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The Effectiveness of Using Number Chart Media to Improve the Ability to Recognize Numbers 1–10 in Second Grade Deaf Students at SLB Negeri Mesuji

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ABSTRACT

This research was motivated by the identification of a second-grade deaf student at SLB Negeri Mesuji who had difficulty recognizing numbers. According to the curriculum, students are expected to recognize numbers before learning arithmetic and addition operations. However, although the teacher had already introduced counting and addition, conventional teaching methods were still predominantly used. In contrast, learning for deaf students should be conducted face-to-face, emphasize visual input, and rely heavily on visual media. Therefore, this study aimed to examine the effectiveness of number chart media in improving the ability to recognize numbers 1–10 in a second-grade deaf student at SLB Negeri Mesuji. This study employed a Single Subject Research (SSR) method with an A–B–A design, and the data were analyzed using visual graphic analysis. The results showed that the Baseline-1 (A1) phase was conducted in four sessions, with a mean level of 20%, 100% data stability, and a stable trend (=). The Intervention (B) phase was conducted in seven sessions, resulting in a mean level of 74.2%, a stability percentage of 85.7%, and an increasing trend (+). Furthermore, the Baseline-2 (A2) phase was conducted in six sessions, with a mean level of 95.8%, 100% data stability, and an increasing trend (+). Data overlap analysis showed 0% overlap between phases B/A1 and B/A2. Therefore, the research hypothesis was accepted, indicating that number chart media effectively improves the ability to recognize numbers 1–10 in second-grade deaf students at SLB Negeri Mesuji.

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INTRODUCTION

Deafness is a hearing impairment that may be caused by congenital factors present at birth or acquired due to accidents. When the impairment is congenital, individuals are unable to develop spoken language naturally because they have never heard language sounds, which results in difficulties in communication. According to Wahid (2019), deaf children are children with special needs who experience hearing difficulties that affect their educational development. Communication difficulties make it challenging for deaf individuals to perceive spoken language, which often leads to

misinterpretation and misunderstanding. Consequently, this condition can result in a low level of comprehension in learning activities, including difficulties in recognizing numbers.

Numbers are among the simplest concepts that individuals can learn and understand. They can be defined as concepts used to describe quantities in a set. The ability to recognize numbers is essential for children, as number recognition is the foundation of counting skills. According to Novitasari (2017), numbers are basic mathematical concepts that are abstract and contain several important elements. Numbers are particularly important for early childhood education because they serve as the initial foundation for understanding more complex mathematical concepts. Therefore, recognizing numbers from an early age is crucial for everyday life. One effective way to introduce numbers to children is through the use of learning media, which can help them understand and remember lessons more easily. According to Sundayana (2014), learning media are visual tools used to convey messages in teaching and learning activities. Media play an important role in children's learning, as they help learners understand concepts more accurately and quickly.

Based on observations of mathematics learning activities and interviews with second-grade teachers of deaf students conducted on November 23, 2020, at SLB Negeri Mesuji, located on Poros Street, Bujung Buring Village, Tanjung Raya District, Mesuji Regency, the researchers found that among five second-grade students, one student (RY) had not yet developed the ability to recognize numbers 1–10. According to the classroom teacher, this was evident during mathematics lessons on the basic competency of recognizing natural numbers up to 20 and writing number symbols up to 20, with a minimum mastery criterion of 72. When the teacher asked student RY to mention number 2 and other numbers, the student was unable to recognize them correctly. Classroom observations also showed that the teacher used a contextual teaching method, which made it difficult for the student to understand the material. Therefore, this study aimed to determine whether number chart media could improve the ability to recognize numbers 1–10 in second-grade deaf students at SLB Negeri Mesuji.

In this study, number chart media were used to improve students' ability to recognize numbers 1–10. The number chart media is a learning tool made of square plywood measuring 30 cm × 40 cm, featuring pictures of fruits numbered 1–10. The pictures are attached using adhesive so that they can be rearranged, and the media also includes movable number symbols that can be matched with the corresponding pictures, as illustrated in Figure 1.

Figure 1. Number Map Media

The steps for using the number chart media are as follows:

1. The teacher attaches the picture cards to the number chart media.
2. Students are asked to count the number of pictures displayed.
3. Students match or move the number symbols corresponding to the number of pictures counted.
4. After all numbers are matched correctly, students are asked to point to the number indicated by the teacher.
5. Students then show the number requested by the teacher.

Regarding the limitations of the number chart media, it can only be used individually and cannot be used collaboratively with peers, and the adhesive used is not very strong. However, the number chart media also has several advantages, including introducing various types of fruits, recognizing simple plane shapes, introducing different colors, and helping students recognize natural numbers from 1 to 10.

METHOD

The research employed a Single Subject Research (SSR) method using an A–B–A design. The A–B–A design is a development of the A–B design and is used to demonstrate a causal relationship between the independent and dependent variables. Data were analyzed using both within-condition and between-condition analyses.

RESULT AND DISCUSSION

Number recognition is a fundamental concept in mathematics. Number chart media are very helpful in supporting number recognition because they increase students' interest in learning, which in turn improves their number recognition skills. According to Moedjino (as cited in Daryanto, 2013), the advantage of using learning media is that they provide direct learning experiences, enabling students to receive and understand lessons more effectively.

In this study, number chart media served as a stimulus to address the difficulties experienced by deaf children in recognizing numbers 1–10, thereby influencing their number recognition ability. The results showed that in the Baseline-1 (A1) condition, which was conducted over four sessions, students achieved scores of approximately 20%. During the Intervention (B) phase, in which number chart media were used, seven observation sessions were conducted, with scores increasing from 50% to 80%. According to Charitas (2021), if a visible change in target behavior occurs during the intervention phase, the behavior may be maintained when the condition returns to Baseline-2 (A2). In the Baseline-2 (A2) phase, conducted over six sessions without the use of number chart media, scores ranged from 87.5% to 100%.

Based on these findings, the use of number chart media in teaching numbers 1–10 was effective in improving number recognition skills in deaf children. This conclusion was supported by visual graph analysis of the collected data. Therefore, it can be concluded that number chart media are effective in improving the ability to recognize numbers 1–10 in second-grade deaf students at SLB Negeri Mesuji.

CONCLUSION

Based on the description above, it can be concluded that number chart media is effective in improving the ability to recognize numbers 1–10 in second-grade deaf students at Mesuji State Special Needs School. This effectiveness is evidenced by an increase in students' scores over approximately one month, as observed across the Baseline-1 (A1), Intervention (B), and Baseline-2 (A2) phases. During the Baseline-1 phase (July 12–15, 2021), students consistently scored 20%,

indicating low initial ability. After the implementation of number chart media in the Intervention phase (July 16–27, 2021), scores gradually increased to between 50% and 80%. In the Baseline-2 phase (August 2–9, 2021), conducted without the media, students achieved higher and stable scores ranging from 87.5% to 100%, demonstrating sustained improvement in number recognition ability.

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