



THE EFFECT OF DICE-BASED READING MEDIA ON EARLY LITERACY SKILLS OF CHILDREN

Imroatus Syafiqoh

Institut Agama Islam Tarbiyatut Tholabah Lamongan, Indonesia

Email Corresponding Author: syafiqah@iai-tabah.ac.id

Received: 04-08-2025. Accepted: 09-30-2025. Published: 10-01-2025

ABSTRACT

Early reading skills constitute a critical foundation for literacy development in early childhood. Despite their importance, early reading instruction at the PAUD level often relies on conventional methods that are insufficiently engaging, resulting in low motivation and limited skill acquisition. This study aimed to investigate the effect of using reading dice media on the early reading abilities of young learners. A quantitative pre-experimental design with a one-group pretest-posttest model was employed. The participants were a cohort of early childhood children at PAUD TKM 05 Bahrul Ulum Lamongan. Early reading skills, including letter recognition, syllable decoding, and simple word reading, were assessed using standardized observation sheets. Descriptive statistics, including mean and standard deviation, were used to analyze the data. The results indicated significant improvements in early reading abilities following the implementation of reading dice, accompanied by increased engagement, enthusiasm, and participation in learning activities. These findings suggest that reading dice provide an effective, play-based instructional medium that facilitates early reading acquisition and enhances learner motivation. The study contributes to the development of innovative instructional strategies in early childhood education, particularly in contexts requiring active and interactive learning approaches.

Keywords: Early Reading Skills, Reading Dice, Early Childhood Education, Play-Based Learning, Literacy Development, Instructional Media

Abstrak

Keterampilan membaca awal merupakan fondasi penting dalam perkembangan literasi anak usia dini. Meskipun demikian, pembelajaran membaca pada tingkat PAUD sering menggunakan metode konvensional yang kurang menarik, sehingga motivasi belajar rendah dan keterampilan anak belum optimal. Penelitian ini bertujuan untuk menganalisis pengaruh penggunaan media dadu baca terhadap keterampilan membaca awal anak. Penelitian menggunakan desain kuantitatif pra-eksperimen dengan model one-group pretest-posttest. Partisipan penelitian adalah sekelompok anak di PAUD TKM 05 Bahrul Ulum Lamongan. Keterampilan membaca awal, termasuk pengenalan huruf, pembacaan suku kata, dan kata sederhana, dinilai menggunakan lembar observasi standar. Analisis data dilakukan dengan statistik deskriptif seperti rata-rata dan deviasi standar. Hasil penelitian menunjukkan peningkatan signifikan pada keterampilan membaca awal setelah penerapan dadu baca, disertai peningkatan keterlibatan, antusiasme, dan partisipasi anak dalam pembelajaran. Temuan ini menunjukkan bahwa dadu baca merupakan media pembelajaran berbasis permainan yang efektif untuk meningkatkan keterampilan membaca dan motivasi belajar. Penelitian ini memberikan kontribusi terhadap pengembangan strategi pembelajaran inovatif dalam pendidikan anak usia dini, khususnya pada konteks yang menuntut pembelajaran aktif dan interaktif.

Kata Kunci: Keterampilan Membaca Awal, Dadu Baca, Pendidikan Anak Usia Dini, Pembelajaran Berbasis Permainan, Perkembangan Literasi, Media Pembelajaran

INTRODUCTION

Childhood is a unique and distinct period, each with its own characteristics, depending on the age (4-6 years). This period can also be considered a golden age, where stimulation of all aspects of development plays a crucial role in early childhood developmental tasks, including



physical development (physical motor skills), cognitive development, speech (language), emotional development, social development, and moral development.

One of the skills that develops in kindergarten-aged children is language skills, particularly early reading skills. Based on Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 146 of 2014 concerning the 2013 Curriculum for Early Childhood Education, n.d., early reading in kindergarten has five indicators that children must achieve: naming familiar letter symbols, recognizing the initial letter sounds of the names of surrounding objects, naming groups of pictures that have the same initial sound/letter, understanding the relationship between sounds and letter shapes, and reading several words based on pictures, writing, or objects known or seen. These five indicators must be achieved by children in their language development. According to (Carol, 2008), reading is a basic skill that children must master before entering elementary school. Beginning reading, or early reading, emphasizes recognizing and pronouncing sound symbols in the form of letters, words, and sentences in simple forms.

Early word recognition provides children with essential foundational skills for reading, which they will need as academic demands increase in later years. By mastering a few words, children are better equipped to process information, follow instructions, and engage in learning activities with greater confidence. Understanding the words they encounter is crucial because they encounter many things related to letters in their daily lives (Shayne B. Piasta & Richard K. Wagner, 2014).

Observations at TKM 05 Bahrul Ulum Lamongan show that some PAUD teachers still use monotonous learning methods, lack varied teaching styles, and do not actively engage children. Teachers still use books to support children's language development, using one-way lectures, reading storybooks without variation, and giving uninteresting assignments. This tends to make children easily bored, less enthusiastic, and less engaged in the learning process. This condition is a significant concern, as unengaging learning can impact children's low learning motivation and hinder the development of their creativity and curiosity. Yet, teachers play a key role in creating a fun and meaningful learning environment for children. Research results (Anggraini, G. F., Pradini, S., & Irzalinda, 2021) show that many teachers still implement traditional learning methods using traditional reading methods such as spelling and so on.

The results of research conducted by Idris Afandi and Nur Hasanah revealed that the low reading rate in group B was due to the lack of media used by teachers to teach early reading. This made researchers take the initiative to create picture word card media to improve early reading skills in group B at Tarbiyatul Athfal Bragang Klampis Kindergarten to make learning more enjoyable (Idris, A., & Nur, 2022). Furthermore, research conducted by Revita Yanuarsari et al. with the title improving early reading skills of early childhood through play methods using flannel board media revealed the results that there was an increase in early reading skills of early childhood after using play methods using flannel board media (Revita, Y., Evi, O., & Syifa, 2020).

Based on various previous studies, there has been much research on the influence of learning media on improving early childhood reading skills. Some of the media used include word cards, picture media, flannel boards and others. However, most of these media are still passive and do not involve children's motor activities directly, even though early childhood tends to potentially cause boredom in the learning process, because early childhood learning methods are more effective through play activities that involve movement, touch, and direct exploration. Research on the use of reading media for children that can increase children's motivation and involvement in learning to read, such as reading dice media, is still very limited.

Seeing these conditions, researchers felt the need to create interesting, interactive, and fun learning media that suited children's learning characteristics. Therefore, researchers designed



reading dice media, which are dice-shaped media with letters on each side that can be arranged into simple words. By using reading dice media for play, researchers also aimed to ensure that children not only learn passively but also actively engage physically and cognitively in learning activities, especially by increasing their vocabulary. The classroom atmosphere became more lively, children were more enthusiastic, and the learning process of reading became more meaningful. This media also provided opportunities for teachers to develop more varied and enjoyable learning methods. It is crucial to use media to improve children's letter recognition skills to facilitate learning and also increase their vocabulary (Eva Novalina, Syafrimen Syafril, 2023).

The method of playing using reading dice media is that children are invited to sing while being asked questions, for example when the theme is *animals*, the teacher asks the child to take the dice according to what is said, the teacher says "Horse" then the child takes several dice which on each side already have various letters k-u-d-a then arranges them into a word that can be read, then the teacher invites the child to talk about horses, after applying the reading dice media in this learning, the researcher hopes that children's reading ability will increase, children will feel more enthusiastic, understand many different word arrangements and also increase their knowledge for future provisions. (Brown, 2014) said that there are several reading abilities in early childhood that can be supported through objects around them that contain pictures and letters so that they become words that can be read.

METHOD

This research was conducted at TKM 05 Bahrul Ulum Warulor, Paciran, Lamongan. This research was conducted because the institution still faces several obstacles in teaching reading to early childhood. Based on initial observations and discussions with educators in the field, reading instruction in the classroom tends to be conventional, lacks engaging media, and is not fully adapted to the learning characteristics of early childhood, who enjoy play.

Furthermore, facilities and learning resources at TKM 05 Bahrul Ulum Warulor, Paciran, Lamongan are still limited, necessitating innovative learning media that are simple, enjoyable, and easy for teachers to implement. Reading dice media is considered appropriate for development and implementation in this area because it is practical, enjoyable, and able to increase children's engagement in the reading process. Therefore, this research is considered relevant and important to conduct at TKM 05 Bahrul Ulum Warulor, Paciran, Lamongan, as an effort to improve the quality of early reading instruction through a more interactive approach tailored to the needs of early childhood.

This research employed a quantitative method, with a pre-experimental experimental design using a one-group pretest-posttest model. This experimental study involved manipulation to determine the effect of the manipulation on observed individual behavior. Content validity was used to test the validity of the instrument. Content validity was assessed by consulting two experts: an early childhood education lecturer and a PAUD practitioner, regarding the suitability of the indicators for measuring early reading skills. The instrument is considered valid if all indicators represent the aspects of early reading skills being measured, such as recognizing vowels and consonants, pronouncing syllables, and reading simple words. The validation results were then analyzed using a rating scale provided by the experts. If more than 80% of the aspects are deemed relevant, the instrument is considered valid and suitable for use.



Furthermore, to assess a child's early reading skills, you can use a rating scale (rubric) with a score of 1–4.

Score	Criteria
1	The child does not yet recognize letters/syllables and cannot read words at all
2	The child recognizes some letters/syllables but still has difficulty reading words
3	The child is able to read simple words with teacher assistance
4	The child is able to read simple words independently and fluently

RESULTS AND DISCUSSION

Playing and learning to read should be fun. Therefore, learning media is crucial. Learning occurs in the zone of proximal development, where media devices are particularly helpful in certain circumstances (Vygotsky, 1978). Media is an integral part of early childhood learning because it can address the limitations of a child's experience. Learning media can bridge this gap. If a child cannot be brought directly to the object being studied, the object is brought to the child. This object can be a tangible form, a model, or an image that can be presented audio, visual, or audio-visually. Play is one way for early childhood children to learn, according to (Abidin M, 2011). The effectiveness of dice reading media in early reading instruction can be better understood through the lens of cognitive developmental theory. According to Piaget, young children are in the preoperational stage (ages 2–7), where learning becomes more meaningful when it involves concrete objects that can be touched and manipulated. Dice reading media provides letters and words in an interactive physical form, allowing children not only to see symbols but also to hold, throw, and arrange them into meaningful words. This activity strengthens the connection between visual representations of letters and children's motor experiences, making the reading process more natural. From Vygotsky's perspective, the use of dice reading media facilitates *scaffolding*, as teachers can assist children in spelling words from the dice faces and then gradually encourage them toward independence. Consequently, dice reading media can significantly accelerate the development of early literacy skills.

Although learning to read, write, and count (calistung) in Early Childhood Education (PAUD) is not prohibited, we must consider the child's readiness and interests. If the child is capable, we may provide such learning, as long as we do not force or suppress their abilities. This aligns with Malquist's opinion in his book (Ahmad Susanto, 2011), which states that reading activities for early childhood must be carried out systematically, meaning they must be tailored to the child's interests, character, needs, and developmental level. Children's reading activities must also utilize learning media in a conducive learning environment.

This improvement aligns with Piaget's theory of cognitive development, which states that early childhood is in the pre-operational stage, where they learn concretely through real objects and play activities (Piaget, 1951). Reading dice media provides a concrete, visual, and kinesthetic learning experience, thus perfectly aligning with children's developmental characteristics.

The results of the study showed an improvement in early childhood reading skills after participating in learning using reading dice media. Children became more enthusiastic, actively engaged, and showed improvements in letter recognition, syllable reading, and even simple word construction. This change was evident in the higher average posttest scores compared to the pretest scores.

Thus, the results of this study confirm that the use of fun learning media, such as reading dice, can be an effective approach to improving early literacy skills in young children. In addition to addressing boredom in learning, this media also encourages children's active participation in the reading learning process.



This research is also supported by previous studies (Rahmawati, F., Fadilah, & Astuti, 2019) and (Sari, K. Y., & Tegeh, 2021), which showed that game-based learning media can improve motivation and early reading skills. (Sari, K. Y., & Tegeh, 2021) stated that educational games can foster children's interest in learning, while (Rahmawati, F., Fadilah, & Astuti, 2019) emphasized that simple media such as letter and syllable cards can help children recognize language patterns more quickly.

The following are the results of the initial (pretest) of children's reading ability before treatment:

Table 4.1
Initial pretest of children's reading ability

Name	Scores Achieved in Beginning Reading Ability						Value Score
	1	2	3	4	5	6	
ABD	2	1	1	1	1	1	7
SYF	2	1	1	1	1	1	7
AQL	3	3	2	2	2	2	14
SEL	2	2	1	2	1	1	9
KIA	3	3	2	2	2	2	14
TYS	3	3	2	2	2	2	14
HLD	2	2	2	2	2	1	11
RF	2	2	2	2	2	1	11
BGS	3	3	2	2	2	2	14
EQ	2	1	1	2	1	1	8
JZL	2	1	1	2	1	1	8
FQ	3	3	2	2	2	2	14
NAI	2	1	1	1	1	1	7
FAI	2	1	1	2	1	1	8
LB	2	1	1	2	1	1	8
Jumlah	35	28	22	27	22	20	154

Implementation of Treatment

Table 1
Treatment was administered six times, namely:

NO	DAY	DATE
1.	Saturday	February 1, 2020
2.	Monday	February 3, 2020
3.	Wednesday	February 5, 2020
4.	Saturday	February 8, 2020
5.	Monday	February 10, 2020
6.	Wednesday	February 12, 2020



Treatment was implemented at Kindergarten 05 Bahrul Ulum Warulor, Paciran, Lamongan. Treatment was given to 15 children in Group B. Reading dice were used to improve their early reading skills.

Posttest Implementation

The posttest was administered after each child had completed the learning activities outlined in the observation guidelines. The purpose of the posttest was to determine the children's performance after the treatment. The posttest was administered on February 15th and 17th, 2020. The results of the posttest were then compared with the results of the pretest administered before the treatment.

Table 2

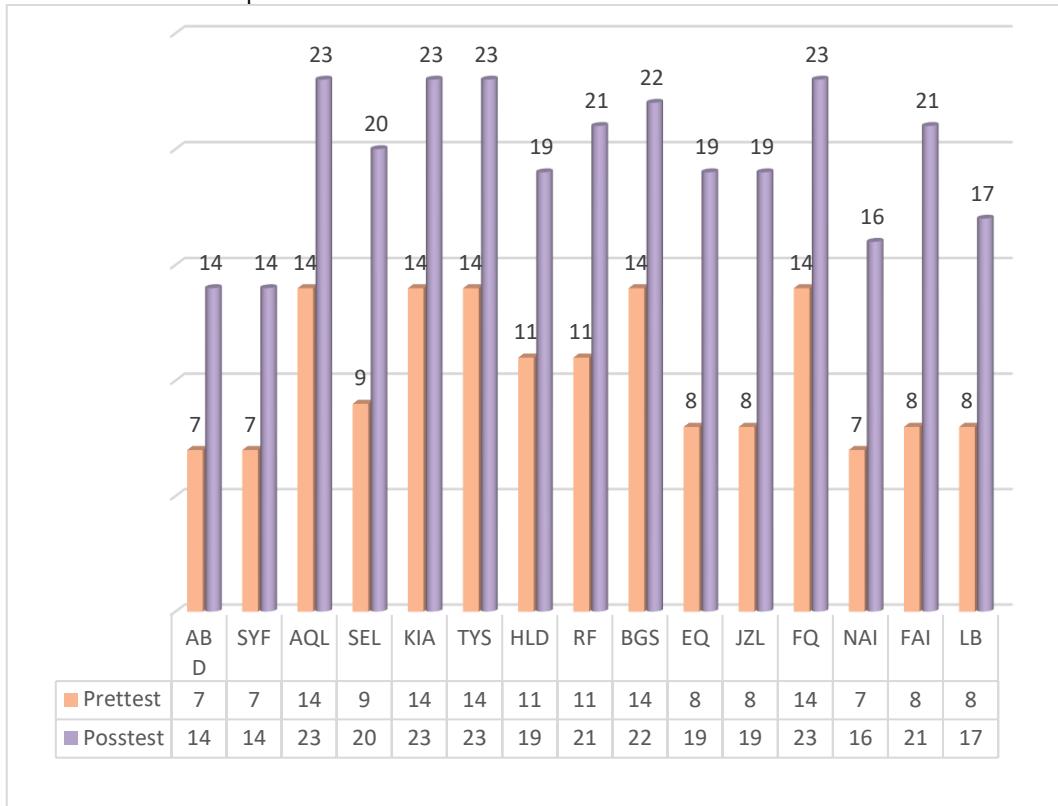
The following table shows the final test results (posttest):

Name	Scores Achieved in Beginning Reading Ability						Value Score
	1	2	3	4	5	6	
ABD	3	2	2	3	2	2	14
SYF	3	2	2	3	2	2	14
AQL	4	4	3	4	4	4	23
SEL	4	3	3	4	3	3	20
KIA	4	4	4	4	3	4	23
TYS	4	4	3	4	4	4	23
HLD	3	3	3	4	3	3	19
RF	4	4	3	4	3	3	21
BGS	4	4	3	4	3	4	22
EQ	3	3	3	4	3	3	19
JZL	3	3	3	4	3	3	19
FQ	4	4	3	4	4	4	23
NAI	3	2	2	3	3	3	16
FAI	4	3	3	4	3	4	21
LB	3	2	2	4	3	3	17
Jumlah	53	47	42	57	46	49	294

Graph of Differences in Pre-Test and Post-Test Scores

Table 3

Graph of Differences in Pre-Test and Post-Test Scores



The graph above shows that all children experienced improvements in their early reading skills. The graph shows an increase in early reading scores during the pretest, with a total score of 154, with 7 being the lowest, and 14 being the highest. After the posttest, the scores increased to a total score of 294, with 14 being the lowest and 23 being the highest.

Based on this, it can be concluded that the use of reading dice media significantly improved children's early reading skills.

Data Analysis

After the pretest and posttest data were obtained, the researchers compared the pretest and posttest results and analyzed the data to test the hypotheses used. The data analysis in this study used the Wilcoxon test table as follows:

Table 4
Wilcoxon Helper Table

No	Name	X _B	X _A	Different	Level Signs			
					X _A - X _B	Level	+	-
1	ABD	7	14	7	1,5	1,5	0	
2	SYF	7	14	7	1,5	1,5	0	
3	AQL	14	23	9	7,5	7,5	0	



4	SEL	9	20	11	13	13	0
5	KIA	14	23	9	7,5	7,5	0
6	TYS	14	23	9	7,5	7,5	0
7	HLD	11	19	8	3,5	3,5	0
8	RF	11	21	10	11	11	0
9	BGS	14	22	8	3,5	3,5	0
10	EQ	8	19	11	13	13	0
11	JZL	8	19	11	13	13	0
12	FQ	14	23	9	7,5	7,5	0
13	NAI	7	16	9	7,5	7,5	0
14	FAI	8	21	13	15	15	0
15	LB	8	17	9	7,5	7,5	0

Based on the calculation results table above, the calculated T value is 0, as the smallest signed rank sum (positive or negative) is expressed as the calculated T value. The calculated T value is then compared with the table value at a significance level of 5% with N = 15. The critical value table for the Wilcoxon signed-rank test shows that the T value is 25.

If the calculated T value is \leq T value, H_0 is rejected and H_a is accepted. From the results of the study, it is known that the calculated T value ($0 < 25$) indicates that the research hypothesis is accepted.

Based on the scores obtained by the researcher, it can be seen that there is a difference between the pretest score of 154 and the posttest score of 294. This difference in treatment and response is what causes the difference in learning outcomes before and after treatment. During the initial reading pretest, several children were called forward one by one to learn how to read, while others were busy playing with their friends and running around.

This can cause children who are learning to read to lose focus and not be able to learn optimally. In contrast to learning using reading dice, children appear enthusiastic, active, and more focused in carrying out the learning because they are directly involved in playing with the media by coming forward one by one while being invited to sing together while asking the children to name the vowels and consonants, arranging the letters that the teacher has said so that they can form readable words. To ensure that the child has correctly recognized the letters and read them, the child is asked to repeat the sentence that has been said. This way, children can more easily accept the beginning of reading learning well, while other children orderly watch and listen to their friends who are playing in front. The use of teaching media is important in the learning process, because the media is useful for making the learning material that will be delivered by the teacher easier to understand and digest by children. Therefore, media is used to help teachers make the learning process more effective and efficient, so that it can help increase interest and learning outcomes. This is in accordance with what was stated by (Muchyidin, 2002).

Research Limitations

This study has several limitations that should be considered. First, the research design used a single-group pre-experimental model, namely pretest-posttest, and therefore did not include a control group for comparison. This limits the generalizability of the results, as the improvements may not be entirely due to the treatment. Second, the limited number of participants, namely only one group of children from one early childhood education institution, makes the results less representative of the broader population. Third, the relatively short duration of the treatment may also affect the long-term stability of learning outcomes.

Recommendations for Further Study



Based on the limitations of this study, the researchers recommend that further studies be conducted using an experimental design involving a control group to more objectively measure the effects of reading dice media. Furthermore, research with a larger sample size and diverse locations will yield more generalizable and applicable results across various early childhood education contexts. The use of similar media with a thematic or integrative approach could also be a topic for further exploration, including analysis of other developmental aspects such as social skills, fine motor skills, or children's self-confidence during the learning to read process. The findings of this study carry significant practical implications. For early childhood education teachers, dice reading media can serve as an effective alternative to overcome the monotony of conventional reading methods. Teachers may design a variety of game-based activities, such as word formation competitions, word-guessing games, or group tasks that encourage collaboration among students. In this way, the learning process not only enhances literacy but also fosters essential social skills. For parents, dice reading media can function as a valuable family learning tool. Children can be engaged in playful reading activities at home, creating continuity between formal and non-formal education. Moreover, this simple medium is relatively inexpensive and easy to produce, making it suitable for broader educational contexts across diverse communities.

Despite its promising outcomes, this study has several limitations that must be acknowledged. First, the number of participants was relatively small, involving only 15 children, which restricts the generalizability of the findings. Second, the research employed a one-group pretest–posttest design without a control group, meaning that external factors could not be fully ruled out. Third, the intervention was conducted over a relatively short duration, preventing the assessment of long-term impacts of dice reading media on children's early reading abilities. These limitations suggest that the results should be interpreted with caution and highlight the need for further investigation.

For future research, it is recommended to employ a more rigorous experimental design by including a control group and involving a larger number of participants. Longitudinal studies could also be conducted to examine the long-term effects of using dice reading media on children's literacy development. In addition, comparative studies across different types of learning media, such as flashcards, flannel boards, and digital applications, would be valuable for understanding the relative effectiveness of each medium. Qualitative research using in-depth observational approaches is also important to explore the experiences of children, teachers, and parents in utilizing this medium. In this way, play-based early literacy studies can be developed more comprehensively and contribute more significantly to early childhood education practices.

CONCLUSION

Based on the findings of this study, it can be concluded that the use of reading dice media has a significant positive effect on the early reading skills of children. The study, conducted with a pre-experimental one-group pretest–posttest design involving 30 children in Group B at TKM 05 Bahrul Ulum Lamongan, demonstrated notable improvements in letter recognition, syllable reading, and simple word construction. Pretest scores averaged 154, while posttest scores increased to 294, indicating that the intervention effectively enhanced foundational literacy skills.

Furthermore, the reading dice media created a more engaging, interactive, and enjoyable learning environment, which aligned with the cognitive developmental stages of early childhood. The play-while-learning approach not only prevented boredom but also fostered active participation, enthusiasm, and deeper comprehension of reading concepts. These results underscore the importance of integrating innovative and interactive teaching tools in early childhood education to support holistic literacy development.



Finally, the study highlights the practical implications of using reading dice as an alternative and creative instructional medium in early literacy programs. Future research is recommended to explore longitudinal effects and the potential for scalability across diverse early childhood education settings. The findings provide valuable insights for educators, curriculum developers, and policymakers aiming to improve early reading proficiency through playful, evidence-based, and contextually relevant pedagogical interventions.

BIBLIOGRAPHY

Abidin M, Z. (2011). *Teori Belajar Konstruktivisme Vygotsky Dalam Pembelajaran Matematika*. Bandung: Alfabeta.

Ahmad Susanto. (2011). *Perkembangan Anak Usia Dini Pengantar dalam Berbagai Aspeknya*. Jakarta: Kencana Perdana Media Group.

Anggraini, G. F., Pradini, S., & Irzalinda, V. (2021). Gambaran Kepercayaan Guru Dalam Literasi Anak Usia Dini. *Jurnal Pendidikan Anak*, 7(1), 01–08.
<https://doi.org/http://dx.doi.org/10.23960/jpa.v7n1.22262>

Brown, C. S. (2014). *Language and Literacy Development in the Early Years : Foundational Skills that Support Emergent Readers*. Language and Literacy Development in the Early Years.
<https://files.eric.ed.gov/fulltext/EJ1034914.pdf>

Carol, dan B. A. W. (2008). *Pendidikan anak usia dini. (abli bahasa: Pius Nasar)*. Jakarta: Indeks.

Eva Novalina, Syafrimen Syafril, U. N. (2023). Media Magic Box: Optimization of the Ability to Recognize Letters in Early Children. *Vol. 6 No. 2 (2023): Al-Athfaal: Jurnal Ilmiah Pendidikan Anak Usia Dini*, 6(2).
<https://doi.org/https://doi.org/10.24042/00202361902800>

Idris, A., & Nur, H. (2022). Permainan Kartu Kata Bergambar Dalam Meningkatkan Kemampuan Awal Belajar Membaca di Kelompok B di TK Tarbiyatul Athfal Bragang Klampis. *Jurnal Al-Ibrah*, 7(2), 2.

Muchyidin, A. S. dan F. (2002). *Media Pembelajaran*. Bandung : FIP-UPI.

Piaget, J. (1951). Play , dreams and. *Library, The International*.

Rahmawati, F., Fadilah, & Astuti, I. (2019). Peningkatan Kemampuan Membaca Permulaan melalui Media Kartu Kata pada Kelompok Usia 5–6 Tahun di PAUD Laskar Pelangi Kabupaten Kubu Raya. *Jurnal Pendidikan Dan Pembelajaran Khatulistiwa*, 2(10).
<https://doi.org/https://doi.org/10.26418/jppk.v3i10.7510>

Revita, Y., Evi, O., & Syifa, N. A. A. (2020). Meningkatkan Kemampuan Membaca Permulaan Anak Usia DIni Melalui Metode Bermain Menggunakan Media Papan Planel. *E-Prosideing Pascasarjana Universitas Negeri Gorontalo*, 55.

Sari, K. Y., & Tegeh, I. M. (2021). Media Permainan Kartu Kata Bergambar Berbasis PowerPoint Meningkatkan Keterampilan Membaca Anak Usia Dini. *PAUD*, 10, 58–66.

Shayne B. Piasta & Richard K. Wagner. (2014). Developing early literacy skills: a meta-analysis of alphabet learning and instruction. *Wiley International Reading Association*, 45(1), 8–38.
<https://doi.org/https://doi.org/10.1598/RRQ.45.1.2>

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.