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# The Use of Summation Home Media to Improve The Ability of Integer Counting Operations for Children with Mild Mental Impairment Class IV at Slbn Trituna Subang

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## Abstract

This study aims to assist students with mild mental impairments in improving their ability to count integers through the home medium of summation. In addition, this research was conducted to help teachers to facilitate the process of learning mathematics in summation through the medium of summation houses. The research method used in this study is a quantitative approach, where this approach is used to research or find out the improvement of the ability to calculate the summation of integers in students with mild mental impairment grade IV SDLB at SLBN Trituna Subang through the media of summation houses. The results of the study on the ability to count integers through the home media summation on the test results of the initial score of obtaining student scores of 50 and 40, after being given intervention through the use of home media summation there was an increase in the scores obtained, namely 90 and 70. Based on the results of research and discussions that have been carried out, it can be concluded that the use of summation home media can improve the ability to count integers in grade IV mentally impaired students. And the hypothesis results obtained to state that $H_0$ is rejected and $H_1$ is accepted, namely an increase in the ability to count integers after being given intervention through the home medium of summation. In connection with the results of the research above, the following suggestions are recommended: It is hoped that teachers will apply to learn with collaborative use of media to be able to stimulate students with mild mental impairments to be more active in following the mathematics learning process, especially in the aspect of integer counting operations in terms of addition. For subsequent researchers, it is hoped that they can develop this research problem in more depth so that it can contribute more useful knowledge to students with special needs.

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# Introduction

Students with mental impairment are conditions characterized by the presence of intellectual abilities that are far below average and have obstacles in social adjustment. Astati (2015:8) states that "children with mental disabilities are those whose intelligence is clearly below average". However, although other abilities can be developed by students with mental disabilities, the existence of an initial identification process can know the extent of other abilities or talents of interest possessed by students with mental disabilities. Rochyadi and Alimin . (2005:11) mention that "mental impairment is closely related to the problem of developing low intelligence abilities and is a condition". This is supported by the statement according to Kirk, (Efendi 2006:88) namely "Mental Retarded is not a disease but a condition".

As for students with mental disabilities, they have characteristics generally stated by Page (Astati 2015: 15) in terms of intelligence, social, other mental functions, impulses and emotions, personality, and organism.

Based on these characteristics, students with mental disabilities need guidance and assistance in developing their abilities, be it through guidance from parents, teachers through learning media, or the surrounding environment.

This research was previously carried out by Kusmana (2021: 69) in a journal entitled "The Use of Summation Box Media in Improving the Numeracy Ability of Students with Disabilities". In this study, the researcher continued the previous research, namely in terms of the ability to count, but this study is more specific in terms of the ability to count integers through the medium of summation house.

Based on the explanation above, it can be emphasized that a mildly disabled student is someone who has below-average intellectual abilities but can still develop their academic potential through special education.

Every child deserves a proper education. This is affirmed in Article 31 Paragraph 1 of the 1945 Constitution which reads, "Every citizen has the right to education."

Students with mental disabilities generally have difficulty in counting. Some of the difficulties experienced in terms of conceptual ability are the ability to the conception of the value of the place. These difficulties in the form of numeracy skills have an impact on learning mathematics such as addition, subtraction, multiplication, and division calculation operations.

Summation is one of the aspects of counting in mathematics. The summation aspect is differentiated into the summation of saves. At the time of learning Mathematics, students are already able to get to know the concept of summation, however, new students can add up with the help of fingers. The source of problems for students with mental disabilities is when students encounter math problems whose summation exceeds the number of fingers in the student's hand, such as 7+5, 8+11, and so on.

In this study, we will discuss the aspect of calculating summation. The summation aspect was chosen to be the focus of the study because students still have difficulty summing

up the numbers, so the summation aspect is considered suitable for this research. The students who were subjects of this study were students with mild mental impairment in class IV SDLB C SLB Negeri Trituna Subang.

Students who have difficulty in thinking are caused by constraints on their functional development, then the specific principles needed include repetition, giving examples and directions, perseverance, compassion, breaking the material into small parts, or task analysis. Students with mental disabilities generally have difficulty in counting. Some of the difficulties experienced in terms of conceptual ability are the ability to the conception of the value of the place. To solve this problem, researchers tried to apply the use of home media summation. Efforts to solve problems experienced by students who have difficulty in summation by applying the use of summation home media are one of the efforts made by researchers to help students in dealing with the problems they are facing.

# Literature Review

***Use***

In the Big Indonesian Dictionary, usage has the meaning of process, how things are used, or used. Use is an activity in using or wearing something such as means or goods. According to Salim (1991) in Ayu Ofni the meaning of the word used is the process of using something.

***Summation House***

The summation house is a medium created to help students solve the problem of summing numbers in mathematics lessons.

***Integers***

A number is a mathematical concept that gives a sum value to something that is calculated. This is what makes numbers used in measurement and enumeration. Well, a number has a symbol or symbol. This symbol, we refer to as a number.

According to Ramaini (2012:4) in the Journal of The Charm of Early Childhood said that "the concept of numbers is the set of objects or numbers that can provide an understanding. The concept of numbers is associated with the work of connecting both objects and symbol numbers".

***Lightly Impaired Students***

AAMD (Association of American Mental Deficiency) and PP No.72 of 1991 state that mildly impaired students belong to the group of students with inhibited intelligence and adaptability, but can develop in the academic subject areas of social adjustment and workability.

Lightly impaired students have intelligence/IQ numbers ranging from 50/55-70/75, their physical development is normal but their mental development is impaired.

***Integer Count Operation***

An integer is an extension of a small number. The set of integers consists of the set of natural numbers, i.e. {1,2,3,4...} which is hereinafter referred to as positive integers, zero numbers, and the opposite set of natural numbers, i.e. {-1,-2,-3,-4,...} which is hereinafter referred to as the set of negative integers.

***Students With Mental Disabilities***

Students with mental disabilities are referred to by various labels. The terms "weak brain", "bad memory", "weak mind", "mental retardation", and "many defects" are often used in Indonesian. In literature, foreign languages are called mental retardation, mental deficiencies, and mental disabilities. According to Grossman in Halidu (2022:31) students who have a significantly below average (normal) intellectual intelligence (IQ) accompanied by an inability to adjust to the environment and all this takes place in the period of development. Mental retardation is a state of slow or incomplete mental development defined by a deficit of developmental skills that interfere with all levels of intelligence, including cognitive, verbal, motor, and social capacities.

## Research Methods

The research approach used in this study is a quantitative approach, where this approach is used to research or find out the improvement of the ability to calculate the addition of integers in students with mild mental impairment grade IV SDLB at SLBN Trituna Subang through the media of summation houses.

This research is a descriptive study, which is to improve the ability to count through the home medium of summation to improve the ability to count integers to obtain an understanding of summation through the media.

The operational definition in this study is: What is meant by the ability of integer counting operations is the result obtained from the measurement of the sum of integers whose results are not greater than 10 and not more than 20.

The research design in this study was carried out by providing a pretest to measure student learning outcomes before using summation home media. Furthermore, it provides treatment through learning integer counting operations by applying the home medium of addition. After that, carry out a posttest to measure the improvement of the student's integer count operation after being given treatment. The results of the pretest and posttest implementation were used to determine whether there was an increase in the ability of integer counting operations in lightly impaired students of grade IV SDLB at SLBN Trituna Subang.

The subjects of this study were lightly impaired students in grade IV SDLB at SLBN Trituna Subang, which numbered 2 people.

The data collection technique in this study was carried out by test, this technique was used to obtain data on the ability of integer count operations in students with mild mental impairment before and after using the summation house medium.

The test is used to obtain the data or information needed in this study used to test techniques. The question test is a written test, it is intended to collect data on improvements in integer counting operations in mildly impaired students both before and after using the home medium of summation.

Integer counting operation with summation technique in grade IV SDLB students at SLBN Trituna Subang. The material for this planned research test is a summation calculation operation through the medium of summation house. The test form used is a form of test constructed by the researcher himself and the number of planned questions is 10 questions. The criteria for assigning grades are used 0 and 1. Grade (0) if the student is unable to do the

question. Grade (1) if the student can do the problem correctly. So the maximum total score is 10. While the minimum score a student can achieve is 0. In this study, researchers categorized values, including 1) Very Capable, 2) Capable, 3) Sufficient, 4) Poor, and 5) Incapable.

Thus, in this study can be obtained the following assessment categories:

**Table 1.1***: Categorization of Test Result Scores*

| Value Interval | Category |
|---|---|
| 80-100 | Very Capable |
| 66-79 | Able |
| 56-65 | Quite Capable |
| 41-55 | Underprivileged |
| ≤ 41 | Incapable |

(Arikunto, 2004:19)

To conclude the connection with this study, quantitative descriptive analysis is used for data analysis. This technique is used as a description of improving the ability of students with mild mental impairment both before and after being used as a home media of addition in learning integer counting operations in learning addition mathematics. The analysis procedure is as follows:

1. Tabulating test results in data before and after treatment.
2. Categorization of the initial and final test score, I then convert these values by the

$$\text{Value} = \frac{\text{score obtained}}{\text{maximum score}} \text{x } 100$$

**Source:** *Sudjana, 2006:118*

3. Comparing the learning outcomes before and after treatment, if the score of the test result after treatment is greater than the score before treatment then it is stated that there is an increase and if it is the other way around then there is no improvement.
4. To clarify the improvement, it will be evaluated in a bar chart.

A hypothesis is a temporary answer to a problem at hand and needs to be tested for correctness with more complete and supporting data. This study, was conducted to determine the ability to count integers using summation home media. The following is the formulation of the hypothesis of this study:

**$H_0$:** there was no significant improvement in the ability to count integers through the medium of summation houses in grade IV students of SDLB at SLBN Trituna Subang.
**H1:** There was a significant improvement in the ability to count integers through the medium of summation houses in grade IV students of SDLB at SLBN Trituna Subang.

## Results and Discussion

This study aims to see the extent of improving the ability of integer counting operations in students with mild mental impairment in grade IV SDLB at SLBN Trituna Subang.

This research has been carried out on grade IV SDLB students at SLBN Trituna Subang which totaled 2 people. This research was conducted on November 9, 2022.

Measurements of the improvement of the ability in the integer counting operation in summing through the summation house medium were carried out twice, namely the test before the use of the summation house media in learning the integer counting operation to obtain an idea of the initial ability level of mildly impaired students. While the second measurement is carried out after students are given learning using the home media in addition to learning integer counting operations.

**Table 2.1**: *Initial Test Scores*

| No | Code Student | Initial Test Scores |
|---|---|---|
| 1. | RA | 5 |
| 2. | IN | 4 |

Based on the table above, shows the initial test score of integer counting operation ability in grade IV SDLB lightly impaired students at SLBN Trituna Subang. Furthermore, the score obtained is converted to a standard value of 100 using a predetermined formula, if connected, the result can be seen in the calculation as follows:

$$\text{of Value of RA} = \frac{\text{score obtained}}{\text{maximum score}} \text{x100}$$
$$= \frac{5}{10} \text{x100}$$
$$= \frac{500}{10} = 50$$
$$\text{of Value of IN} = \frac{\text{score obtained}}{\text{maximum score}} \text{x100}$$
$$= \frac{4}{10} \text{x100}$$
$$= \frac{400}{10} = 40$$

Based on the scores obtained by children with mild mental impairment in the initial test, the scores of the two lightly impaired students are set out in the following table:

**Table 2.2:** *Test Result Score*

| No | Code Student | Score | Grade | Categories |
|---|---|---|---|---|
| 1. | RA | 5 | 50 | Less Can |
| 2. | IN | 4 | 40 | No Can |

Based on the results of the analysis in the table above, scores were obtained on the two lightly impaired students of grade IV SDLB at SLBN Trituna Subang before the use of summation house media, namely RA obtained a score of 50, while IN obtained a score of 40. Based on the observation of the value of the ability to calculate integers in terms of summation, obtained by the two students, all students are in the category of Underprivileged and Incapacitated. To find out the ability of lightly impaired students in grade IV SDLB at SLBN Trituna Subang after using the summation house media can be known through the final test. The data on lightly impaired students in grade IV SDLB at SLBN Trituna Subang after using the summation house media is further stated in the following table:

**Table 2.3:** *Final Test Scores*

| No | Code Student | Final Test Scores |
|---|---|---|
| 1. | RA | 9 |
| 2. | IN | 7 |

Based on the table above, shows the final test score of integer counting ability against the two students with mild mental impairment in grade IV SDLB at SLBN Trituna Subang after using the summation house media, namely RA students get a score of 90, while IN students get a score of 70. Based on the observation of the ability scores obtained by the two students, the average scores of the two students are in the Ability category.

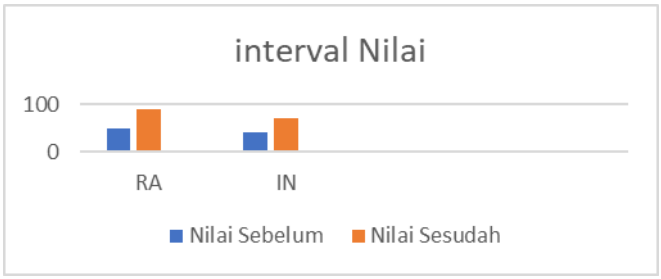
Improving the ability to count integers in students with mild mental impairment grade IV SDLB at SLBN Trituna Subang through the media of the summation house, can be achieved by comparing the value of integer counting ability obtained by students between before and after using the summation house media. The comparison of the values of the ability to calculate integers can be seen in the following table:

**Table 2.4***: Comparison Of Student Ability Score*

| No | 1 | 2 |
|---|---|---|
| Student Code | RA | IN |
| Grade Before | 50 | 40 |
| Category | underprivileged | incapacitated |
| Value After | 90 | 70 |
| Category | Highly | Capable |

Based on the table above, it can be explained that in general and individually the ability to count integers in lightly impaired students has changed towards a more capable and increased ability to count integers in the addition calculation operation in lightly impaired students of grade IV SDLB at SLBN Trituna Subang is obtained. This can be seen in the grades of the two students before the use of home media summation. In the initial test, the score obtained by each student, namely RA, obtained a score of 50 while IN obtained a score of 40. Then on the final test or after using the home media the summation of the scores obtained by each student, namely, RA obtained a score of 90, while IN obtained a score of 70. For more details, it will be visualized in the form of a graph as follows:

**Graph 1.1:** *Student Grades*




Students with special needs, especially students with mild mental impairments have average abilities below other normal students, so they experience limitations in thinking and experience delays in solving a problem if to understand such a complex problem.

The problem related to the ability of integer counting operations, in this case, sums up, in this study is all students who have been in grade IV SDLB who do not know the operation of calculating integers. Before the use of home media summation in learning in lightly impaired students grade IV SDLB at SLBN Trituna Subang.

The use of summation house media greatly affects students' understanding of the learning material being taught. As the results of research and descriptive analysis carried out, it is known that the ability of integer counting operations of grade IV lightly impaired

students before media use were below average. The ability to calculate integers of grade IV lightly impaired students after using the summation house media at SLBN Trituna Subang is included in the category of capable and very capable. This is due to the proper use of learning media. As Hamalik argues in Arsyad (2013:2) about learning media.

1. Media as a communication tool to further streamline the teaching and learning process.
2. The media's function is to achieve education's objectives.
3. The ins and outs of the learning process.
4. The relationship between teaching methods and educational media.
5. The value or benefit of educational media in teaching.
6. Selection and use in teaching.
7. Different types of tools and Techniques of Educational media.
8. Educational Media in every subject.
9. Innovation efforts in educational media.

After conducting learning with material on integer counting operations using summation house media and carrying out the final test on the ability of integer counting operations for students with mild mental impairment in grade IV SDLB after using home media the addition has increased in each student. This can be seen from the ability of integer counting operations after using summation house media in lightly impaired students grade IV SDLB at SLBN Trituna Subang is classified as capable and very capable, this is due to the use of appropriate learning media for each material, in other words in learning the material in lightly impaired students should use the summation house media.

Based on the analysis of the comparison results on the initial test and the final test results descriptively, it is clear that the results obtained in the final test have improved. Therefore, the ability of integer counting operations in lightly impaired students of grade IV SDLB before the use of summation home media is lower when converted to the category of underprivileged and incapable, while the ability of integer counting operations of grade IV SDLB lightly impaired students after the use of summation home media has increased and is included in the categorization of capable and very capable, this indicates that the use of home media summation can improve the ability of integer counting operations in students with mild mental impairment grade IV SDLB at SLBN Trituna Subang.

So the result of the above hypothesis is that H0 is rejected and H1 is accepted, that is, there is an increase in the ability to count integers after being given intervention through the home medium of summation.

## Conclusions, Implications, And Recommendations

### *Conclusions*

Based on the results of research and data analysis, it can be concluded that the ability of integer counting operations in lightly impaired students of grade IV SDLB at SLBN Trituna Subang before using the summation house media is in the category of underprivileged and incapable. The ability to calculate integers of students with mild mental impairment in grade IV SDLB at SLBN Trituna Subang after using the summation house media is in the category of capable and very capable. The improvement of the ability in integer counting operations in grade IV SDLB students at SLBN Trituna Subang through the media of the summation house means that the use of summation house media can improve

the ability in the integer counting operation of lightly impaired students of grade IV SDLB at SLBN Trituna Subang.

***Implications***

This research shows that the ability of integer counting operations through the home medium of summation is very important in learning summation mathematics. Thus, it has implications for the ability and implementation of mathematics learning to add up to students with mild mental impairments through learning media. This research has implications for increasing the ability to calculate integers through the home medium of summation and provides experience in the learning process to students and teachers. This study also has implications for researchers, namely experience and awareness of the use of summation home media in improving the ability of round counting operations in mildly impaired students.

***Recommendations***

Based on the conclusions and some implications of research on improving the ability to count integers through the medium of summation houses in grade IV SDLB students at SLBN Trituna Subang, researchers recommend the following:

1. It is hoped that teachers will apply to learn with collaborative use of media to stimulate students with mild mental impairments to be more active in following the mathematics learning process, especially in the aspect of integer counting operations in terms of addition.
2. The Principal leads and creates a culture of quality, by formulating and setting policies oriented towards the goal of realizing graduates who are smart and skilled in numeracy, especially in learning mathematics through learning media.
3. For subsequent researchers, it is hoped that they can develop this research problem in more depth so that it can contribute more useful knowledge to students with special needs.

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