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Development of Phonic Song Methods to Improve Articulation Ability in Speech Delay Children

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ABSTRACTS

Early-age childhood language skills are a benchmark for other developmental abilities. Children can express their desires and thoughts to the surrounding environment with expressive language. One of the barriers to expressive language is the difficulty of articulating consonants. This study aims to formulate a product in the form of developing a phonic song method to improve the articulation ability of children with speech delay. The Research and Development (RnD) research design was used in this study. RnD with a qualitative approach explores information about the objective condition of the subject. A quantitative approach using the Single Subject Research (SSR) experimental method with an A-B-A design to measure the effect of the phonic song method applied to the subject. The research was conducted in three stages, namely (i) preliminary study; (ii) phonics song program preparation, and (iii) phonic song program trial. The results of the study showed an increase in articulation ability in the pronunciation of these phonemes. The pronunciation of the phonemes /l/ and /k/ has increased from phase A1, from abilities 0-8 to 23-27. The pronunciation of the phonemes /g/ has changed from phase A1, from abilities 0-5 to 10 – 16, as well as from phases B and A2. The ability to pronounce the phoneme /s/ changed from phase A1, from abilities 4-12 to 22-24. The increase in ability occurred after receiving an intervention in the form of accompanying phonic song singing. Thus, it is hoped that this research can be a theoretical study in developing methods to improve the articulation of children with speech delay.

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1. INTRODUCTION

Language development is one of the most fundamental components of child development. With language, a child can connect with the surrounding environment through the expression of his thoughts and desires so that language development will direct the child to cognitive, social, physical, emotional, personality and other developments so that language is felt as the first and most important social interaction tool. Effective communication is needed in the learning process, the development of social and emotional interactions, and functioning in society (Fong *et al.*, 2003). Speech and language skills are also assessed as indicators of the overall abilities of a child such as cognitive abilities and academic success or in other words, speech and language development is a benchmark for children's cognitive development which will also affect later stages of development (Harrison *et al*., 2009).

Speech delay is a general term that refers to the process of delaying verbal language production. The production of this language is known as speaking or expressive language activities so that children have difficulty communicating verbally, while speaking is defined as the ability to pronounce articulation sounds or words to express, express, and convey thoughts, ideas, and feelings. Speech delay is also known as a condition where early childhood experiences delay in speaking processes such as articulation pronunciation compared to the speech process of children their age (Shriberg *et al*., 1999). This delay is not appropriate for the child's developmental age. However, this term implies that this delay will be overcome and followed at a certain time. One way that can be done to overcome the problem of speech delay in children is to use the phonic song method (Tallal, 1980).

The song phonic method is a phonic method developed by singing where the lyrics in the song are sung with a rhythmic tone. Children become easier to articulate correctly and can associate pictures with speech (Dalim *et al*., 2020). This singing activity is carried out alphabetically from A to Z so that it is easier for children to recognize the Indonesian alphabet. This method is considered a fun way for children to remember the most basic phoneme sounds and the lyrics in songs are usually short and repetitive so that children can easily remember them.

There have been many studies that have examined the use of the phonic method to improve children's speaking skills, including research on improving children's reading through the phonic method (Nopriyanti, 2012; Salamah et al., 2018), the use of the phonic method in learning English (Westhisi, 2019; Virdyna, 2015; Westhisi, 2020), the effectiveness of using the phonic method in improving the speaking ability of children aged 4-5 years (Putri *et al*., 2021) and children aged 5-6 years (Aulina, 2012), and research on the application of the phonic method in improving early reading ability in mentally retarded children (Novianti, 2021). However, there has been no research on combining the use of the phonic method and the song method or known as the phonic song method in helping to improve the articulation ability of speech-delayed children.

This research was conducted to know the effectiveness of the development of the phonic song method to improve the articulation ability of speech delay children. In addition, this study was also conducted to determine the results of developing phonic songs to improve children's articulation skills of speech. So, it is hoped that the use of the phonic song method can improve speech skills, especially in the articulation skills of speech delay children which support the learning process.

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2. METHODS

The research subjects were children aged 4 years 10 months who still had difficulty in pronouncing the phonemes /k/, /g/, /l/ and /s/. The research subject is one boy. The research was conducted in the Aryandini playgroup, Indonesia. In this study, we used 4 phonic songs consisting of song 1 /k/, song 2 /l/, song 3 /g/, and song 4 /s/. The research design used is Research and Development (R&D). **Figure 1** shows the stages of the research in more detail. This research was conducted in three stages, namely (i) preliminary study; (ii) preparation of a phonic song program, and (iii) a trial of a phonic song program to help children with speech delay with an A-B-A design.

The first stage is a preliminary study. This stage consists of two parts, namely a literature review and a field study of the child's condition. In stage 1, we used a qualitative approach to obtain the child's objective condition. The second stage is the stage of compiling the formulation of the phonic song program. The validation of the phonic song method involves experts who are competent in their fields. The formulation of the revised phonic song program then entered the stage of reliability testing. The reliability test was carried out to obtain consistency in the measurement. Thus, the phonic song formulation used in this study could reveal the actual data. The reliability test was carried out involving two assessors, namely the child's speech therapist and the parents. After the assessment is carried out and the instrument is said to be reliable, then the phonic song method can be used to collect research data in the field.

The third stage is the final stage of the research. At this stage, a trial was conducted on the implementation of the phonic song formulation and the results of its implementation. The trial process was carried out using a Single Subject Research (SSR) research design. The SSR research design used was A-B-A to draw conclusions in the form of a functional relationship between the independent variable in the form of the phonic song method, and the dependent variable, namely the articulation ability of children with speech delays. The ABA design consists of baseline conditions (A1) with a certain period. Then the intervention was given in phase B and a second baseline condition (A2) was added.

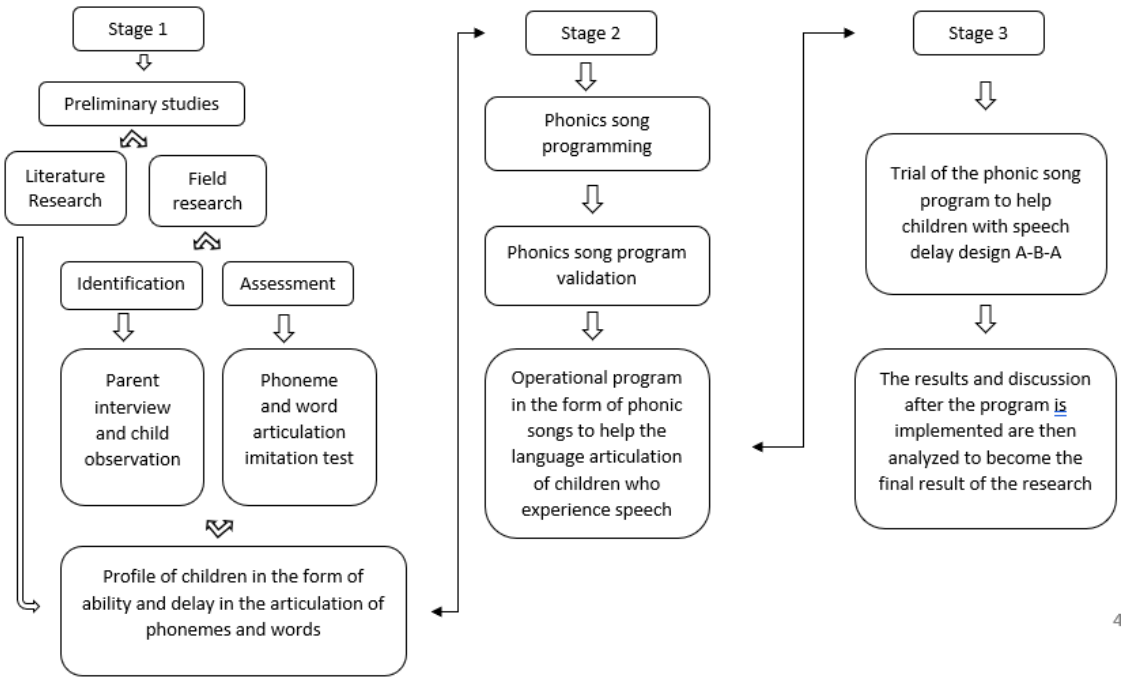

Figure 1. Research procedure.

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3. RESULTS AND DISCUSSION

3.1. Data Presentation

The data is generated from the results of the implementation for 12 days divided by 4 days for the A1 baseline phase or the stage of measuring and collecting target behavior data or target behavior (the measurement results are in the appendix), 4 days for the intervention phase B or conditions where the target behavior is measured during an intervention. given (the measurement results are in the appendix) and 4 days for the A2 baseline phase or the repetition phase or additional conditions to conclude the interventions that have been given (the measurement results are in the appendix). Each stage is carried out continuously for 4 sessions because, in that session, data stability has been created in the pronunciation of phonemes, words, and aspects of fluency in the pronunciation of phrases or sentences. The time used during the session is 2 x 15 minutes.

3.2. Data Analysis

The initial activity to analyze between conditions is to enter the condition code, namely A1 for baseline 1, B for intervention, and A2 for baseline 2. Then do the following steps:

i). Specifies the comparison of conditions with the following format:
Condition comparison B/A1/A2
2/ 1/ 3

ii). Determine the number of variables that are changed in the study

iii). Determine the change in the direction of the trend by taking the data in the analysis under the above conditions.

iv). Determine the change in the stability trend by taking the data in the analysis under the above conditions.

v). Determine the level of change in A1/B by comparing the mean level in each condition.

vi). Determine the percentage of overlap by calculating the difference in the mean level in each condition multiplied by 100%. The greater the percentage of overlap, the better the influence of the intervention on the target behavior.

Table 1 shows that the tendency of children's articulation ability on the target aspect of song 1 increased after the intervention was given. The level of change per aspect of the target tends to increase as well as the percentage of overlap.

Table 2 shows that the tendency of children's articulation ability on the target aspect in song 2 increased after the intervention was given. The level of change in song two on A1 is 6.00, phase B is 17.75, and Phase A2 is 25.25. The overlapping presentations from phase A1 to phase B were 1175% and from phase B to phase A2 was 750%.

Table 3 shows the analysis between conditions in track 3 for the /g/ phenomenon. Based on **Table 3**, the tendency of children's articulation ability in the target aspect in song 3 increased after the intervention was given, although after the intervention several aspects decreased afterward. The level of change in track 3 on A1 is 2.50, phase B is 6.75, and Phase A2 is 12.75. The percentage of overlap that occurs from phase A1 to phase B is 425% and from phase B to phase A2 is 600%.

Table 4 shows the results of the analysis between conditions on the song 4 phenomena /s/. From **Table 4**, it can be concluded that the tendency of children's articulation ability in the target aspect in song 4 increases after the intervention is seen from the level of change. The level of change in the analysis results shows that in phase A1 is 8.75, phase B is 16.5 and A2 is 22.75.

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Table 1. Analysis between conditions song 1 /k/.

Aspect	Compared conditions	A1/B/A2 (1:2:3)
Single Fonem /k/	Number of variables	1
	Change of direction and its effects	Positive 
	Stability change	Variable to stable to stable
	Change Level	3.50 8.75 17.25
	Percentage of overlap	525 % 850%

Table 2. Analysis between conditions song 2 /l/.

Aspect	Compared conditions	A1/B/A2 (1:2:3)
Single Fonem /l/	Number of variables	1
	Change of direction and its effects	positive 
	Stability change	Variable to stable to stable
	Change Level	6 .00 17.75 25.25
	Percentage of overlap	1175% 750%

Table 3. Analysis between conditions song 3 /g/.

Aspect	Compared conditions	A1/B/A2 (1:2:3)
Single Fonem /g/	Number of variables	1
	Change of direction and its effects	positive 
	Stability change	Variable to stable to stable
	Change Level	2.50 6.75 12.75
	Percentage of overlap	425% 600%

Table 4. Analysis between conditions song 4 /s/.

Aspect	Compared conditions	A1/B/A2 (1:2:3)
Single Fonem /s/	Number of variables	1
	Change of direction and its effects	positive 
	Stability change	Variable ke stabil ke stabil
	Change Level	8.75 16.50 22.75
	Percentage of overlap	775% 625%

3.3. Discussion

Visser-Bochane (2020) describes the characteristics of language skills of children aged 4-5 years including being able to listen, distinguish, and pronounce certain sounds. The child subjects in the study were not able to correctly pronounce the requested sound or sounds such as velar consonants such as the letters /k/ and /g/, the child had not been able to repeat the 3–4 word order requested, could not say the words with syllables same beginning or ending syllable.

The results of the study indicate that the child's receptive language skills are quite good. Children do not experience obstacles in understanding the accepted language. However, children experience obstacles in their expressive language skills, children need practice in

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expressing the language they receive so that it can be said to be Speech and Expressive Language Disorder where children are easy to understand the words of adults around them. However, the child has difficulty responding. This makes it difficult for children to express their feelings and thoughts (Abidin, 2021). One of the obstacles faced by children is the problem of articulation. Children often feel reluctant to speak because their pronunciation still often makes it difficult for those around them to understand the words being said.

Articulate sounds or phonemes inappropriately can be the cause of a child experiencing speech delays. So, it tends to experience errors in pronouncing words. Likewise, with the research subjects, the ability to articulate words because they are still experiencing phonological processes above their age, such as pronouncing the phoneme /k/ to /t/ causes children to experience speech delay.

The child's profile has difficulties in articulating the phonemes /k/, /g/ /l/ and /s/ correctly because they are still experiencing substitution pronunciation patterns on the phonemes /k/, /g/ and /s/ and the pronunciation is still weak on the phonemes / l/ then one way to intervene is through the phonic song method.

The phonic method introduces words through sounding letters (Westhisi, 2019). Letters or phoneme sounds are the basis for pronouncing words. This method is considered good to be applied to children who are late to speak because it can train children's attention and practice the pronunciation of Indonesian phoneme sounds (Zakiyah, 2019). The essence of this phonic song method is pronunciation practice where song lyrics are sung repeatedly with a focus on the target phoneme, which is expected to help practice proper articulation of pronunciation.

The findings of the application of the phonic song method are that children experience an increase in articulation pronunciation skills, especially in the pronunciation of single phonemes that are targeted; phonemes /k/, /l/, /g/ and /s/ significantly and stable. Pronunciation of phonemes in words and fluency of pronunciation of phrases/sentences also increased even though children showed up and down or unstable abilities, but it can be said that there was an increase in pronunciation ability seen from the mean level value between conditions. However, the increase in phase A2 did not occur in the pronunciation of the word /cabinet/, the phrase /yellow walnuts/, and /fear of ants/ which decreased after the intervention.

The increase in ability is due to the condition of the child who does it with pleasure and can be done anytime according to the child's wishes so that it can be said that this phonic song method is good to apply. The phonic song method can be an alternative medium in training children's articulation. This method can improve the articulation of the pronunciation of phonemes or words that are the target of training because in it there is a drilling method that can be done in a fun way according to the child's development.

4. CONCLUSION

Children experience expressive language delays due to difficulties in articulating some consonant phonemes such as /k/, /g/, /l/ and /s/ phonemes. Children still have substitution pronunciation patterns for the phonemes /k/, /g/, and /s/ while for the sound pronunciation /l/, children still pronounce them weakly because they still move the tip of the tongue in the middle of the roof of the mouth rather than at the front end of the palate. In addition to phonemes in words, children still experience omission patterns for pronunciation of phonemes in the middle and at the end of words. By applying the experimental research design A-B-A, the phonic song method was applied at the intervention stage (B) to see the difference in stages A1 and A2, it was found that almost all pronunciation targets, both single words, or sentences in the lyrics of songs sung by children, tended to increase. A significant

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and stable increase occurred in the ability to pronounce single phonemes, while for the ability to pronounce phonemes in words and sentences, even though children showed up and down or unstable abilities, it can be said that there was an increase in pronunciation skills seen from the mean level value between conditions.

5. AUTHORS' NOTE

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

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