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IMPROVING FINE MOTOR SKILLS THROUGH FOLDING, CUTTING, AND PASTING TECHNIQUES IN CHILDREN AGED 5-6 YEARS

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Abstract:

Fine motor skills are important skills that influence a child's readiness to enter primary education, especially in writing and academic activities. This study aims to improve children's fine motor skills through folding, cutting, and pasting (3M) activities. The method used is Kemmis & McTaggart's Classroom Action Research (CAR) model with two cycles. The research subjects were 18 children in group B of Trisula Purwari Kindergarten (9 boys, 9 girls) aged 5–6 years. Data were collected through observation, documentation, and field notes, then analyzed qualitatively and quantitatively. The results showed a significant improvement: in cycle I, only 9 children (50%) achieved the Expected Development (ED) category, while in cycle II, this increased to 15 children (83.3%) who achieved the ED and Very Good Development (VGD) categories. Thus, the success indicator (≥75% of children reaching the BSH/BSB category) was achieved. This study proves that the 3M activity is effective as a creative learning strategy for developing fine motor skills in early childhood.

Keywords: *fine motor skills, early childhood, folding, cutting, pasting*

Abstrak:

Motorik halus merupakan keterampilan penting yang berpengaruh pada kesiapan anak memasuki pendidikan dasar, khususnya dalam menulis dan aktivitas akademik. Penelitian ini bertujuan untuk meningkatkan keterampilan motorik halus anak melalui kegiatan melipat, menggunting, dan menempel (3M). Metode yang digunakan adalah Penelitian Tindakan Kelas (PTK) model Kemmis & McTaggart dengan dua siklus. Subjek penelitian adalah 18 anak kelompok B TK Trisula Purwari (9 laki-laki, 9 perempuan) usia 5–6 tahun. Data dikumpulkan melalui observasi, dokumentasi, dan catatan lapangan, kemudian dianalisis secara kualitatif dan kuantitatif. Hasil penelitian menunjukkan peningkatan signifikan: pada siklus I, hanya 9 anak (50%) yang mencapai kategori Berkembang Sesuai Harapan (BSH), sedangkan pada siklus II meningkat menjadi 15 anak (83,3%) yang mencapai kategori BSH dan Berkembang Sangat Baik (BSB). Dengan demikian, indikator keberhasilan (≥75% anak mencapai kategori BSH/BSB) telah tercapai. Penelitian ini membuktikan bahwa kegiatan 3M efektif digunakan sebagai strategi pembelajaran kreatif untuk mengembangkan motorik halus anak usia dini.

Kata Kunci: *motorik halus, anak usia dini, melipat, menggunting, menempel*

INTRODUCTION

Early childhood education (PAUD) is an important stage of education that determines the success of a child's future development. This occurs when children are in their golden age, when brain growth is rapid and reaches 80% of its capacity.

Therefore, any encouragement given during this stage will have a major impact on a child's physical, cognitive, linguistic, social, and emotional development. Law Number 20 of 2003 concerning the National Education System explains that PAUD is an effort to nurture children from birth to six years of age by providing educational stimulation. This aims to help children's physical and spiritual growth so that they are ready to face further education (Mahda, 2022). Therefore, the success of basic education to higher levels greatly depends on the quality of stimulation that children receive from an early age.

One of the things that is often considered in early childhood education is motor development, especially fine motor skills. Fine motor skills are the ability to move small muscles, such as fingers and wrists, with the help of vision so that children can perform tasks that require precision, such as writing, drawing, folding, cutting, and making origami. These fine motor skills are very important because they help children prepare for learning in elementary school, especially in writing skills. If children have good fine motor skills, they will find it easier to understand learning materials, while children who are less developed in this area may have difficulty mastering basic academic skills (Kamil, 2024). Thus, fine motor skills are not only about physical abilities, but also affect children's ability to learn.

However, conditions in the field often show that children's fine motor skills are not yet sufficiently developed. From observations at Trisula Purwari Kindergarten, some 5-6-year-old children still have difficulty folding paper according to patterns, cutting neatly, and sticking pieces of paper accurately. Some children are also unable to control their fingers well, so the results of their work are not as expected. This indicates that the fine motor stimulation provided is still limited to simple activities such as colouring, writing, or drawing. In fact, early childhood requires a variety of fun, creative, and challenging activities for their fine motor skills to develop optimally (Sudarmini, 2023). If not given stimulation immediately, children may experience difficulties when entering primary education.

One proven way to improve fine motor skills is through activities that involve folding, cutting, and pasting (3M). 3M activities not only help train motor skills, but also give children the opportunity to be creative and make something that can be evaluated. Folding helps children hone their hand-eye coordination and trains their patience and precision. Cutting helps develop hand control and movement accuracy, while pasting trains spatial awareness and the ability to place objects correctly. These three activities are combined into an interesting piece of work, so that children not only learn basic skills but also feel happy because they can make something that can be appreciated (Holiyah, Fadilah, & Ma'arif, 2025). Research shows that through origami, the fine motor skills of 5-6-year-old children can improve significantly because this activity requires children to use their fingers in a coordinated manner (Pramanik & Anwar, 2024). Thus, the 3M activity is very appropriate for use in early childhood education as a strategy for developing fine motor skills based on creativity.

Based on this explanation, the problem discussed in this study can be formulated as follows: “How can activities involving folding, cutting, and pasting improve the fine motor skills of 5-6-year-old children at Trisula Purwari Kindergarten?” The purpose of this study is to determine the extent of improvement in the fine motor skills of 5-6-year-old children through creative activities using folding, cutting, and pasting techniques at Trisula Purwari Kindergarten.

This study is expected to provide several benefits. Theoretically, this study

helps enrich knowledge about learning strategies in developing fine motor skills in early childhood through creative activities based on artwork. Practically, this study is also beneficial for various parties. For teachers, this research can be used as a more interesting and creative learning method to develop children's fine motor skills. For children, creating works using the 3M technique can improve hand-eye coordination, accuracy, creativity, and self-confidence because they can create works that can be assessed and appreciated. For schools, the results of this study can be used as a reference to improve and develop learning programs in Early Childhood Education, especially in terms of fine motor skill development. For other researchers, this study can be used as a reference for conducting further research on how to develop children's fine motor skills using various innovative learning techniques or media.

RESEARCH METHOD

a. Type of Research
   This research is Classroom Action Research (CAR) using the Kemmis & McTaggart model and is carried out repeatedly in several cycles. Each cycle consists of four stages: planning, acting, observing, and reflecting. This model was chosen because it makes it easier for teachers to continuously improve their teaching methods based on real problems that occur in the classroom (Wibawa, 2022).
b. Research Subjects, Location, and Time
   1. Research subjects: 18 children from Group B at Trisula Purwari Kindergarten, Purwakarta Regency, consisting of 9 boys and 9 girls aged 5-6 years.
   2. Research location: Trisula Purwari Kindergarten, Purwakarta Regency.
   3. Research time: conducted from late August to early September of the 2024/2025 academic year
c. Research Procedure
   This research procedure was carried out in two cycles, each consisting of four stages:
   1. Planning
      a) Developing a Daily Lesson Plan (RPPH) with activities of folding, cutting, and pasting origami paper into broom crafts.
      b) Preparing learning media, observation instruments, and documentation.
   2. Implementation (Acting)
      Teachers conducted lessons according to the RPPH, providing step-by-step examples and guiding children in making crafts.
   3. Observation
      The researcher observes the children's skills using observation sheets, photo documentation, and field notes.
   4. Reflection
      The teacher and researcher jointly evaluate the results of each cycle. If the indicators have not been achieved, the strategy is improved in the next cycle.
d. Research Instruments
   The main instrument was a fine motor development observation sheet, with the following indicators:

Table 1: Indicators of Children's Fine Motor Skills in 3M Activities

No.	Aspect Observed	Indicator	Assessment Category
1	Folding	Paper folded neatly, parallel to the pattern lines	BB/MB/BSH/BSB
2	Cutting	Cuts along the pattern lines, no deviation	BB/MB/BSH/BSB
3	Sticking	The result of sticking is in the right position and neat	BB/MB/BSH/BSB

Category descriptions:

- BB = Not yet developed
- MB = Beginning to develop
- BSH = Developing as expected
- BSB = Developing very well

Supporting instruments in the form of documents (photos of the activity process and work results) and field notes.

e. Data Collection Techniques
Data is collected by:
1. Observation
   Recording children's skills during the learning process.
2. Documentation
   Collecting children's work and photos of activities.
3. Field notes
   Writing down important events that occur during the action.

f. Data Analysis Techniques
Data analysis was conducted qualitatively (descriptive) and quantitatively (achievement percentage). The formula used was:

$$P = \frac{f}{N} \text{ X } 100\%$$

Explanation:
P = Achievement percentage
f = Number of children who achieved the indicator
N = Total number of children

g. Success Indicators
This study is considered successful if ≥ 75% of children achieve the BSH (Developing as Expected) or BSB (Developing Very Well) category in folding, cutting, and pasting skills.

FINDINGS AND DISCUSSION

Before implementing the action, the researcher first conducted preliminary observations in group B of the Trisula Purwari Purwakarta Kindergarten. These observations aimed to determine the children's fine motor skills, particularly in folding, cutting, and pasting paper. The results of the observation showed that out of 18 children (9 boys and 9 girls), 9 children (50%) had demonstrated fairly good ability in moving their small muscles when folding or cutting. However, the other 9 children (50%) still experienced difficulties.

Difficulties observed in the early stages include: First, children are unable to

cut straight along the given pattern. Second, the resulting paper folds are messy and often uneven. Third, the results are not glued in the correct position, resulting in works that lack clear shapes. This condition indicates that the child's fine motor skills are not yet optimal, even though this skill is an important preparation for learning at the next level. Therefore, systematic, structured, and enjoyable learning efforts are needed so that children's fine motor skills can be developed to their full potential.

a. Cycle I

In the first cycle, the teacher begins the learning activity by introducing examples of brooms made from origami paper. The children are shown the finished products, then the teacher explains the materials and tools used, such as colored origami paper and scissors. Next, the teacher demonstrates the steps for making a broom, namely:

1. Roll the origami paper from end to end to form the broomstick
2. Take another piece of origami paper and fold it into a smaller square shape.
3. Cut the folded paper according to a slightly curved triangle pattern and make straight cuts halfway through so that it looks like broom bristles.
4. Attach the rolled part to the folded pieces to form a simple broom. After that, the children were asked to make brooms independently by following the steps demonstrated by the teacher.

The results of the observations in the first cycle showed that out of 18 children, only 9 children (50%) were able to follow the instructions quite well, while the other 9 children (50%) were still not optimal. The difficulties that arose included:

1. Some children had difficulty keeping the folds neat so that the brooms they made looked untidy.
2. Some children were unable to cut straight along the given pattern.
3. Some children rushed when gluing, resulting in an inaccurate finish.

These conditions show that although the learning method of making brooms is quite interesting, some children still need additional help. Therefore, the teacher needs to design improvement strategies for the next cycle.

From the implementation of Cycle I, it appears that children need clearer examples and step-by-step instructions. There are also some children who still need personal guidance, especially when cutting and pasting. Motivation and positive reinforcement need to be given more often so that children are more confident in completing their work. Based on this, teachers and researchers made an improvement plan for Cycle II.

Table 2: Fine Motor Skills Data Cycle I

No.	Child Name	Sticking	Cutting	Folding	Remarks
1.	HKL	MB	MB	MB	Beginning to Develop
2.	AGM	BSH	BSH	BSH	Developing as Expected
3.	KLS	BSH	BSH	BSH	Developing as Expected
4.	ASH	MB	MB	MB	Beginning to Develop
5.	ARQ	BB	BB	BB	Not Yet Developed
6.	ATV	BB	BB	BB	Not yet growing

7.	ATY	BSH	BSH	BSH	Growing as expected
8.	AYK	BSH	BSH	BSH	Growing as expected
9.	FHR	BSH	BSH	BSH	Growing as expected
10.	KNN	BSH	BSH	BSH	Developing as Expected
11.	BGN	BSH	BSH	BSH	Developing as Expected
12.	KNC	BB	BB	BB	Not Yet Developed
13.	RFF	BB	BB	BB	Not Yet Developed
14.	RZK	MB	MB	MB	Starting to Develop
15.	RYC	BSH	BSH	BSH	Developing as Expected
16.	ZYN	BB	BB	BB	Not Yet Developed
17.	SHM	BSH	BSH	BSH	Developing as Expected
18.	ZRA	MB	MB	MB	Starting to Develop

- BB (Not Yet Developed): 5 children (27.8%)
- MB (Starting to Develop): 4 children (22.2%)
- BSH (Developing as Expected): 9 children (50%)
- BSB (Developing Very Well): 0 children (0%)

From the data above, it can be seen that most children are in the BS category, which is around 50%. However, there are still 27.8% of children in the BB category and 22.2% in the MB category. This shows that improvement strategies are needed in the next cycle so that children in the BB and MB categories can improve to the BSH or BSB categories.

b. Cycle II

Based on reflections from Cycle I, teachers made improvements to their strategies in Cycle II. First, they taught the process gradually by demonstrating one step at a time, allowing children to follow along before moving on to the next step. Second, they used repeated demonstrations to give children more opportunities to understand the process. Third, providing guide lines on origami paper to make it easier for children to fold and cut. Fourth, providing special guidance to children who still had difficulties in the previous cycle. Fifth, motivating and praising children when they successfully completed certain steps, thereby boosting their confidence.

The results of the observations in the second cycle showed a significant improvement. Of the 18 children, 15 (83.3%) were able to achieve the expected skills. They were able to fold neatly, cut according to the pattern, and stick their work in the right position. Only 3 children (16.7%) were still not optimal, particularly in maintaining the quality of the folds and the accuracy of sticking. The indicators of success seen in the second cycle included:

1. Children were able to fold paper evenly so that the shape was more symmetrical.
2. Children were able to cut straight along the guide lines without deviating too much.
3. Children were able to paste accurately so that their work resembled a broom well.

From the reflection after the second cycle, it was seen that the improvement strategies implemented by the teacher were successful in improving the children's fine motor skills. Most of the children had achieved the set indicators, namely ≥ 75% of children were able to fold, cut, and paste correctly. Thus, the learning was considered successful and the research was stopped at the second cycle.

Table3: Fine Motor Skills Data Cycle II

No.	Child Name	Sticking	Cutting	Folding	Remarks
1.	HKL	BSH	BSH	BSH	Developing As Expected
2.	AGM	BSB	BSB	BSB	Developing Very Well
3.	KLS	BSB	BSB	BSB	Developing Very Well
4.	ASH	BSH	BSH	BSH	Developing as Expected
5.	ARQ	MB	MB	MB	Starting to Develop
6.	ATV	BB	BB	BB	Not yet growing
7.	ATY	BSB	BSB	BSB	Developing Very Well
8.	AYK	BSB	BSB	BSB	Developing Very Well
9.	FHR	BSB	BSB	BSB	Developing Very Well
10.	KNN	BSB	BSB	BSB	Developing as Expected
11.	BGN	BSB	BSB	BSB	Developing as Expected
12.	KNC	BB	BB	BB	Not Yet Developed
13.	RFF	BB	BB	BB	Not Yet Developed
14.	RZK	BSH	BSH	BSH	Developing as expected
15.	RYC	BSB	BSB	BSB	Developing very well
16.	ZYN	MB	MB	MB	Starting to develop
17.	SHM	BSB	BSB	BSB	Developing Very Well
18.	ZRA	BSH	BSH	BSH	Developing as Expected

- BB (Not Yet Developed): 3 children (16.7%) → ATV, KNC, RFF
- MB (Starting to Develop): 2 children (11.1%) → ARQ, ZYN
- BSH (Developing as Expected): 4 children (22.2%) → HKL, ASH, RZK, ZRA
- BSB (Developing Very Well): 9 children (50%)

c. Research Results Recapitulation

Based on observations of the fine motor development of 5-6-year-old children at Trisula Purwari Kindergarten, data was collected from the initial condition to Cycle II, as shown in the following table:

Table 4: Recapitulation of Fine Motor Skills in Cycles I-II

Category	Cycle I (Number/%)	Cycle II (Number/%)	Change
BB (Not Yet Developed)	5 children (27.8%)	3 children (16.7%)	↓ 11,1%

MB (Starting to Develop)	4 children (22,2%)	2 children (11,1%)	↓ 11,1%
BSH (Developing as Expected)	9 children (50,0%)	4 children (22,2%)	↓ 27,8% (due to moving up to BSB)
BSB (Developing Very Well)	0 children (0%)	9 children (50,0%)	↑ 50,0%
Total	18 children (100%)	18 children (100%)	-

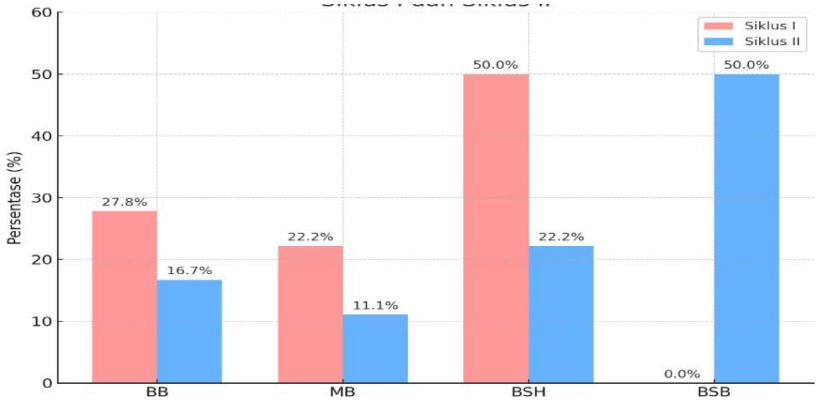

Figure 1: Comparison of Fine Motor Development Cycle I – II

The table and diagram above show that children's fine motor development improved from Cycle I to Cycle II. In the initial condition (pre-intervention), most children still had difficulty folding paper neatly, cutting straight along the pattern, and pasting accurately. This can be seen in cycle I, where there were 5 children (27.8%) in the BB category and 4 children (22.2%) in the MB category, meaning that more than half of the children were not yet able to achieve the expected skills.

After the strategy was improved in cycle II by providing clearer examples of work, step-by-step guidance, and more intensive assistance when children cut and pasted, there was a significant improvement. The number of children in the BSB category increased dramatically from 0 children to 9 children (50%). Meanwhile, children in the BB category decreased from 27.8% to 16.7%, and children in the MB category decreased from 22.2% to 11.1%.

Although there were still 3 children (16.7%) in the BB category and 2 children (11.1%) in the MB category, overall, 75% of children were in the BSH and BSB categories.

Thus, the research success indicator of ≥75% of children being able to fold, cut, and paste correctly can be said to have been achieved. This change shows that the activity of making brooms using the techniques of folding, cutting, and pasting origami paper can provide effective stimulation to improve hand-eye coordination, fine motor skills, and neatness in work.

These results are also in line with Kamil's (2024) opinion, which emphasizes that fine motor skills, such as folding, cutting, and pasting, require repeated practice, guidance, and interesting media to stimulate children properly. Furthermore, these results support the research by Syukur & Amri (2023), which found that 3M activities (folding, cutting, and pasting) can significantly improve eye-hand coordination in young children.

Thus, it can be concluded that the activity of making brooms from origami paper using folding, cutting, and pasting techniques is an effective and enjoyable learning strategy for improving the fine motor skills of early childhood.

CONCLUSION

Based on the results of classroom action research conducted at Trisula Purwari Kindergarten, it can be concluded that folding, cutting, and pasting activities are very effective in improving the fine motor skills of early childhood aged 5-6 years. In cycle I, the children's fine motor skills were still relatively low, with only 9 children (50%) reaching the expected development category (BSH), while the rest were still in the Not Yet Developed (BB) and Starting to Develop (MB) categories. After improving the strategy in cycle II, the results improved significantly, with 15 children (83.3%) achieving the BSH and developing very well (BSB) categories. This achievement shows that the research success indicator, namely a minimum of 75% of children in the BSH/BSB category, has been achieved.

Thus, it can be confirmed that the 3M activity is not only able to improve eye-hand coordination and fine motor skills in children, but also helps foster neatness, accuracy, creativity, and self-confidence in the learning process.

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