



The Effect of The Method Solmisation in The Song "Burung Kakak Tua" through The Angklung Media on The Memory Ability of Children Aged 5-6 Years

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Abstract

Memory ability is an important aspect in the cognitive development of early childhood because it plays a role in the process of storing, processing, and recalling information received. However, the results of initial observations at DWP Jono Kindergarten showed that some children in group B still had difficulty remembering the sequence of notes, song lyrics, and the sound of the angklung during singing activities. The angklung musical instrument available at school has not been utilized as a learning tool, so children have not gained musical experience that can support memory strengthening. This study aims to analyze the effect of the solmization method on the song "Burung Kakak Tua" through the angklung musical instrument on the memory ability of children aged 5-6 years. This study used a quasi-experimental approach with a non-equivalent control group design involving 11 children in the experimental group and 22 children in the control group. Data were collected through pretest, treatment, and posttest, then analyzed using the Wilcoxon Signed Rank Test because the data is non-parametric. The results of the analysis showed a significance value of $0.008 < 0.05$, so H_0 was rejected and H_1 was accepted. This indicates a significant difference between pretest and posttest scores. Thus, the solmization method using the angklung musical instrument has been shown to significantly improve children's memory.

Keywords: *Solmization; Angklung; Memory Ability; Childhood.*

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INTRODUCTION

Childhood is a period of human life, especially the golden age, when children are able to absorb various information that they see in a responsive manner. Early childhood is the main foundation for human development in the next stages, namely adolescence and adulthood. Early childhood, which covers the ages of 0-6 years, is a phase of rapid growth and development that is fundamental to later life (Indrawati, 2021).

Early childhood is an important investment for the future progress of a nation. This period is a crucial stage for children's physical, psychological, emotional, and social growth, requiring optimal care and supervision (Churiyah et al., 2024). Children undergo a growth and development process influenced by stimuli appropriate to their age. As time goes by, this process will continue to undergo changes and adjustments in accordance with the child's age and needs (Yuliasari & Widayati et al., 2018).

In the world of Early Childhood Education (PAUD), child growth and development are viewed holistically through several key dimensions. Recent research confirms that educators need to pay attention to six key areas of development: moral and religious values, physical health and motor skills, thinking or cognitive abilities, language mastery, social-emotional development, and expression through art. All of these domains are considered important in supporting balanced and adequate growth in children from an early age so that they can develop optimally in the future (Muzil & Nuraida, 2025). Meanwhile, according to (Ruswanti et al., 2024) PAUD is an institution designed to facilitate the holistic development of children in accordance with their potential. Learning will be more lively, communicative, and enjoyable when there is good collaboration between teachers and children, so that the quality of the material introduction process can continue to develop in a more optimal direction (Wahyutami et al., 2023). Playing music is not only fun for children, but also plays an important role in improving their musical intelligence. According to research cited by (Simatupang & Widayati, 2024) music is beautiful and has various potentials, not just as entertainment. Music plays a big role in supporting cognitive development, motor skills, social skills, and emotions.

According to (Watini, 2019), musical intelligence is the ability to create, express, identify, observe, and enjoy various types of music in one's life. This ability includes sensitivity to melody, timbre, and rhythm in music. Most teachers, when teaching, provide activities that are still limited to general activities such as pasting and cutting (Ni & Maulidiyah, 2020). In addition to general activities such as pasting or cutting, the development of musical intelligence in early childhood is very important and should not be ignored.

Musical intelligence is the ability to recognize, distinguish, and express musical elements such as rhythm, pitch, and tempo. When children are introduced to music from an early age, it not only trains their musical abilities but also has an impact on several other areas of development. Music encourages children to pay attention to patterns and structures, thereby helping to develop memory and focus skills, which are then related to thinking skills. Music is also often performed in groups, so children learn to work together, communicate, and appreciate time and the roles of others in a collective activity. These interactions contribute to children's social-emotional skills, namely the ability to empathize, express themselves, and manage their emotions when playing with their friends. Thus, early exposure to music helps children build a foundation of cognitive and social skills that is more complex than simple motor activities alone. The integration of music into early childhood education makes learning more holistic

because musicality, language, movement, and social interaction are stimulated simultaneously through planned and enjoyable musical activities (Febryane Effendi & Respati, 2024) . Therefore, this study presents a more diverse and enjoyable variety of activities for children. According to Law Number 20 of 2003 concerning the National Education System, one of the objectives of early childhood education is to develop children's potential optimally, including their intellectual potential. Memory is part of intellectual potential that needs to be stimulated from an early age so that children are ready to face the next stage of education (Utaminingsih, 2019).

Angklung is a traditional Indonesian musical instrument made of bamboo that produces sound when shaken or vibrated by the player. Each angklung creates a specific note according to musical notation. Introducing solmization (1, 2, 3, 4, 5, 6, 7) through angklung games can help children recognize note patterns and rhythms, which contributes to the development of musical literacy skills. Researchers are interested in exploring angklung learning in early childhood because currently, efforts to preserve Indonesian culture by introducing traditional regional musical instruments are rarely carried out (Mahmudah & Pamungkas, 2023).

Based on initial observations and interviews with the principals of DWP Kambingan Kindergarten and DWP Jono Kindergarten , researchers found that DWP Jono Kindergarten has angklung instruments. However, this traditional musical instrument is never used in learning activities, so it only serves as a display. As a result, children at DWP Jono Kindergarten are not familiar with how to play the angklung or the basic concepts of music that can be learned through this musical instrument. In addition, the problem of low memory capacity in 5-6 year old children at DWP Jono Kindergarten encourages the need for memory strengthening efforts. Low memory capacity in 5-6 year old children can be seen from their ability to receive and store information, which has not developed optimally. This condition is characterized by children having difficulty remembering information in a relatively short period of time after it has been explained or taught by the teacher. For example, after a learning activity, children seem to understand the material at that moment, but when the teacher asks questions about the same material the next day, they are unable to remember it or give the correct answers.

Children also often show forgetfulness towards simple instructions, sequences of activities, or information that has just been learned. This indicates that the process of storing and recalling information in children's memories is not yet functioning optimally. This low memory capacity can affect children's success in following subsequent learning activities, because children need repetition and more varied stimuli in order for information to be stored longer in their memories. One way to do this is through solmization using the angklung. This traditional musical instrument is believed to be beneficial in improving children's memory. Both kindergartens that were the locations of the study already had angklungs as learning media that could be utilized. The DWP Kambingan kindergarten also had angklung games.

This shows that the angklung can be implemented well in early childhood education activities, both as a musical learning tool and as a medium for developing children's cognitive abilities. Therefore, the researchers chose DWP Jono Kindergarten and DWP Kambingan Kindergarten as the subjects of their research entitled "The Effect of the Solmization Method on the Song 'Burung Kakak Tua' through the Angklung Medium on the Memory Skills of 5-6 Year Old Children." The aim of the study was to help children more easily understand and apply musical concepts, while also improving their cognitive and memory skills. The purpose of this study was to measure the effectiveness of the learning approach through angklung games in

fostering children's interest in music and to provide recommendations for developing more innovative and enjoyable learning models in early childhood education.

The results of the observation show that at DWP Jono Kindergarten, the angklung is not actively used in learning due to a lack of attention to its use as an educational medium. In fact, the angklung has the potential to be an efficient tool for introducing the basics of music, especially in understanding the musical scale or solmization. Unfortunately, children have not had the opportunity to explore this musical instrument, limiting their learning experience. The main factor behind the underutilization of the angklung is the conventional teaching methods that lack interactive teaching aids. Music education at DWP Jono Kindergarten is still centered on lectures or conventional teaching methods, which tend to make children passive and uninterested. This condition is a matter of serious concern because memory skills are the foundation for children's overall cognitive development. If not addressed early on, this can have an impact on children's ability to learn in the next grade. Therefore, a more enjoyable, interactive, and age-appropriate learning approach is needed to help improve their memory skills.

At DWP Jono Kindergarten, the introduction of solmization through the song "Burung Kakak Tua" was chosen as a learning strategy to help children learn basic music concepts and angklung games. This song was used because it has simple lyrics, a familiar melody, and an easy-to-remember structure, making it effective for stimulating children's memory. The use of songs that are familiar to children also increases their motivation to learn and creates a fun and meaningful learning atmosphere. Meanwhile, at DWP Kambingan Kindergarten, the research focused on strengthening basic solmization concepts by utilizing the angklung as a medium, given that the children already had previous experience using this musical instrument. This approach was taken to adjust the level of stimulation for each group and to clarify the differences in treatment between the control and experimental groups.

The limitations of memory ability in this study were directed at simple memory abilities in accordance with Piaget's preoperational stage. The focus of observation included the children's ability to recognize and repeat the lyrics, melody, and pattern of the song "Burung Kakak Tua" (Old Bird), as well as associating the sound of the notes with the movements when playing the angklung. This study does not assess long-term memory or complex academic abilities, but rather focuses on the memory process that can be observed directly through interactive musical activities that are appropriate for the developmental characteristics of 5-6-year-old children. This study does not assess long-term memory or complex academic abilities, but rather focuses on the memory process that can be observed directly through interactive musical activities that are appropriate for the developmental characteristics of 5-6-year-old children.

RESEARCH METHOD

This study used a quantitative approach with a quasi-experimental research design and applied a Non-Equivalent Control Group Design. This design was chosen because the classes at both institutions had already been formed, making it impossible to randomly assign subjects (Sugiyono, 2023). In this design, the researcher compared two randomly unequal groups, namely the experimental group that received treatment and the control group that did not receive

treatment. This approach was used to determine the extent to which the solmization method using the angklung medium affected the memory abilities of 5-6 year old children.

The research population included all children in group B at two institutions, namely DWP Jono Kindergarten and DWP Kambingan Kindergarten. The research sample was taken using purposive sampling, which is the determination of subjects based on certain criteria relevant to the research objectives. Based on the criteria of being 5–6 years old, attending classes regularly, and being able to fully participate in the research process, 11 children were selected as the experimental group at DWP Jono Kindergarten and 22 children as the control group at DWP Kambingan Kindergarten. Both groups were selected because they had relatively comparable developmental characteristics to support the process of comparing the results of the treatment.

Data collection techniques were carried out through structured observation using an observation sheet of children's memory abilities, which was compiled based on four main indicators, namely: (1) Remembering and reciting the lyrics of the song "Burung Kakak Tua" (Old Bird), (2) Naming the notes of the angklung held (3) Playing the angklung when the note should be played in the song, and (4) Waiting for their turn according to the order of the song. The observation sheet was used in both the pretest and posttest stages to obtain an overview of the development of memory skills before and after the treatment was given. As a supporting measure, documentation techniques were used to record the conditions of the learning process and evidence of research activities.

The instrument was validated by experts to ensure the suitability of the content and clarity of the indicators, then tested for reliability to ensure consistency of assessment. The observation sheet was declared suitable for use after meeting the validity and reliability standards, so that it could accurately measure children's memory abilities. The tools used in the treatment were the angklung and the song "Burung Kakak Tua" (Old Bird). The angklung served as a musical medium that provided auditory stimulation, while the song was used as the main material in the application of the solmization method.

The data analysis technique in this study was conducted in stages, beginning with instrument analysis and descriptive statistical calculations, followed by inferential statistical tests. After obtaining the pretest and posttest data, the researcher used the Wilcoxon Signed Rank Test as the hypothesis test. The Wilcoxon test was chosen based on the relatively small number of research subjects (less than 30 children) and the characteristics of the data that did not meet the assumptions of normal distribution. In addition, the Wilcoxon test was chosen because it is suitable for comparing two paired data sets, namely the pretest and posttest results in the same group after treatment. This analysis aims to determine whether the application of the solmization method using the angklung medium has a significant effect on improving the memory of 5-6-year-old children (Sugiyono, 2023).

RESULT AND DISCUSSION

Implementation Before Treatment (Pretest)

The next stage in this study was to conduct a pretest to determine the children's initial abilities before being given treatment using the solmization method through the angklung medium. The pretest was conducted on two groups, namely the experimental group at DWP Jono Kindergarten and the control group at DWP Kambingan Kindergarten, involving all children in group B at each institution. The pretest was conducted in one session for each group

and was carried out individually with the aim of obtaining an objective picture of the children's memory abilities.

The pretest was conducted by the researcher calling the children one by one. The children were asked to sit facing the researcher in a relaxed atmosphere so as not to cause pressure. The researcher then sang the song "Burung Kakak Tua" as an example, then asked the children to imitate and sing back the song's lyrics according to their abilities. During the process, the researcher assessed two aspects of the children's abilities, namely (1) the ability to remember and repeat the song lyrics in sequence, and (2) the ability to sing the song with clear pronunciation and follow the rhythm and intonation correctly.

The pretest results for the control group at DWP Kambingan Kindergarten showed that the children's initial ability on the first item was in the category of Developing as Expected (BSH) to Developing Very Well (BSB) with an average score of 3.5, while on the second item, the children's average achievement was 3.6, indicating that their ability to sing songs was already good. The total average pretest score for the control group was 7.4, which means that most children were familiar with the songs but still needed practice in pronouncing the lyrics and maintaining consistent tone stability.

Meanwhile, the pretest results in the experimental group at DWP Jono Kindergarten showed relatively comparable abilities. In the first item, the children's ability to remember and recite song lyrics was in the BSH to BSB category with an average score of 3.6. On the second item, the ability to sing the song with the correct intonation and pronunciation had an average score of 3.7. Overall, the average total pretest score for the experimental group was 7.3, which shows that the children were familiar with the song and able to sing it fairly accurately before being given the treatment.

Based on the pretest results of both groups, it can be concluded that the initial abilities of the children in the experimental and control groups were in the good but not yet optimal category, so that treatment given through the solmization method using the angklung medium was needed to see the extent of improvement in children's memory abilities after participating in further learning activities. Description:

1. Recalling and repeating the lyrics of the song "Burung Kakak Tua" in sequence.
2. Sing the song "Burung Kakak Tua" with clear pronunciation and follow the rhythm and intonation accurately.
3. Not yet developed (ND)
4. Beginning to Develop (BD)
5. Developing as Expected (DE)
6. Very Well Developed (VWD)

Pelaksanaan Saat Diberikan Perlakuan (Treatment)

The treatment phase for the experimental group was carried out over three days in one week, from August 11 to August 16, 2025, with activities starting at 7:00 a.m. and continuing until completion. All activities focused on the use of angklung that had been marked with notes according to the solmization of the song "Burung Kakak Tua" (Old Bird), so that children could practice recognizing notes while singing the song gradually.

First Treatment: August 11–12, 2025 (Monday–Tuesday)

On the first two days, activities focused on the first two lines of the song. Children were asked to sing the lines "Burung kakak tua, hinggap di jendela" (Old bird, perched on the window) while playing the angklung according to the solmization notes. The researcher shows hand symbols in the form of fingers (1– 7) to help children recognize the pitch of the notes. At this stage, the exercise is more focused on recognizing basic notes and getting children used to playing the angklung at the right time as indicated by the researcher's instructions. Children are still guided to adjust the beat and tempo, but slowly begin to be able to play the correct notes in the first part of the lyrics.

Second Treatment: August 13–14, 2025 (Wednesday–Thursday)

The activities in the second stage continue with the third and fourth lines of the lyrics, namely the part that goes, "Grandma is old, she only has two teeth left." The children are asked to continue singing while playing the angklung according to the sequence of notes that has been introduced previously. The researcher continued to use hand symbols to help reinforce the children's understanding of solmization. At this stage, the focus of the exercise shifted to the ability to follow the tempo and stability of the rhythm, because this part of the lyrics tends to be memorized more quickly but requires more concentration when combined with playing the angklung.

Third Treatment : August 15, 2025 (Friday)

The third stage focuses on the closing part of the song, namely the lyrics "Tredung, tredung, tredung tra la la..." until returning to the phrase "Burung Kakak Tua". In this session, children are trained to play the angklung more cohesively, following the previously arranged sequence of notes. The researcher gave the children the opportunity to try playing several parts without direct instruction, as an exercise in remembering the melody patterns independently. The main focus at this stage was on tempo accuracy, hand coordination, group cohesion, and the children's musical memory. After the activity was completed, the researcher also began to make initial observations of the children's improved abilities as a basis for the post-test.

Fourth Treatment / Posttest: August 16, 2025 (Saturday)

The last day was used as an evaluation stage to assess the children's abilities after the entire treatment series had been administered. The children were asked to sing and play the entire song "Burung Kakak Tua" in its entirety, from the first lyrics to the end. In this session, hand symbol assistance was reduced so that the children could perform more independently. The main objectives of this activity were to measure the children's memory of the lyrics sequence, their ability to follow the melody and rhythm, their accuracy in playing the angklung, and their cohesiveness when playing in a group. The results of the observations at this stage were used as a reference to assess the children's progress after completing the full treatment.

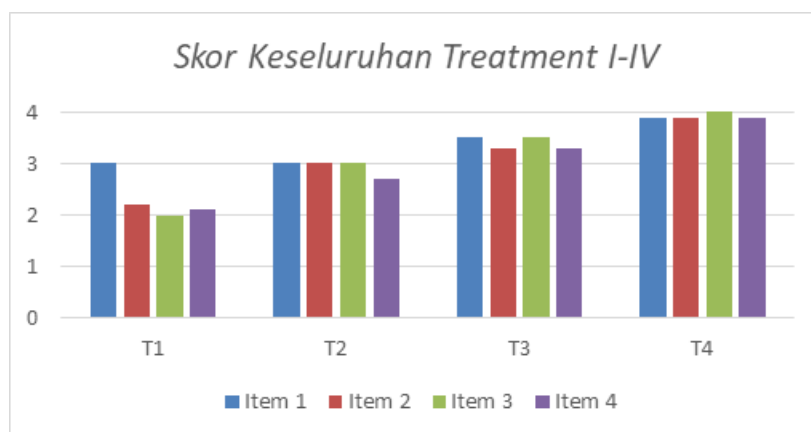


Figure 1. Overall Treatment Data Graph

Implementation After Treatment (Post-test)

After the entire series of treatments using the solmization method through the angklung medium was completed at DWP Jono Kindergarten, the next stage was to conduct a post-test. This activity aimed to determine the extent of change in children's ability to remember and sing the song "Burung Kakak Tua" after receiving the treatment. The post-test was conducted on two groups, namely the experimental group at DWP Jono Kindergarten and the control group at DWP Kambingan Kindergarten. Both activities were carried out on the same day so that the assessment conditions remained balanced and the results could be compared objectively.

The post-test was conducted using the same procedure as the pre-test. The children were called one by one and sat facing the researcher in an atmosphere that was made as comfortable as possible. The researcher sang the song once as a memory trigger, then the children were asked to sing the song independently without the help of the teacher or researcher. The assessment was conducted individually so that each child's abilities could be observed more clearly, particularly in terms of the accuracy of the lyrics, rhythm stability, and clarity of pronunciation.

In the experimental group at TK DWP Jono, the post-test results showed a significant improvement compared to the pre-test. The children appeared more confident, able to sing songs from beginning to end, and remember the lyrics in the correct order. Almost all children scored BSB (4) on both assessment items, namely the ability to remember the sequence of lyrics and the ability to sing songs with the correct intonation and pronunciation. Practicing with the angklung during the treatment had a positive impact on the children's musical memory, because they not only memorized the lyrics but were also helped by the experience of playing solmization notes repeatedly.

In terms of average scores, there was an increase from 7.4 on the pretest to 8.0 on the posttest. Although there was an increase, the change was not as significant as that in the experimental group. The increase in the control group was mainly due to routine learning at school, repetition of songs that had been heard many times, and the natural development of children.

In general, the results of the control group showed that children continued to develop their abilities, but the improvement was not as strong as in the experimental group. This fact reinforces that the solmization method through angklung media contributes more significantly

to improving children's musical memory than conventional learning. The difference in the level of improvement between the two groups proves that the treatment given to the experimental group had a real effect and did not occur by chance.

Wilcoxon Hypothesis Test

The initial step in determining the data analysis technique is to conduct normality and homogeneity tests. These two tests are important to determine whether the research data meets parametric assumptions or not. However, based on the preliminary analysis conducted using SPSS 25, it was found that the research data was not normally distributed. Therefore, the researcher used non-parametric analysis, namely the Wilcoxon Signed Rank Test, to examine the differences within a group.

Tabel 1. Wilcoxon Normality Test

	Null Hypothesis	Test	Sig.	Decision
1	The median of differences between <i>Pretest</i> and <i>Posttest</i> equals 0	Related-Samples Wilcoxon Signed Rank Test	.008	Reject the null hypothesis

The Wilcoxon analysis results show that the significance value is 0.008, which is below the significance threshold of 0.05. Thus, the null hypothesis (H_0), which states that there is no difference between the pretest and posttest scores, is rejected. These findings indicate that there is a significant difference between the pre- and post-treatment scores in the experimental group. In other words, after participating in learning activities using the solmization method through the angklung medium, the children's abilities improved significantly. This shows that the treatment provided had a direct impact on the children's musical memory abilities. This analysis also confirms that the research data is not normally distributed, so the use of the Wilcoxon test is appropriate for observing changes in ability within a single group.

Discussion

The discussion of this study aims to interpret the findings in depth by relating them to established theories, previous research results, and the quality of the instruments used. Thus, this section not only explains the changes in values that occurred but also analyzes the causes, meanings, and scientific contributions of these findings to the development of early childhood learning, particularly in the context of musical memory. In this study, the memory ability of 5-6-year-old children is defined as the ability to store and recall information obtained through music learning, such as remembering the lyrics of the song "Burung Kakak Tua" (Old Bird), the sequence of solfège notes, and the sounds of the angklung. Of the 11 children observed, 5-6 children showed poor memory, and 2-3 children had difficulty placing notes correctly.

The observation instrument was developed based on indicators of children's memory and was found to be valid and reliable (Cronbach's Alpha = 0.638), so that the pretest and posttest data were reliable. The pretest scores of the experimental and control groups were relatively balanced, indicating similar initial abilities. The treatment was carried out over three days with a gradual approach: tone recognition, tempo reinforcement, and song harmony practice using solmization-marked angklung and hand symbols. This multisensory activity is in line with

Piaget's preoperational stage, in which children learn most effectively through concrete, symbolic, and repetitive experiences. The use of angklung allows children to associate auditory symbols with real experiences, strengthen memory, and build new cognitive schemas.

The Wilcoxon test results showed a significance of 0.008, indicating that the treatment had a significant effect on improving children's musical memory. Children not only memorized songs, but also learned them through direct and repetitive experiences, in accordance with Piaget's principles.

However, from a pedagogical and practical perspective, the findings of this study still show that the solmization method using the angklung medium has a stronger impact on the learning process in the experimental group than regular learning in the control group. Descriptively, the improvement that occurred in the experimental group was more consistent. The children appeared to be more focused, more stable in following the rhythm, and quicker to recall previously learned tone patterns. This is in line with the findings of (Paulina et al., 2025) and (Manek et al., 2025) which state that the solmization method can improve children's understanding of the relationship between tones, while strengthening musical memory through a structured repetition process.

This study also reinforces the opinion (Supriadi, 2006) that angklung can function as an educational medium that not only introduces culture but also improves children's concentration and coordination. When children play angklung while following the tempo, they indirectly train their short-term memory, fine motor coordination, and ability to regulate focus. This impact is consistent with the findings of other early childhood studies, such as those reported by Fauzah et al. (2023) and (Claudia et al., 2022) which indicate that musical activities can improve cognitive abilities, including memory and attention.

Overall, this discussion shows that the solmization method in the song "Burung Kakak Tua" through the angklung medium has a positive effect on the memory development of early childhood, especially when viewed from the improvement in learning outcomes in the experimental group. The interaction between musical symbols, hand movements, and the sound of the angklung provides a rich and meaningful learning experience, making it easier for children to remember musical patterns. Although there were no statistically significant differences between the groups, the findings of this study still make an important contribution to the development of music learning models in early childhood education, as they have been proven to foster musical intelligence, strengthen memory, and increase children's engagement in learning activities.

CONCLUSION

Based on the results of the data analysis, it can be concluded that the application of the solmization method through the angklung medium has a positive effect on improving the memory of children aged 5–6 years. The Wilcoxon Signed Rank Test results showed a significance value of 0.008 (< 0.05), which means that there was a significant difference between the pretest and posttest results in the experimental group. This shows that after receiving treatment in the form of learning the song "Burung Kakak Tua" using the solmization method and angklung media, the children's ability to remember lyrics and melodies improved significantly. Thus, the improvement that occurred was internal to the experimental group, not a striking difference between groups.

This data testing was conducted using SPSS version 25 to ensure statistical and objective accuracy of the results. Overall, it can be said that the solmization method through the angklung medium is effective in helping children improve their memory of song lyrics and melodies, even though the improvement did not show a significant difference compared to the control group. Music learning using the song "Burung Kakak Tua" has been proven to create a fun learning atmosphere, actively involving children through sound, movement, and rhythm, as well as fostering a higher interest in learning. Through this process, children not only learn to recognize melody patterns, but also hone their concentration, cooperation, and cognitive abilities in an integrated manner.

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