



Stimulation of Fine Motor Skills in Early Childhood: An Intervention Study of Collage Learning Activities

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Abstract

This study aims to stimulate the fine motor skills of class B children at Aisyiyah 01 Leuwiliang Kindergarten. through collage learning activities . The type of research used is classroom action research (CAR). This study consists of two cycles and each cycle is carried out five meetings. The subjects of this study were 12 children aged 5-6 years, consisting of 12 boys. Data collection techniques consisted of observation and documentation. The instruments used in this study were the daily lesson plan (RPPH) and field notes. Data analysis techniques were carried out descriptively, qualitatively, and quantitatively. The indicator of success of this study is if the calculation of the overall percentage of children shows 71% or more, then the child has experienced an increase in fine motor skills. The results of the research conducted by the researcher indicate that stimulation of children's fine motor skills through collage learning activities has a positive change. This can be seen from the increase in the average percentage value at the end of the cycle. Pre-cycle children showed motor skills of 40%, meaning the level of development achievement has not yet developed. Meanwhile, in cycle 1 it reached 59% and in cycle 2 it reached 85%.

Keywords: *Fine Motor Stimulation, Children Aged 5-6 Years, College Learning Media.*

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INTRODUCTION

Fine motor skills are a developmental area that requires attention in early childhood because many activities require them. For example, activities inside and outside of school (daily activities). Fine motor development is important to pay attention to because it provides the foundation for children to perform other coordinated movements through nerves and muscles in preparation for the next level. Teachers also emphasize the importance of developing fine motor skills so that students can complete basic tasks that their peers can easily complete (Shorouk et al., 2025). Students who have superior fine motor skills are usually more confident and more independent in the classroom, while children with poor fine motor control struggle to achieve many goals, including neat handwriting, completing assignments on time, and participating in activities that require fine hand movements, which can lead to frustration and low academic performance (Gaul & Sc, 2014).

Fine motor skills generally require a relatively long period of adjustment. Therefore, the intensity of activities is needed to improve fine motor skills. This process is important for a child, because fine motor skills involve the coordination of small muscles such as the hands, fingers, and eyes, which is very important in daily activities such as writing, drawing, and using small tools (Listianingsih, dkk, 2023). Therefore, consistent and continuous activity intensity is needed to hone and improve a child's fine motor skills. Without continuous practice, the development of these skills can be hampered, which in turn can affect a child's ability to engage in more complex activities in the future (Andarini et al., 2024).

Elizabeth B. Hurlock (1978) stated that motor development also means the development of physical control movements through the activities of the central nervous system, nerves and coordinated muscles (Saripudin et al., 2019). Fine motor skills are considered important for the development of preschool and elementary school children. For example, in young children, fine motor skills are needed to complete tasks and self-care activities such as stacking blocks and playing puzzles. Some ways to develop fine motor skills in early childhood include: folding, drawing with crayons, forming or manipulating clay/wax/dough, painting with watercolors, playing collage, cutting, stringing objects with string/thread (stringing) (Yan Nurjani et al., 2019).

The English word "collage" comes from the French word "coller," meaning "glue" or "glued work (Freeman, 2020)." Collage is a highly effective medium because it leverages social aspects and free play (Diggs et al., 2015). The materials used in early childhood collages in schools are simple and non-hazardous, including recycled and natural materials. Based on the Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 137 of 2014 concerning National Standards for Early Childhood Education Chapter IV Article 10 point 3: "Physical motor skills, one of which is fine motor skills, include the ability and flexibility to use fingers and tools to explore and express oneself in various forms (Yan Nurjani et al., 2019).

Table 1. Level of Achievement of Children's Fine Motor Development

Lingkup Perkembangan	Tingkat Pencapaian Perkembangan Anak	
	Usia 4 - 5 tahun	Usia 5 -6 tahun
B. Motorik Halus	1. Membuat garis vertikal, horizontal, lengkung kiri/kanan, miring kiri/kanan, dan lingkaran 2. Menjiplak bentuk 3. Mengkoordinasikan mata dan tangan untuk melakukan gerakan yang rumit 4. Melakukan gerakan manipulatif untuk menghasilkan suatu bentuk dengan menggunakan berbagai media 5. Mengekspresikan diri dengan berkarya seni menggunakan berbagai media 6. Mengontrol gerakan tangan yang menggunakan otot halus (menjumput, mengelus, mencolek, mengepal, memelintir, memilin, memeras)	1. Menggambar sesuai gagasannya 2. Meniru bentuk 3. Melakukan eksplorasi dengan berbagai media dan kegiatan 4. Menggunakan alat tulis dan alat makan dengan benar 5. Menggunting sesuai dengan pola 6. Menempel gambar dengan tepat 7. Mengekspresikan diri melalui gerakan menggambar secara rinci

Most fine motor skills research in early childhood education (PAUD) utilizes common activities such as buttoning, cutting, coloring, or simple manipulatives. Collage activities can be a key learning intervention strategy, not just as a regular art activity, but systematically structured to stimulate fine motor skills (sticking, pinching, cutting, and arranging visual compositions). This can result in a collage learning model that is *targeted* and specifically designed to improve specific fine motor skills.

METHOD

This research uses the Classroom Action Research (CAR) model, namely the Kemmis and MC Taggart models, which utilize a spiral system where each cycle uses four stages: planning, implementation, observation, and reflection. These four stages are combined in one cycle of classroom action research and are implemented continuously until the desired results are achieved (*Panduan Dan Aplikasi Penelitian Tindakan Kelas - Dr. Rustiyarso, M.Si. - Google Buku*, n.d.).

This research is a classroom action research (CAR), where teachers conduct classroom activities with an emphasis on improving the learning process, particularly improving fine motor skills through collage learning activities. This research was conducted at Aisyiyah 01 Kindergarten, Leuwiliang, Bogor Regency, from August to September 2024. The research subjects were 12 class B children aged 5-6 years. Data collection techniques used were observation and documentation.

In the Kemmis & Taggart research model, action and observation are integrated because they are considered to be two inseparable activities. These four stages are combined in one cycle of classroom action research and are implemented continuously until the desired results are achieved. This research was conducted over two cycles, each lasting approximately two weeks, using the Kemmis MC Taggart CAR model. Classical success follows Mills' standards in his research, namely establishing percentage by 71% (Ariyanto, 2014).

RESULTS AND DISCUSSION

Pre Cycle

Before the classroom action research was conducted at Aisyiyah Leuwiliang Kindergarten, the researcher conducted a pre-action study to obtain baseline data on children's fine motor skills. The data obtained from the pre-action study were used to measure fine motor skills in children aged 5-6 years. The pre-action was conducted as a comparison between before and after the action research was conducted. During the learning process, in the pre-action fine

motor simulation, children only carried out activities such as imitating shapes, cutting, and pasting with existing classroom activities such as using existing theme books. In this pre-action, the researcher had not used the stages in the Kemmis & Taggart action research model. From the pre-action conducted, the researcher obtained the following data on children's fine motor skills:

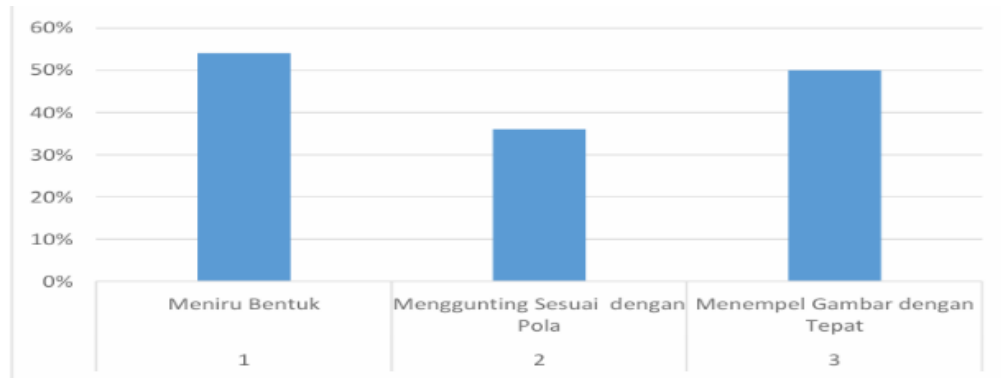


Figure 1. Pre-Cycle Percentage Data for Fine Motor Skills

From the description of the data above, it can be concluded that during the pre-action in the activity of improving fine motor skills in children aged 5-6 years at Aisyiyah Kindergarten, the average percentage of those who received good criteria could be said to have not reached the expected criteria, namely 48%. Based on the data above, the researchers and teachers decided to use media that is interesting for children in order to make improvements during the learning activities to improve children's fine motor skills. This is so that children's fine motor skills, especially imitating shapes, cutting according to patterns, and sticking pictures correctly through collage learning activities with various media. It is hoped that teaching and learning activities will be more enjoyable, so that they can experience changes in accordance with the expected goals.

Cycle 1

The implementation of cycle 1 was carried out for 2 weeks with 5 meetings, namely on Monday, Wednesday and Friday in the 3rd and 4th weeks of August 2024, using the My Environment Theme, the school sub-theme is using Origami paper. In this cycle 1, the researcher carried out 4 stages of the Kemmis & Taggart model, namely planning (compiling RPPH, media and observation sheets), action and observation (sticking/collage activities according to the shape using origami media that had been prepared in advance by the teacher), and reflection.



Figure 2. Children's Activities while Doing Collage Activities

Based on the research conducted by the researcher in Cycle 1, the following summary results were obtained regarding the comparison of children's fine motor skills during pre-action and cycle 1 action:

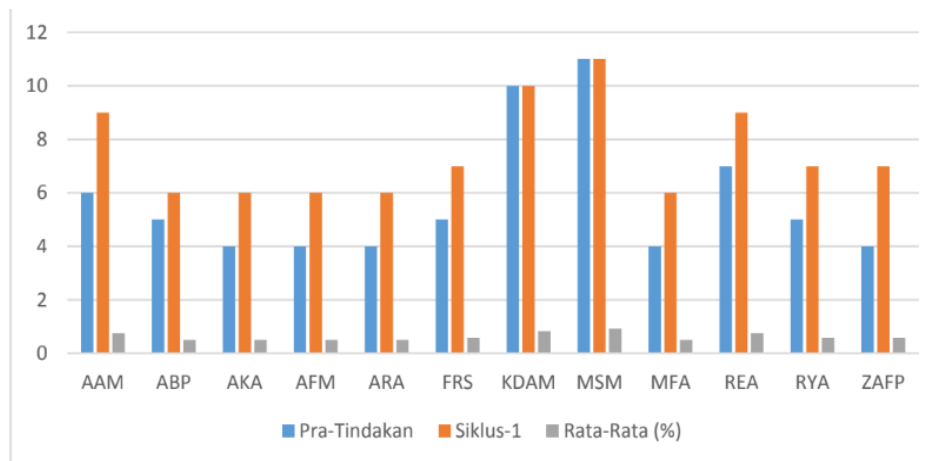


Figure 3. Recapitulation Of Comparison of Motoric Values Per Child in Pre-Action and Action Cycle 1

Reflection is intended to discuss the obstacles or problems experienced during the implementation of Cycle I, both at meetings 1, 2, 3, and 4. From the results of observations made by researchers during cycle I, there was a slight improvement. Several things were also found that became obstacles or constraints in the actions of Cycle I. Therefore, researchers decided to continue the activities in cycle 2.

Cycle 2

In this second cycle, researchers strive to create more engaging learning and create a classroom environment that prevents children from feeling bored and tired of the learning process, especially in developing fine motor skills through collage activities. The theme used in this learning is "Environment" with the subtheme "My Home" for 2 weeks in September 2024 using the 4 stages of the action research model according to Kemmis & Taggart (planning, action and observation, and reflection). In cycle 1 in children's collage activities, researchers used origami paper media. To increase interest in learning activities, researchers in cycle 2 used

natural materials and used materials to make it more interesting and not monotonous and are expected to improve children's fine motor skills. The following is documentation of children's collage activities in cycle 2:



Figure 4. Children's Collage Activities Using Natural and Used Materials

The following are the average results of children's fine motor development in cycle 2:

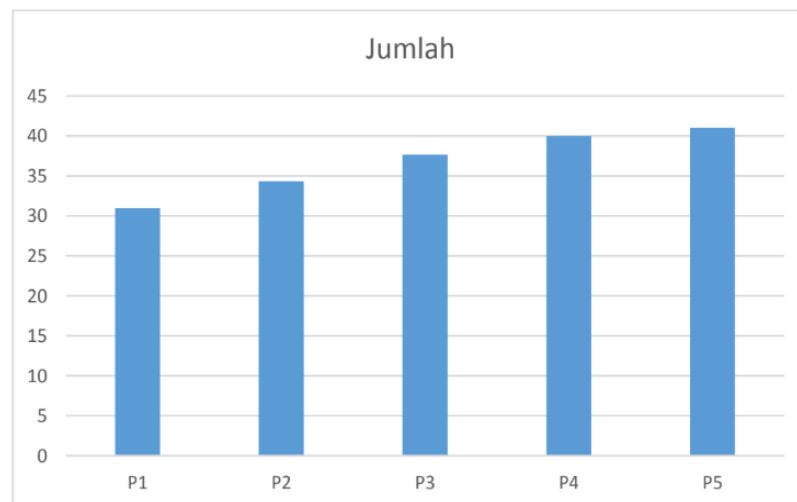


Figure 5. Average results of children's fine motor development in cycle 2

Caption:

- P1 = First meeting
- P2 = Second meeting
- P3 = Third meeting
- P4 = Fourth meeting
- P5 = Fifth meeting

Based on the image above, it can be seen that there was an increase in the development of children's fine motor skills using collage learning activities from the first to the fifth meeting. The results of these observations can be seen in changes in children's fine motor skills that are better compared to the data in the pre-action. After the cycle 2 action activities, the researcher conducted a comparison with cycle 1 and the results showed that children's abilities could be improved again and had achieved success in improving children's fine motor skills. Thus, the researcher decided to stop the action and stated that children's fine motor skills can be improved through collage learning activities.

Discussion

Fine motor skills are considered crucial for the development of preschool and elementary school children because they encourage participation in completing learning tasks, particularly writing readiness. Maturity in fine motor development will also help them write better and tire less easily when faced with various writing-related school assignments (Pura & Asnawati, 2019).

Many strategies can be used to improve motor skills in early childhood, one of which is through play. The Minister of Education and Culture Regulation also states that external motor development is currently carried out through play activities (Khadijah et al., 2022). For example, in a study conducted by Nurfaizah, Ulya Ainur, and Muhimmatul Choirh entitled "Finger Painting in Developing Children's Fine Motor Skills in the Era of Society 5.0" the study discussed *finger painting* play activities that can improve children's fine motor skills (Nurfaizah et al., 2024).

Table 2. The average percentages of children's fine motor skills for each indicator in the pre-cycle, cycles 1, and 2

No	Aspects observed	Pre Cycle Percentage	Percentage Cycle 1	Percentage Cycle 2
1	Copying Shape	54%	62%	75%
2	Cutting in accordance pattern	40%	46%	68%
3	Stick in accordance with form	50%	59%	82%

In the study, the researchers chose collage because it can train hand muscles and improve hand-eye coordination. Collages can also produce works of art, so children participating in this activity will enjoy and enjoy the work they create. Research data from the pre-cycle, cycles 1, and 2 indicate that children's fine motor skills can be improved through

collage learning activities. These activities include sticking according to patterns, copying shapes, and cutting according to patterns. The following are the average percentages of children's fine motor skills for each indicator in the pre-cycle, cycles 1, and 2.

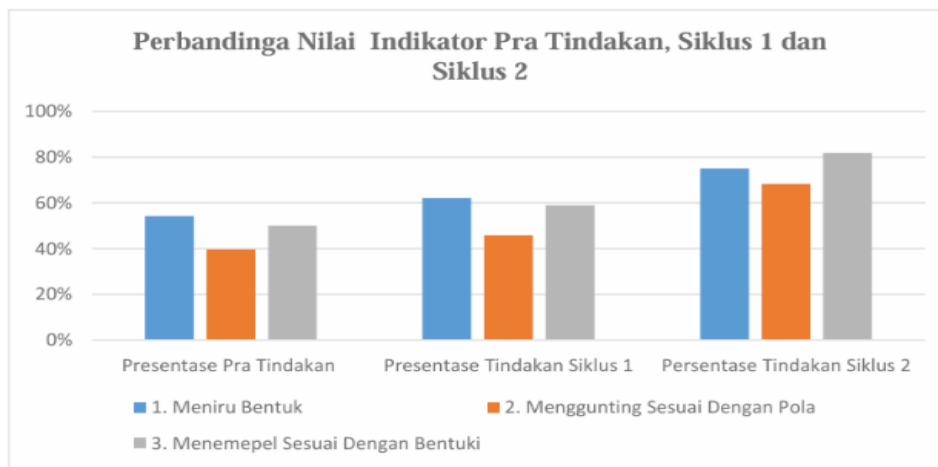


Figure 6. Comparison Diagram of Children's Abilities for Each Indicator Pre-Cycle, Cycle 1 and Cycle 2

From the research results above, it can be concluded that children's fine motor skills can improve to reach the BSB/Complete level. The results of the study indicate that utilizing children's fine motor skills through collage learning activities can provide positive results for improving fine motor skills in early childhood. Overall, this study shows that collage learning activities are an effective medium in supporting the development of fine motor skills in early childhood.

CONCLUSION

Based on the data obtained, fine motor skills can be improved through collage activities in children aged 5-6 years at Aisyiyah 01 Leuwiliang Kindergarten. This can be seen from the increase in percentage from the pre-action stage and after cycle 1 and cycle II. The observation results showed that there were only two children who had very good development criteria, two children who had BSH criteria, and one child who had MB criteria or got a percentage of 48%. After the cycle I action increased to 63% and cycle II increased to 85%. The results of the study showed that fine motor activities through collage can provide positive results. Overall, this study shows that collage is an effective play activity and media in supporting the development of fine motor skills in early childhood.

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