

The Effect of Using Loose Part Media on Early Literacy Skills of 4-5 Year Old Children

Rinda Aulia Ramadhanti¹, Evie Palenewen², Fachrul Rozie³

¹ Mulawarman University, Indonesia; rindaauliaramadhanti@gmail.com

² Mulawarman University, Indonesia; evie.palenewen@fkip.unmul.ac.id

³ Mulawarman University, Indonesia; fachrul.rozie@fkip.unmul.ac.id

* WhatsApp; 081346702920

Article history

Submitted: 2026/05/21; Revised: 2026/06/11; Accepted: 2026/07/20

Abstract

Early childhood is a child who has an age range from 0 to 6 years. Early life only comes once in every person's life stages. So, the existence of early age should not be wasted. This study aims to determine the effect of the use of loose part media on the early literacy ability of children aged 4-5 years at Al Raudah Samarinda Kindergarten. This type of research is quantitative with a pre-experimental approach method with a one-group pretest-posttest design research model. The subjects of this study are 19 students of Al Raudah Samarinda Kindergarten. The research instruments used include tests from pretest and posttest observation sheets in the form of statement instruments equipped with documentation. The data analysis technique used is data obtained from the N-Gain test. The results showed that the N-Gain test > 0.7 with a percentage of 0.83 or included in the high category, which means that the loose part media for children's early literacy ability is in the effective category. Thus, it means that there is an increase in effectiveness between pretest and posttest so that the alternative hypothesis (H_a) is accepted and the null hypothesis (H_0) is rejected, meaning that there is an effect of the use of loose part media on early literacy ability in children aged 4-5 years at Al Raudah Samarinda Kindergarten.

Keywords

Children Aged 4-5 Years; Early Literacy Ability; Media Loose Part; N-Gain



© 2026 by the authors. This is an open-access publication under the terms and conditions of the Creative Commons Attribution 4.0 International (CC BY SA) license, <https://creativecommons.org/licenses/by-sa/4.0/>.

INTRODUCTION

Early childhood is a child who has an age range from 0 to 6 years. Early life only comes once in every person's life stages. So the existence of early age should not be wasted (Talango, 2020). Early childhood is the most appropriate time to stimulate aspects of child development that are appropriate for the child's age. The goal of preschool and kindergarten is to help each student reach his or her greatest potential. Children's potential is divided into several aspects including religious and moral values, art, cognitive, social-emotional, language, and physical-motor. One of the important aspects of development to be stimulated in children is the

language aspect. Language development includes three domains, namely understanding language, expressing language and literacy. Early literacy development is one of the most important developments for early childhood.

Early literacy is one of the most vital language competencies to be taught to children at an early age, which includes listening, speaking, reading, and writing skills. Early literacy refers to the ability to recognize vowels and consonants as fundamental skills that children need to master in order to be able to read and write well (Agustini & Masudah, 2020). Literacy skills in the early stages are very important as a basis for the development of children's literacy at the age of 4-5 years, because at that age it is a process of mental, cognitive, and physical preparation for children to move to the next stage of formal education with high confidence.

There are a number of elements that play a role in the process of introducing literacy skills in children. There are three stages or elements that have an impact on children in understanding literacy, namely when playing and in daily routines, a rich and interactive language environment, and crucial language development and interaction with peers (Muslichah, 2021). The standard of achievement in the development of early literacy skills can be measured through indicators of recognizing letter symbols and imitating and pronouncing letters as part of language development in children aged 4-5 years (Permendikbud No. 137 concerning National Standards for Early Childhood Education, 2014).

This level of developmental achievement serves as an indicator for teachers that can be used as teaching material about early literacy for preschool children. The bridge between early childhood educators and their students is the learning medium. Learning media in educational institutions must be interactive, interesting, and fun for children. One interesting option is the use of loose part media. Loose parts are materials that can be moved, carried, combined, redesigned, separated, and reassembled in a variety of ways (Muslichah, 2021).

There are various kinds of loose parts including natural materials such as stones, gravel, sand, soil, grains, shells, plastic materials such as straws, bottle caps, used plastic bottles, metal materials such as coins, spoons, can lids, wooden materials such as ice cream sticks, leftover wooden blocks, blunt skewers, and fabric materials such as raffia rope, wool thread, ribbon, flannel fabric. Media Loose Part creates endless opportunities in the learning process and stimulates children's imagination. Loose Part is a learning medium whose benefits in the child's learning process are endless. The purpose of learning to use loose sections is to help children develop their creativity. Children are given the freedom to create, change and rearrange loose part media according to their imagination. Children will learn to appreciate the materials or objects that exist in their environment.

Based on studies that have been conducted by Muslichah (2021) and Astuti (2022) It is known that children's early literacy abilities can be improved through the use of loose part media and also through free play activities with loose part media, where natural materials around children are used to improve their early literacy skills. Research that focuses on the use of loose part media for early childhood in order to improve early literacy skills is still limited, so educators are trying to overcome the problem of lack of understanding of 4-5 year old

children in Al-Raudah Kindergarten about early literacy skills with loose part media that has not been applied in previous schools. The research on the topic discussed will be based on the context of the problem, namely with the title "The Effect of the Use of Loose Part Media on the Early Literacy Ability of Children Aged 4-5 Years in Al Raudah Samarinda".

METHODS

This study uses quantitative research with a pre-experimental method. According to Sugiyono (2021) Explains that pre-experimental research is an experimental research that in principle only uses one group, there is no control group. So the results of the experiment, which are dependent variables, are not solely influenced by independent variables. This research took place at Al-Raudah Samarinda Kindergarten which lasted 2 months, namely March 2025 to May on April 30, 2025. The population in this study is 19 students of Al-Raudah Samarinda Kindergarten consisting of 13 males and 6 females.

This study refers to the model of Donald T. Campbell and Julian C. Stanley (as cited by Sulaikho, 2026) by using a type of research approach Pre-Experimental Design with One-Group Pretest-Posttest Design. The research procedure starts from the stage of preparing a treatment plan, providing a pretest (01), implementing treatment (X), and providing a posttest (02). The instruments used to measure children's early literacy abilities in the form of statement instruments in the pretest and posttest in the category have not developed until they are very well developed. The effect of the treatment can be calculated by comparing the values of the two. If the posttest score is greater than the pretest, then the treatment has a positive effect. On the other hand, if the pretest value is greater than the posttest, then the treatment has a negative effect.



Figure 1. One Group Pretest-Posttest Design

Source: Donald T. Capbell & Julian C. Stanley

Data collection techniques include (1) Pretest before treatment, (2) Loose part media treatment, (3) Posttest after loose part media treatment, (4) Using assessment criteria as a guide to determine the score of each statement, (5) Summing the score of each statement item, (6) Converting the score into a value, (6) Giving the N-Gain score criterion.

Table 1. N-Gain Value Interpretation Criteria

N-Gain Value	Interpretation Criteria
$g > 0.7$	Height
$0.3 \leq g \leq 0.7$	Medium
$g < 0.3$	Low

Source: (Sahid Rahardjo, 2019)

FINDINGS AND DISCUSSION

Findings

Results of Descriptive Analysis of the Pretest

The pretest was carried out before being given the media loose part treatment, the children were given 10 statements that had been adjusted to the instruments in this study. The first statement is to mention the known vowel symbols (a, i, u, e, o). Second, mention the known consonant letter symbols (b, c, d, f, g, h, j, k, l, m, n, p, q, r, s, t, v, w, x, y, z) that are known. Third, write the letter symbol of one's own name with loose part media. Fourth, compile the letters from the animal words "chicken" and "duck" with loose part media Fifth, compile the letters from the animal words "cow" and "goat" with loose part media. Sixth, compiling the letters from the animal words "cat" and "dog" with loose part media. Seventh, compile the letters from the animal word "bird" with loose part media. Eighth, mention the letters from A to Z. Ninth, make the letters requested by the teacher with loose part media. Tenth, mention the letters requested by the teacher with loose part media.

Table 2. Descriptive Analysis of *Pretest Results*

	N	Minimum	Maximum	Mean	Std. Deviation
Value	19	18	28	22.26	4.470
<i>Pretest</i>					
Valid N	19				

Based on the descriptive analysis table on the pretest results, 19 children of Al-Raudah Samarinda Kindergarten received a minimum score of 18, a maximum score of 28, a mean value (average) of 22.26 and a standard deviation (standard deviation) of 4.470.

Posttest Descriptive Analysis Results

The results of the posttest data were obtained from 10 items of the same research instrument and had been carried out in the previous pretest. Posttest was carried out on children aged 4-5 years at Al Raudah Samarinda Kindergarten. Before the posttest, children are given loose part media treatment in their learning activities. After doing the treatment, it can be seen that the posttest score is higher than the pretest value. This shows the influence of the use of loose part media in the early literacy ability of children aged 4-5 years at Al Raudah Samarinda Kindergarten.

Table 3. Descriptive Analysis of *Posttest Results*

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest Scores	19	34	40	37.05	1.870
Valid N	19				

Based on the descriptive analysis table on the results of the pretest, 19 children of Al-Raudah Samarinda Kindergarten after being treated in the form of *loose part* media on literacy ability could get a minimum score of 34, a maximum score of 40, a mean value (average) of 37.05 and a standard deviation (standard deviation) of 1,870.

Inferential Analysis Results

Validity and Reliability Testing

Before conducting a pretest on children aged 4-5 years at Al Raudah Samarinda Kindergarten, the researcher conducted a validity test for the analysis of instrument items and compared the calculation with the rtable used in the study which functions to determine the child's initial literacy ability. The researcher and lecturer from Mulawarman University Samarinda, Mrs. Evie Palenewen, M.Pd. The item of the instrument was validated and declared feasible or unsuitable to be used as a research instrument. The results of the 10 research instruments contained in the observation sheet were declared suitable to be used as tests on students.

Table 4. Validity Test

	Scale Mean If Item Deleted	Scale Variance if Item Deleted	Corrected Item Total Correlation	Cronbach's Alpha If item Deleted
P1	25.2333	28.599	.839	.902
P2	25.7000	25.803	.747	.912
P3	25.3667	28.585	.674	.912
P4	24.9000	29.610	.721	.908
P5	24.6000	32.041	.682	.913
P6	24.7333	31.306	.688	.912
P7	24.7333	31.306	.688	.912
P8	25.0333	30.240	.681	.911
P9	26.0667	29.444	.714	.909
P10	25.6333	28.447	.727	.908

Table 5. Reliability Test

Cronbach's Alpha	N of Items
.918	10

Data Normality Testing

The results of the liliefors test can be seen from the results of the kolmogorov-smirnov test as written in the table below the results of the liliefors test are the same as the results of the kolmogorov-smirnov test, only in the liliefors test the basis of decision making looks at the liliefors table, if the statistical results of the liliefors test (L_o) < L_{table} and the significance value is > 0.05, then the data is considered to be normally distributed. For $n = 19$,

the statistical pretest value of the liliefors test obtained was $0.194 < 0.200$ and the statistical value of the liliefors test was $0.167 < 0.200$ with a pretest significance value of $0.058 > 0.05$ and a posttest significance value of $0.168 > 0.05$. From this explanation, it can be concluded that the data is normally distributed because judging from the overall statistics of the liliefors test has a value of < 0.200 and a significance value of > 0.05 .

Table 6. Data Normality Test

Kolmogorov-Smirnova			Shapiro-Wilk		
Statistic	Df	Say.	Statistic	df	Say.
Value	.194	19	.058	.916	19
<i>Pretest</i>					
Value	.167	19	.168	.941	19
<i>Posttest</i>					
					.097
					.276

Data Homogeneity Testing

Based on the results of the analysis of variance homogeneity testing using SPSS 25.0 For Windows with the levene test, at a significance level of 0.05, the significance value was obtained in the pretest and posttest data of children aged 4-5 years at Al Raudah Samarinda Kindergarten, which was 0.589. The significance value obtained was $0.589 > 0.05$ meaning that the sample in this study came from a homogeneous population.at the output of the N-Gain test, where on the basis of decision-making it is known that if the score obtained is 0.8314, then the results of the N-Gain test of children's early literacy ability towards the use of loose part media in children aged 4-5 years at Al Raudah Samarinda Kindergarten are in the high category (above > 0.7).

Table 7. Data Homogeneity Test

Levene Statistic		df1	df2	Say.
LearningBased on Mean		.304	1	17
OutcomeBased on Median		.086	1	17
s	Based on Median and with adjusted df	.086	1	16.717
	Based on trimmed mean	.307	1	17

Hypothesis Testing

The hypothesis test in this study used the N-Gain test on the SPSS 25.0 For Windows program and calculated manually with a minimum score between 0.3-0.7 or > 0.7 . The average difference in the results of the pretest and posttest of the measurement ability of children aged 4-5 years at Al Raudah Samarinda Kindergarten can be seen in the output of the N-Gain test, where on the basis of decision-making it is known that if the score obtained is 0.8314, then the results of the N-Gain test of children's initial literacy ability towards the use of loose part media in children aged 4-5 years at Al Raudah Samarinda Kindergarten are in the high category (above > 0.7).

Table 5. Hypothesis Results of Early Literacy Instruments

	N	Minimum	Maximum	Mean	Std. Deviation
Ngain	19	.57	1.00	.8314	.10641
Valid N (listwise)	19				

Hipotesis :

Ho: There is no significant effect between the use of loose part media on the early literacy ability of children aged 4-5 years at Al Raudah Samarinda Kindergarten.

H1 : There is a significant influence between the use of loose part media on the early literacy ability of children aged 4-5 years at Al Raudah Samarinda Kindergarten.

Thus H0 is rejected and H1 is accepted. The conclusion of the results of the study after treatment is that loose part media has a significant effect on children's early literacy skills at the age of 4-5 years at Al-Raudah Samarinda Kindergarten.

Discussion

Children's initial literacy ability before being given loose part media is with an average pretest score of 22.26. This value is still relatively low because at the time of the pretest, children have not received learning related to early literacy that is able to attract children's interest in learning and loose part media is still rarely used in learning at school, so children's knowledge related to early literacy is still below average. This can be seen that during observation, children are asked about 10 research instruments about early literacy, some children are just silent, confused and do not know what to answer when asked. Early literacy skills in children aged 4-5 years are very important because to proceed to the next stage of education, children are needed to be able to recognize symbols, especially letter symbols, recognize the sounds around the child, and imitate the letters A to Z, both in writing and pronunciation.

The initial literacy ability of children aged 4-5 years after being treated with loose part media has a significant increase where at the time of the pretest the average score obtained is 22.26 and the posttest the score obtained is 37.05 so that it can be seen that the child's initial literacy ability has increased by 14.79. It can be known that loose part media has an influence on the early literacy ability of children aged 4-5 years at Al Raudah Samarinda Kindergarten, it is proven that the indicator value of each item has increased and when the hypothesis test also shows that there is a significant influence on the measurement ability for one month with 10 treatments, it is proven that the result of the N-Gain test is 0.834 which means that it is in the high category (above > 0.7).

Based on this, it shows that loose part media has a positive or meaningful influence on the early literacy ability of children aged 4-5 years at Al Raudah Samarinda Kindergarten. This is corroborated by the opinion The Revelation (2020) which states that the play method using loose parts is very suitable for use in children so that children feel more fun, more

interested in doing learning activities. By utilizing loose part materials, children are able to see and feel to get to know various textures of objects with all their imagination to explore a work with various materials and be able to increase their knowledge of letter symbols and others.

Based on the above statement, it can be concluded that the results of the study after being treated with loose part media have changes and have a significant effect on children's early literacy ability (Pre-experimental Study on children aged 4-5 years at Al Raudah Kindergarten Samarinda).

CONCLUSION

Based on the results of the research and discussion described on the previous page, it can be concluded that the use of loose part media has increased the effectiveness of early literacy skills of children aged 4-5 years at Al Raudah Samarinda Kindergarten. This can be seen from the children's initial literacy ability at Al-Raudah Samarinda Kindergarten before being given loose part, namely with an average pretest score of 22.26. This value is still relatively low because at the time of the pretest, children have not received learning related to early literacy that is able to attract children's interest in learning and loose part media is still rarely used in learning at school, so children's knowledge related to early literacy is still below average.

The initial literacy ability of children aged 4-5 years at Al-Raudah Kindergarten Samarinda after being treated with loose part media has increased in effectiveness where at the time of the pretest the average score obtained is 22.26 and the posttest score obtained is 37.05 so that it can be seen that the child's initial literacy ability has increased by 14.79.

It can be known that loose part media has an influence on the early literacy ability of children aged 4-5 years at Al Raudah Samarinda Kindergarten, it is proven that the indicator value of each item has increased and during the hypothesis test also showed that there was an increase in effectiveness on early literacy ability for one month with 10 treatments, it was proven that the result of the N-Gain test was 0.834 which means that it is included in the high category (above > 0.7). Based on this, it can be concluded that loose part media has increased effectiveness or significance on the early literacy ability of children aged 4-5 years at Al Raudah Samarinda Kindergarten.

REFERENCES

- Agustini, D. R., & Masudah. (2020). Pengaruh media dadu putar terhadap kemampuan keaksaraan anak kelompok B. *Jurnal PAUD Teratai*, 9(1), 1–14. <https://ejournal.unesa.ac.id/index.php/paud-teratai>
- Aras, S. (2021). The effects of play-based learning environments on early literacy skills of preschool children. *International Journal of Progressive Education*, 17(3), 156–170. <https://doi.org/10.29329/ijpe.2021.346.10>
- Astuti, R. Y. (2022). *Meningkatkan Kemampuan Keaksaraan Awal Melalui Bermain Suka-Suka Dengan Media Loose Parts Pada Anak Kelompok B di TK Aisyiyah Bustanul Athfal Slogo*.

- Çetin, Z., & Aydin, E. (2022). The relationship between early literacy experiences and language development in preschool children. *Education Sciences*, 12(2), 101. <https://doi.org/10.3390/educsci12020101>
- Edwards, S., & Bird, J. (2020). Play-based learning and intentional teaching in early childhood education. *Australasian Journal of Early Childhood*, 45(4), 281–293. <https://doi.org/10.1177/1836939120966089>
- Fleer, M. (2022). Conceptual playworlds and early literacy development in preschool settings. *Learning, Culture and Social Interaction*, 32, 100598. <https://doi.org/10.1016/j.lcsi.2021.100598>
- Hedges, H., & Cooper, M. (2021). Relational play and literacy development in early childhood settings. *Journal of Early Childhood Research*, 19(2), 183–196. <https://doi.org/10.1177/1476718X20969874>
- Muslichah, M. (2021). Upaya Meningkatkan Kemampuan Keaksaraan Anak Usia 5-6 Tahun Menggunakan Media Loose Part di TK Trisula Perwari Grabag. *Seminar Nasional Pendidikan Profesi Guru FKIP UAD*, 1(1).
- Permendikbud No 137 Tentang Standar Nasional Pendidikan Anak Usia Dini. (2014). 1–31.
- Sugiyono, P. D. (2021). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*.
- Sulaikho, S. (2026). أنماط التراكيب النحوية من منظومة ألفية ابن مالك وتأثيرها على ارتفاع الإدراك والدافعية وانخفاض القلق في تعليم النحو لدى التلميذات بمدرسة بحر العلوم تامبا براس جومبانج. Universitas Islam Negeri Maulana Malik Ibrahim.
- Talango, S. R. (2020). Perkembangan Anak Usia Dini. *Early Childhood Islamic Education Journal*, 1(1), 92–105. <https://doi.org/10.54045/ecie.v1i1.35>
- Wahyuningsih, S., Pudyaningtyas, A. R., Nurjanah, N. E., Dewi, N. K., Hafidah, R., Syamsuddin, M. M., & Sholeha, V. (2020). The utilization of loose parts media in steam learning for early childhood. *Early Childhood Education and Development Journal*, 2(2), 1–5.
- Pyle, A., DeLuca, C., & Danniels, E. (2020). A scoping review of play-based pedagogies in kindergarten education. *Review of Education*, 8(3), 1–38. <https://doi.org/10.1002/rev3.3227>
- White, R. E. (2021). The power of play: A research summary on play and learning. *Early Childhood Education Journal*, 49(5), 769–780. <https://doi.org/10.1007/s10643-020-01093-6>
- McLeod, A. N., & McDade, S. (2022). Loose parts play and children's creativity in early learning environments. *International Journal of Early Years Education*, 30(4), 782–797. <https://doi.org/10.1080/09669760.2021.1960885>
- Nicholson, S. (2020). How NOT to cheat children: The theory of loose parts revisited. *International Journal of Play*, 9(2), 123–134. <https://doi.org/10.1080/21594937.2020.1720121>
- Pramling Samuelsson, I., & Carlsson, M. A. (2021). Play-responsive teaching in early childhood education. *Early Years*, 41(4), 365–378. <https://doi.org/10.1080/09575146.2019.1655640>
- Sulzby, E., & Teale, W. H. (2021). Emergent literacy and early childhood learning environments. *Reading Research Quarterly*, 56(S1), S45–S59. <https://doi.org/10.1002/rrq.364>
- Yildirim, G., & Ozyilmaz Akamca, G. (2021). The effect of STEM activities with loose materials on preschool children's creativity and literacy skills. *Education and Information Technologies*, 26(5), 6137–6154. <https://doi.org/10.1007/s10639-021-10536-2>
- Yulindrasari, H., & Rahmawati, Y. (2023). The implementation of loose parts media in improving early childhood literacy and creativity. *Jurnal Pendidikan Usia Dini*, 17(1), 45–58. <https://doi.org/10.21009/JPUUD.171.05>