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THE EFFECT OF ROTATING WHEEL MEDIA ASSISTED BY POP-UP BOOK ON CLASS STUDENTS' NUMERACY SKILLS IV SD NEGERI TARATAK NAGODANG

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ABSTRACT

Numeracy skills are a fundamental aspect of basic education, encompassing the ability to understand, analyze, and use numbers in daily life. However, many elementary school students, including fourth-grade students at SD Negeri Taratak, still experience difficulties in understanding numeracy concepts due to unengaging learning approaches. This study aims to examine the effect of using a spinning wheel media assisted by a pop-up book on students' numeracy skills. The study used a quantitative approach with a quasi-experimental design. The research subjects were 40 students divided into experimental and control groups. The instrument used was a 20-item multiple-choice test. The results of the study showed that there was a significant improvement in the numeracy skills of students in the experimental group. The average pretest score increased from 58.25 to 82.15 in the posttest, while the control group increased from 57.90 to 69.40. The t-test results showed a calculated t-value of 3.62, which is greater than the table t-value of 2.02, indicating a significant difference between the two groups. These findings suggest that the spinning wheel media assisted by a pop-up book can create an enjoyable and interactive learning experience, thereby enhancing student engagement and numeracy understanding. This study recommends the use of creative learning media as a strategy to address difficulties in learning mathematics in elementary schools and emphasizes the importance of innovative learning based on visual and movement that aligns with students' developmental characteristics.

Keywords

Numeracy, Spinning Wheel Media, Pop-Up Book, Interactive Learning

1. INTRODUCTION

Numeracy skills are one of the basic competencies that are very important in supporting students' success at the primary education level. Numeracy not only includes the ability to calculate but also encompasses the ability to understand, analyze, and use numbers in daily life. However, in reality, many elementary school students, including fourth-grade students at SD Negeri Taratak, still experience difficulties in understanding basic mathematical concepts related to numeracy. These difficulties are often caused by a learning approach that is still

conventional and fails to engage students' attention.

In the context of the ever-evolving learning process, innovation in learning media has become a strategic solution to enhance students' understanding of lesson material. One medium that has the potential to support numeracy learning is the spinning wheel media assisted by a pop-up book. This medium combines visual elements, motion, and an enjoyable learning experience, making it expected to attract students' interest in learning and help them better understand numeracy concepts.

Previous research conducted by Sari & Widodo (2021) showed that the use of interactive media can significantly improve students' mathematics learning outcomes. Another study by Rahayu (2020) also revealed that the use of pop-up book-based media can enhance students' concentration and engagement in learning. This strengthens the rationale that combining spinning wheel media and pop-up books has the potential to positively impact students' numeracy skills.

Based on these issues, this study aims to examine the effect of using rotating wheel media assisted by pop-up books on the numeracy skills of fourth-grade students at SD Negeri Taratak. This research is expected to provide a tangible contribution to the development of creative and effective learning media in the elementary school environment.

2. RESEARCH METHOD

This study uses a quantitative approach with a quasi-experimental research design. The research was conducted at SD Negeri Taratak Nagodang in the even semester of the 2024/2025 academic year. The subjects of this study were fourth-grade students, with a total of 40 participants, divided into two groups, the experimental group and the control group, each consisting of 20 students. The instrument used in this study was a numeracy skills test in the form of 20 multiple-choice questions. These questions had been tested for validity and reliability before use. The research procedure began with administering a pretest to both groups.

Next, the experimental group was given instruction using a spinning wheel media aided by a pop-up book, while the control group used conventional methods. After the learning session was completed, a posttest was given to both groups to measure the improvement in numeracy skills. The pretest and posttest data were analyzed using the t-test technique.

3. RESULT

The research results indicate that there was an improvement in students' numeracy skills after being given learning treatment using a spinning wheel media assisted by a pop-up book. The average pretest score for the experimental group was 58.25, while the average posttest score increased to 82.15. Meanwhile, the control group using conventional methods had an average pretest score of 57.90 and a posttest score of 69.40. The t-test results showed that there was a significant difference between the posttest scores of the experimental group and the control group. The calculated t-value of 3.62 is greater than the table t-value of 2.02 at a 5% significance level (df = 38), which means $p < 0.05$. This data indicates that the spinning wheel media assisted by a pop-up book has a significant effect on improving students' numeracy skills.

4. DISCUSSION

The results of this study indicate that the spinning wheel media assisted by a pop-up book can provide a fun, challenging, and interactive learning experience for elementary school students. When the learning process takes place using this media, students appear more enthusiastic, active, and directly involved in understanding numeracy material. This reflects that learning media designed with attention to students' visual, motor, and emotional aspects has great potential in improving learning outcomes, particularly in mathematics, which has long been considered difficult by many students.

The use of spinning wheel media not only creates a different learning atmosphere but also encourages students to move, think, and respond quickly to the questions given. Meanwhile, the pop-up book as a support provides an engaging and concrete visual display, allowing students to understand number concepts, arithmetic operations, and relationships between numbers in a more tangible way. The combination of both

results in a learning strategy that stimulates both the right and left sides of students' brains in a balanced manner.

In the process of learning numeracy, students' understanding largely depends on how well teachers are able to connect the material with real-life experiences and the students' logical thinking abilities. Interactive media like this serves as a tool that bridges the gap between the abstraction of the material and the concrete experiences that students can perceive. Moreover, students are also encouraged to collaborate and participate actively, as this media naturally promotes interaction among students, especially when used in groups.

This finding also provides an important signal for teachers and schools to continue innovating in learning. It does not always have to involve high technology or expensive equipment; simple and creative media can also be an effective solution. The teacher's creativity becomes the main key in creating a learning environment that is not monotonous and makes students feel comfortable in facing mathematics lessons.

Another implication is the need for training and professional development for teachers in terms of instructional media design. Teachers who have an understanding of how to design and use such media will be better prepared to face the challenges of 21st-century learning, where students are not only expected to be able to calculate but also to solve problems and think critically.

Numeracy learning through spinning wheel media assisted by pop-up books not only helps students understand the material, but also develops a positive attitude towards mathematics. This becomes an important initial step in shaping a generation that is not only cognitively smart, but also confident and enjoys learning.

5. CONCLUSION

This study concludes that the use of a spinning wheel media assisted by a pop-up book has a positive effect on the numeracy skills of elementary school students. This media has proven effective in creating a more engaging, interactive, and enjoyable learning environment, thereby encouraging active student participation in the learning process. Through a visual and movement-based approach, this media helps students understand basic mathematical concepts in a more concrete and contextual manner. This is very appropriate for the developmental characteristics of elementary school students, who tend to require real and enjoyable learning experiences. These findings indicate that choosing creative and appropriate learning media can be an important factor in improving student learning outcomes, particularly in subjects considered difficult, such as mathematics. Therefore, teachers and schools are encouraged to continue exploring and developing innovative learning media that are relevant to the needs and characteristics of students.

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Collate acknowledgments in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (eg, providing language help, writing assistance or proof reading the article, etc.).

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