

Improving Children's Fine Motor Skills through Pencil Skills

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Abstract—This study aims to determine fine motor skills in activities through pencil skills in children. This study used a classroom action research approach with a collaborative approach consisting of several cycles. Data collection methods used observation techniques and student work. Actions to improve fine motor skills with pencil skills were focused on using crayons in drawing activities. The result of this study showed that there was an increase in children's motor skills quantitatively. The study showed 78.6% of fine motor skills were in good classification. Likewise, aspects of fine motor skills also increase, such as the regularity of color scribble or streaks, the children capability to coloring by fulfilling all areas of image, neatness, timing, and accuracy.

Keywords—*fine motor skill; motorik skill; pencil skill; coloring train*

I. INTRODUCTION

Early childhood education is an effort to develop physical, cognitive, artistic, linguistic, emotional, social, and moral and religious aspects in children aged up to six years through the provision of education in order to have the readiness to study at the next level of education [1]. Furthermore, Yamin and Sanan state that from the age of birth until entering primary education is a golden period as well as a critical period in the stages of human life, which will determine the next life. This period is the right time to lay the foundations for physical, language, social-emotional development, self-concept, art, morality, and religion [2]. Development and growth of children will be optimal when they get external and internal stimulations [1]. As stated by Montessori, that early age is a golden age where children begin to be sensitive to receive various stimulations and educational strategies from adults and their environment both intentionally and unintentionally [3]. In this sensitive period, there is a maturation of physical and psychological functions so that the child is ready to respond and realize all the developmental tasks that are expected to emerge in the pattern of everyday behavior.

The physical-motoric aspect is the ability of motion, both fine and gross motion. For physical-motor growth, children aged 4-6 years still need a lot of activity. According to Wulan, entering the age of 5-7 years, most of what children experience is honing back their known motor skills to the stage of mastery.

Some of these motor skills are writing, drawing and movements performed while playing and exercising [4].

This research focuses on fine motor skills because this is very important for the life of the next child. There is a substantial body of research to suggest that children who have developmental motor problems in their early years tend to have a degree of motor, educational and social difficulties as they get older [5].

As Erna Wulan said, the need for children to carry out various activities is very necessary, both for the development of small muscles and large muscles. Physical movements are not only important for developing physical skills but can also have a positive effect on the growth of a child's sense of self-worth and even cognitive development [6]. The success of children in mastering motor skills can make children proud of themselves. Fine motor skills are essential for performing everyday skills as well as academic skills. Without the ability to complete these everyday tasks, child self-esteem can suffer, their academic performance is compromised and their play options are very limited. They are also unable to develop appropriate independence in life skills (such as getting dressed and feeding themselves) which in turn has social implications but also within peer relationships [7]. So fine motor skills are important for performing daily skills and academic skills. Without the ability to complete daily tasks, children's self-esteem will be low and their academic performance will be disrupted.

There are several problems related to fine motor skills of children aged 4-6 years who are studying in early childhood education. These problems are: first, children cannot draw meaningful forms and secondly, children cannot color neatly [4].

From the observations in the B1 group Bhayangkari Bengkulu preschool on September 4, 2018, it was found that teachers, in learning, emphasized reading and writing activities on the board and finally children read books one by one prepared by the teacher. From the observations of the researchers, while in class it turns out that on average children cannot read and write their names. Seeing such a phenomenon, the researcher discussed with the group B1 teacher. From the discussion, it was agreed to improve the learning that began

most basic for the preparation of reading and writing, namely by increasing fine motor skills.

When children lack skilled motor skills, children will have difficulty displaying their academic. When a child has fine motor skills difficulties, they may also have difficulties with being able to be verbally very skilled but having difficulty showing this on paper (i.e. writing, drawing or coloring) [8]. Improving their ability in, and persistence with, fine motor skills that are required for academic, play and life skills increase school readiness and academic performance of coloring, drawing, writing, cutting and pasting skills [7]. From these various opinions, it can be concluded that to overcome fine motor difficulties can be done by coloring activities.

Fine motor skills include several aspects of skills, namely a. Academics skills including: (1) Pencil skills (scribbling, coloring, drawing, writing), (b) Scissors skills (cutting); b. Play including: (1) Construction skills using lego, duplo, puzzles, train tracks, (2) Doll dressing and manipulation, (3) IT use (e.g. mouse and stylus manipulation); c. Self-care including (1) dressing - tying shoelaces, doling up sandals, zips, buttons, belts (2) eating - using cutlery, opening lunch boxes and food bags, (3) hygiene - cleaning teeth, brushing hair, toileting [7]. Pre-school children need to develop pencil control skills and fine motor skills, coloring is one way of doing this. It can be the precursor to developing writing and encourages creativity [8].

This research focuses on improving children's fine motor skills through Pencil skill, especially, the skill of coloring. By coloring train the fingers of the child to grasp and move the fingers, wrists and hand-eye coordination. In the coloring activity, the tools used are crayons. The reason for using crayons according to Beaty, crayons are important because they can help children strengthen finger muscles that are important for the holding of stationery later [9]. Furthermore, children can practice moving their arms, wrists and lower palms rhythmically on a table or floor, while advancing back and forth crayons [9]. This prepares him to write when similar but more controlled movements are needed. In other words that going through coloring exercises will allow him to grow in coordination. Research has also shown that children with developmental motor problems tend to have difficulties with reading and writing. A study in investigating the motor coordination difficulties in a sample of poor readers and writing showed that more than 50% of these children displayed motor co-ordination difficulties [10]. Children who have Developmental Co-ordination Disorder (DCD) have a high risk of having reading and writing delays [11] and motor difficulties were significantly associated with reading delay [12]. This can be said to bring through coloring exercises for children will improve the ability of coordination of fine skills related to the arms, wrists, fingers, and palms which will have an effect on increasing the ability to write.

Based on the description above is considered very urgent to do more in-depth classroom action research on solving the problems of the fine motor skills of early childhood through coloring activities. In connection with this, the purpose of the study is to improve the fine motor skills of the Early Age

Group B1 Bhayangkari preschool through pencil skill activities that are focused on coloring images.

II. METHOD

This research was conducted at the Bhayangkari Bengkulu preschool using the classroom action research approach. Classroom action research is an observation that applies reflective actions in the classroom by carrying out certain actions or by using rules in accordance with research methodologies carried out in several periods or cycles in order to improve and or improve learning practices carried out together in class professionally so that an increase in understanding or quality or target has been determined [13,14]. Each cycle consists of four stages, namely planning, implementation, observation, and reflection. The subjects of the study were teachers and children of group B1 of Bhayangkari Bengkulu Preschool. Data collection on fine motor skills is done by observing when children coloring and children's work. The criteria are as follows.

TABLE I. GRADING CRITERIA FOR MOTORIC FINE THROUGH THE COLORING MOVEMENT

The measured aspect	Score 3	Score 2	Score 1
color scribbles	regular	less regularly	not regular
coloring	fill the image field	almost fill	not full
neatness	not out of line	slightly out of line	out of line
hand and eyes coordination	Timing /fast Accurate	Less fast Less precise	Not fast Not precise

There are five categories in classifying respondents' answers, namely categories that are very good, good, sufficient, lacking, and very lacking [15]. Therefore, for the next step in the emergence of motion behavior, the indicator image is three, then the grouping of behavior is grouped into three.

TABLE II. FINE MOTOR SKILLS ASSESSMENT

Score	Conversion	Interval	classification
3	100	83 -100	Good
2	66,6	50 - 82	Sufficient
1	33,3	33 - 49	deficient

III. RESULT AND DISCUSSION

A. Results

Class action research is process research. Identifying about children's fine motor skills through coloring activities were obtained through observation of children's work.

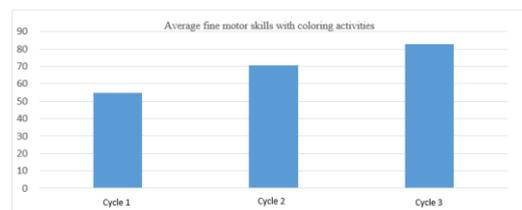


Fig. 1. Percentage of fine motor skills of children in the B1 Kemala Bhayangkari Preschool Bengkulu City.

From the table picture above, it can be seen that the fine motor skills of children after being given coloring activities increase in each cycle. From cycle 1, children motor skills averages were 55% or insufficient category, then increase in cycle 2 with average fine motor skills 70% or insufficient categories and in cycle 3 increasing to 83% or in the good category. While individually, fine motor skills in the good category in cycle 3 were 11 people or 78.6%.

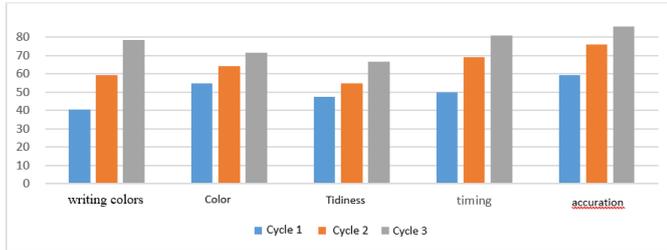


Fig. 2. Fine motor skills with coloring activities.

Figure 2 proves that with coloring activities the child's fine motor skills increase. This can be seen from the skills of children in writing colors regularly (79%). Before the action, there are still many irregular coloring movements in the child. Likewise in coloring forms, initially the forms that have not been fully colored have not been colored, after going through the drawing process in the third cycle the children have been able to fully color the shapes in the picture (71%). Then from neatness, children have increased their tidiness compared to before (67%). While the hand-eye coordination capabilities related to speed also increased by 81%. This acquisition is close to the good category due to the speed of completion. For accuracy in coloring, there is also an increase from each cycle of 86%. So the accuracy of the child when coloring is in good classification.

B. Discussion

From the results of this study, it was found that there was an increase in children's fine motor skills after being given coloring activities. Coloring is an activity to improve children's fine motor skills. Coloring and drawing both help kids improve fine motor skills [16]. They also train the brain to focus. With the increase in fine motor skills, children also have an impact on the work of the brain that is training the brain to focus on one academic activity or task or daily task.

Among the coloring skill components, a neat component is still low compared to other components. From the results of observations on children's work, hand control is still a problem for children. So that there are still children who are less tidy in coloring. This can be seen from the children's work, in this case, coloring, there is still a lot of coloring outside the lines or images. Improvements are given with regard to improvements to the color graffiti aspect. Color streaks are still irregular, and this means they need practice and experience. This is because children are not careful when making scratches when coloring pictures. Children need to be careful and concentrated when working on coloring tasks. Many children are now entering the Kindergarten lacking in fine motor skills which significantly affects how they are able to participate in the classroom.

Referrals to Occupational Therapy are up and many in the school system are not this overall lack of fine motor skills. It's important to remember that fine motor skills not only affect handwriting but all classroom activities and skills [17].

At the age of 5, the child should be able to control his fingers, so that the child is able to color with control and accuracy in the line. From being aware of the lines but because of their pencil grasp is not adequately developed yet, the control and precision are not yet adequate [18]. About 5 years of age the child demonstrates a three-point grasp. The pencil is controlled by individual finger movements that will allow a child to execute colors with sufficient control and precision tasks. If fine motor skills are developed appropriately it will allow the child to execute the tasks that are successful with the necessary control to stay between the lines. In contrast with this, a child who has poorly developed motor skills will find it very difficult to execute tasks and activities with necessary control and precision. As the child gets older it is important to execute coloring tasks correctly from left to right with the wrist in extension. This is the same as the position is used in writing skills."

Overall, from this class action research, there has been an increase. Besides quantitatively increasing. Qualitatively, it has also increased starting from regular color scribbling skills, coloring on image shapes has begun to be full of color, neatness, timings, and accuracy are good enough. At the beginning of the study children who had fine motor skills in children were classified well in cycle 1 and 2 did not exist, in cycle 3 there were 11 children or 78.6% in good classification. There are several things that need to be considered in teaching coloring to improve these fine motor skills, as stated in Regulation of The Minister Of National Education of The Republic of Indonesia Number 49 of 2007 as follows: 1) Fine motor development is carried out gradually and repeatedly according to the child's ability, 2) Activities should be given according to the theme where the environment where the child lives, 3) The stimulation is given should be according to the age and level of growth and development of the child both physically and spiritually, 4) Child motor development is carried out with interesting and fun activities, 5) Providing supervision and guidance to children when performing fine motor activities, 6) Fine motoric activities should be carried out in a variety of ways so as not to cause saturation [19].

Fine motor skills, if done continuously and repeatedly, will affect the development of children's intelligence. In fact, the fine motor skills were very consistent with specific cognitive abilities [20].

In this study found also children who have difficulty with coloring pictures. In the future the class teachers can continue guiding children who have difficulty in full coloring, regular scratching, controlling hand movements, and eye and hand coordination. If children have difficulty drawing, writing, holding a pencil, chances are the child has difficulty in his fine motor skills. Children with sensory processing difficulties and motor difficulties often lack proper proprioceptive and vestibular input in order to function. They often appear to be uncoordinated, clumsy, or afraid of certain physical activities. As we see in the chapter on gross motor involvement, these

large muscle movements and skills are important for fine motor development. So if you are struggling with sensory processing and not participating in the movement and gross motor activities, they need to develop, fine motor skills can be lacking [17].

The most important thing in this regard is training children to develop their fine motor skills. Because fine motor skills significantly affect the quality of task results and the speed of task performance.

IV. CONCLUSION

From the results of this study, it can be concluded that through the activity of coloring images of children's fine motor skills can be improved. This increase can be seen from the results of each cycle, from the first cycle enough then to the cycle when it increases to good. Developing children's fine motor skills through drawing activities involves several aspects, namely how color strokes are organized, are able to color by fulfilling all areas of image, neatness, timing, and accuracy. In addition, in teaching the coloring activity, the exercises take a long time and the child's mental preparation is not disturbed by concentration. From the results of this study, it is suggested that early childhood education teachers to develop writing skills must begin with mastery of fine motor skills, especially with crayons, because it can help children strengthen the finger muscles needed in academic assignments and daily tasks.

ACKNOWLEDGMENTS

Firstly, Authors gratefully acknowledge the head of foundation of Bengkulu Bayangkari Preschool who admitted us to do research in his Preschool. Lastly, we would like to thank all the heads, teachers, support staff, and students of Bengkulu Bayangkari Preschool who helped us develop and complete this research project through their participation and cooperation.

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