

# The Influence of Loose-parts Media on Children's Fine Motor Skills

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## Abstract

This study addresses the challenges in developing fine motor skills in children at RA Darussalam Menanti. Specific problems identified include: 1) certain children displaying rigidity and slowness in coordinating their eyes and hands during fine motor activities, 2) difficulties in creating forms using school-supplied materials, and 3) challenges in attaching images correctly on worksheets. The research aims to determine loose-part media's effect on Group B children's fine motor skills at RA Darussalam Menanti. This study employs a pre-experimental design with a One-Group Pre-test and Post-test model. The sample comprises 15 children, including 10 boys and 5 girls. Data collection methods involve observation, testing, and documentation, while data analysis includes the Normality Test, Homogeneity Test, and Hypothesis Test. Results from pre-test and post-test assessments were analyzed using the t-test. The findings reveal that  $t = 37.04$ , with degrees of freedom ( $df = 28$ ) and a significance level of 0.025, yielding a t-table value of 2.145. Since  $t\text{-count} > t\text{-table}$ , the hypothesis ( $H_a$ ) is accepted and the null hypothesis ( $H_o$ ) is rejected, indicating that the use of loose-part media significantly impacts the fine motor skills of Group B children at RA Darussalam Menanti.

**Keywords:** Picture storybooks, language development, children's listening skills, experimental study, Kasih Ibu KB.



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## Introduction

Early Childhood Education (ECE) is defined as an educational stage before elementary education aimed at nurturing children from birth to six years old, facilitating physical and spiritual growth to prepare them for future education<sup>1</sup>. This period is foundational, emphasizing the development of various domains, including motor skills (both fine and gross), cognitive, socio-

<sup>1</sup> Peraturan Menteri Pendidikan dan Kebudayaan No. 146, 2014

emotional, spiritual, artistic, and linguistic growth. The development phase between the ages of 4-6 is particularly critical as it contributes to overall human growth, with fine motor skills being one of the most essential aspects to be cultivated early on<sup>2</sup>. ECE significantly influences the child's subsequent educational journey, necessitating targeted interventions to support physical, including fine motor, development.

Fine motor skills consist of activities involving small muscle coordination, such as holding a pencil, using a spoon, or cutting with scissors. Achieving proficiency in fine motor skills requires more time than gross motor skills because these activities demand concentration, control, precision, and coordination among different muscle groups<sup>3</sup>. The ability to coordinate the eyes and hands effectively is crucial for this developmental aspect. According to Susanto<sup>4</sup>, fine motor skills engage specific body parts such as the hands, eyes, and fingers, relying on the small muscles for precise, rapid, and skillful movements. Mulyani<sup>5</sup> further states that fine motor skills involve the child's ability to control and coordinate hand movements with agility, supported by eye-hand coordination, while the brain serves as the controlling agent<sup>6</sup>.

From these perspectives, the achievement indicators for fine motor skills in 5-6-year-old children include (1) effective eye-hand coordination, (2) the ability to create forms using media, and (3) dexterity in using fingers to produce accurate representations<sup>7</sup>. These indicators help measure the level of fine motor skill development and inform appropriate stimulation strategies.

Previous research on loose-part media includes studies by Dewi et al.<sup>8</sup>, who explored its impact on cognitive development, Leonia et al.<sup>9</sup>, focusing on pre-writing skills, and Farida<sup>10</sup> examining creativity enhancement in early childhood. These studies underscore the versatility of loose-part media in supporting various developmental areas. Unlike prior research that centers on cognitive, pre-writing, or creative aspects, this study investigates the impact of loose-part media on fine motor skill development.

Observations at RA Darussalam Menanti with a sample of 15 children aged 5-6 revealed suboptimal fine motor skills. The observed difficulties include: (1) some children displaying stiffness and slow eye-hand coordination during fine motor activities, evident from their coloring outside the lines on worksheets; (2) struggles in creating forms using school-provided materials,

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<sup>2</sup> Dewi Rohiani, "Upaya Meningkatkan Kemampuan Fisik Motorik Halus Dan Seni (Mewarnai Gambar)," *Jurnal Pendidikan Aura* 12, no. 1 (2020): 79–87.

<sup>3</sup> Ni Made Yuliati, Asri Hente, and Nurmiati, "Meningkatkan Kemampuan Motorik Halus Anak Melalui Kegiatan Menghubungkan Titik Dengan Menggunakan Media Tulis Di Kelompok A Paud Al Musafir Palu Barat," *Jurnal Kolaboratif Sains* 4, no. 2 (2021): 66–71.

<sup>4</sup> Ahmad Susanto, *Perkembangan Anak Usia Dini*, 2014.

<sup>5</sup> Novi Mulyani, *Perkembangan Dasar Anak Usia Dini (Yogyakarta : Gava Media)*, 2018.

<sup>6</sup> Khodijah & Nurul Amelia, *Perkembangan Fisik Motorik Anak Usia Dini (Jakarta : Kencana)*, 2020.

<sup>7</sup> Peraturan Menteri Pendidikan dan Kebudayaan No. 137, 2014

<sup>8</sup> Elfrida Rahma Valentina Dewi, Hibana Hibana, and Musyafa Ali, "Pengaruh Penggunaan Media Loose Parts Terhadap Perkembangan Kognitif Anak Usia Dini," *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini* 7, no. 1 (2023): 267–282.

<sup>9</sup> Rizqy Aisyah Leonia, Tutut Handayani, and Yecha Febrieanitha Putri, "Pengaruh Media Loose Part Terhadap Kemampuan Pra Menulis Anak Pada Kelompok B," *Jurnal PG-PAUD Trunojoyo : Jurnal Pendidikan dan Pembelajaran Anak Usia Dini* 9, no. 2 (2022): 9–17.

<sup>10</sup> Azky Farida, "Penggunaan Media Loose Parts Untuk Mengembangkan Kreativitas Anak Usia" (2020): 32.

with repeated teacher assistance required; and (3) challenges in correctly pasting pictures on worksheets, indicating a need for ongoing guidance. The lack of diverse, engaging media contributes to the limited development of these skills.

The underlying issues contributing to insufficient fine motor skill development are: (1) limited application of teaching methods incorporating educational media, often restricted to free coloring activities on worksheets; (2) inadequate opportunities for children to utilize surrounding media during learning activities, which could foster exploration and motor skill development; and (3) a lack of variety in fine motor activities, leading to decreased interest and motivation.

To enhance fine motor skills, educators must implement effective teaching strategies, one of which involves using media that stimulate and engage children. Media such as loose-parts, which are easily accessible and cost-effective, provide an ideal solution<sup>11</sup>. Loose-parts, including items like twigs, shells, recycled plastic, cardboard, and fabric, can be sourced with minimal expense and repurposed creatively. These materials are adaptable and manipulatable and foster new learning opportunities that stimulate children's creativity<sup>12</sup>.

Loose-part media, characterized by its open-ended nature, allows children to engage with their surroundings and develop fine motor skills through hands-on play. This method supports sensory exploration, enabling children to see and feel different textures and use their imagination to create unique works. Through play with loose-parts, children can explore their environment, learn about repurposing everyday objects, and develop the motor skills needed for academic success.

Previous studies, such as those by Silfia Nita<sup>13</sup>, indicate that loose-part media effectively enhances fine motor skills. The research demonstrated that integrating loose-parts into classroom activities improved children's motor skill proficiency, as shown by their ability to create crafts like flower vases. Field observations revealed that children were enthusiastic and engaged when interacting with loose-parts, indicating that this medium is a beneficial and enjoyable way to support motor development.

## Method

This study employed a quantitative approach with a pre-experimental design. The research utilized a one-group pre-test and post-test format to assess the impact of loose-part media on fine motor skills. Activities during the pre-test and post-test phases included attaching origami paper to outlined patterns and creating collages using origami paper. In this design, the selected group of children received treatment using loose-part media to enhance their fine motor skills, with

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<sup>11</sup> Andriyani Andriyani and Feerlie Moonthana Indhra, "Meningkatkan Kemampuan Motorik Halus Anak Dengan Menggunakan Media Loose Parts Pada Anak Kelompok B TK Tunas Inti Dusun Tebo Jaya Kecamatan Limbur Lubuk Mengkuang Kabupaten Bungo," *ALAYYA : Jurnal Pendidikan Islam Anak Usia Dini* 2, no. 1 (2022): 1–23.

<sup>12</sup> Siti Maryam Hadiyanti, Elan Elan, and Taopik Rahman, "Analisis Media Loose Part Untuk Meningkatkan Kemampuan Motorik Halus Anak Usia Dini," *PAUDIA : Jurnal Penelitian dalam Bidang Pendidikan Anak Usia Dini* 10, no. 2 (2021): 337–347.

<sup>13</sup> Purnama Rozak, "Penerapan Media Loose Part Dalam Kemampuan Motorik Halus Pada Anak Usia Dini," *Al-Athfal* 2, no. 1 (2021): 56–71.

observations conducted according to predetermined evaluation criteria. The goal was to identify the effect of loose-part media on the fine motor abilities of children at RA Darussalam Menanti.

The sampling technique used in this study was purposive sampling, where specific criteria guided sample selection. The sample consisted of 15 children aged 5-6 years from RA Darussalam Menanti, chosen due to their suboptimal motor skill development. The selection criteria included children who exhibited stiffness and slow coordination between the eyes and hands, had low proficiency in creating crafts, and displayed challenges in performing fine motor activities accurately. The total population consisted of 35 children, from which the 15 participants were selected. The research was conducted during the 2023/2024 academic year in the second semester, spanning from initial observations to data collection in January and February 2024.

Data collection techniques included tests, observation, and documentation. Observational methods were primarily employed, using observation sheets to record and assess children's activities. The tests aimed to evaluate the baseline and post-treatment fine motor skill development, focusing on activities such as attaching origami paper to images and creating collages. Documentation, such as photographs and assessment formats, supplemented data collection by providing visual evidence of the learning process.

Data analysis in this study comprised validity and reliability tests, normality and homogeneity tests, and hypothesis testing using the t-test. The hypotheses were formulated as follows:

- **H<sub>0</sub>**: There is no effect of loose-part media on the fine motor skills of children aged 5-6 years at RA Darussalam Menanti.
- **H<sub>a</sub>**: There is an effect of loose-part media on the fine motor skills of Group B children at RA Darussalam Menanti.

## Results and Discussion

The current study aimed to assess the impact of loose-part media on the fine motor skills of 5-6-year-old children at RA Darussalam Menanti. Data collection was conducted through pre-test, treatment, and post-test phases involving 15 children. The instruments were first validated for reliability, confirming the robustness of the evaluation.

### Instrument Validation and Reliability

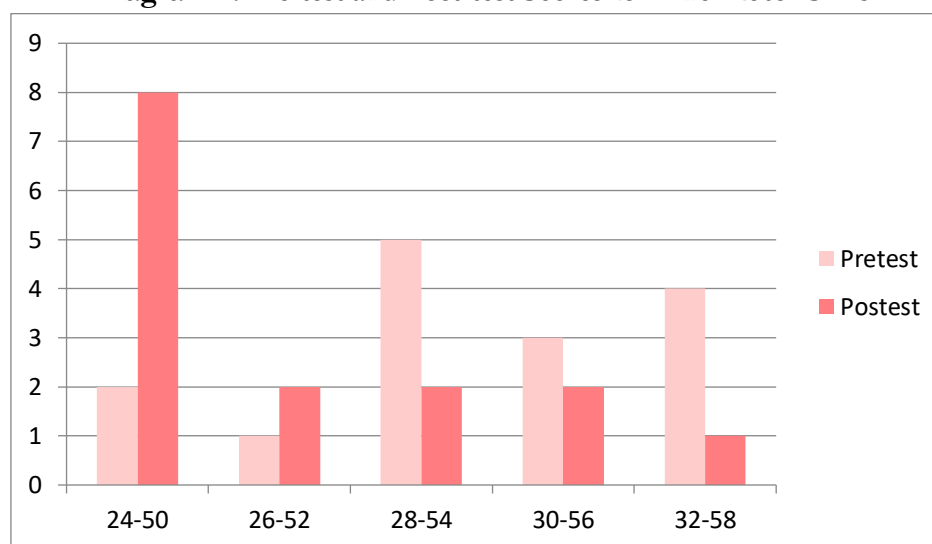
The validity test using a product-moment formula at a 5% significance level demonstrated that all eight observation items were valid ( $r_{count>rtabler\_{\text{count}}} > r_{\text{table}}_{count>rtable}$ ). The reliability, calculated using Cronbach's alpha, yielded  $r_{count=0.791r_{\text{count}}} = 0.791$ , indicating that the instrument was reliable and strong. These findings supported the use of the instrument throughout the research process, aligning with established methodologies in early childhood education (Susanto, 2014).

### Pre-test and Post-test Analysis

The analysis of pre-test scores revealed that fine motor skills varied among the children, with scores ranging from 24 to 32. The distribution showed that 13% of the children scored between 24-25, 7% scored 26-27, 33% scored 28-29, 20% scored 30-31, and 27% scored 32-33.

The post-test results highlighted a marked improvement: 53% of children scored between 49-50, 13% scored 51-52, 13% scored 53-54, 13% scored 55-56, and 7% scored 57-58. This data underscores the significant progress made following the intervention.

**Diagram 1.** Pre-test and Post-test Scores for Fine Motor Skills



The substantial increase in post-test scores supports the effectiveness of loose-part media in enhancing fine motor skills. The homogeneity test results ( $F_{count}=1.26$ ;  $F_{table}=2.53$ ) confirmed that the data sets were consistent, allowing for valid comparisons.

The findings of this study align with the work of Febriyanti et al.<sup>14</sup>, who explored the influence of loose-part media on fine motor skills in children aged 5-6 at PAUD Taam An Nuur Palembang. Their research showed a 22% increase in fine motor skills post-treatment, from a baseline average of 60% to 82%. Similarly, this study observed notable improvements in coordination and dexterity following the use of loose-part media. Febriyanti et al. concluded that the interactive and hands-on nature of loose-part media effectively engages children, enhancing their motor skill development through sensory exploration and creative manipulation.

Farwati et al.<sup>15</sup> also emphasized the importance of loose-part media in early childhood education, noting that these materials can be combined, modified, and repurposed, providing limitless possibilities for learning. Their findings corroborate the results of the current study, which demonstrated that children at RA Darussalam Menanti were more engaged and proactive in using their fine motor skills when presented with versatile materials such as wood, leaves, and stones.

<sup>14</sup> Syarwani Ahmad Febriyanti, Rahmah Novianti, "Pengaruh Media Loose Part Terhadap Perkembangan Motorik Halus Pada Anak Kelompok B Di PAUD Taam An Nuur Palembang Tahun 2023," *Jurnal Ilmiah Wahana Pendidikan* 9, no. November (2023): 392-408.

<sup>15</sup> Ratna Farwati et al., "STEM Education Implementation in Indonesia: A Scoping Review," *International Journal of STEM Education for Sustainability* 1, no. 1 (2021): 11-32.

Moreover, Kasriyati et al.<sup>16</sup> highlighted that loose-part media encourage children to respect and creatively utilize their environment, supporting both cognitive and motor development. This aligns with observations during the treatment phase of this study, where children displayed significant enthusiasm and creativity in manipulating the materials. The benefits of incorporating natural and recycled materials also align with findings by Yulianti Siantajani<sup>17</sup>, who noted that using loose-parts engages the entire hand, fingers, and arm muscles, strengthening coordination and agility.

The theoretical underpinning of this research draws from constructivist learning theories, which advocate for active, hands-on experiences as essential for young children's development<sup>18</sup>. Loose-part media provide an open-ended learning environment where children can experiment, combine, and transform materials, fostering fine motor skills and enhancing cognitive flexibility. This aligns with the principles outlined by Hadiyanti et al.<sup>19</sup>, who argue that these media types stimulate not only physical development but also problem-solving and imaginative play.

Initial observations showed that children often struggled with tasks requiring precise coordination, such as attaching origami to patterns or creating shapes without assistance. This highlighted the existing gap in stimulation strategies at RA Darussalam Menanti, where conventional activities like coloring worksheets with crayons predominated. The use of loose-part media effectively addressed these challenges by providing opportunities for the children to engage in varied, stimulating tasks that activated their fine motor pathways.

This study also supports the assertion by Refnawati and Yetti<sup>20</sup> that targeted stimulation can significantly impact children's small muscle control and bilateral coordination. The observed improvements in this study, including more accurate eye-hand coordination, ability to form shapes, and enhanced dexterity, confirm that structured, hands-on interventions like those using loose-parts are effective.

The results underscore the potential of loose-part media as an effective tool for enhancing fine motor skills in young children. The intervention significantly improved coordination, dexterity, and task accuracy. These findings reinforce the importance of incorporating diverse and interactive teaching methods, supporting educators in delivering developmentally appropriate practices.

Future studies could further explore the long-term impact of loose-part media on other developmental areas, such as cognitive and socio-emotional growth, and examine variations in effectiveness across different age groups and learning environments.

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<sup>16</sup> Destina Kasriyati, Sri Wahyuni, and Reswita Reswita, "Pelatihan Perencanaan Dan Penerapan Media Loose Parts Dalam Pembelajaran Anak Usia Dini Bagi Guru PAUD Kecamatan Rumbai Pesisir," *Wahana Dedikasi : Jurnal PkM Ilmu Kependidikan* 4, no. 2 (2021): 34.

<sup>17</sup> Yulianti Siantajani, *Loose Part Material Lepas Otentik Stimulasi PAUD (Semarang : PT Serang Seratus Aksara)*, 2021.

<sup>18</sup> Tania Stoltz, "Consciousness in Piaget: Possibilities of Understanding," *Psicologia: Reflexao e Critica*, 2018.

<sup>19</sup> Hadiyanti, Elan, and Rahman, "Analisis Media Loose Part Untuk Meningkatkan Kemampuan Motorik Halus Anak Usia Dini."

<sup>20</sup> Prima Refnawati and Rivda Yetti, "Stimulasi Guru Pada Motorik Halus Anak Di Taman Kanak-Kanak Pertiwi 3 Kota Padang," *Jurnal Yaa Bunayya* 5, no. 2 (2019): 22–30.

The results and comparisons with prior research affirm that loose-part media are not only feasible but also advantageous for promoting fine motor skills, offering a sustainable and creative approach to early childhood education.

## Conclusion

The findings from this research demonstrate that the use of loose-part media can effectively enhance the fine motor skills of children aged 5-6 years. The pre-test results revealed an average score of 29, which increased to 52 in the post-test, indicating substantial improvement. Statistical analysis further supported these results, with a calculated  $t$ -value of 37.04 and degrees of freedom (df) = 28 at a significance level of 0.025, yielding a  $t$ -table value of 2.145. Since  $t_{\text{count}} > t_{\text{table}}$ , the hypothesis (Ha) was accepted, confirming a significant positive impact of loose-part media on the fine motor skills of Group B children at RA Darussalam Menanti.

These results suggest that incorporating loose-part media into early childhood education effectively enhances fine motor development. This method provides children with engaging, hands-on experiences that stimulate the small muscles required for precision and coordination tasks. The significant improvement in eye-hand coordination, form-making, and dexterity observed in this study highlights the benefits of using accessible and flexible materials in teaching practices.

The implications of this research underline the importance of innovative and diverse teaching methods that foster developmental growth in young children. Educators and practitioners should consider implementing loose-part media as part of their curriculum to support motor skill development. Future research could investigate the long-term effects of loose-part media on other developmental areas and evaluate its effectiveness across diverse educational settings and age groups.

The use of loose-part media represents an effective, economical, and versatile approach to enhancing fine motor skills in early childhood education, providing significant support for educators aiming to optimize learning and developmental outcomes.

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