



# Improving Mastery of Indonesian Vocabulary through Music Mnemonic Method and Picture Cards in Elementary School

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## ABSTRAK

Saat ini mata pelajaran bahasa Indonesia bukan merupakan mata pelajaran wajib di sekolah. Namun, penguasaan kosakata bahasa Indonesia masih membutuhkan usaha lebih bagi banyak siswa. Kompleksnya informasi pada kaidah kebahasaan mata pelajaran bahasa pada Kurikulum 2013 membuat siswa kesulitan dalam menghafal. Penelitian eksperimen semu ini bertujuan untuk meningkatkan penguasaan kosakata bahasa Indonesia kelas 4 di sekolah dasar melalui metode mnemonik musik dan kartu bergambar. Desain penelitian yang digunakan adalah penelitian quasi eksperimen dengan desain antar subjek. Desain antar subjek merupakan desain penelitian eksperimental yang melibatkan dua kelompok atau lebih yang diberi perlakuan berbeda. Desain yang digunakan dalam penelitian ini adalah pre-test-post-test control group design. Pesertanya adalah 30 siswa berusia 9-11 tahun dengan nilai penguasaan kosakata bahasa Indonesia di bawah rata-rata. Hasil penelitian menunjukkan adanya peningkatan penguasaan kosakata bahasa Indonesia melalui metode mnemonik musik dan kartu bergambar siswa kelas 4 SD. Kelompok dengan mnemonik musik memiliki skor tertinggi karena multimodalitas berbagai metode menghafal yang berdampak pada efek chunking pada Memori kerja sehingga informasi baru dapat lebih mudah masuk ke Memori Jangka Panjang. Disimpulkan bahwa penggunaan teknik mnemonik tipe akrostik berpengaruh signifikan terhadap tingkat daya ingat siswa. Penelitian ini memberikan masukan kepada guru dan sekolah untuk menggabungkan beberapa metode dalam memberikan pembelajaran yang sesuai dengan tahap perkembangan kognitif anak.

## ABSTRACT

At this time, the subject of Indonesian is not a compulsory subject in schools. However, mastering Indonesian vocabulary still requires more work for many students. The complex information in the linguistic rules of the language subject in Curriculum 2013 makes it difficult for students to memorize. This study aims to improve grade 4 Indonesian vocabulary mastery in elementary school through music mnemonic and picture card methods. The research design used was a quasi-experimental study with a between-subject design. The between-subject design is an experimental research design involving two or more groups given different treatments. The design used in this study was a pre-test-post-test control group design. The participants were 30 students aged 9-11 with Indonesian vocabulary mastery scores below the average. The results showed an increase in Indonesian vocabulary mastery through music mnemonic and picture card methods for grade 4 students in elementary school. The group with music mnemonics has the highest score due to the multimodality of various memorization methods that impact the chunking effect on working Memory so that new information can more easily enter the Long-Term Memory. It is concluded that the use of accrostic-type mnemonic techniques has a significant effect on students' memory level. This study provides input to teachers and schools to combine several methods in providing learning in accordance with children's cognitive development stage.

## 1. INTRODUCTION

The development of the 2013 curriculum contained changes to several learning contents, including the time or number of hours in a lesson at all levels of education from elementary to senior high school. The three most important aspects of the 2013 curriculum are the need for encouragement so that learning materials are in accordance with the child's developmental stage (Hardiansyah Et Al., 2022; Hardiansyah & Zainuddin, 2022). Second, the need for the ability to develop creativity for students. Third, the importance of character education needs to be developed in the curriculum because there are challenges that will be faced, both internal and external challenges, in the system for managing curricula and material expansion. One of the important factors that reflects a quality school is the curriculum. The curriculum development process requires individuals to make some form of language adjustment and

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understand a second language, one of which is Indonesian. Learning Indonesian must be supported by mastery of vocabulary (Hamer, 2021; Munawir et al., 2022). The vocabulary that grade 4 students must master at the elementary school level is formulated from the competency standards and basic competences set by the government regarding Indonesian. Obstacles that cause students to be unable to learn Indonesian properly include: 1) lack of motivation, 2) teaching materials that are too difficult, 3) methods or language learning media that tend to be less attractive, and 4) lack of habituation to the subject matter Indonesian (Jeharu & Juliari, 2020; Khairunnisah Et Al., 2018). Indonesian language learning strategies suggests that in learning Indonesian, it is necessary to include methods or materials that are fun for students. The method used must be in line with what the students like. When learning any language, a student needs various teaching methods to stimulate the student's memory (Anggaira Et Al., 2022; Leba Et Al., 2021; Sari, 2018).

Theoretical subjects generally require more memorization in studying them. In practice, many of these subjects are taught by conventional methods or lectures, even though much of the material content needs to be known in more detail and requires a more precise approach. Delivery in this way makes these subjects only be considered like fairy tales or as mere complementary subjects. As a result, when faced with exam questions, students will need help recalling the material received, affecting their scores, which are generally low. Students often complain about theoretical subjects because they are considered complex or unimportant. Two things make academic subjects often complain, namely, the aspects of the subjects and elements of the teaching methods. Based on the part of the lesson, students are often not interested in these subjects because there is much memorization, so students tend to ignore the subjects they receive. Viewed from the aspect of teaching methods, teachers tend to teach theoretical subjects with lectures or monotonous memorization, resulting in a lack of student interest in these subjects (Hardiansyah & AR, 2022; Hardiansyah & Mas'odi, 2022).

Based on information from the Ministry of National Education's Puspendik and BSNP about the results of the primary school national exam scores for the 2021–2022 academic year, it is known that 53% of students who take Indonesian language lessons do not pass the national exam directly, 12% do not pass mathematics, and 35% do not pass science. This shows that the level of direct student failure in Indonesian language subjects is the highest compared to natural science and mathematics subjects. The potential for loss in Indonesian subjects is high, and in general, it can be seen that students need help memorizing vocabulary. Indonesian language subjects are generally taught emphasizing memorization because much material is learned. Without a systematic way to remember, memorized material quickly disappears from memory. Revealed that the information is only stored in short-term memory, which lasts about 30 seconds. This shows that when someone briefly studies a subject matter, the material has been entered into memory, but the storage duration is minimal, around 30 seconds, so it cannot be recalled for a more extended period. Short-term memory can only hold about  $7 + 2$  items, so it cannot store more data (Hardiansyah et al., 2023; Hardiansyah & Mulyadi, 2022). This means that data will be shifted after someone enters more than  $7 + 2$  items, so previous details will be forgotten. Therefore, for information to be reaccessed in a more extended period and with more capacity, this information must be stored in long-term memory.

The theory of memory structure suggests that there are three parts of memory: sensory, short-term, and long-term. New information can be entered and processed in the memory system in a way or method that bridges the information (Erlina Et Al., 2019; Rachmawati, 2018; Simbolon Et Al., 2022). Information will be stored properly in long-term memory. Maintenance rehearsal is one of the strategies used to help information survive in long-term memory. Previous research on vocabulary learning methods shows that repetition can impact one's vocabulary mastery (Bram et al., 2020). Provides input that the repetition method does not make any difference to students' vocabulary mastery. That animated images that students forget will impact students' memorized vocabulary (Munawir Et Al., 2022; Rasiban Et Al., 2019). Images can function as a student facility in memorizing, although often, if the image is forgotten, the information can be lost along with the loss of the image from the student's memory.

Based on observations in elementary schools in Sumenep regency, when learning Indonesian was implemented, the learning process was still in the teacher center concept, the methods did not change, and students were not allowed to think positively and express their opinions. Feeling bored when delivering material, the teacher explains the main points of the material and then asks students to work on student worksheets. Therefore, abstract teaching materials have not been explained clearly and are not interesting (Hamer, 2021; Nasri, 2021; Utami & Astuti, 2021). Learning activities always use strategies, methods, media and learning resources that are used so that students can learn efficiently and achieve learning outcomes. The involvement of the senses can also follow the repetition method application. Giving applications that involve these sensory organs can be done in various ways, such as with picture cards or

songs. The strategy that can be used to help the memorization process is mnemonics (Bahrami et al., 2019; Chabibilah, 2020; Jamik & Soeharno, 2020).

Mnemonics is a strategy to assist a person in organizing information to achieve the maximum stage of long-term memory. Music mnemonic is a method of remembering information by making that information into a song (Naralita & Azis, 2020; Winoto Et Al., 2018). Mnemonics are strategies and tricks to improve memory skills, such as using rhymes or formulas. The mnemonic method can help students teach the material in a way that is easy to remember/understand. This method works to activate the function of the right brain, where students are trained to compose a story, song and picture using their imagination to become something interesting and fun (Andreania & Ying, 2019; Liando Et Al., 2022). Previous research use the mnemonic method to make it easier for students to remember something, thereby reducing obstacles in the learning process said that using the mnemonic method greatly influences student learning (Naralita & Azis, 2020; Tarkhova Et Al., 2020). The researcher devised a music mnemonic method by using music rhythms that students liked and had existed before, but by replacing the song's lyrics with words in Indonesian followed by their meaning in Indonesian. The researcher also presented a picture card containing a picture, followed by an Indonesian word which would be given to the students for the second method. This study uses children's music, which children from grades 1 to 4 at elementary school levels. The use of images in this study uses attractive and colorful images. This research aimed to improve Indonesian vocabulary mastery through music mnemonics and picture cards for elementary school students.

## 2. METHOD

The research design used was a quasi-experimental study with a between-subject design. The between-subject design is an experimental research design involving two or more groups given different treatments (Rogers & Revesz, 2019). The design used in this study was a pre-test-post-test control group design. The pre-test-post-test design is a design that compares the pre-test scores with the post-test scores obtained by the participants. In this research, PK1, PK2, and KK will be formed. PK1 is the group that gets repetition treatment with mnemonic music, PK2 is the group that gets repetition with picture cards, and PE is the group that gets repetition only without media. The research participants were grade 4 students. The sample selection of research participants was carried out without going through randomization (nonrandomized) but was selected based on the characteristics of the sample (purposive sampling). The characteristics of the sample in this study were as follows: (1) Having an interest in music, singing, and having an interest in pictures, (2) Having an equal level of intelligence between the experimental groups, (3) Having the ability to master vocabulary in the medium to low range. The ability to master vocabulary is moderately low, obtained from the last Indonesian test score (all below 7.0). Vocabulary was compiled based on vocabulary tests and Indonesian language package books for grade 5 elementary school. The vocabulary mastery test grid consists of (1) types of vocabulary mastery, namely active receptive, and (2) indicators or aspects, namely word classes (nouns, verbs, adjectives, and task words), meanings, meaning relationships (synonyms and antonyms), and word forms (essential words and affixes). The overview of the pre-test and post-test group design research design is show in Figure 1.

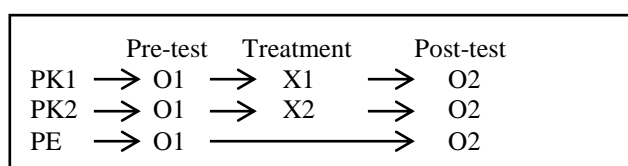


Figure 1. Experimental Design

The procedures carried out in the pre-experimental stage were measuring vocabulary in the early stages before being given the intervention, measuring student intelligence tests using the CFIT 2A test, compiling a program of both music mnemonic methods and picture cards, selecting several teachers who were blind experimenters in this study, and explain to the teachers. This study has three instruments: music, picture cards, and vocabulary test questions. Validity measurement uses content validity, taking into account the CVI value. The CVI calculation results for the three songs showed that Song A had a CVI value of 0.6, Song B had a CVI value of 1.0, and Song C had a CVI value of 0.866. The three CVI values are above 0.5, indicating that the three songs are valid. The CVI calculation results in the figure show that the CVI value is moving from 0.6 to 1.0 and can be said to be valid. The CVI calculation results on the vocabulary test questions are moving from 0.866 to 1.0 and are said to be valid. The measurement tool used was 90 short answer questions representing the Indonesian Vocabulary Competency Standards for

grade IV students, and their reliability was measured using the Kuder Richardson-20 ( $p=0.958$ ; close to 1.00).

The method used to analyze the data in this study is the Covariance Analysis method (ANOVA). Data analysis in this study used SPSS 21.0 software. The analysis technique used in this study was Covariance Analysis (ANOVA). The Anakova technique is a combination of comparative and correlation tests. The anakova test, which distinguishes it from the ANOVA test, is a relationship test carried out in addition to the comparison test. Comparative tests were carried out on differences in student scores at PK1, PK2, and PE related to students' mastery of Indonesian vocabulary. The relationship test was carried out between students' mastery of Indonesian vocabulary and the results of students' intelligence tests.

### 3. RESULT AND DISCUSSION

#### Result

The normality test was carried out to test the normality of the data distribution both on the pretest and posttest. This normality test was carried out using kolmogorov-smirnov as show in [Table 1](#).

**Table 1. Normality Test**

	Kolmogorov-Smirnov			Information Normal/abnormal
	Statistic	Df	Sig.	
Pre-test	0.143	30	0.122	Normal
Post-test	0.104	30	0.200	Normal

[Table 1](#) shows the results of the normality test of the data distribution on the pretest with  $p = 0.120$  where  $p > 0.05$ , meaning that it can be said that the pretest results are normal. The normality test of the data distribution on the posttest with  $p = 0.200$  where  $p > 0.05$  means that it can be said that the posttest results are normal. The homogeneity test is carried out to determine whether the variance of two or more variables used in the study is the same. The homogeneity test was carried out using Levene's Test. Based on the data above, the control and experimental classes at the pretest had the same percentage of completeness before being treated with learning techniques. The difference in results between the two types appeared after being given treatment. The experimental class was given acrostic mnemonic techniques, while the control class was given conventional methods. The percentage of success in the practical course was 69.69%, while in the control class it was 27.27%. Based on this, it shows significant differences in memory that can be seen through the learning outcomes between the two. The result of homogeneity test is show in [Table 2](#).

**Table 2. Homogeneity Test**

	Levene's Test		Information Homogen/not
	F	Sig.	
Test scores	0.678	0.516	Homogen
Pre-test	0.022	0.978	Homogen
session 1	0.745	0.484	Homogen
session 2	1.027	0.372	Homogen
session 3	0.231	0.796	Homogen
Post-test	0.434	0.652	Homogen
1 week delay	0.192	0.827	Homogen

Base on [Table 2](#) the acquisition of p-values of more than 0.05 in the overall test results. Hypothesis testing was carried out using an analysis of covariance. Measurements of the experimental and control groups were carried out three times in each group. Data analysis in this study used the General Linear Model - Repeated Measures by SPSS 16.0 software. The control variables used for comparison in this study were the students' IQ Test scores and the last Indonesian test scores obtained by the students. The results of the analysis show that there is an effect of the method on students' vocabulary scores. This is shown by the significance value of 0.001 (less than 0.05), which means that the method influences students' Indonesian vocabulary test scores. IQ scores do not influence vocabulary test scores. This is shown by the significance value of 0.766 (more than 0.05). It is known that Experiment Group 1 ranked the highest when measured post-test and follow-up. Experimental Group 2 also experienced the same increase as Experimental Group 1, but at the Follow-up, Experimental Group 2 experienced a decrease. The control group was at the lowest position. In this study, there were four vocabulary themes given to

students. The themes were part of the body, family members, school life, and home sweet home. The analysis found that in the school life and family member themes, students had lower scores than in the other themes. This low score was not in the control group but in the group with music mnemonic and picture card intervention. This study also conducted interviews with student representatives from each group. Interviews were conducted on one subject with the highest score and one with the lowest in each group. Interviews were conducted with six research participants. The result as show in [Table 3](#).

**Table 3. Interview Results**

Question category	highest PK1	lowest PK1	highest PK2	lowest PK2	highest PE	lowest KK
The fun part of the lesson	I'm happy because I use songs, I like singing so I can memorize it better	I like the song, but sometimes I forget the lyrics	Happy because there are funny pictures	Nice picture	Can focus on memorizati on	Just normal
Obstacles faced while studying	There isn't any. Exciting and still remember the song	When asked again, I forgot it meant which song it was in	Image change too fast. Haven't seen the words yet	Tired of the pictures, Sometimes something is incomprehensible	It's hard to remember, it should take a while	Don't know how to memorize
The feeling of learning with a certain method	Happy, because it can be repeated with friends	It's fun, but later when you don't hear the song, you forget it again	Nice, because I can see the pictures	Not happy because it's boring. Bored with the same picture all the time	Just normal	Confused

The questions presented to the subjects were about the fun things from the lessons given, the obstacles faced by students while learning, and the subject's feelings when learning with specific methods that were different from what he usually received in daily school activities. The results showed the effect of the intervention of mnemonic music and picture cards on the mastery of Indonesian vocabulary of grade 4 students ( $p=0.001$ ;  $p<0.01$ ). The mean score of vocabulary mastery score in experimental group 1 was 72.6. The mean score of vocabulary mastery score in experimental group 2 was 64.9. The mean score of vocabulary mastery score in the control group was 52.1. Experimental group 1 had the highest average vocabulary mastery score compared to experimental group 2 and the control group.

## Discussion

The results of this study support other research conducted by previous study on the effectiveness of the music mnemonic method in academic learning at school ([Jamik & Soeharno, 2020](#)). The music mnemonic method is a method that can bridge the brain performance process. This is due to the influence of music that can balance the performance of the right and left hemispheres of the brain ([Erlina et al., 2019](#); [Rasiban et al., 2019](#)). Researchers make acrostic based on three factors that affect memory, namely association, meaning, and emotion, which are related. The relationship built between meaningless affixes and vocabulary that is relevant to the demands of life so that it feels more familiar to students. The stages of learning Indonesian in grade 4 begin with preparing and displaying illustrated card learning media about the prowess of a magician who memorizes rows of numbers precisely and accurately. The aim is to involve emotional factors so that students give a positive response and greater attention because attention is one factor that affects memory ([Hardiansyah, 2022](#); [Yuniar et al., 2020](#)). The researcher then linked the picture cards with learning material that high-level intelligence or inherited intelligence, but memorization can be learned and trained.

The next researcher explained how to use acrostic with learning media in PowerPoint. The trick is that each type of affix must only be separated from each word contained in the acrostic. This method involves using semantic memory for storing vocabulary to distinguish and separate examples of affixes from types of affixes. Then, for each explanation of the kind of affixation, the researcher provides examples of words and sentences so that the use of affixes is appropriate and everything is correct in the encoding phase. Next, the training stage is carried out to store information from short-term to long-term



memory and ends by providing feedback in the form of asking about the constraints experienced by students during the learning process. The control group explained Indonesian affixation using visual media on PowerPoint slides. It's just that in each fall, there is absolutely no acrostic. That is where the difference lies. The learning outcomes of the experimental and control classes on Indonesian language affixation material through pretest and posttest show the level of students' memory. The results obtained from the test obtained different average values for the two types.

The second stage proposed is developing connections by making familiar material, which means making associations and building relationships between materials. Researchers make acrostic based on three factors that affect memory, namely association, meaning, and emotion, which are related. According to previous study before information can be stored and retrieved, it must be encoded (Munawir et al., 2022; Winoto et al., 2018). Encoding is the process of translating knowledge into codes with the help of mental images. In the coding phase, the researcher asked several students to name the whole type of affixation. Some students who were invited did not have complete answers and tended to make many mistakes, even though the material about affixation had already been studied. Then, the researcher continues by delivering material using the media that has been made. After the students saw the slide that had an acrostic in it, most of them laughed. This response occurs because the acrostic is very close to life, relevant, and has clear associations. The next researcher explains how to use the acrostic that has been made. The trick is that each type of affix must be separated from each word contained in the acrostic. Then, for each explanation of the kind of affixation, the researcher provides examples of words and sentences so that the use of affixes is appropriate and everything is correct in the encoding phase.

Expanding the sensory image, which sharpens memory, is the third stage of using the mnemonic technique proposed. Sharpen memory by doing exercises in the form of repetitions in memorizing because determining whether to store acrostic information regarding affixation material in short-term or long-term memory occurs at the training stage. The process of remembering exercises lasts for 30 minutes, with students visualizing and repeating information continuously until the time is over so that it is memorized (Cox, 2019; Munawir et al., 2022). Students continue to carry out the first 10 minutes of the visualization process by looking at each other's notebooks and repeating information. Researchers supervise students who independently continue to memorize repeatedly.

The fourth stage is recalling the material until it is complete, which means practicing remembering the information thoroughly. At this stage, the researcher allowed students and their peers to mention the types and examples of affixations. Two bench people in the experimental group stood to complement each other when verbalizing the types and models of affixes that had been memorized orally. The two students who remembered then mentioned affixes based on the acrostic that had been made. Then, after finishing, take turns with other bench pairs. The memorization results can be discussed systematically, and when one person is a little hampered, the other person can add it and then continue (Chandio et al., 2016; Munawir et al., 2022). Although only some things are smooth, the memorization is complete and can be mentioned systematically. The control class did not use the acrostic type mnemonic technique in learning Indonesian affixes. The control class experienced more resistance. In the process, several examples of affixes still need to be remembered. This happened because students memorized affixes randomly and not systematically, like an acrostic. Students whose memorization is hampered tend to stop, take longer, close their eyes, look up for ideas, tap their heads, and so on—signs of trying hard to remember. The result of the effect size calculation shows that the effect of using the acrostic type mnemonic technique has high criteria. It is said to meet high standards because the ES calculation results = 1.17, which means  $1.17 > 0.8$ . The effectiveness of the acrostic type mnemonic technique that has been calculated can be concluded to be high because the results of the calculation of  $ES = 1.17$ , which means  $1.17 > 0.8$ , are obtained from the influence of the acrostic.

A person can automatically understand the music that enters the memory system in the brain. Previous studies explain that songs whose lyrics have been replaced with vocabulary to be entered into Memory have a chunking effect on students' Memory (Bahrami et al., 2019; Utami & Astuti, 2021). This is due to the recall of the learned song during the information entry process from STM to LTM. The chunking effect is related to the grouping of the melody with the vocabulary in the song lyrics. This causes a student to recall more easily with the presence of facilities in the form of songs or music. Research conducted by previous study on the effectiveness of memorization methods to improve vocabulary mastery also explains that the involvement of brain activity is needed in learning a language or vocabulary (Simbolon et al., 2022). This is because memorization involves Memory, and the primary memory performance is in brain activity. Combining learning methods in learning new information is part of multimodality. Multimodality combines several methods in processing information in working Memory (Drewry et al., 2019; Munawir et al., 2022; Philippe et al., 2020). The working memory process supported by multimodality will help new information enter Long-Term Memory. The group that received the picture

card intervention scored below the group that received the music mnemonic intervention. Picture cards are facilities that use visual methods, where participants with the picture card method can only use vision to see images. The results showed that the group with picture cards also had better scores or had a difference in vocabulary mastery compared to the group that did not get any method. This supports previous research conducted which suggests that the picture card method is a medium that can be used for visual teaching methods or those that involve vision (Nasri, 2021).

The increase in scores in the control group is exciting to discuss. Subjects who are grade 4 elementary school students are aged ten years and can be classified as being at the concrete operational cognitive development stage. The concrete operational stage of development requires children to think logically and begin to use clear rules but only with concrete objects. Children aged ten years can classify, group, and organize problems (Rachmawati, 2018; Schut et al., 2022). 10 is a good age to start learning a second language (L2). English as a second language for children is a new language that children must master in addition to the increasing development of the first language (L1). The second language (L2) can begin to be learned because of the help of previous language acquisition. For children who have good Indonesian language skills, it is possible to have good English language skills if excellent and appropriate methods facilitate the bridge process between Indonesian and English. The vocabulary mastery score is thought to be influenced by other variables, such as students' intelligence ability in this study. The calculation results show that students' English vocabulary mastery does not interact with the Intelligence Test score results. This is shown by the value of  $p=0.776$  ( $p>0.05$ ), which indicates no interaction between students' English vocabulary mastery and the Intelligence Test score. Language or vocabulary learning involves many aspects of a person's memory.

One of the influential aspects of the memory process is the organization of information. The organization of information aims to distinguish and make it easier for information to be stored in memory. This information organization is determined based on the context of the vocabulary or vocabulary theme. The context of the learned vocabulary affects how a person absorbs new information. Context effects have been observed in studies on perceptual memory using stimuli of geometric shapes, random shapes, and semi-abstract images (Naralita & Azis, 2020; Winoto et al., 2018). The context of information is very much related to everyday life. Information outside the context of a person's daily life will be challenging to manage and organize in the brain.

One significant implication is the potential to increase students' mastery of Indonesian vocabulary through the application of the music method as a memory aid. Using the mnemonic method with music can improve students' memory because music can increase attraction and emotional involvement, making it easier for students to remember vocabulary through association with melody or rhythm. However, this study also has several limitations that need to be considered. First, the generalizability of the results may be limited to certain populations, so caution is needed in applying the findings of this study to different educational contexts. Additionally, research may not cover all variables that influence vocabulary acquisition, so the findings need to be considered in a broader context. Additionally, the long-term impact of implementing these methods on students' language development needs to be further investigated to understand the sustainability of positive results.

#### 4. CONCLUSION

This study shows significant differences in vocabulary mastery between the groups using the mnemonic approach and those not. The supporting factor for this method is playing while learning. Factors that influence this success include learning by playing, the frequency of practice, feedback and rewards, and students' difficulty level. This research has several limitations. The sample size for this study was relatively small, so the results may not be widely applicable to the larger population. In addition, this research was conducted over some time, so the results may not reflect the long-term effects of the learning methods used. This study only compared the group that used the mnemonic learning method with the group that did not use the mnemonic method. However, a more appropriate control group is a group that uses other learning methods so that the results can be more valid and reliable. This study did not consider other factors that might affect the students' vocabulary skills, such as previous level of intelligence or language background. Therefore, the research results must be examined more critically and consider the extent to which this mnemonic approach is practical in different learning contexts.

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