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The Application of The Word "Lembaga" Method In Improving The Articulation Ability of Hearing Impairment in Second Grade of Elementary Special School Sumbersari

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A B S T R A C T S

The purpose of this study was to determine the effect of the application of the word method for the "LEMBAGA" word on improving the articulation ability to hear impairment students in the second grade of elementary special school. This study uses the Single Subject Research (SSR) method with an A-B-A design on one elementary special school student with a hearing impairment student. The learning method begins with the introduction of a particular word. This word is then broken down into syllables, syllables into letters. Next, letters are the process of arranging letters into syllables and syllables into words. The results showed that there was an increase in the child's articulation ability before and after the intervention was given. The application of the word "Lembaga" method is used by showing children how to write a word and a picture of the word, thus children are more interested in participating in learning.

A R T I C L E I N F O

1. INTRODUCTION

Humans are social creatures who live in groups and need each other. As social beings and live in groups in daily life, of course, it does not escape the name of interaction or communication. (Inah, 2013). Speaking is one aspect of verbal language that involves the sound of language that utilizes speech organs (Qoimudin, 2016; Asmoro, 2016). The sound or sound is influenced by the development of the child's articulation. Articulation development is a person's ability to produce language sounds that are used for verbal expression. So that the sounds of the language produced are different from one another (Bajeri *et al.*, 2021).

Hearing impairment is a condition or condition of a person who experiences a lack or loss of the sense of hearing so that he is unable to capture stimuli in the form of sound, sound, or other stimuli through hearing. A hearing impairment person is also hampered by his speech and language skills, which results in a hearing impairment person experiencing delays and difficulties in matters relating to communication (Glyde *et al.*, 2013).

The results of the assessment showed that the child was clear in pronouncing the vowels and consonants /b/and /p/ but not clear in pronouncing the consonant /m/ it was evident when pronouncing the word "Bapa" the child pronounced the word "Bapa", the word "Ibu" the child pronounced it "Ibu", but when the word that contains the letter /m/ the child is not clear, such as the word "Bambu" the child pronounces it as "babbu", then the word "malu" the child pronounces it as "bauu", then the word "enam" the child pronounce it as "eeaa" (Insani, 2014).

The word "Lembaga" method is called the word-by-word method, by presenting it to children in the form of word material, which aims to make the child able to pronounce the whole sound of language in the form of words so that children will more easily remember the meaning of the word in question. With the characteristics of the word hearing impairment method, it is possible to apply it to Hearing impairment to improve children's articulation skills (Gunawan, 2013; Sharaswati *et al.*, 2014). The general purpose of this study was to determine the effect of the application of the word hearing impairment method on improving the articulation ability of Hearing impairment in the second grade of Elementary Special School Sumbersari.

2. METHODS

The research method used in this research is the experimental method. This method is carried out by experiment, which is a quantitative method, used to determine the effect of the independent variable (treatment) on the dependent variable (outcome) under controlled conditions. The experimental method used in this study is an experimental method with a single research subject or known as Single Subject Research (SSR) (Isnaini, 2017). The single-subject research design pattern used in this study is the A-B-A design which has three stages, namely A-1 (baseline), B (intervention), A-2 (baseline-2). In this study, the purpose of using the A-B-A design pattern is to determine the magnitude of the increase in the word "Lembaga" method on the articulation ability to hear impairment children (NihayatulMuna, 2019).

In this research, two variables were studied, namely the independent variable and the dependent variable.

2.1. Independent Variable

The independent variable in this study is the word hearing impairment method. The word

The hearing impairment method is a method in teaching children's articulation skills that begins with introducing words, breaking words into syllables, syllables into letters, then combining letters into syllables, and syllables into words (Sugiyono, 2018).

The steps for implementing the word hearing impairment method in this study are as follows:

a. Students are introduced to a word. For example the word **[papa]**;

b. Breaking words into syllables. **[pa-pa]**;

c. The syllables are broken down into letters. **[p-a-p-a]**;

d. Next, combine the letters into syllables. **[pa-pa]**;

e. Combining syllables into words. **[papa]**.

2.2 Dependent Variable

The dependent variable in this study is articulation ability. Articulation is the sound of language or sounds produced by speech instruments that have characteristics so that one is different from another.

2.3 Research Subject

The subject in this study was a child with hearing impairment with the initials V as many as one people sitting in the second grade of Elementary Special School Sumbersari which is located at Bandung City, West Java, Indonesia. Currently, subject V articulation ability is not good, especially the /m/ consonant has not been seen at all

This study was conducted for two weeks with details as shown in **Table 1**.

Table 1. Research Time.

Week	Agenda	Time Allocation
1.	Baseline 1 (Meeting 1,2,3)	1 x 30 minute
	Intervention (Meeting 1,2,3)	2 x 30 minute
2.	Intervention (Meeting 4,5,6)	
	Baseline 2 (Meeting 1,2,3)	1 x 30 minute

2.4. Data Processing Techniques

To collect the data needed in this study, several methods were used, including:

2.4.1. Test

A test is a method, tool, or procedure used to find out or measure something in an atmosphere with predetermined ways and rules. In this study using a form of performance test, namely performance tests can be used to assess the quality of a job that has been completed by students, including the skills and accuracy of completing a job, speed, and ability to plan a job.

2.4.2. Observation

Observation is a complex process, a process composed of various biological and psychological processes. Two of the most important are the processes of observation and memory.

2.5. Data Analysis Technique

According to Isnaini (2017) explaining that in analyzing data several components must be considered, namely (1) length of condition, (2) trend of direction, (3) level of stability (level of stability), (4) trace of data (data path), (5) Level of stability and range, (6) Change of level (level change).

3. RESULTS AND DISCUSSION

The results of this study refer to research indicators: children can pronounce consonant /m/ at the beginning of words, children can pronounce consonants /m/ in the middle of words, and children can pronounce consonants /m/ at the end of words.

This research was conducted in several phases, namely the first phase of baseline-1 (A-1), the implementation of baseline-1 (A-1) was carried out for four sessions until the data obtained were stable. This phase is carried out to see students' initial abilities before being given an intervention using the word hearing impairment method. The second phase is intervention, the implementation of the intervention is carried out for five sessions, one session lasts approximately one hour. The intervention carried out was the implementation of articulation learning using the word "Lembaga" method. The third phase is baseline-2 (A-2), in this phase the researcher does not do any intervention with students. The baseline-2 implementation is carried out for three sessions until the data obtained is stable. This phase is carried out to see the articulation ability to hear impairment children after the intervention using the hearing impairment word method.

3.1. Baseline-1 Results (A-1)

Based on **Table 2**, V in the first session got a score of 6 with a percentage of 33.33%, then in the second session it got the same score as the first session, namely 6 with a percentage of 33.33%, while in the third session there was an increase as evidenced by the score namely 7 with a percentage of 38.89%, then in the fourth session, the score was the same as the third session, namely 7 with a percentage of 33.33%. It can be seen in the baseline-1 phase (A-1) the highest score is 7 with a percentage of 38.89% and the lowest score is 6 with a percentage of 33.33%. The results of the percentage V in the baseline-1 (A-1) phase can be seen in **Figure 1**.

3.2. Baseline-1 Results (A-1)

Based on **Table 3**, V in the first session scored 8 with a percentage of 44.44%. Furthermore, in the second session, V obtained a score of 9 with a percentage of 50%. In the third session, it obtained a score of 10 with a percentage of 55.56%. Then in the fourth session, they got a score of 12 with a percentage of 66.67%. In the fifth session, they got a score of 14 with a percentage of 77.78%. It can be seen in the intervention phase (B) the highest score is 14 with a percentage of 77.78% and the lowest score is 8 with a percentage of 44.44%. The results of the percentage of V in the intervention phase (B) can be seen in **Figure 2.**

Table 2. Baseline-1 Score Percentage Data (A-1).

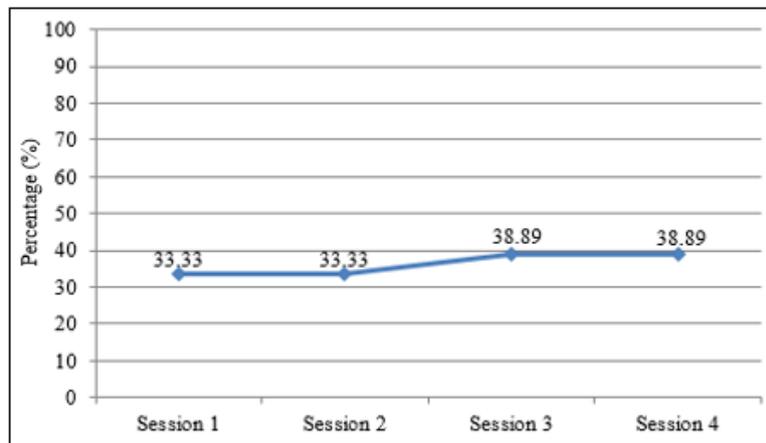| Session	Number of Questions	Maximum Score	Earning Score	Percentage (%)
1	6	18	6	33,33%
2	6	18	6	33,33%
3	6	18	7	38,89%
4	6	18	7	38,89%

Figure 1. Articulation ability of the consonant /m/ in the baseline-1 phase (A-1).

Table 3. Intervention Score Percentage Data (B)

| Session	Number of Questions	Maximum Score	Earning Score	Percentage (%)
1	6	18	8	44,44%
2	6	18	9	50%
3	6	18	10	55,56%
4	6	18	12	66,67%
5	6	18	14	77,78%
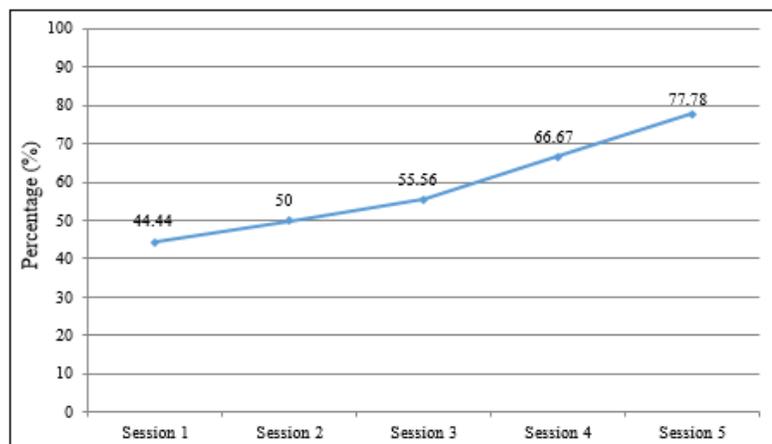
Figure 2. Articulation ability of the consonant /m/ at the Intervention stage (B).

3.3. Baseline-2 Results (A-2)

Based on **Table 4**, V in the first session scored 15 with a percentage of 83.33%, then in the second session, it increased as evidenced by the acquisition of a score of 16 with a percentage of 88.89%, while in the third session it obtained the same score as the second session, namely 16 with a percentage of 88.89%. It can be seen in the baseline-2 phase (A-2) the highest score is 16 with a percentage of 88.89% and the lowest score is 15 with a percentage of 83.33%. The results of the percentage V in the baseline-2 (A-2) phase can be seen in **Figure 3.**

Table 4. Baseline-2 Score Percentage Data (A-2)

Session	Number of Questions	Maximum Score	Earning Score	Percentage (%)
1	6	18	15	83,33%
2	6	18	16	88,89%
3	6	18	16	88,89%
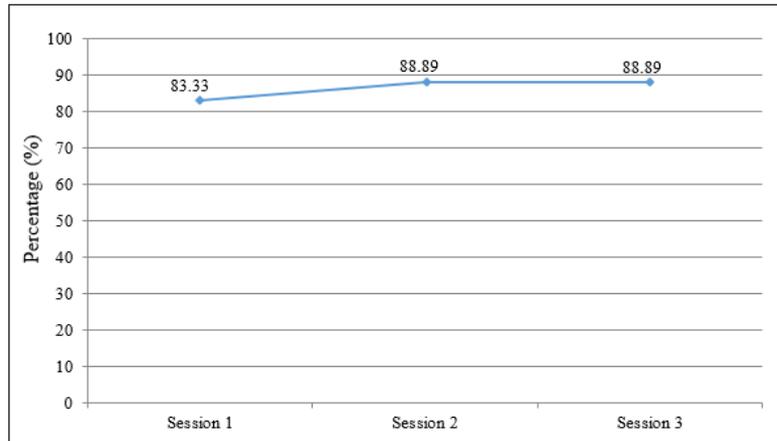
Figure 3. Articulation ability of the consonant /m/ at the Baseline-2 (A-2) stage.

3.4. Percentage Recapitulation

The recapitulation of the data percentage for all phases from baseline-1 (A-1), intervention (B), and baseline-2 (A-2) regarding the articulation ability of the consonant /m/are presented in **Table 5.**

Table 5. Consonant Articulation Percentage Overall Percentage /m/

Phase	Session	Percentage (%)
	1	33,33%
	2	33,33%
Baseline-1 (A-1)	3	38,89%
	4	38,89%
	5	44,44%
	6	50%
Intervention (B)	7	55,56%
	8	66,67%
	9	77,78%
	10	83,33%
Baseline-2 (A-2)	11	88,89%
	12	88,89%

The results of the percentage of articulation ability of the consonant /m/, data for all phases from baseline-1 (A-1), intervention (B), and baseline-2 (A-2) are also presented in graphical form as shown in **Figure 4.**
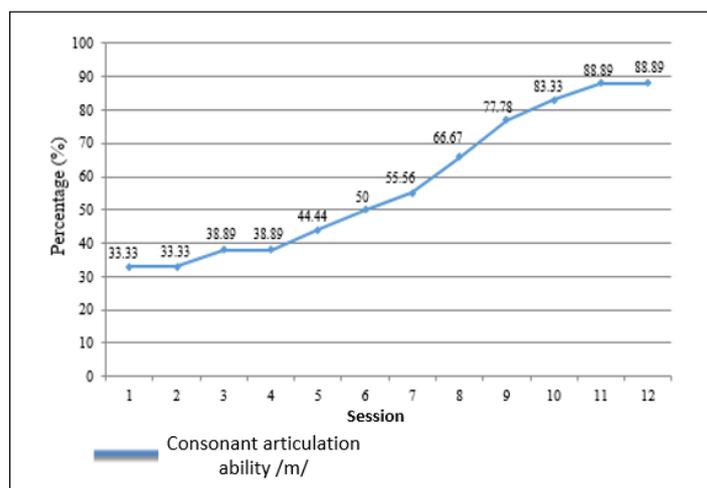
Figure 4. Consonant Articulation Percentage Overall Percentage /m/.

3.5. Data Analysis
3.5.1. Data Analysis Under Conditions

The in-state analysis includes condition length, directional trend estimation, stability trend, data trail, stability level, and range, and level change. The results of the analysis are under the following conditions.

(i) Condition Length. In this study, the total length of the condition was 12 consisting of four sessions of the baseline-1 phase (A-1), five sessions of the intervention phase (B), and three sessions of the baseline-2 phase (A-2) as shown in **Table 6**.

Table 6. Condition Length

Kondisi	*Baseline*-1 (A-1)	Intervention (B)	*Baseline*-2 (A-2)
Panjang Kondisi	4	5	3

(ii) Estimation of Directional Tendency. The estimated tendency of the articulation ability to hear impairment children (*m*) can be explained in **Figures 5 – 7.** From **Figure 7**, it can be seen how the trend of the development of the articulation ability of the consonant /m/ in each phase from the beginning to the last session. The trend towards each phase can be seen in the graph above, it can also be used in **Table 7**. The trend direction in the baseline-1 phase (A-1), in the intervention phase (B), and the baseline-2 phase (A-2) shows an increasing estimation direction.

Table 7. Estimation of Directional Tendency

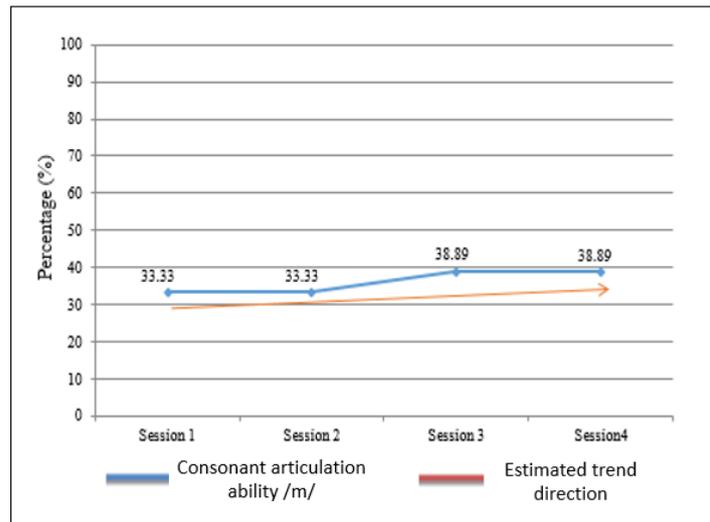| Condition	*Baseline*-1 (A-1)	Intervention (B)	*Baseline*-2 (A-2)
Estimation of Directional Tendency	↗	↗	↗

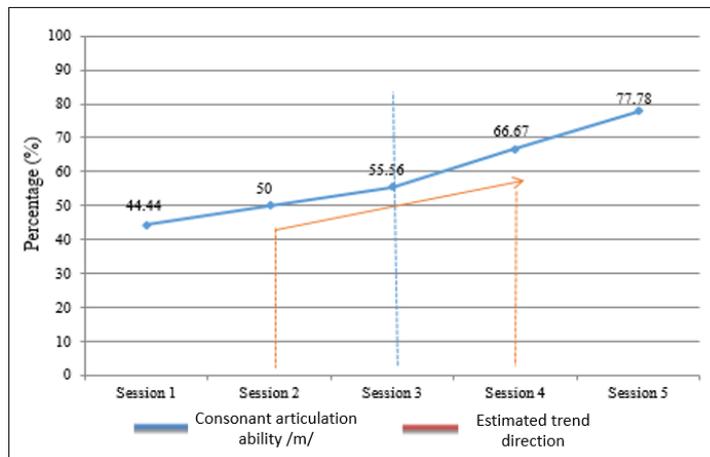**Figure 5.** Estimated trend towards baseline-1 (A-1) phase.

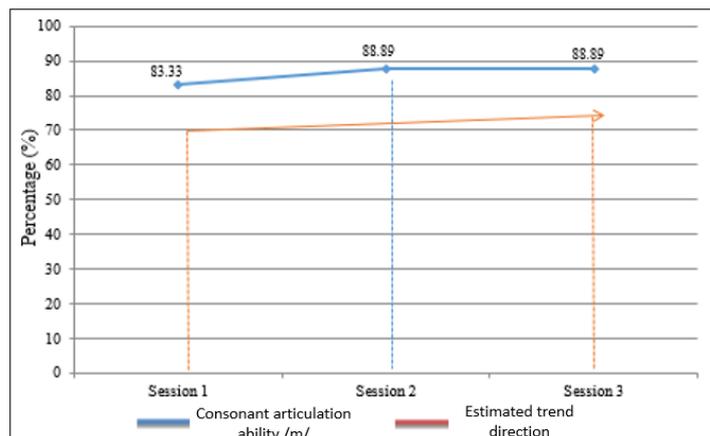**Figure 6.** Estimated trend toward intervention phase (B).

Figure 7. Estimated trend towards baseline-2 (A-2) phase

(iii) Stability Tendency. The stability trend serves to see whether the variables studied are stable or not, using the 15% stability criterion. The stability percentage is said to be stable if the amount is 85%-90%, whereas if the value is below that criterion, it is said to be unstable (variable).

The following is the calculation of trend stability in conditions of baseline-1 (A-1), intervention (B), and baseline-2 (A-2):

(i) Baseline-1 (A-1)

Highest Score   : 38.89

Stability Range   : Highest score x stability criteria

38.89 x 0,15 = 5.83

Mean Level   : $\dfrac{33.33 + 33.33 + 38.89 + 38.89}{4} = 36.11$

Upper limit   : *Mean level* + ($\frac{1}{2}$ x 5.83)

36.11 + 2.91 = 39.03

Lower limit   : *Mean level* - ($\frac{1}{2}$ x 5.83)

$36.11 - 2.91 = 33.19$

The amount of data that is in the range of the upper and lower limits is 4 points, so the tendency for stability = 4/4 x 100% = 100%, meaning that the baseline-1 phase (A-1) is declared stable as shown in **Figure 8**.
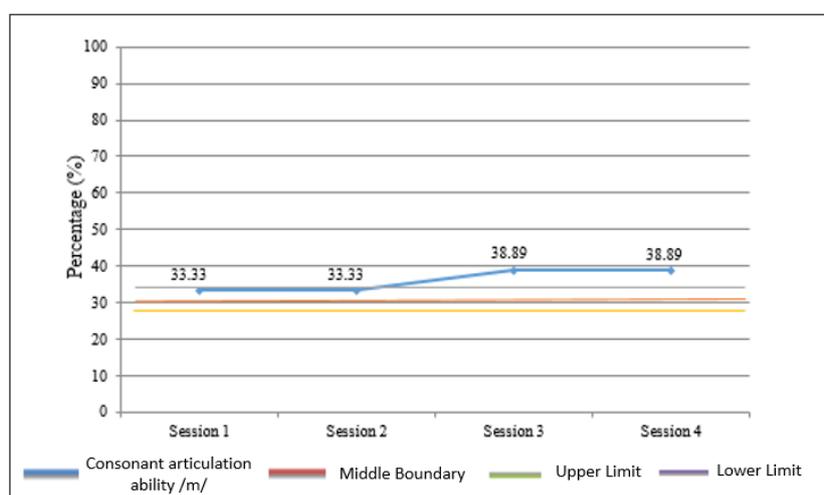

Figure 8. Baseline-1 Phase Stability Trend (A-1)

(ii) Intervention (B)

Highest Score   : 77.78

Stability Range   : Highest score x stability criteria

77.78 x 0.15 = 11.67

Mean Level   : $\dfrac{44.44 + 50 + 55.56 + 66.67 + 77.78}{5} = 58.89$

Upper limit   : *Mean level* + ($\frac{1}{2}$ x 11.67)

58.89 + 5.83 = 64.72

Lower limit   : *Mean level* - ($\frac{1}{2}$ x 11.67)

$58.89 - 5.83 = 53.06$

The amount of data that is in the range of the upper and lower limits is 1 point, so the tendency for stability = 1/5 x 100% = 20%, meaning that in the intervention phase (B) it is declared unstable/variable as shown in **Figure 9**.
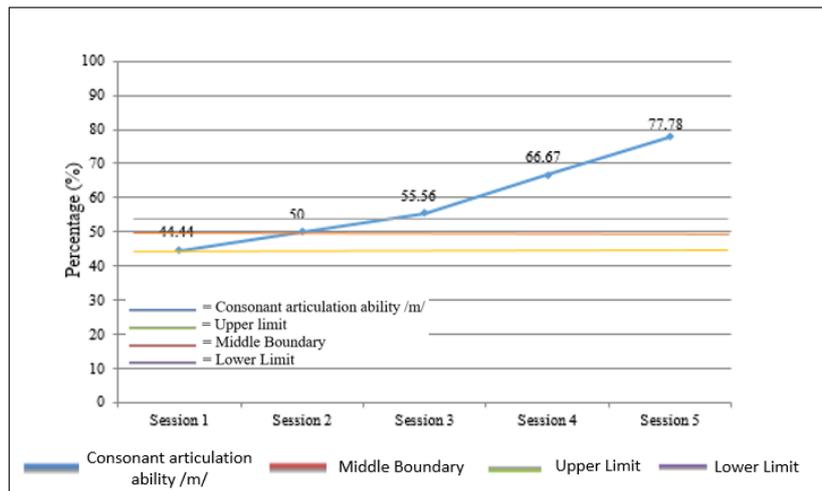
Figure 9. Intervention Phase Stability Trend (B)

(iii)   Baseline-2 (A-2)

Highest Score   : 88,89

Stability Range   : Highest score x stability criteria

        88.89 x 0.15 = 13.33

Mean Level   : $\dfrac{83.33 + 88.89 + 88.89}{3} = 87.04$

Upper limit   : *Mean level* + ($\frac{1}{2}$ x 13.33)

        87.04 + 6.66 = 93.7

Lower limit   : *Mean level* - ($\frac{1}{2}$ x 13.33)

        87.04 – 6.66 = 80.37

The amount of data that is in the range of the upper and lower limits is 3 points, then the tendency for stability = 3/3 x 100% = 100%, meaning that the baseline-2 phase (A-2) is declared stable as shown in **Figure 10**.
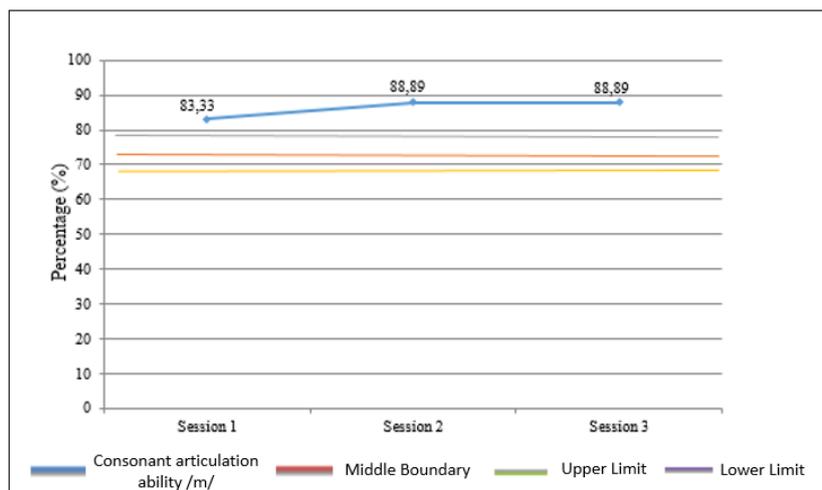

Figure 10. Baseline-2 Phase Stability Trend (A-2)

Based on the analysis of the stability trend in the baseline-1 (A-1), intervention (B), and baseline-2 (A-2) phases, then the stability trend is obtained as presented in **Table 8**.

Table 8. Stability Percentage

Condition	Many points on the range	Total points	Stability percentage	Information
Baseline-1 (A-1)	4	4	100%	Stable
Intervention (B)	1	5	20%	Unstable/Variable
Baseline-2 (A-2)	3	3	100%	Stable

(iv) Trace Data.

Determining the data path (data path) is the same as determining the estimated direction of the trend; thus, the trend of the data trail can be described in **Table 9.**

Table 9. Data Trace Trends

Condition	*Baseline*-1 (A-1)	Intervention (B)	*Baseline*-2 (A-2)
Data Trace Trends	↗ (+)	↗ (+)	↗ (+)
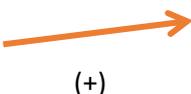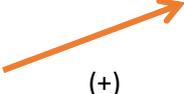
(v) Stability Level and Range

The level of stability and range is determined by entering the smallest score and the largest score in each phase, the following levels of stability and range are presented in **Table 10.**

Table 10. Stability Level and Range

Condition	*Baseline*-1 (A-1)	Intervention (B)	*Baseline*-2 (A-2)
Stability Level and Range	Stable 33.33%-38.89%	Variabel 44.44% - 77.78%	Stable 83.33%-88.89%

(vi) Level Change

The level of data change in a condition is the difference between the first data and the last data. The level of change can be determined by calculating the difference between the two data and then determining the direction of the data to increase or decrease with a sign (+) if it is increasing, (-) if it is decreasing, (=) if it is horizontal. The level of change in the study can be seen in **Table 11**.

Table 11. Level Change

Condition	*Baseline*-1 (A-1)	Intervention (B)	*Baseline*-2 (A-2)
Level Change	33.33% - 38.89% (+5.56)	44.44% - 77.78% (+33.34)	83.33% - 88.89% (+5.56)

(vii)   Summary of Analysis Results in Condition.

The following is a description of the recapitulation of the results of visual analysis on articulation abilities.

a. The length of the conditions in the baseline-1 phase (A-1) was carried out for four sessions, the intervention phase (B) was carried out for five sessions, and the baseline-2 phase (A-2) was carried out for three sessions.

b. The results of the directional trend show that in the baseline-1 phase (A-1), the intervention phase and the baseline-2 phase (A-2) show an increasing trend.

c. The results of the stability trend show that in the baseline-1 phase (A-1) and the baseline-2 phase (A-2) the data is stable with a percentage of 100%, and in the intervention phase (B) the data is unstable (variable). with a percentage of 20%.
d. The results of the trace data obtained show that the trace data in the baseline-1 (A-1), intervention phase, and baseline-2 (A-2) phase show increasing data.
e. The level of stability and range of stability obtained based on the data shown in the baseline-1 phase (A-1) the data is stable with a data range of 33.33% - 38.89% which is increasing, in the intervention phase (B) the data is unstable (variable) with a data range of 44.44% - 77.78% which is increasing, and in the baseline-2 phase (A-2) the data is stable with a data range of 83.33% - 88.89%, which is increasing.
f. At the level of data change shown in the baseline-1 (A-1) phase and baseline-2 (A-2) phase the data experienced a change in the data level increased by 5.56%, in the intervention phase (B) the data experienced a change in level data increased by 33.34%.

The summary of the results of the analysis under the conditions is presented in **Table 12.**

Table 12. Summary of Analysis Results in Condition

No	Condition	*Baseline*-1 (A-1)	Intervention (B)	*Baseline*-2 (A-2)
1	Condition Length	4	5	3
2	Estimation of Directional Tendency	→	↗	→
3	Stability tendency	Stable (100%)	Unstable/variabel (20%)	Stable (100%)
4	Trace Data	→ (+)	↗ (+)	→ (+)
5	Stability Level and Range	Stable 33,33%-38,89%	Variabel 44,44% -77,78%	Stable 83,33% -88,89%
6	Change Level	33,33% - 38,89% (+5,56)	44,44% - 77,78% (+33,34)	83,33% - 88,89% (+5.56)

4. CONCLUSION

The results of this study use the Single Subject Research (SSR) method with the A-B-A design. This study aims to determine how much influence the application of the word "Lembaga" method has on improving the articulation ability to hear impairment children. This study was conducted in 12 sessions consisting of three phases, namely four sessions of the baseline-1 phase (A-1), five sessions of the intervention phase (B), and three sessions of the baseline-2 phase (A-2).

Based on the results of the analysis of data processing that has been carried out and presented in the form of graphs and tables, it shows an increase in the percentage of articulation ability in the baseline-1 phase (A-1), the intervention phase (B), and also the baseline-2 phase (A-2) The mean level in the baseline-1 phase (A-1) was 36.11%, the intervention phase (B) was 58.89% and the baseline-2 phase (A-2) was 87.04%. As for when displayed in the form of a diagram, it can be seen as in **Figure 11**.
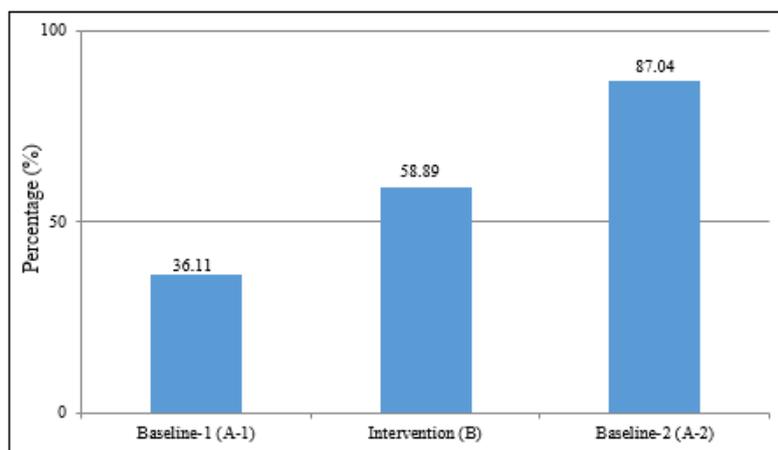
Figure 11. Mean Level

It can be seen that there is an increase in the child's articulation ability before and after the intervention. In addition, the results of overlapping data also show a small percentage of overlap, which is only 0%.

The word "Lembaga" method is a learning method for beginning reading that begins with the introduction of a particular word. This word is then broken down into syllables, syllables into letters. Next is the process of arranging letters into syllables and syllables into words. The application of the word "Lembaga" method is used by showing children how to write a word and a picture of the word, so that children are more interested in participating in learning.

The results of data analysis both data analysis in the conditions that have been discussed articulation abilities in hearing impairment children show an increase after using the word "Lembaga" method. Thus, the word "Lembaga" method can improve the articulation ability of hearing impairment children in second grade of Elementary Special School Sumbersari.

5. ACKNOWLEDGMENT

6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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