

# Improving Number Symbol Recognition Through Concrete Objects in Hearing-Impaired Elementary Students at State Special Schools A, B, and D, Kedungkandang

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## Abstract

This study aims to determine the improvement of the ability to recognize number symbols through concrete objects media in Deaf elementary school students at SLB A,B,D Negeri Kedungkandang. The research method used is class action research with the use of concrete media. Based on the results of the study, it is stated that concrete media using decorative stones can be used to improve the ability to recognize number symbols in deaf children in SLB A,B,D Negeri Kedungkandang. This is evidenced by an increase in the learning outcomes test of the ability to recognize number symbols.

## 1. Introduction

Every child born into this world has the right to receive a proper education and teaching, regardless of any limitations they may have. This is established in Law Number 20 of 2003 concerning the National Education System, Article 5, Paragraphs (1) and (2), which states, "Every citizen has the same right to obtain quality education." Thus, every child, including those with limitations or disabilities, such as children with special needs, has the same right to receive equitable education (Hakim, 2016).

Children with special needs are those who experience developmental delays or disturbances, making them different from their normally developing peers (Husna et al., 2019). Simply put, children with special needs can be defined as those requiring special services to understand activities and phrases containing figurative meanings, as well as struggling to master rhythm and language style (Purbaningrum & Rofiah, 2018).

The characteristics of deafness can negatively impact academic development, one of which is low learning achievement, primarily due to difficulties in language comprehension. This also affects their learning styles. According to Haenudin (2013:66), the low academic performance of deaf children does not stem from low intellectual ability but from their intelligence not having the opportunity to develop optimally. Therefore, deaf children require special educational services tailored to their needs.

Deaf children tend to rely on their visual and tactile senses, making their learning styles somewhat different from those of normal children. Learning style is a combination of various elements and experiences that shape individual characteristics, influencing concentration in a unique manner (Shinnick & Woo, 2015; Simelane-Mnisi & Mji, 2015). In other words, a learning style is a comfortable and easy way for someone to acquire and digest information.

Factors that can influence the formation of learning styles include the environment, emotional conditions, sociological conditions, physiological characteristics, and tendencies in psychological processing (Dunn and Burke, 2006). Menurut Fadillah et.al. (2014:137) terdapat tiga tipe gaya belajar, meliputi: (a) Gaya belajar visual, yaitu penggunaan beragam bentuk grafis sebagai media. The delivery of knowledge information can occur through various learning styles: (a) Visual

learning style, which relies on what students see; (b) Auditory learning style, which depends on students' hearing to understand and remember information; (c) Kinesthetic learning style, which involves learning through movement and touch using various models or teaching aids.

Based on observations conducted with a teacher at SLB A, B, D Negeri Kedungkandang in Malang City, a problem was identified: sixth-grade deaf students have not yet been able to recognize number symbols. This was evidenced by the difficulties these children faced during exams, where they struggled to answer math questions even with assistance from the teacher. Additionally, during learning activities, the children appeared less focused and tended to misunderstand the teacher's explanations. Consequently, there was no reciprocal interaction between the teacher and the students during the learning process.

In response to this issue, the researcher has developed a research article aimed at enhancing the ability to recognize numbers among deaf children at SLB A, B, D Negeri Kedungkandang through the use of concrete media with an individual learning approach. Learning through concrete materials can serve as a method for deaf children to improve their number recognition skills while emphasizing their preferred learning styles.

## **2. Method**

Based on the research focus, this study is classified as classroom action research. Classroom action research is an activity conducted within the classroom. It can be understood as a process of examining classroom learning issues through self-reflection to solve problems by analyzing the effects of the given treatments (Prihantoro & Hidayat, 2019). According to Fitri Yulianti et al. (2012:21), the goal of classroom action research is to address real problems occurring in the classroom while seeking scientific answers to why these issues can be resolved through the planned actions.

The benefits of classroom action research include:

- a. Improving student performance in learning and teacher effectiveness in teaching.
- b. Enhancing the quality of the learning process within the classroom.
- c. Improving the quality and utilization of media, teaching aids, and other learning resources.
- d. Enhancing the quality of procedures and evaluations used to measure the learning processes and outcomes of students (Pahleviannur et al., 2022).

The steps for implementing classroom action research are:

- a) Planning
- b) Acting
- c) Observing
- d) Reflecting.

This classroom action research aims to address issues faced by deaf children in recognizing number symbols by introducing these symbols through concrete media. The advantage of using concrete media in learning is that it enhances students' interest in understanding the material and provides real-life experiences for learning. The subject of this research is a single deaf child, referred to as R. The research and data collection took place at Sekolah Luar Biasa A, B, D Negeri Kedungkandang, located at Jl. Haji Ali Nasrudin, Kecamatan Kedungkandang, Kota Malang. The research was conducted from May 27 to June 6, 2024.

## Concrete Media

Concrete media refers to real objects that can be used to convey messages from the sender to the recipient, stimulating the thoughts, feelings, attention, and interest of students, thereby enabling the learning process to occur effectively and efficiently (Nazifah et al., 2013). Additionally, concrete objects can be understood as teaching aids (learning media) that function in the teaching and learning process to provide students with direct experiences through models and real objects that are clear and engaging (Lovita, 2017). According to Anitah (2008:1.32), concrete media are visual aids in the learning process that provide students with direct experiences, such as models and tangible objects like tables, chairs, balls, stones, etc.

Based on the descriptions above, it can be concluded that concrete media are anything used as intermediaries to convey messages (learning materials) that stimulate various activities, such as the interests, thoughts, feelings, and will of students in learning activities to achieve specific educational goals.

### A. Advantages of Concrete Media

Concrete media have several advantages, including:

1. High Objectivity: They provide a tangible and clear reference that enhances understanding.
2. Facilitates Interaction: They engage students through all sensory modalities.
3. High Flexibility: They can be used for various subjects and learning activities.
4. Manipulability: They can be adjusted according to the needs, conditions, and situations of the learning environment.

### B. Weaknesses of Concrete Media

Despite their advantages, concrete media also have several weaknesses, including:

1. Complex Preparation: Concrete media require a complicated process and thorough preparation.
2. Difficulty in Manipulation: Certain ideas, objects, or concepts can be challenging to manipulate effectively.
3. Distraction Potential: Concrete media can sometimes capture students' attention so much that it detracts from the intended learning objectives.
4. Increased Noise Levels: This can lead to a higher likelihood of chaos and noise among students.

### Benefits of Concrete Media

According to Sudjana and Rivai, as cited by Sundayana (2013:10), the benefits of concrete media in learning activities include providing real experiences that foster self-directed learning among students, offering them experiences with real objects, and supporting the development of their learning abilities (Yuliana & Budianti, 2015).

Additionally, Mulyana Sumantri (2004:178) states that, in general, concrete media function as:

- a) Aids in creating effective teaching and learning conditions.

- b) An integral part of the overall teaching concept.
- c) Foundations for concrete understanding and abstract concepts, thereby reducing verbal comprehension issues.
- d) Enhancing the quality of learning (Aini & Asran, 2015).

### **3. Results and Discussion**

The researcher conducted an initial observation to assess R's starting ability to recognize numbers before implementing the classroom action research. Based on the data obtained during the observation, R's ability to recognize number symbols had not yet met the success indicators. Therefore, a suitable effort to improve R's ability to recognize number symbols involved using concrete media. In this research, the concrete media consisted of a learning method using decorative stones. The activities were divided into two parts: arranging number symbols/matching the same number symbols correctly and matching the quantity of decorative stones with the appropriate number symbols.

#### Implementation of Action I

Action I was conducted over three meetings, consisting of two sessions for the action and one session for the post-action test. Action I took place from May 27 to May 29, 2024, with a time allocation of 30 minutes.

- First Meeting: The children were introduced to the sequence of number symbols from 1 to 10. They were then asked to arrange the number symbols by picking decorative stones. For example, "R takes 1 stone" (the researcher assisted by showing one finger and pointing to the number symbol 1 on the number card) until they formed the sequence of numbers from 1 to 10.

- Second Meeting: The children were guided to arrange the numbers pointed out by the researcher in random order. For instance, the researcher pointed to the number symbols 3, 5, and 7 on the number cards, and the children were asked to pick decorative stones corresponding to the number symbols indicated.

- Final Meeting: The children were asked to match the same number symbols, arrange the number symbols, and match the quantity of decorative stones with the number symbols. The teacher provided rewards to the children after they correctly completed these activities.

In the observation of Action I, at the initial activity, R was able to perform the apercception given by the researcher, which involved arranging number symbols and actively participating in the learning activities. The test after Action I was conducted after completing the activities. The test questions were based on the material covered during the action, specifically matching the number symbols from 1 to 10.

Based on the reflection on Action I, it was noted from the learning test results that there was an improvement in the ability to recognize number symbols after the children were provided with actions involving the application of concrete media. However, during the implementation of Action I, there were still some challenges. For instance, during the second meeting, R was guided to create a sequence of random number symbols using the number cards. An example of the number symbols used was 3, 7, and 5. "Look at the number 3!" (while showing the number symbol 3), "This is the number 7" (while showing the number symbol 7).

#### Action II

Action II was conducted over three meetings, consisting of two sessions for the action and one session for the post-action test. Action II took place from June 3 to June 5, 2024, with a time allocation of 30 minutes.

- First Meeting: R was guided to arrange the number symbols as demonstrated by the researcher, which involved picking decorative stones and creating a sequence of numbers, such as arranging the number symbols from the random numbers 1, 3, and 5.

- Second Meeting: R was guided to create a sequence of random number symbols using number cards. For example, the number symbols used were 3, 7, and 5. "Look at the number 3!" (while showing the number symbol 3), "This is the number 7" (while showing the number symbol 7), and so on. R was then asked to arrange the number symbols from the smallest to the largest.

- Final Meeting: R was asked to independently arrange the number symbols using decorative stones without assistance. The researcher provided rewards in the form of high-fives.

#### Observation of Action II

R's ability to recognize number symbols has shown improvement. This was evident when the child worked on several exercises involving creating sequences of number symbols from 1 to 10, demonstrating better performance compared to Action I. As for the material, matching number symbols with the quantity of objects, the child tended to show no difficulties. R was able to perform the perception provided by the teacher, which involved repeating the material on arranging number symbols. This indicates a solid understanding and improvement in R's ability to recognize and work with number symbols.

### 3.1. Conclusion

Based on the research results, it can be concluded that concrete media using decorative stones can be used to enhance the ability to recognize number symbols in deaf children at SLB A, B, D Negeri Kedungkandang. This is evidenced by an improvement in the test results regarding the ability to recognize number symbols. The children have recognized the number symbols, as demonstrated by their ability to arrange the number symbols from 1 to 10 and match the quantity of decorative stones with the number symbols from 1 to 10 without assistance from the researcher.

During the initial implementation, the children were able to engage in activities such as matching the same number symbols, arranging number symbols, and matching the quantity of decorative stones with the number symbols. Additionally, the children were able to perform tasks according to the examples provided by the researcher, creating a sequence of number symbols from 1 to 10 using decorative stones. At the end of the activity, the children received rewards in the form of compliments like "good/smart" and were invited to high-five by the teacher when they successfully completed the tasks correctly.

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