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The Effect of Origami Paper Folding Activities on the Fine Motor Skills of Group A Children at TK Negeri 5 Banda Aceh City"

Julia Safitri [1], Riza Oktariana [2], Fitriani[3]
[123]Universitas Bina Bangsa Getsempena

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Abstract

are typically sectioned logically as an overview of what appears in the paperThis study aimed to examine the effect of origami paper-folding activities on the fine motor skills of Group A children at TK Negeri 5 Banda Aceh. Fine motor skills are an important aspect of early childhood development involving the coordination of small muscles, particularly those of the hands and fingers, which are required for various daily learning activities such as writing, cutting, and drawing. This study employed a quantitative approach using a pre-experimental one-group pretest-posttest design. The research sample consisted of 16 children selected through a total sampling technique. Data were collected through observation, performance tests, and documentation, and were analyzed using descriptive statistics and a paired sample t-test.The results showed a significant improvement in children's fine motor skills after the implementation of origami paper-folding activities. The mean pretest score was 7.56 (37.81%), while the mean posttest score increased to 15.31 (76.56%). The paired sample t-test revealed a significant difference with a significance value of 0.000 ($p < 0.05$), leading to the rejection of the null hypothesis. These findings indicate that origami paper-folding activities have a significant positive effect on improving the fine motor skills of early childhood children.

Corresponding Author:
Julia Safitri
Universitas Bina Bangsa Getsempena

1. INTRODUCTION

According to Risnawati (2020), early childhood education is an educational program designed to facilitate children's overall growth and development by emphasizing the development of all aspects of their personality. Therefore, early childhood education provides children with opportunities to develop their personalities and potentials to the fullest extent. In line with this view, Suryana (2021) explains that early childhood education is a developmental effort provided to children from birth to eight years of age through educational stimulation aimed at supporting their physical and psychological growth and development, thereby preparing them to enter the next level of education. Early childhood education plays a crucial role in supporting children's overall growth and development. According to the National Education System Law of Indonesia Number 20 of 2003, early childhood education is organized to provide educational stimulation to children from birth to six years of age in order to prepare them for the next level of education. Early childhood is known as the golden age, a period during which children's brain development occurs very rapidly, making it

essential to provide optimal stimulation for all aspects of development. Suryana (2021) states that the developmental aspects that need to be stimulated include religious and moral values, physical-motor development, cognitive development, language development, social-emotional development, and artistic development, so that children can grow and develop holistically and in a balanced manner.

One of the important aspects of child development is fine motor skills, which refer to the ability to coordinate small muscles, particularly those of the hands and fingers. Fine motor skills are essential for various daily activities, such as writing, drawing, cutting, buttoning clothes, folding, pasting, and other tasks that require precision and coordination. According to Hayati and Putro (2021), various play activities undertaken by children can contribute positively to their physical-motor, cognitive, language, social-emotional, and creative development. Play serves as an effective medium for stimulating motor development because children learn through enjoyable and direct experiences.

In addition to improving fine motor skills, origami activities also provide enjoyable learning experiences because they are carried out through play-based activities. Umaroh and Putro (2021) explain that play materials and various forms of games provided to children can stimulate the development of creativity, imagination, and problem-solving skills. Therefore, origami activities function not only as a means of developing fine motor skills but also as a learning medium that supports the integrated development of various aspects of children's growth and development.

This is in line with Mulyani's (2018) view that physical-motor development consists of gross motor skills and fine motor skills. At the age of 4–6 years, fine motor development progresses rapidly and therefore requires various forms of stimulation involving hand and finger coordination. The more frequently children are given opportunities to engage in activities that train hand and finger movements, the better their fine motor skills will develop.

Based on preliminary observations conducted at TK Negeri 5 Banda Aceh, it was found that several children in Group A still experienced difficulties in activities related to fine motor skills. Some children were not yet able to color within the lines, accurately copy shapes, hold a pencil correctly, cut according to predetermined patterns, or paste pictures neatly. These findings indicate that the children's fine motor skills had not yet developed optimally and therefore required appropriate educational stimulation.

Previous studies have reported the positive effects of origami activities on children's fine motor development. Mulyani (2018) found that origami activities significantly improved children's hand and finger coordination. Wahyuni and Safitri (2020) reported that regular origami activities enhanced children's finger movement control, creativity, and concentration. Rahman (2023) also demonstrated that origami activities were effective in improving hand–eye coordination and fine motor skills among young children. Nevertheless, studies specifically examining the effect of origami paper-folding activities on the fine motor skills of Group A children at TK Negeri 5 Banda Aceh remain limited. Therefore, this study is important to conduct.

2. METHOD

This study employed a quantitative approach using a pre-experimental design with a one-group pretest-posttest model. This design was used to determine the effect of origami paper-folding activities on the fine motor skills of early childhood children. In this design, the participants were

assessed before the treatment (pretest) and after the treatment (posttest), which consisted of origami paper-folding activities.

The study was conducted at TK Negeri 5 Banda Aceh from April 16 to April 30, 2026. The population consisted of all Group A children at TK Negeri 5 Banda Aceh. The sample comprised 16 children, including 6 girls and 10 boys, selected using the total sampling technique.

Data were collected through observation, performance tests, and documentation. Observation was conducted systematically to assess the development of children's fine motor skills during learning activities. Performance tests were used to measure the children's ability to complete origami paper-folding tasks according to the given instructions. Documentation in the form of photographs and videos was used to support and validate the research data.

The research instruments consisted of a fine motor skills observation checklist and a performance test assessment rubric. The observed indicators included hand–eye coordination, the accuracy and neatness of folds, and the children's concentration during the activities. Assessment was carried out using a 1–5 rating scale, ranging from very poor to very good.

Data analysis was conducted using descriptive and inferential statistics. Prior to hypothesis testing, a normality test was performed to determine the distribution of the data. Subsequently, the effect of origami paper-folding activities on children's fine motor skills was analyzed using a paired sample t-test with a significance level of 0.05.

3. RESULTS AND DISCUSSION

Results

This study was conducted with 16 Group A children at TK Negeri 5 Banda Aceh. The effectiveness of origami paper-folding activities on children’s fine motor skills was measured using pretest and posttest assessments.

The pretest results showed that the average score of children’s fine motor skills was 7.56 out of a maximum score of 20, with a percentage of 37.81%. These results indicate that most children were still in the low developmental category. After the treatment in the form of origami paper-folding activities, the posttest results showed a significant improvement. The average score increased to 15.31 with a percentage of 76.56%, indicating that most children had reached the expected developmental category. These findings suggest that origami activities made a positive contribution to improving children’s fine motor skills.

The normality test using the Kolmogorov–Smirnov and Shapiro–Wilk methods showed significance values greater than 0.05 for both pretest and posttest data. Therefore, the data were normally distributed and met the assumptions required for parametric analysis.

To test the research hypothesis, a paired sample t-test was conducted. The results showed a mean difference of 7.75 between pretest and posttest scores, with a t-value of -16.189 and a significance value (Sig. 2-tailed) of 0.000. Since the significance value was less than 0.05, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_1) was accepted. These results indicate that origami paper-folding activities have a significant effect on the fine motor skills of Group A children at TK Negeri 5 Banda Aceh.

Discussion

Fine motor skills are one of the important aspects of early childhood development because they involve the coordination of small muscles, particularly those of the hands and fingers. These skills form the foundation for children's readiness to perform various learning activities such as writing, drawing, cutting, and manipulating objects. Therefore, appropriate stimulation is needed to support the optimal development of fine motor skills.

The results of this study show that origami paper-folding activities are able to significantly improve children's fine motor skills. The increase in the average score from 7.56 in the pretest to 15.31 in the posttest indicates that repeated folding activities helped children improve hand–eye coordination, finger flexibility, concentration, and accuracy in completing tasks.

These findings are consistent with Hurlock's theory, which states that fine motor development improves through continuous and directed practice. Origami activities provide opportunities for children to repeatedly use and control small muscle movements while following instructions and producing meaningful work. In addition, Beaty states that fine motor development involves the integration of visual observation, cognitive processes, and hand movements, all of which can be stimulated through origami activities.

The findings of this study also support previous research. Mulyani (2018) reported that origami activities can improve hand and finger coordination in early childhood. Similarly, Wahyuni and Safitri (2020) found that origami activities can enhance fine motor control, concentration, and creativity in children. Rahman (2023) also concluded that origami is effective in improving children's hand–eye coordination and finger motor skills. The similarity between the results of this study and previous studies further strengthens the evidence that origami is an effective learning medium for developing children's fine motor skills.

The statistical analysis conducted confirms that the research hypothesis is accepted, namely that origami paper-folding activities have a significant effect on children's fine motor skills. The significance value of 0.000 ($p < 0.05$) indicates that the improvement after the treatment was not due to chance, but rather the result of the implementation of origami activities. Thus, the hypothesis stating that origami paper-folding activities have a positive and significant effect on the fine motor skills of Group A children at TK Negeri 5 Banda Aceh is accepted.

4. CONCLUSION

Based on the results of the study, it can be concluded that origami paper-folding activities have a positive and significant effect on the fine motor skills of Group A children at TK Negeri 5 Banda Aceh. This is evidenced by the increase in the average fine motor skill score from 7.56 in the pretest to 15.31 in the posttest. The paired sample t-test results showed a significance value of 0.000 ($p < 0.05$), indicating that the research hypothesis was accepted. Thus, origami paper-folding activities are proven to be effective in improving hand–eye coordination, accuracy, concentration, and finger movement skills in early childhood.

Based on these findings, it is recommended that early childhood teachers use origami paper-folding activities as an alternative learning activity that can be implemented regularly to stimulate the development of children's fine motor skills. In addition, schools are expected to provide adequate learning media and supporting facilities so that creativity-based learning activities can be implemented optimally. For future researchers, it is suggested to expand the study with a larger

sample size or combine origami activities with other creative activities in order to obtain more comprehensive results.

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