

The Effect Of Mosaic Technique On Fine Motor Development In Preschool Children Aged 5-6 Years In TK Negeri Pembina 3

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ABSTRACT

Background: Preschool age is the most important and fundamental early period throughout the growth and development span of human life. According to data from the WHO (World Health Organization), 5–25% of preschool-aged children suffer from minor brain dysfunctions, and 16% of children under five years old in Indonesia are found to have mild to severe neurological and brain development problems. **Objective:** To determine the effect of the mosaic technique on fine motor development in children aged 5–6 years at TK Negeri Pembina 3 in the year 2025. **Method:** This is a quantitative study using a quasi-experimental method with a one-group pretest-posttest design. The study was conducted in June 2025 at TK Negeri Pembina 3. The population of the study consisted of 23 children, and the sample consisted of 23 preschool-aged children (aged 5–6 years), selected using a total sampling technique. Data sources included both primary and secondary data. The research instruments used were SOPs and the Denver II Sheet. Data analysis techniques included univariate and bivariate analysis using the Wilcoxon test. Prior to the bivariate test, a normality test was conducted as a prerequisite. **Results:** The pretest results showed that the majority of 18 respondents or (78.3%) were in the delayed category. After the mosaic technique intervention, the posttest results showed that the majority of 16 respondents or (69.6%) were in the normal category. The Wilcoxon test showed a p-value of $0.000 < 0.05$. **Conclusion:** There is an effect of the mosaic technique on the fine motor development of preschool children aged 5–6 years at TK Negeri Pembina 3.

Keywords: *Fine Motor Development, Mosaic Technique, Preschool Children*

INTRODUCTION

Preschool childhood is the most important and fundamental early period in human growth and development. This period is marked by various important, fundamental periods in a child's life, extending to the final stages of development.

One of the defining periods of early childhood is the golden age. Therefore, the involvement of both the government and parents in children's growth and development is essential so that children can thrive, become intelligent, and optimally develop their potential (Asia Rahim & Akil Musi, 2020).

The impact of delayed fine motor development in children consists of two aspects: micro and macro. Micro impacts, such as developmental delays, will hinder other developmental milestones, which will later disrupt the child's cognitive and physical development, such as finger movement, wrist strength, hand-eye coordination, and finger movement during activities such as sticking or drawing (Moka et al., 2020).

Data from the WHO (World Health Organization) reports that 5-25% of preschool-aged children suffer from minor brain dysfunction, including fine motor development disorders related to eye-hand coordination (Sundayana et al., 2020). Data from UNICEF (United Nations Children's Fund) shows that the number of toddlers who experience fine and gross motor disorders is as many as

1,375,000 per 5 million children have developmental delays. According to the Indonesian Ministry of Health (2016), 16% of children under 5 years of age have developmental delays.

Five-year-olds in Indonesia have been found to experience mild to severe neurological and brain development problems. The Indonesian Ministry of Health (2022) ranked Riau Province in the bottom 7 in terms of monitoring the development of children under 5 years old, at around 58.6%. The Strategic Plan targets were not achieved. Planned will resulting in the child's development not being properly monitored (Arismawati et al., 2022).

Mosaic is a two-dimensional or three-dimensional work of art that uses materials or pieces that are deliberately made by cutting or forming pieces and then arranging them by sticking them on a flat surface using glue (Marcelina et al., 2023).

This mosaic technique can be useful for improving fine motor skills because in this activity children use their fingers to pick up small objects and involve coordination of hand and eye muscles (Sukmawati et al., 2021a)

METHOD

This type of quantitative research uses the Quasi Experiment method with a one-group pretest-posttest design. This research was conducted in June 2025 at Pembina 3 State

Kindergarten. The population in this study was 100 students.

Table 4.1 shows that before the mosaic technique was given to students at Pembina 3 State Kindergarten, the majority were delayed (18 respondents) and the minority were normal (5) respondents (21.7%).

Table 4.2 Fine Motor Skills of 5-6 Year Old Children After Being Given Mosaic Techniques at Pembina 3 State Kindergarten 23 children and samples in the study this is a preschool age child 5-6 years as many as 23 children with techniques taking sample using total sampling. Source The data used primary and secondary data. The instruments in this study consisted of SOPs, Denver Sheets *II*. The data analysis technique uses univariate and bivariate analysis using the Wilcoxon test, before conducting the bivariate test, a prerequisite test will be carried out, namely the data normality test.

RESULTS AND DISCUSSION OF RESULTS

Univariate Analysis

Table 4.1 Fine Motor Skills of 5-6 Year Old Children Before Being Given Mosaic Techniques at Pembina 3 State Kindergarten

Motoric Fine	F	%
Normal	5	21.7
Delay	18	78.3
Amount	23	100

Table 4.2 shows that after being given the mosaic technique to students at Pembina 3 State Kindergarten, the majority of 16 respondents were normal (69.7%) and minority delay 7 respondents (30.4%).

Motoric Fine	F	%
Normal	16	69.6
Delay	7	30.4
Amount	23	100

Bivariate Analysis

In this study, before conducting bivariate analysis, a normality test was first conducted using the Shapiro-Wilk test. From the results of the normality test, the pretest and posttest P values were obtained at 0.000. A P value <0.05 means the data is not normally distributed, so a non-parametric Wilcoxon test was conducted.

Table 4.3 Fine Motor Skills of 5-6 Year Old Children Before and After Being Given Mosaic Techniques at Pembina 3 State Kindergarten

Motoric Fine	N	Mean Rank	P
Negative rank	0	0,000	
Positive rank	11	6.00	0,000
Ties	12		
Total	23		

Based on the table above, it shows a negative rank of 0 which indicates no decrease in the pretest and posttest scores, while a positive rank indicates an increase after being given the mosaic technique to preschool children by 11 with a mean rank of 6.00. The P value shows $0.000 < 0.05$, which means the mosaic technique has an effect on fine motor development in preschool children aged 5-6 years.

DISCUSSION

Univariate Discussion

Based on the research results, before the provision of the technique was carried out mosaic showed the results of 18 children, the majority of whom were delayed (78.3%), and after being given Technique mosaic. The results showed that 16 children were mostly normal (69.6%). This indicates that children's fine motor development is still low.

This research is in line with the research conducted by Moka et al., (2020) with the research title The Effect of Mosaic Technique Picture Sticking Activities on Fine Motor Development in Preschool Children at RA Nurul Huda, where the results of the study showed that almost half of preschool children, namely 8 (50.0%) before being given mosaic

technique sticking activities, including in category development is not yet capable, children aged preschool with capable development, namely 7 (43.8%), and 1 (6.3%) preschool-age children with disabled development. And almost all preschool-age children after being given sticking activity technique mosaic their development in the capable category is 15 (93.8%), and preschool children in the not yet capable category are 1 (6.3%).

This research is in accordance with the research conducted by Qomariah et al., (2020) with the title of research on Improving Fine Motor Skills Through Mosaic Activities in Students, which where results his research shows that in the pre-cycle stage the level of children's fine motor skills reached a percentage of 47.66%, while after using mosaic activities in cycle I it reached a percentage of 59.91% and in cycle II it reached a percentage of 80.08%. It can be concluded that there is a significant increase in children's fine motor skills through mosaic activities.

Bivariate Discussion

Based on the Wilcoxon test, a p-value <0.005 was obtained, which can be interpreted as meaning that there is an influence of the Action. Mosaic with fine motor development in children aged 5-6 years. This is consistent with previous research conducted by (Tresya, 2021), with a p-value of 0.004 (<0.05). So that the hypothesis rejects H_0 and H_a is accepted or it can be interpreted that there is an influence of mosaic action on fine motor development in children.

This research is in accordance with research conducted by Damayanti & Sensussiana, (2022) with the title The Influence of Therapy

The Effect of Mosaic Techniques on the Development of 4-5 Year Old Children at Al-Amanaah Kindergarten

1. The results of the study showed that the majority of children before being given mosaic therapy were 32 children. (66.7%) experience Fine motor development was in the doubtful category. After mosaic therapy, 43 children (89.6%) improved. The Wilcoxon test showed a p-value of 0.000 ($p < 0.05$), indicating an increase in fine motor development in preschool children aged 4-12 years.

5 years after mosaic therapy.

This research is in line with research conducted by Farida (2020), with the title The Influence of Engineering Mosaic To Fine Motor Development in Early Childhood at Insani Ceria 1 Kindergarten, Tumpang. The results of the study showed that before the mosaic technique was carried out, most of the respondents were doubtful, amounting to 7

respondents (70%), and after being given the mosaic technique, most of the respondents had normal abilities, amounting to 7 respondents (70%) and the development of fine motor skills was

There were 3 respondents (30%) who were doubtful. This study used Wilcoxon test analysis, with the analysis result of $p=0.004$ indicating that there was an influence of the technique. mosaic to development motor smooth early childhood.

CONCLUSION AND SUGGESTION CONCLUSION

Based on the results of research conducted in June-July regarding the differences in fine motor development of children aged 5-6 years before and after the provision of mosaic techniques at Pembina State Kindergarten.

3 of 2025, it can be concluded as follows:

1. The development of fine motor skills in children aged 5-6 years before being given mosaic techniques at Pembina 3 State Kindergarten in 2025 was mostly delayed with 18 respondents (78.3%) and normal. 5 respondents (21.7%).
2. The development of fine motor skills in children aged 5-6 years after being given mosaic techniques at Pembina 3 State Kindergarten in 2025 was mostly normal for 16 respondents (69.6%). and delay 7 respondents (30.4%).
3. It is known that there is an influence given the technique mosaic on fine motor development of children aged 5-6 years in Kindergarten Negeri Pembina 3 in 2025 with a p value <0.000 meaning a significant value ($p\text{-value} < \alpha$) then H_a is accepted. Thus it means technique mosaic influential to Fine motor development in preschool children aged 5-6 years.

SUGGESTION

1. For Research Sites School expected can facilitate the application of mosaic techniques For learning remembering that this mosaic technique very important to increase development fine motor skills in children.
2. For respondents It is hoped that this research will motivate children to further hone their fine motor skills, by carrying out activities that can develop fine motor skills. children especially in mosaic activities.
3. For Educational Institutions It is hoped that this research will be able to become a

learning or information medium addition to increase servicemidwifery in the field of neonates, infants, toddlers, and preschool children.

4. For Further Researchers It is hoped that the results of this study can be used as a reference for those wishing to develop similar research. Further research samples and variables can be added.

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