JAPRA
Jurnal Pendidikan Raudhatul Athfal
P-ISSN. 2527-4325 E-ISSN. 2580-7412

The Effect of Illustrated Magnetic Board Media on the Speaking Skills of Children Aged 5–6 Years

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Naskah diterima: 25 Oktober 2025, direvisi: 5 November 2025, diterbitkan: 25 Desember 2025

Abstrak

Penelitian tersebut didasarkan pada beberapa anak yang masih kesusahan menyusun kalimat lengkap, kosa kata terbatas, anak kesulitan menyusun kalimat yang memiliki struktur subjek-predikat-objek-keterangan (SPOK) dan kurang percaya diri saat berekspresi. Tujuan penelitian tersebut untuk mengetahui pengaruh penggunaan media papan magnet bergambar terhadap kemampuan berbicara anak usia 5-6 tahun, khususnya dalam kemampuan mengulang kalimat kompleks, menyusun kalimat (SPOK) dan mengelompokkan gambar sesuai huruf awal. Metode penelitian menggunakan Eksperiment one group Pretest-Posttest design dengan menggunakan 13 siswa dan Total Sample, dengan rumus Uji t. Subjek penelitian tersebut menggunakan pilihan kelas TK B kepada anak yang berusia 5-6 tahun didasari oleh pada penelitian materi papan magnet bergambar yang sudah diajarkan dalam jenjang kelas tersebut. Teknik pengumpulan data dengan menggunakan teknik observasi berupa pre-test dan post-test serta dokumentasi kemudian dengan uji-t (Paired Sample t Test). Analisis data tersebut menggunakan analisis deskriptif yang kemudian dilanjutkan dengan analisis statistik inferensial. Berdasarkan tabel Paired Samples Test, diketahui nilai Sig. (2-tailed) ialah sebesar 0,00 < 0,05, maka H0 ditolak. Artinya ada perbedaan rata-rata hasil tes awal dan tes akhir, sehingga dapat disimpulkan bahwa ada pengaruh media papan magnet bergambar memiliki pengaruh yang signifikan terhadap kemampuan berbicara anak usia 5-6 tahun di TK Bina Tunas Bangsa Surabaya.

***Kata kunci**: Papan Magnet Bergambar; Kemampuan Berbicara; Anak Usia 5-6 Tahun.*

Abstract

The study was based on several children who still have difficulty constructing complete sentences, limited vocabulary, children have difficulty constructing sentences that have a subject-predicate-object-adverb (SPOK) structure and lack of confidence when expressing

themselves. The purpose of the study was to determine the effect of using magnetic picture boards on the speaking ability of children aged 5-6 years, especially in the ability to repeat complex sentences, construct sentences (SPOK) and group images according to the initial letter. The research method used an Experiment one group Pretest-Posttest design using 13 students and a Total Sample, with the t-test formula. The research subjects used the choice of Kindergarten B class for children aged 5-6 years based on research on the magnetic picture board material that had been taught in that class level. Data collection techniques used observation techniques in the form of pre-tests and post-tests as well as documentation then with a t-test (Paired Sample t Test). The data analysis used descriptive analysis which was then continued with inferential statistical analysis. Based on the Paired Samples Test table, the Sig. value was known. (2-tailed) is 0.00 < 0.05, so H0 is rejected. This means that there is a difference in the average results of the initial test and the final test, so it can be concluded that there is an influence of the magnetic board media with pictures that has a significant influence on the speaking ability of children aged 5-6 years at Bina Tunas Bangsa Kindergarten Surabaya.

Keywords: Magnetic Picture Board; Speaking Skills; Children Aged 5-6 Years.

Introduction

Early childhood refers to the initial phase of a child's development, beginning at birth and continuing until the age of six. This is a period of rapid physical, cognitive, linguistic, and emotional development that lays the foundation for the rest of a child's life. According to Article 1, Paragraph 14 of Law No. 20 of 2003 on the national education system, early childhood education (ECE) is defined as educational efforts aimed at children from birth through age 6. This process is carried out by providing educational stimulation to support children's growth and development both physically and emotionally, so that they are prepared to advance to higher levels of education (Nurachadijat & Selvia, 2023).

Education is a planned process designed to develop human potential in terms of knowledge, skills, and attitudes. The goal of education is to guide students toward holistic development, encompassing intellectual ability, personality, and moral character. Early childhood education is a form of education that is crucial for national development, as it serves as the primary foundation for national progress. If children develop well, the next generation will also thrive (Isjoni, 2011). Early childhood education plays a vital role, as this period marks a "golden age" of development that cannot be replicated later in life. During

this period, it is essential to nurture the potential of every child. Young children are the nation's future generation and are a trust from Allah SWT that must be safeguarded to the greatest extent possible. Simply put, the central idea is that children can experience sudden changes from early childhood through to old age. One aspect of a child's development is their language ability (Nabila, 2020).

Early childhood language skills form the foundation of communication abilities that develop through listening, speaking, and imitation. In the early stages, children learn to understand messages and convey ideas to others. The ability to use language effectively during early childhood is known as early childhood linguistic intelligence (Hidayat & Al-Audiyah, 2023). According to Ernasari et al. (2025), a child's ability to understand, process, and utilize words in linguistic form, whether conveyed orally or in writing, is referred to as linguistic intelligence. Language development essentially encompasses two elements: the ability to understand language and the ability to express it (Anis et al., 2021).

Based on previous research, Jamain Rachmayanie and Rumina (2023) found that children's storytelling abilities remain relatively low because their vocabulary development has not yet reached its full potential. Consistent with these findings, a study conducted by Isnaini and Sukmawati (2023) using magnetic board media indicated that some children still struggle to name and arrange letters of the alphabet. Based on these issues, this study aims to determine the effect of using illustrated magnetic boards on the speaking skills of 5-6 year old children at Bina Tunas Bangsa Kindergarten in Surabaya. The results of this study are expected to provide insight into the improvement of children's speaking skills and vocabulary acquisition through retelling activities using illustrated magnetic boards.

The development of speech skills in early childhood is influenced by environmental stimulation, social interaction, and appropriate learning materials. A supportive environment helps children enrich their vocabulary, construct sentences, and tell stories more effectively (Nabila, 2020). Speech skills not only serve as a means of communication but also provide a platform for children to express their ideas, feelings, and desires. Children aged 5 to 6 years are in a growth period known as the golden age of language development. Therefore, appropriate stimulation is essential for children's language skills to develop optimally.

Based on observations at Bina Tunas Bangsa Kindergarten in Surabaya and interviews with teachers there, it was found that some children still struggle to form complete sentences, have a limited vocabulary, and are not yet able to properly construct

sentences following the Subject-Predicate-Object-Modifier structure. Children also tend to lack confidence when speaking, rarely participate actively in group discussions or storytelling activities, and give short answers using simple vocabulary. Furthermore, the development of children's speaking skills is hindered by a lack of engaging learning materials that can spark their imagination.

Learning materials enable children to explore various concepts and skills in a more tangible and meaningful way, enhance young children's understanding of subject matter, and foster their curiosity and creativity (Gea & Zega, 2025). Adapting modern learning models tailored to the needs of young children through educational toys is an effective method for supporting children's development and learning (Anggraini, 2025). The development of educational toys requires a creative approach to create engaging learning media that meet children's needs (Siagian et al., 2025). Therefore, these educational toys are integrated with magnetic picture boards designed to support children's speaking skills.

The illustrated magnetic board for children aged 5–6 is an educational toy designed to enhance early literacy and language skills in young children. It consists of a magnetic board equipped with various illustrations and magnetized letters that can be attached to the board and moved around by the child, making the learning process interactive and enjoyable. An example of the magnetic picture board is shown in Figure 1

Figure 1. Illustrated Magnetic Board

Magnetic picture boards for early childhood are a type of visual learning tool specifically designed for children in the early stages of development, namely ages 0–6. These boards typically feature attractive images that are easily recognizable to children, such as pictures of animals, fruits, numbers, letters, shapes, or everyday activities. The main purpose of magnetic picture boards is to help children learn various basic concepts through a fun, visual approach that is tailored to the developmental characteristics of young children.

Methodology

This study employed a quantitative approach using a one-group pretest-posttest design. Quantitative research is defined as a research approach grounded in the philosophical framework of positivism; this approach is used to examine a specific group or segment of a population (Sugiyono, 2023). This design was used to determine the differences between pretest and posttest results. The study examined the effect of Variable X (Illustrated Magnetic Board Media) on Y (student learning outcomes). The study population consisted of 13 students in Kindergarten Class B. The sampling technique used was total sampling, in which the entire group of 13 Kindergarten Class B students was studied.

The data collection methods in this study included observation, performance tests, and documentation. The researcher utilized statistical data obtained from observations of the children's activities to assess their speaking (storytelling) abilities through the use of the illustrated magnetic board. The data collected were quantitative in nature, expressed as numerical values. Assessment was conducted using a 4-level scale with the following criteria: Level 1 = Not Yet Developed (BB), Level 2 = Beginning to Develop (MB), Level 3 = Developing as Expected (BSH), and Level 4 = Developing Very Well (BSB). The analytical technique used was a t-test to compare pre-test and post-test results for each treatment group. According to the study, as cited by Sugiyono (in Cahyono, 2017), this data analysis technique was applied using the t-test.

O1 x O2

Information :

O1 = Pretest Score (Before playing with the magnetic picture board)

X = Treatment

O2 = Posttest (After playing with the magnetic picture board)

Results and Discussion

Data analysis in this study was conducted using the paired-sample t-test with the assistance of SPSS software. This technique was chosen because it is appropriate for comparing the mean differences in results before and after treatment, with the aim of determining whether the use of illustrated magnetic boards has a significant effect on the

speaking ability of 5- to 6-year-old children, with a sample size of 13 students. The criteria for hypothesis testing were set based on a significance level of 5% or 0.05. If the significance value (Sig., 2-tailed) was < 0.05, it was concluded that the treatment had a significant effect. Conversely, if the value was > 0.05, the treatment was deemed to have no significant effect.

Table 1. Pretest Results

Number	Respondent Code	Average indicator 1	Average of Indicator 2	Average of Indicator 3	Overall Average
1.	S1	1,38	1,50	1,88	**1,58**
2.	S2	1,25	1,38	1,42	**1,35**
3.	S3	1,29	1,29	1,29	**1,29**
4.	S4	1,63	1,88	1,88	**1,79**
5.	S5	1,38	1,50	1,50	**1,46**
6.	S6	1,50	1,63	1,75	**1,63**
7.	S7	1,75	1,88	1,88	**1,83**
8.	S8	1,50	1,63	1,63	**1,58**
9.	S9	1,50	1,75	1,79	**1,65**
10.	S10	1,29	1,38	1,33	**1,33**
11.	S11	1,75	1,92	1,83	**1,83**
12.	S12	1,38	1,46	1,42	**1,42**
13.	S13	1,83	2,00	1,92	**1,92**
Overall average		1,49	1,63	1,66	**1,58**

Days 1 through 8 involved conducting the research without formal instruction, meaning the activities were carried out directly and orally without using aids such as magnetic picture boards or alphabet letters. The dependent variable indicators consist of:

1. Children are able to repeat more complex sentences.
2. Children are able to construct simple sentences with a subject-predicate-adverb structure.
3. Children are able to name several groups of pictures that start with the same letter.

Based on the results of the pre-test table, these are the results obtained before the intervention or before using the teaching materials. The pre-test was conducted over 8 sessions, with the pre-test administered at the beginning of the learning process. The average score was 1.58, indicating that the children had not yet developed the necessary

skills, that is, they were unable to demonstrate the behaviors or abilities being measured, even when provided with assistance, encouragement, or examples. This condition was evident when the activities were conducted without the use of learning media. The criteria established in this study were as follows: children were able to repeat more complex sentences; children were able to construct simple sentences with a subject-predicate-adverb structure; and children were able to name several groups of pictures with the same initial letter

The pre-test was administered before using the illustrated magnetic board or before instruction began, with a total of 8 sessions planned for the study. Thus, the pre-test results indicate the children's ability levels before receiving the instructional intervention and before using the media. The following graph shows the average pre-test results:

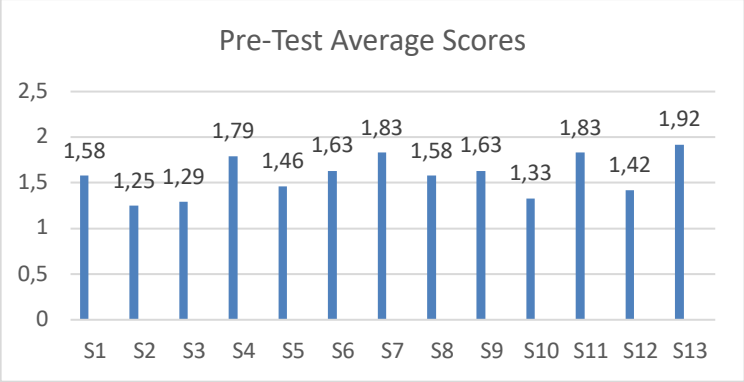

Figure 2. Diagram of Speaking Ability Before Treatment (Pretest)

The results of the data collection (post-test) following the treatment are presented in the following table:

Table 2. post-test results

Number	Respondent Code	Average indicator 1	Average of Indicator 2	Average of Indicator 3	Overall Average
1.	S1	2,50	3,00	2,08	**2,79**
2.	S2	2,08	2,17	2,17	**2,13**
3.	S3	2,33	2,50	2,58	**2,46**
4.	S4	3,00	3,33	3,54	**3,29**
5.	S5	2,42	2,42	2,33	**2,38**
6.	S6	2,83	3,08	2,83	**2,92**
7.	S7	3,08	3,42	3,42	**3,29**
8.	S8	2,67	3,00	3,00	**2,88**
9.	S9	2,33	2,75	2,88	**2,63**
10.	S10	2,50	2,75	2,63	**2,63**

Number	Respondent Code	Average indicator 1	Average of Indicator 2	Average of Indicator 3	Overall Average
11.	S11	3,00	3,25	3,13	**3,13**
12.	S12	2,25	2,33	2,29	**2,29**
13.	S13	3,25	3,50	3,58	**3,42**
Overall Average		2,63	2,89	2,90	**2,78**

Days 1 through 8 involved conducting the research activities after the lesson, meaning the activities were carried out directly and orally using materials such as magnetic picture boards and alphabet letters. The dependent variable indicators consist of:

1. Children are able to repeat more complex sentences and understand the rules of a game.
2. Children are able to construct simple sentences with a subject-predicate-adverb structure.
3. Children are able to name familiar alphabet letters and identify several groups of pictures that start with the same letter.

Based on the results in the post-test table, these are the results obtained after the intervention or after using the media. The average research result was 2.78, which means that the children developed as expected (BSH) when using the media. According to the assessment rubric, the "Developing as Expected" category means that the children have met the expected developmental indicators. The average score of 2.78 indicates that the children were able to repeat complex sentences, construct simple sentences, and group pictures according to their initial letters, meaning their development met the established standards. The post-test was administered after the use of the illustrated magnetic board or the start of instruction, with a total of 8 sessions planned for the study. Thus, the post-test results reflect the outcomes after the intervention or after the use of the media. The following graph shows the average post-test scores:

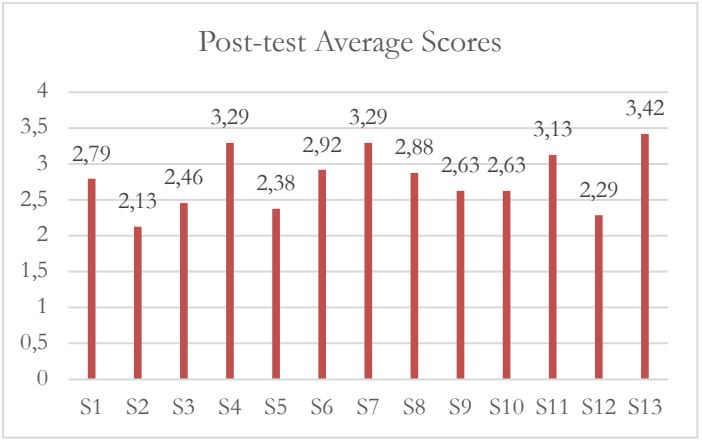

Figure 3. Diagram of Speaking Ability After the Intervention (Post-test)

In general, the results of the pre-test and post-test indicate an improvement in learning outcomes between activities conducted without media and those using illustrated magnetic boards. Based on the results of all pre-tests and post-tests, after analyzing the data, the pre-test score was 1.58, while the post-test score was 1.78. Therefore, it can be concluded that the post-test results were superior to the pre-test results.

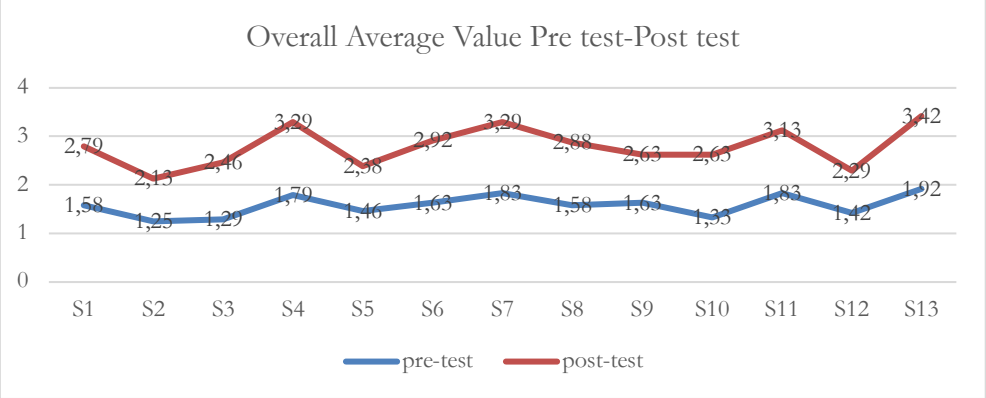

Figure 4. Comparison Diagram of Pre-test and Post-test Scores

Next, after organizing the data into pre-test and post-test tables or pre-test and post-test diagrams to validate the data, the next stage in the statistical analysis is to conduct a Paired Samples t-test to determine whether there is a difference between the two paired data sets such as the results of measurements taken before and after the intervention, or whether the illustrated magnetic board medium has an effect on children's speaking ability. Similar to the authors (Rachmayanie &Rumina, 2023), who used a quantitative research method, the type of experiment employed was a quasi-experimental design.

If the Sig. (2-tailed) value is <0.05, then the illustrated magnetic board medium is deemed to have a significant effect on children's speaking ability. If the Sig. (2-tailed) value

is > 0.05, then the illustrated magnetic board medium has no effect on children's speaking ability.

Table 3. Speaking Ability Hypothesis

Pretest Pair – 1 postest	Mean	Std Deviation	Std Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
	-1,208	,227	0,63	-1,345	-1,071	-19,225	12	,000

Based on the Paired Samples Test table above, the Sig. (2-tailed) value is 0.00 < 0.05; therefore, H0 is rejected. Thus, it can be concluded that there is a difference in the mean scores between the pre-test and post-test results, indicating that the illustrated magnetic board has an effect on the speaking ability of 5- to 6-year-old children at Binas Tunas Bangsa Kindergarten in Surabaya.

Therefore, there is a difference in speaking ability between using the illustrated magnetic board as a teaching aid and not using it. Speaking ability scores were higher when the illustrated magnetic board was used compared to when it was not used. The pre-test (before treatment) score was 1.38, while the post-test (after treatment) score was 2.78.

However, after undergoing treatment that involved using a magnetic picture board to practice speaking, the children demonstrated how to use it and engaged in speaking and storytelling activities, as reported by the researcher. Subsequently, after the children listened to the researcher speak or tell a story, their speaking abilities were assessed. Furthermore, the results of the hypothesis test showed that the significance value of the pre-post test data was 0.00. Since the significance value of 0.00 is less than 0.05, H0 was rejected. Thus, it was proven that the illustrated magnetic board medium has an effect on speaking ability. Therefore, speaking ability through storytelling activities can be improved through the teacher's role and in the early stages of learning, particularly in storytelling activities.

Conclusion

Based on the results of a study of 13 children aged 5–6 years at Bina Tunas Bangsa Kindergarten in Surabaya, the use of illustrated magnetic boards was shown to improve children's speaking skills. This was demonstrated by an increase in the average score from 1.58 on the pre-test to 2.78 on the post-test, representing an increase of 1.20 points. This

improvement was evident in the children's ability to repeat more complex sentences, construct simple sentences, and name and group pictures based on the same initial letter. The results of the Paired Sample t-Test showed a significance value of 0.000 < 0.05, so H_0 was rejected. Thus, it can be concluded that the illustrated magnetic board has a significant effect on the speaking skills of children aged 5–6 years. This medium can be used as an interactive and enjoyable learning alternative to help children develop their vocabulary, sentence-construction skills, confidence in speaking, and the ability to express ideas.

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