

## The Effect of Using the Media Matching Box in Improving the Ability of Number Recognition in Students with Intellectual Disabilities

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**Abstract:** This research was motivated by the problems that the researchers found in SKh Idaman Hati Tangerang City, namely in children with intellectual disabilities in class V in learning the introduction of numbers 1-5. This study aims to determine whether the use of matching box learning media has a significant effect in increasing the ability to recognize numbers at the stage of mentioning numbers 1-5 in children with intellectual disabilities. The type of research used is experimental research with Single-Subject Research. Data collection techniques were used, namely observation, documentation, and instruments. Subjects involved in this study amounted to 1 child. The results showed that the ability to mention numbers 1-5 children with intellectual disabilities got an average percentage or mean level from the baseline-1 phase (A1), intervention (B), and baseline-2 phase (A2), namely 47%, 97.75% , and 87%. The data shows that children with intellectual disabilities experienced an increase in the percentage after receiving intervention through media matching boxes, so it can be concluded that the use of media matching boxes affects increasing the ability to recognize numbers 1-5 in children with intellectual disabilities.

**Keywords:** Children with intellectual disabilities; Learning media; Matching box.

### INTRODUCTION

Education is the right of all citizens regardless of origin, socioeconomic status, or physical condition of a person, including children with disabilities. Thus, it takes institutions that can realize the goals of national education as stated in the National Education System Law no. 20 of 2003. The purpose of national education is to develop the potential of students to become human beings who believe and fear God Almighty, have a noble character, are healthy, knowledgeable, sufficient, creative, independent, and become democratic and responsible citizens.

It is known that children with special needs have special needs according to their categories that must be met, either at home or even at school, especially for children with intellectual disabilities. The American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DM-IV-TR) defines mental retardation as a dysfunction or disorder that occurs in the central nervous system that results in a person's intellectual intelligence (Intellectual Question) being measured below 70 so that it has an impact on the ability to meet basic needs such as communication, socialization, education/learning, health, and work (Association, 2010; Widiger, Frances, Pincus, & Ross, 1997).

The cognitive ability of children with intellectual disabilities can be interpreted that mentally retarded children experiencing intellectual function deficits such as reasoning, problem-solving, planning, abstract

thinking, assessment, academic ability, and learning experience (Speaks, 2014).

Children with intellectual disabilities often have difficulty absorbing information, even simple information that is easy for normal people. In children with intellectual disabilities, the obstacles experienced are not only in terms of academics but also in managing emotions. Reiss, et.al said that children with intellectual disabilities often experience emotional disturbances and problems with emotional development due to their low abilities (Suharmini, 2009).

Strategies that can be used for learning for children with intellectual disabilities are strategies given to improve academic abilities. The learning approach for children with intellectual disabilities also requires various considerations based on the characteristics of the child. The approach that tends to be used in learning for children with intellectual disabilities is the academic approach. This is because the development of behavior in children with intellectual disabilities has experienced many obstacles so that the academic development that is developed must be measurable and observable.

The term medium as an intermediary that delivers information between the source and the receiver. So television, film, photographs, radio, audio recordings, projected images, printed materials, and the like are communication media (Molenda & James, 1982). If the media carries information that has instructional purposes or contains teaching purposes, then the media is called teaching media.

Based on observations, the researchers found the condition of students in class V Elementary School at SKh Idaman Hati, Tangerang City, where these students had intellectual disabilities, there were problems in the field for these students who had not been able to recognize numbers, namely mentioning numbers. Based on this, researchers are interested in providing learning that can help children with intellectual disabilities recognize numbers, namely in mentioning numbers 1-5. Seeing the urgency in this case, where the student has entered the V SDKh grade level, he should have understood the basic numbers because for the long term, such as knowing currency, counting, and so on.

Therefore, the researcher will provide learning related to recognizing numbers 1-5 first, so that students can mention numbers 1-5 using the media matching box. This media matching box is a box-shaped learning media where there are 5 empty spaces as containers, there is a rectangular-shaped media for example which contains numbers 1-5 and there is a square-shaped as an adjustment for numbers 1-5 which will be inserted into the box according to For example, on a rectangular media. In the application of this media matching box, students only need to be able to match the same numbers according to rectangular media as an example and be able to mention numbers 1-5. With the use of this media, it is hoped that it can assist students in mentioning numbers at the number recognition stage 1-5. Not only that, the use of media matching boxes can help children understand the differences in each form of numbers 1-5. Thus, based on the background above, the author will discuss matters relating to “The Effect of Using Matching Box Media in Improving Number Recognition Ability in Students with Intellectual Barriers Class V at SKh Idaman Hati, Tangerang City”.

## METHOD

The research method used is an experimental method with a quantitative approach. The experiment is an experimental activity to examine an event or symptom that appears under certain conditions. Experiment is a way to find a causal relationship (causal relationship) between two factors that are intentionally caused by researchers by eliminating or reducing or setting aside other factors that can interfere. Experiments are always carried out to see the effects of treatment (Arikunto, 2002).

To support efforts to increase the ability to recognize numbers in this study an experimental design with single-subject research, better known as Single Subject Research (SSR) was used. Research with a single subject is an experimental study carried out to determine how much influence the treatment or treatment given to the subject repeatedly within a certain time (Sunanto, Takeuchi, & Nakata, 2006).

In this study, researchers will observe the effect of media matching boxes in the introduction of numbers 1-5 in children with intellectual disabilities in class V SDKh at SKh Idaman Hati, Tangerang City, in conditions before being given treatment (baseline-1), during treatment (intervention), and the impact of the treatment (baseline-2).

### *Research Design*

*The design used in this study is a design where (reversal) in the form of an A-B-A design, there are three stages carried out to determine whether or not there is an effect of the treatment that has been given to a subject, by comparing the measurement results from before and before the treatment was given.*

### *Research Subject*

Class V at Idaman Hati SKh Tangerang City consists of 1 student with the initials AF who has a very low ability to recognize numbers.

### *Data Collection Technique*

*a) Observation, Observation used in this study is observation in the form of participatory observation. Where in this form of observation the researcher will be directly involved with the daily life of the informants because this form of observation is used to collect data to collect research data through observation and sense so that researchers are required to be able to interact directly with the informants.*

*b) Test, Data collection techniques using test techniques to determine the subject's initial ability in recognizing numbers 1-5.*

*c) Documentation, Documentation is used to strengthen the data that has been obtained in observations and tests. In this study, researchers used personal documents, and photos during observations and tests, this documentation can provide a concrete picture of the ability to recognize the numbers of students with intellectual disabilities at SKh Idaman Hati, Tangerang City.*

### *Research Data Analysis Techniques*

The final stage before concluding is data analysis. Data analysis is an activity after data from all respondents or other data sources are collected (Sugiyono, 2015). The purpose of data analysis is to determine the extent of the intervention on the behavior you want to change or the target behavior.

## RESULTS AND DISCUSSION

### Results

#### 1. Baseline-1 Phase (A<sub>1</sub>)

Baseline-1 condition data is data on the initial ability of the research subject, namely the ability to mention in recognize numbers 1-5 before being given influence or intervention. This data can be obtained

from the results of an oral test mentioning the numbers 1-5. The results of the calculation of the percentage and the ability score to recognize the number of research subjects at baseline-1 ( $A_1$ ) consisting of 4 sessions are outlined in the figure 1.

2. Intervention Phase (B)

In this phase, the researcher intervenes (B) to improve the ability to mention the numbers 1-5 research subjects using the media matching box. The results of the calculation of the percentage and the ability score mention recognizing the numbers 1-5 research subjects in the intervention phase (B) which consists of 8 sessions. The following is the data for the intervention phase (B) shown in the Figure 3.

1. Baseline-2 ( $A_2$ ) phase

The results of data measurement at baseline-2 ( $A_2$ ) were able to identify the number of research subjects after being given intervention treatment using a media matching box. In the baseline-2 phase ( $A_2$ ) the researcher asked the research subjects for numbers 1-5. The following is the data in the baseline-2 ( $A_2$ ) phase shown in Figure 5.

If the data obtained at baseline-1 ( $A_1$ ), intervention (B), and baseline-2 ( $A_2$ ) are combined and displayed in graphic form, tfigure 7.

Figure 1. Oral test in Baseline-1 Phase



Figure 2. Ability to Mention Numbers 1-5 on Baseline-1 ( $A_1$ )

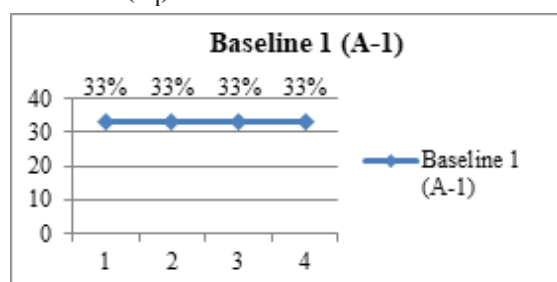


Figure 3. Oral test in the Intervention Phase using media



Figure 4. Ability to Mention Numbers 1-5 in the Intervention Phase (B)

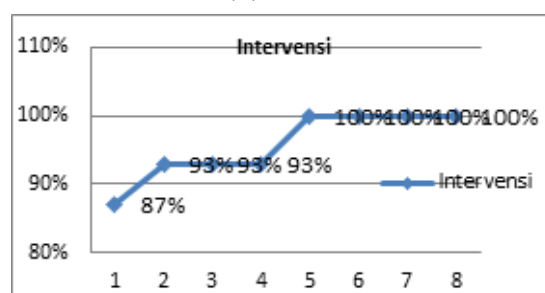


Figure 5. Oral test in Baseline-2 Phase

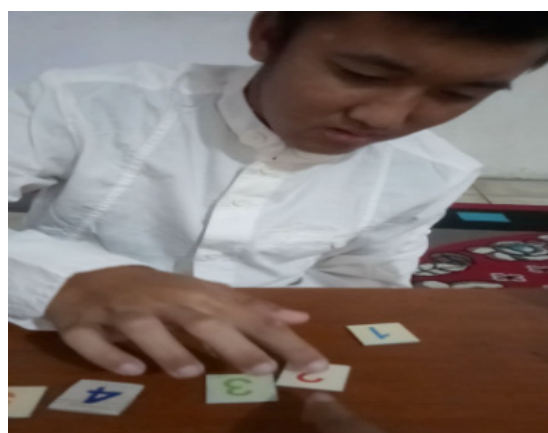
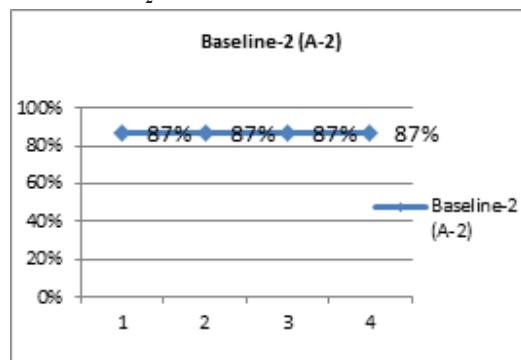
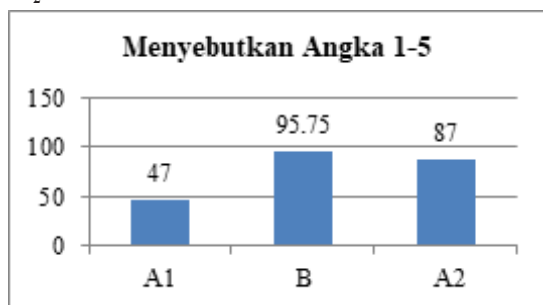


Figure 6. Ability to Mention Numbers 1-5 on Baseline-2 ( $A_2$ )



**Figure 7. Ability to Mention Numbers 1-5 on Baseline-1 ( $A_1$ ), Intervention (B), and Baseline-2 ( $A_2$ )**



## Discussion

Based on the results of the study, it can be seen that the use of media matching boxes can improve the ability to mention numbers 1-5 in children with intellectual disabilities in class V SDKh. The problem in this study is that the researchers found children with intellectual disabilities in the fifth grade of the SDKh who had not been able to name numbers 1-5.

In this study using data collection methods that aim to be supporting material in completing research related to understanding number recognition is a general thing that needs to be improved, which examined that understanding the concept of number 1. In addition to using the media, researchers use data collection methods, namely through observation, tests, and documentation (Irawan & Febriyanti, 2018; Lostari, Wahyuno, & Irianto, 2014).

Seeing the urgency in this case, where the student has entered the V SDKh grade level, he should have understood the basic numbers because for the long term, such as knowing currency, counting, and so on. Thus, researchers provide learning related to recognizing numbers 1-5 first, so that students can mention numbers 1-5 using the media matching box.

Based on the results of the research that has been done, the ability to mention numbers 1-5 on average or the mean level of research subjects in the baseline-1 ( $A_1$ ) phase is 33% because this phase is a natural condition without any intervention using a media matching box. In the intervention phase (B), the average percentage or mean level is 95.75% because in this phase the subject has been given treatment or intervention. While in the baseline-2 ( $A_2$ ) phase, the average percentage or mean level obtained was 87% because this phase was the natural condition of the research subject after being given treatment or intervention. Based on these data, it can be concluded that by learning using the matching box media the ability to recognize numbers in mentioning numbers 1-5 research subjects, namely children with research barriers in class V increases.

The use of numbers learning media for children with intellectual disabilities can affect increasing the

ability to recognize numbers 1-5. The research was conducted on 1 class II SDLB SLB Bandung Raya student showing significant results I. The number symbols using media can improve students' ability to recognize numbers 1-5. The research was conducted on 6 mentally retarded students in Class IV C SLBN Nambah Rejo and showed significant results (Lestari, 2009). In addition to the advantages, of learning using the matching box learning media, there are also weaknesses. These weaknesses include the shape, namely the thin lid of the media, if the child presses too hard, the media coverage will be broken (Putra, 2012).

## CONCLUSION

From the results obtained in this study, the use of matching box learning media can improve the ability to recognize numbers in mentioning numbers 1-5 in children with intellectual disabilities in class V at SKh Idaman Hati, Tangerang City. This is indicated by an increase in the average percentage or mean level from the baseline-1 ( $A_1$ ), intervention (B), and baseline-2 ( $A_2$ ) phases, namely 33%, 95.75%, and 87%. In addition, changes in data in the baseline-1 ( $A_1$ ), intervention (B), and baseline-2 ( $A_2$ ) phases have stable data.

In addition, the change in data level in the analysis between conditions in the intervention phase to the baseline-1 ( $A_1$ ) phase increased by 54 points due to the treatment. While in the baseline-2 phase ( $A_2$ ) to intervention (B) there was an increase of (-13) points. Although in the baseline-2 ( $A_2$ ) phase the data obtained were lower than in the intervention phase, the data obtained were higher than the data in the baseline-1 ( $A_1$ ) phase.

In addition, data overlap in the intervention phase (B) to baseline-1 ( $A_1$ ) and the baseline-2 ( $A_2$ ) to intervention (B) phase has an overlap percentage of 0%. Thus the results of this study can answer the hypothesis that by using the matching box learning media the ability to recognize numbers in mentioning numbers 1-5 in children with intellectual disabilities in class V can increase.

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