

The Effect Of Playing Collage On Fine Motor Abilities In Children Aged 4-6 Years

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ABSTRACT

Fine motor skills are a crucial aspect of early childhood development because they influence a child's ability to perform various daily activities and their readiness to learn. One activity that can stimulate fine motor development is collage play. This study aimed to determine the effect of collage play on fine motor skills in children aged 4–6 years at Bunga Tanjung Banjararum Preschool. This study used a pre-experimental design with a one-group pretest-posttest design. The sample consisted of 20 children aged 4–6 years selected using a purposive sampling technique. The children's fine motor skills were measured before and after the collage play intervention. The data were analyzed using the Wilcoxon Signed Rank Test with a significance level of $\alpha = 0.05$. The results showed an increase in fine motor skills after the collage play intervention. Before the intervention, most children were in the moderate fine motor skills category, while after the intervention, most were in the good fine motor skills category. The statistical analysis using the Wilcoxon test showed a p-value of 0.000 ($p < 0.05$), indicating a significant effect of collage play on the fine motor skills of children aged 4–6 years. The conclusion of this study is that collage play effectively improves fine motor skills in children aged 4–6 years at Bunga Tanjung Banjararum Preschool.

Keywords: Collage Play, Fine Motor Skills, Early Childhood

INTRODUCTION

Early childhood is a crucial period in the growth and development process because it occurs rapidly in various aspects, including physical motor development. One aspect of development that requires attention is fine motor skills. Fine motor skills involve the coordination of small muscles, especially in the fingers and wrists, integrated with eye coordination. These skills are necessary for children to perform various activities such as writing, drawing, cutting, stringing, and pasting (WHO, 2023; Sanenek et al., 2023). Optimal fine motor development during preschool will support children's readiness to enter primary education and support academic success later in life (WHO, 2023; Cameron et al., 2022).

Globally, attention to early childhood development continues to increase. The World Health Organization (WHO) emphasizes that motor development is a crucial indicator in assessing a child's growth and development. The WHO, through its Global Scales for Early Development (GSED), places motor skills as a key component of child development that needs to be monitored from an early age (WHO, 2023). Furthermore, research shows that up to 34% of preschool children still experience difficulties with fine motor skills, such as holding a pencil correctly, which can impact learning readiness and academic achievement in school (Parents, 2026). Other studies also show that fine motor skills in preschool are associated with better academic achievement later in school and contribute to children's behavioral and cognitive development (Biological Psychiatry, 2024).

In reality, many children aged 4–6 years still experience delayed or suboptimal fine motor development. This condition can be caused by a lack of stimulation both at home and in educational settings. Children tend to spend more time using digital devices than engaging in activities that improve hand-eye coordination. As a result, children experience difficulties with writing, cutting, coloring, and pasting, which are indicators of fine motor development in preschool (Parents, 2026). The lack of variety in learning media is also a factor contributing to children's suboptimal fine motor development (Putri et al., 2021).

One way to improve children's fine motor skills is through collage play. Collage play involves arranging and pasting various materials into a specific pattern or image. This activity involves finger movements, hand-eye coordination, precision, and concentration, making it highly effective in stimulating fine motor development. Research shows that collage activities simultaneously train hand, finger, and eye coordination, thereby improving fine motor skills in early childhood (Yuliawati et al., 2023; Muniro & Rahman, 2023). Furthermore, the use of various materials in collage provides children with the opportunity to explore textures, shapes, and colors, which can enhance creativity and fine motor skills (Irwan & Aulina, 2025).

Based on the results of initial observations at PAUD Bunga Tanjung Banjararum, it was found that some children aged 4–6 years still had difficulty in carrying out activities that require fine motor skills such as holding writing tools correctly, cutting according to patterns, and sticking materials to the media provided. Therefore, an interesting learning

activity is needed and is in accordance with the characteristics of early childhood to stimulate their fine motor skills. Playing collage was chosen because it is a fun activity, easy to implement, and able to optimally involve hand and eye movement coordination. Based on this description, the researcher was interested in conducting research on "The Effect of Playing Collage on Fine Motor Skills in Children Aged 4–6 Years at PAUD Bunga Tanjung Banjararum."

METHOD

This study used a pre-experimental design with a One Group Pretest-Posttest Design approach. The research sample consisted of 20 children selected using a purposive sampling technique.

Data collection was conducted using a fine motor skills observation sheet administered before the intervention (pretest) and after the intervention (posttest). The intervention consisted of collage play activities carried out according to procedures determined by the researcher.

Data analysis was conducted univariately to describe the characteristics of respondents and the level of fine motor skills before and after the intervention. Bivariate analysis used the Wilcoxon Signed Rank Test with a significance level of $\alpha = 0.05$ to determine the effect of playing collage on fine motor skills in children aged 4–6 years. If the p-value < 0.05 , then H_0 is rejected and H_1 is accepted, which means there is an effect of playing collage on fine motor skills in children aged 4–6 years at PAUD Bunga Tanjung Banjararum.

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RESULTS AND DISCUSSION

Univariate Analysis

Table 1. Frequency Distribution of Respondent Characteristics

Information	n	%
Child's age		
4 years	4	20
5 years	7	35
6 years	9	45
Gender		

Woman	9	45
Man	11	55
Mother's Job		
Housewife	15	75
Work	5	25
Total	20	100

Based on Table 1. Frequency Distribution of Respondent Characteristics, it can be explained that of the total of 20 respondents, most of the children are 6 years old, namely 9 children (45%), followed by 5 years old as many as 7 children (35%), and 4 years old as many as 4 children (20%). This data shows that the majority of respondents are at the age of 6 years, which is a developmental stage where children's fine motor skills are increasingly mature so that children are easier to do activities that require coordination between the eyes and hands, such as collage activities.

Based on gender, the majority of respondents were male, with 11 children (55%), while 9 were female (45%). This indicates that there were slightly more male respondents than female respondents, but the difference was not significant, so the gender characteristics were relatively balanced in this study.

Based on maternal occupation, the majority of respondents were housewives (15 women (75%)), while 5 women (25%) were working mothers. This indicates that most mothers have more time to accompany and stimulate their children's development at home, including play activities that can improve fine motor skills, such as collage.

Overall, the respondents in this study were predominantly 6-year-old boys with mothers who were housewives. These characteristics could be factors supporting children's fine motor development and the success of the collage play activities in the study.

Bivariate Analysis

Table 2. "The Effect of Playing Collage on Fine Motor Skills in Children Aged 4–6 Years"

	Fine Motor Posttest		Total	P-value
	BSH			
Fine Motor Pretest	5	5	10	
	4	6	10	
Total	9	11	20	0.00

Based on the crosstab table of pretest and posttest fine motor skills, it is known that before the collage play intervention, there were 10 children (50%) who were in the Not Yet Developing (BB) category and 10 children (50%) were in the Starting to Develop (MB) category. After the intervention, all respondents experienced an increase in fine motor skills to reach the Developing According to Expectations (BSH) and Very Well Developing (BSB) categories.

Of the 10 children who were in the BB category in the pretest, 5 children (50%) improved to the BSH category and 5 children (50%) improved to the BSB category. Meanwhile, of the 10 children who were in the MB category in the pretest, 4 children (40%) improved to the BSH category and 6 children (60%) improved to the BSB category. These results indicate that there are no more children in the BB or MB categories after being given collage play activities.

Overall, posttest results showed that 9 children (45%) were in the BSH category and 11 children (55%) were in the BSB category. These data demonstrate a significant improvement in fine motor skills after the children participated in collage play activities. The majority of children even reached the BSB category, indicating optimal fine motor development.

Based on the results of the bivariate analysis, the p -value = 0.00 was obtained. Because the p -value is smaller than the significance level $\alpha = 0.05$ ($0.00 < 0.05$), then H_0 is rejected and H_1 is accepted. Thus, it can be concluded that there is a significant influence of playing collage on the fine motor skills of children aged 4–6 years. Collage playing activities have been proven effective in improving children's fine motor skills, because during the collage process children are trained to coordinate hand and finger movements, control the accuracy of movements, and improve concentration and eye-hand coordination which play an important role in fine motor development.

The results of the study showed that before the collage play intervention, most children had fine motor skills in the Undeveloped (BB) and Beginning to Develop (MB) categories, with 10 children (50%) each. After the collage play intervention, there was an increase in fine motor skills, with 9 children (45%) in the Developing as Expected (BSH) category and 11 children (55%) in the Developing Very Well (BSB) category. These results indicate that collage play activities can provide effective stimulation for the fine motor development of children aged 4–6 years. Fine motor skills involve the coordination of small muscles, especially in the fingers and hands, which develop through appropriate training and stimulation (Sari & Khotimah, 2021; Fauziah et al., 2022).

Improved fine motor skills after collage play occur because collage activities require children to perform various movements such as holding, picking up, cutting, tearing, applying glue, and attaching materials to specific patterns. These activities train hand-eye coordination and increase finger muscle strength, which is essential for fine motor development (Putri et al., 2022; Rosyidah & Wulandari, 2023). The more frequently children engage in activities involving the manipulation of small objects, the better their fine motor skills will be (Pratiwi et al., 2021).

Based on the crosstab results, it was found that of the 10 children who were previously in the BB category, all experienced improvement, with 5 children improving to the BSH category and 5 children improving to the BSB category. In addition, of the 10 children who were in the MB category, 4 children improved to the BSH category and 6 children improved to the BSB category. These results indicate that playing collage can improve fine motor skills in all respondents. This finding is in line with the research of Hamiza et al. (2022) which stated that collage activities have a positive influence on children's fine motor development because they involve repeated visual-motor coordination activities.

Collage activities also provide opportunities for children to explore various textures, shapes, and colors, thereby improving concentration and accuracy in completing tasks. According to Fitriani and Rahmawati (2023), children involved in art activities such as collage tend to show improved hand-eye coordination and better finger movement control compared to before being stimulated. Therefore, collage serves not only as a play medium but also as a learning tool that supports children's physical and motor development.

Besides improving fine motor skills, playing with collage can also foster creativity and self-confidence. When children are given the opportunity to select and arrange collage materials according to their imagination, they learn to develop ideas and solve simple problems throughout the learning process (Ningsih et al., 2024). This activity aligns with the principles of early childhood education, which emphasize learning through play, enabling children to learn actively and enjoyably.

The results of the bivariate analysis showed a $p\text{-value} = 0.00 (<0.05)$, so H_0 was rejected and H_1 was accepted. Thus, it can be concluded that there is a significant effect between playing collage on the fine motor skills of children aged 4–6 years. These results indicate that the changes in fine motor skills that occurred were not caused by chance factors, but rather due to the collage play intervention provided during the study. This finding is in line with research conducted by Lestari et al. (2021), Dewi et al. (2022), and Rosyati et al. (2024) which showed that collage games are effective in improving fine motor skills in early childhood with a significance value of $p < 0.05$.

Overall, the results of this study demonstrate that collage play is an effective stimulation method for improving fine motor skills in children aged 4–6 years. Through cutting, pasting, arranging, and combining various materials, children gain learning experiences that optimize hand-eye coordination, finger movement accuracy, concentration, and creativity. Therefore, collage activities can be used as an alternative learning activity recommended for early childhood education teachers and parents to stimulate children's fine motor development (Hamiza et al., 2022; Rosyidah & Wulandari, 2023; Ningsih et al., 2024).

CONCLUSION AND SUGGESTIONS

Based on the research results, there is a significant influence between playing collage on fine motor skills in children aged 4–6 years. This is indicated by an increase in fine motor

skills after the collage play intervention, where most children reached the Very Well Developed (BSB) category, and the results of statistical tests showed a value of $0.05.p\text{-value} = 0.00 (< 0.05)$. Thus, playing collage is effective in improving the fine motor skills of children aged 4–6 years.

Teachers and parents are expected to utilize collage play as a regular alternative stimulation activity to develop children's fine motor skills. Furthermore, further research is expected to use a larger sample size and a wider variety of collage media to achieve more optimal results.

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