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Journal of Early Childhood Development and Education Vol 1 No 3 (2024) https://doi.org/10.58723/junior.v1i3.240
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Research Article

Experimental Study: Coloring Activities with the Abur Wipe Technique as a Means of Early Childhood Fine Motor Development

Received : July 22, 2024	Revised : August 10, 2024	Accepted: September 20, 2024	Publish : September 28, 2024

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Abstract:
The purpose of this study is to ascertain how coloring activities using the Abur wipe technique affect young children's fine motor abilities. The study design is quasi-experimental design, quantitative research with an experimental approach. The study's population consisted of 11 pupils from Pamardi Siwi Kindergarten and 13 students from Pangudi Luhur Kindergarten who belonged to group A. Total sampling approach was employed in the sampling process. Methods for gathering data through testing. According to the findings, group A children in the experimental class had an average value of fine motor skills that was 88.36 points greater than the control class's average value of 74.15. The significant value of 0.000 < 0.05 indicates that the abur wipe technique has an impact on the fine motor abilities of kindergarten students in group A, according to the findings of the hypothesis test.
Keywords: Abur Wipe Technique, Coloring, Fine Motor Skills

1. INTRODUCTION

Early childhood is a golden age, a period when children develop well and can easily accept anything conveyed by others. Given how important this period is for a child, stimulation is very necessary. This is the right time for children to learn and develop various abilities such as cognitive, language, motor, and social-emotional. The golden period cannot be repeated twice, therefore the environment and education are needed to develop children's abilities. The role of early childhood education in developing basic abilities is very important and emphasizes efforts to develop children's abilities based on the principle of learning while playing. Therefore, children's learning must be in accordance with their level of development so that all their abilities can develop optimally (Schachter et al., 2024).

Indonesia has many educational pathways for early childhood ranging from formal, non-formal and informal pathways. As stated in the Regulation of the Minister of National Education of the Republic of Indonesia Number 58 of 2009 concerning Early Childhood Education Standards states that, early childhood education has a variety of services in accordance with existing conditions and capabilities, both in formal and non-formal education channels. The implementation of PAUD in the formal education pathway is in the form of Kindergarten (TK), Raudhatul Atfal (RA). Non-formal pathways take the form of daycare centers (TPA) and other forms that use programs for early childhood, nurturing for early childhood, playgroups (Kober), and so on.

Motor skills mean the development of control of physical movements through coordinated activities of nerve centers, nerves, and muscles (Pini et al., 2024). Motor skills include gross motor and fine motor. Fine motor is a movement that uses fine muscles or parts of certain limbs that are influenced by opportunities to learn and practice (Haq & Roesminingsih, 2023). Fine motor skills are one of the abilities that need attention in early childhood, because many activities require these skills. In other words, fine motor skills are the basic capital for children to make coordinated movements through nerve and muscle arrangements. Fine motor skills are abilities that do not require a lot of energy, but require high accuracy (Qomariah et al., 2024).

Fine motor skills have functions including supporting the development of self-confidence, having the skills to play or use game tools, and being able to adjust to the school environment. A success in children's fine motor skills cannot be separated from a process known as Sensory Integration, which is a sensory process to describe receptive messages to the nervous

system from the senses, and convert them into movements that are in accordance with behavior or response. Sensory integration is the process of recognizing, changing, and distinguishing sensations from the sensory system to produce a response (Ferreiro-Pérez et al., 2024). Motor skills have the same important role as other aspects of development, can be used as the first benchmark to determine the growth and development of children.

This is because motor skills can be observed through the five senses. Fine motor skills are seen as important to children's academic abilities in basic education. Some factors that influence fine motor skills in early childhood are intelligence development, talent, readiness and learning opportunities, opportunities to practice, good models, guidance, motivation, and stimulation from the environment (Zhou & Tolmie, 2024). This will lead to a sense of disbelief in their own abilities.

If the child's fine motor skills are well developed, it will be easy for the child to do simple activities such as writing, cutting, folding, coloring, and so on. Therefore, fine motor skills need to be developed with effective activities in such a way that children will reach their true level of development.

Training fine motor skills can be done in many ways, one of which is by teaching children the abur swipe technique in coloring activities. According to Alurmei et al. (2024) coloring activities with the stroke technique is an activity that can train children's fine motor skills. Basically, coloring activities with the stroke technique are activities that require the skills of the fingers in applying color to the pattern. As said by Zakiyya & Kurniatin (2024) that coloring activities with the abur wipe technique are activities that function as a learning medium to optimize children's fine motor skills. Coloring activities with the abur wipe technique can provide a variety of stimulation to child development, such as eye-hand coordination ability, muscle strength of the child's fingers, and flexibility of the child's fingers when applying color.

Initial observations made by researchers on children aged 4-5 years at Pangudi Luhur Kindergarten and Pamardi Siwi Kindergarten, Putri Hijau District, North Bengkulu Regency. Problems were found, namely that children's fine motor skills have not developed optimally, including children having difficulty moving their fingers correctly, moving their wrists and coordinating their eyes and hands. Children's fingers look stiff in holding a pencil, moving scissors, and coloring. Meanwhile, eye and hand coordination is not yet directed when doing complicated activities. In coloring activities with the abur wipe technique, hand movements that can be trained are hand movements when coloring patterns, hand strength when holding paper, hand movements when pressing and wiping colors.

There are many activities that can be used to optimize fine motor skills, researchers choose coloring activities with the abur wipe technique. Based on several relevant previous studies, it shows that coloring activities with the swipe technique affect children's fine motor skills. For example, researchers Wahyuni et al. (2024) who examined the "Effect of Abur Wipe Activities on Fine Motor Skills of Early Childhood" obtained the results that abur wipe activities were able to improve children's fine motor skills with various methods applied.

Based on the identification of the above problems and the data obtained, the researcher wants to know the effect of coloring activities with the wipe blur technique on the fine motor skills of group A children in kindergarten, therefore the researcher conducted a study "Experimental Study: Coloring Activities with the Abur Wipe Technique as a Means of Developing Fine Motor Skills in Early Childhood".

2. MATERIAL AND METHOD

This research was conducted from April 22 to May 07 in the even semester of the 2024 academic year at Tk Pamardi Siwi and Tk Pangudi Luhur, Putri Hijau District, North Bengkulu Regency. This research uses experimental research methods in the form of Quasy Experiments with Quantitative research types. The experimental method is a research method that looks for causal relationships between researcher variables, aiming to determine whether or not there is an effect of certain treatments (Abraham & Supriyati, 2022). The design of the Quasy Experimental approach used is Nonequevalen Control Group Design. This design requires an experimental class and a control class. The object of this research is in Pamardi Siwi Kindergarten and Pangudi Luhur Kindergarten in Putri Hijau District, North Bengkulu Regency. Furthermore, the population determined in this study was 24 children. The sampling technique used in this study was Total Sampling. Total sampling is a sampling technique where all members of the population are sampled. Sampling in this study determined group A children in both kindergartens, where at Tk Pamardi Siwi the researcher set 11 children and Tk Pangudi Luhur the researcher set 13 children as samples. Data collection techniques carried out in the form of tests, namely Prettest and Posttest. The data analysis tools used are normality

test, homogeneity test, and hypothesis testing with Independent Simple t-Test test.

3. RESULT AND DISCUSSION

In the study of the Effect of Coloring Activities with the Abur Wipe Technique on Fine Motor Skills of Group A Children in Kindergarten, using a sample of class A at Pamardi Siwi Kindergarten as the experimental class and class A at Pangudi Luhur Kindergarten as the control class. The experimental class and control class participated in six different activities throughout the two-week study period. Pre-test, coloring activities using the abur swipe technique (for the experimental class), coloring activities with crayons (for the control class), and a post-test covering finger flexibility, finger muscle strength, and eye-hand coordination are the tasks that will be assigned to demonstrate the learning outcomes of the children in the experimental class and control class. After that, coloring activities with the abur swipe technique for the experimental class and coloring activities using crayons for the control class.

The aim of this study is to determine if coloring activities using the abur wipe technique have an impact on the fine motor abilities of children in group A. Fine motor skills involve equalized movements. According to Narvaez (2024) that fine motor skills are an aspect of development that has a major influence on children's ability academically in education. Fine motor skills achieved by children are not the same, some are slow and some are in accordance with developmental achievements depending on the maturity of the child. The importance of fine motor skills for early childhood is so that children can exercise fine muscle control and strengthen eye and hand coordination. Meanwhile, according to the opinion Huggett & Howells (2024) that educators and parents need to help to improve fine motor skills in children. In line with Faber et al. (2024) believe that developing a child's fine motor abilities at a young age is crucial because it allows them to train the little muscles in their fingers, move a flexible wrist, and use the muscles connecting their eyes and hands during tasks like writing and cutting.

In this study, data were collected 6 times starting from pre-test, treatment I, II, III, IV, and post-test activities. The first activity begins with conducting a pre-test with the activity of cutting circle patterns and straight lines, drawing circle patterns, following zig-zag dotted lines and curved lines. Then the next meeting was carried out treatment for four meetings in the experimental class with coloring activities with the abur swipe technique.

Figure 1. Treatment I activity

At the second meeting of the first treatment, children do coloring activities with the technique of rubbing the sun sub-theme. The stages in doing so are first, the child cuts out the circle pattern, then proceeds to color the pattern using crayons, and the child begins to wipe the crayon sprinkles on the pattern that is colored on white paper. In these activities, children are trained in fine motor skills, namely, in the aspects of eye and hand coordination, finger flexibility, and finger muscle strength. The results of the first treatment, namely, in the aspect of eye-hand coordination, there are several children who have not been able to coordinate their eyes and hands when pressing and rubbing crayon colors on the drawing pattern, and children have not been able to cut the paper according to the pattern line. In the aspect of finger flexibility, it can be seen that some children have not been able to color the picture with one direction of crayon strokes, and there are still children who have not been able to hold the crayon correctly but hold the crayon with all five fingers. In the aspect of finger muscle strength, it can be seen that children have not been able to hold the paper when rubbing the color, so that the position of the pattern paper is irregular.

Figure 2. Treatment II Activity

At the third meeting of the second treatment, children do coloring activities with the star sub-theme abur wipe technique. In these activities, children are trained in fine motor skills, namely, in the aspects of eye and hand coordination, finger flexibility, and finger muscle strength. The results of the second treatment, namely, in the aspect of eye-hand coordination, it can be seen that some children are starting to be able to coordinate their eyes and hands when cutting out patterns but the cutouts are still out of the line pattern. In the aspect of finger flexibility, children began to be able to hold crayons correctly, and children began to be able to color patterns with regular directions, but not yet consistent. In the aspect of finger strength, the child is starting to be able to hold the paper when rubbing the color but is sometimes detached from the initial position.

Figure 3. Treatment II Activity

At the fourth meeting of the third treatment, the children did the activity of rubbing the moon sub-theme. In these activities, children are trained in fine motor skills, namely, in the aspects of eye and hand coordination, finger flexibility, and finger muscle strength. The results of the third treatment, namely, in the aspect of eye-hand coordination, it can be seen that the coordination of the eyes and hands of children is starting to develop as expected, where when cutting patterns, children are able to cut patterns according to the pattern lines, but not yet completely neat, children are able to press and wipe colors but not yet completely neat. The child's ability to paint the picture in one direction, despite its imperfect neatness, is evident when looking at finger flexibility. In the meantime, a number of kids are beginning to exhibit the predicted development of finger muscular strength; it is evident that the child can hold the paper when rubbing the color, despite the fact that it occasionally slips slightly.

Figure 4. Treatment II Activity

The fourth treatment of children doing coloring activities with the technique of swipe abur sub-theme clouds. In these activities, children are trained in fine motor skills, namely, in the aspects of eye and hand coordination, finger flexibility, and finger muscle strength. The results of the fourth treatment, namely, children develop very well in the aspect of fine motor skills, can be seen from the aspect of eye and hand coordination, children are able to cut patterns according to lines and neatly, children are able to

press and rub colors with better rubbing results. In the aspect of finger flexibility, it can be seen that the child is able to color in one direction by not going outside the line pattern, and the child is able to hold the crayon correctly. In the aspect of finger muscle strength, the child is able to hold the paper in its initial position well.

According to the opinion of Ruiz et al. (2024) that coloring activities with the swabbing technique require children to actively move their fingers so that they train the strength and flexibility of the child's fingers and the coordination of the child's eyes and hands when doing activities. Coloring activities with the abur wipe technique are activities that can develop children's fine motor skills in hand processing skills. In line with the opinion Ferasinta et al. (2024), the abur swipe technique is a method that is emphasized on the fingers to flatten the color against a shape into an object that has aesthetic value. Coloring activities with the swipe abur technique also aim to train fine motor skills, coordinate the eyes with the hands, and control hand movements.

At the sixth meeting, researchers conducted a post-test with the aim of seeing children's fine motor skills after being given treatment. The post-test activities used were similar to the pre-test activities. The results of the experimental post-test showed a significant difference in the average value from the control class post-test value, which means that after being given the experimental class treatment, children's fine skills related to eye-hand coordination, finger flexibility, and finger muscle strength have developed very well (BSB) and the control class is developing as expected (BSH). Based on the analysis of the results of the pre-test and post-test of the two classes, it was found that in the experimental class, before being given the treatment of coloring activities with the abur wipe technique, fine motor skills in the aspects of finger flexibility and eye and hand coordination were not optimal or not developing (BB), then after being given the treatment of coloring activities with the abur wipe technique, children's fine motor skills had begun to develop well (BSB).

This can be seen in the pre-test and post-test results which show differences in the experimental and control classes. As evidenced by the increase in children's fine motor skills in the experimental class in the aspect of eye and hand coordination when doing paper cutting activities, eye and hand coordination is more directed so that the cutouts look neat and follow the line pattern. In the activity of following the dotted line, the coordination of the child's eyes and hands is more focused and the child is able to follow the dotted line without going off the line. In the aspect of finger flexibility, it can be seen that when children draw a circle pattern, the flexibility of the child's fingers is more flexible, so that the resulting circle pattern is more visible and the pencil strokes are neater. In the aspect of finger muscle strength, it can be seen that the child has been able to move the scissors with his fingers correctly.

The results of the comparison of the average pre-test and post-test scores are presented in the bar chart as follows:

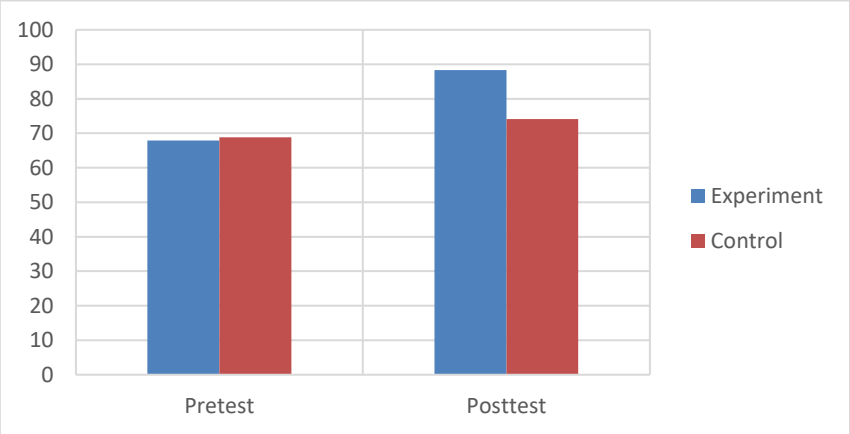

Figure 5. Pretest and Posttest Scores

The results of the pre-test activities in the experimental class and control class showed a difference that was not too significant, meaning that the initial skills possessed by children in both classes were almost the same. Based on Figure 1, it shows that the pre-test value of the experimental class was 67.91 while the control class was 68.85 with a difference in the average value of 0.94. Meanwhile, the average value results in post-test activities, the experimental class obtained a value of 88.36 while the control class obtained a value of 74.15 with a difference in average value of 14.21. It is proven that

after the treatment of coloring activities with the abur wipe technique, children's fine motor skills have increased significantly.

Then data analysis was carried out using normality and homogeneity tests. After carrying out the prerequisite test, it is known that the results of the fine motor skills data output are normally distributed and homogeneous, so that hypothesis testing can be carried out using the Independent Sample t-Test test. This test aims to determine whether there is a difference in the average of two unpaired samples. The results of the hypothesis test show that the Sig (2-tailed) value is 0.000 < 0.05, so Ho is rejected and Ha is accepted, meaning that there is a significant effect. Based on the hypothesis test, it is stated that there is an effect of coloring activities with the abur wipe technique on the fine motor skills of group A children in kindergarten.

As for the limitations in this study, namely, there are some children who are not yet skilled in using scissors, so that in the treatment activities the pattern cutouts are still far outside the line pattern and this can affect the results of strokes in research activities. Based on the results of research conducted on the effect of coloring activities using the abur swipe technique on the fine motor skills of group A children in kindergarten. Suggestions from researchers for future improvements, namely, teachers need to anticipate students who are less skilled in using scissors, so that in developing skills using scissors, teachers should be able to provide stimulation in the form of paper squeezing activities to train the strength of their hand muscles, practice holding scissors with the correct hand position, practice opening and closing scissors, and practice cutting by following line patterns.

4. CONCLUSION

Based on the results of hypothesis testing using the independent sample t-test, it shows that the Sig value. (2-tailed) value is 0.000 < 0.05, meaning Ho is rejected and Ha is accepted. This statement is reinforced by the results of the average calculation in the experimental class by doing coloring activities with the abur swipe technique obtained a result of 88.36 higher than the average value of the control class by doing learning activities as usual, namely coloring sketch drawings, obtained a result of 74.15. The results of this study have a significant difference in the average value of the experimental class against the control class, so it can be concluded that there is a significant effect of coloring activities with the abur wipe technique on the fine motor skills of group A children in kindergarten.

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