additional training for teachers and time constraints, were encountered during the implementation of this media. However, with proper

adaptation, Line Card Number media can be applied effectively in the learning process. The implications of this research indicate that the integration of manipulative media in the mathematics curriculum can improve teaching effectiveness and student learning outcomes, making a positive contribution to mathematics learning practices in elementary schools.

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