



## Improving Fine Motor Skills in Early Childhood Through Origami Playing Activities

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### Abstract

The aim of this research is to determine the improvement of fine motor skills in young children through origami-playing activities. By playing origami, children's fine motor skills will improve. Paper folding activities will ensure that children use their small muscles to fold the paper that has been provided, so that the small muscles will be sharpened to the maximum. This research uses classroom action research. The data required for this research was collected through observation of the implementation of origami or paper folding activities. During the learning and observation process, the researcher also noted things related to the problem that were in accordance with the researcher's focus. Based on the results of classroom action research (PTK) and data analysis carried out collaboratively between teachers and researchers, it can be concluded that the activity of folding origami paper can improve children's fine motor skills, which can be seen in the increase from cycle I, which obtained a percentage of 55.55% of children. Classical children who were at the minimum criteria for developing according to expectations experienced an increase in cycle II, which obtained a percentage of 94.45% of classical children who were at the minimum criteria for developing according to expectations.

**Keywords:** fine motor skills; improve; origami.

### INTRODUCTION

Early childhood education is the initial stage in the development of children's education given to children in preschool, usually from 0 to 6 years old. This is an important period in a child's life, where basic development will occur at that age (Oktarina, Angraini, & Susilawati, 2020). This education becomes part of further development and will have a big impact on children's lives in the future. This education will be important in developing children's potential, such as cognitive abilities, numeracy, fine motor skills, and/or gross motor skills. They also begin to develop social skills that are important for interacting with others and understanding the world around them. Early childhood education provides opportunities for children to develop basic skills in speaking, listening, reading, writing, and arithmetic. An important aspect of early childhood education is the development of motor skills. Children learn to control their bodies through activities such as walking, running, jumping, drawing, and playing with various play equipment and materials such as building blocks, crayons, and watercolors.

These motor skills are important for healthy physical development and help children in various daily activities. Play is a natural way for children to explore and understand the world around them. This is a time where they can develop imagination, creativity, and problem-solving skills. Playing with their friends also helps them understand social concepts such as sharing, respect, and cooperation. Early childhood education is not just about playing and

having fun. It also includes learning through structured activities such as stories, singing, and group activities. Children learn about colors, shapes, letters, and numbers through these various activities. They are also introduced to new vocabulary and basic concepts in various fields. Teachers have an obligation to guide and support this child's development. They need to provide the best way to teach children in preschool. They must create a safe and stimulating environment for children to learn. Teachers and educators can observe children's development and provide additional assistance if needed to help them reach their potential.

Early childhood is an important period in human development. They are individuals aged between 0 and 6 years, which is often referred to as the preschool period. This period is a crucial time for forming the basics of a child's personality, abilities, and skills. In this article, we will explain about early childhood, the important role of parents and educators, and early childhood development. Early childhood is often considered a "blank sheet" that can be filled with various experiences and learning. They have the ability to learn very quickly and have a high absorption capacity, so educators can provide the right stimulation at this time. Early childhood, often referred to as the "Golden Age" or the golden age of child development, is a very important period in a person's life. This period covers the age range from birth to around 8 years, which includes early developmental stages such as babies, toddlers, and preschoolers. This is the time when a child's cognitive, social, emotional, and physical foundations are formed. This age is often called the "golden age," which only comes once and cannot be repeated (Trenngonowati & Kulsum, 2017). During this time, children experience extraordinary growth and development, forming the foundations that will guide them throughout their lives (Ningtyas, 2017).

Based on the problems faced by Flamboyan 60 PAUD teachers, the results of the interviews conducted mainly showed that the use of media in learning was less than optimal. The use of origami that has not been done at school and the lack of students carrying out small muscle activities cause children's fine motor skills to be less developed. Children who tend to like to play need to create an atmosphere or activity that can move their body or hands with their small muscles. This goal is to develop children's fine motor skills. There is a need for variation in teaching children so as not to cause children's fine motor problems (March & March, 2016; Sutini & Rahmawati, 2018). Fine motor skills in early childhood are the child's ability to control small movements in parts of their body, such as their hands and fingers. These fine motor skills play a role in many aspects of daily life, such as writing, drawing, tying shoelaces, and various other creative activities. Fine motor development is the foundation for their ability to learn and interact with the world around them by moving small muscles.

Origami helps children become better at eye-hand coordination and controlling their hand movements, which is very important during the growth phase, when fine motor skills become the basis for other skills such as writing, fishing clothes, or using utensils. Furthermore, origami helps children become more focused and more skilled in following instruction, which also improves fine motor skills. Therefore, Origami is very important for children as it can help their fine motor development in a comprehensive way, which is an important foundation for various aspects of daily and academic life. This was reinforced by (Ramadhani et al., 2023) who stated that by gradual folding using origami helps the process of fine motor development in children. The ability to learn to fold will be easily and quickly mastered by a child when the training process is given in the sense that his muscles have grown perfectly, and the time to curl the fold form has been acquired (Saswita & Oktariana, 2024).

According to (Harahap & Seprina, 2019), At the age of 5–6 years, children will become more advanced in their fine motor skills. They will be able to write better, draw more detailed pictures, and follow instructions that involve actions such as folding, pressing, and stringing. Their ability to control their hand and finger movements will become more precise, and this will help them in academic activities such as folding origami. During this stage of fine motor development, the role of parents or teachers is very important. Because it arises If children are interested in origami paper folding activities, there needs to be encouragement from teachers and parents (Fitriani & Ridhwan, 2019). So that origami-giving activities can be used to improve their fine motor development (Ogus, 2016). They can provide support and opportunities to play. and practice with age-appropriate objects for their children. This includes toys that support fine motor development, such as origami paper folding activities. By providing opportunities to play origami paper folding, children will continue to develop their fine motor skills and be ready to face tasks that arise. These fine motor skills are very important in daily life, especially in carrying out tasks that require precision and accuracy, such as writing, drawing, cooking, sewing, and playing musical instruments. This is in line with Sumantri in (Jannah, 2019); fine motor skills are movements between the eyes and hands to produce something. Fine motor skills involve aspects of the body, where the eyes must be able to identify the object or target to be reached, while the hands and fingers must be able to respond precisely and accurately.

This is reinforced by previous research results that stated that, Folding activities (origami) using demonstration methods have a significant influence on early childhood fine motor skills (Wahida et al., 2023). Origami media can be used in various activities related to its role in improving child's fine motor skills, such as folding, knitting, drawing, and knitting paper, in order to arouse children's interest and enthusiasm for learning in the classroom. (Widyasari et al., 2023). These origami games are very useful, make this activity not as a subject but in the form of a game to feel relaxed and not overwhelmed, do not have to fold the folds like what, grow the creative ideas of children with what they want to do, fold them, they scrape until they draw in other forms (Munthe & Aprilia, 2022). However, the difference between this study and previous studies is that this study uses action research and to find out the improvement in the development of fine motor skills of children using origami.

The activity of folding origami paper is one of the activities that can be applied to improve children's fine motor skills (Claudia et al., 2018; Pendidikan et al., 2016; Rahmawati & Khotimah, 2013). Because the paper folding activity will ensure that children use their small muscles to fold the paper that has been provided, the small muscles will be sharpened to the maximum. The practice of origami involves taking a flat sheet of paper, often a square, and folding it into various shapes and forms without using additional tools such as scissors or glue. Origami also not only improves children's fine motor skills but also children's self-confidence (Fitriatun, 2019) and children's independence (Claudia et al., 2018; Fitriatun, 2019). This teaches them about patience, precision, and creativity while providing a satisfying and educational experience. With the description that has been given, the aim of this research is to determine the improvement of fine motor skills in early childhood through origami playing activities at PAUD Flamboyan 60 Jember.

## **METHOD**

This research uses classroom action research. As for the PTK steps in this research, namely action planning, action implementation, observation, analysis and reflection. With the

research location at PAUD Flamboyan 60 School, there were 18 children, consisting of 10 boys and 8 girls. The data required for this research was collected by observing origami activities. During the learning and observing process, the researcher also pays attention to problems related to the problem and problems related to the researcher's focus. The data analysis method used is descriptive. Data analysis was carried out using the Origami Learning Assessment Tool in percentage form. The data is then described. Based on the assessment, if the child is able to follow the indicators that have been set, then the test is successful. The activity is successful if students achieve the Expected Development (BSH) and Very Good Development (BSB) scores (minimum score of 80). classic%. The data is then analyzed again using the following formula:

$$P = \frac{f}{N} \times 100\% \dots\dots\dots(1)$$

Information, P = maximum number of abilities (percentage), f = total score obtained, and N = total score.

**Table 1. Interpretation of Fine Motor Skills**

Category	Intervals
Developing Very Well	80% - 100%
Developing according to expectations	60% - 79%
Starting to Develop	30% - 59%
Undeveloped	0% - 29%

Meanwhile, the assessment of the grid of origami folding activities is as follows table 2.

**Table 2. Grid of Fine Motor Skills in Origami Activities**

Category	Indicator	Score
Accuracy	fold neatly without the teacher's help	4
	fold neatly with the help of the teacher	3
	The folds are not neat without the teacher's help	2
	folds less neatly with the help of the teacher	1
Flexibility	Move your fingers in a non-stiff folding motion	4
	Move your fingers to make folding movements without stiffness, but with the help of the teacher	3
	He moves his fingers to make folding movements but is still stiff and without the teacher's help	2
	Move the fingers to make a folding movement, but still stiff, with the help of the teacher	1

## RESULTS AND DISCUSSION

In this activity, the researcher started by carrying out activities in the form of an action study as an initial activity before the research was carried out so that they could find out the condition of the 18 Flamboyan PAUD children. The researcher tried to improve the children's fine motor skills through origami folding activities that had been planned previously. Based on observations, it was found that most of the children were not yet able to carry out folding activities. This was known to be the case because most of the children, namely 16 out of 18 children, had low fine motor skills in folding. The following table presents the results of observations of children's fine motor skills that were observed before the action was carried out on Flamboyan PAUD children.

**Table 3. Initial Observations of Children's Fine Motor Skills**

No	Child Code	Pre Cycle			No	Child Code	Pre Cycle		
		Score	Value	Criteria			Score	Value	Criteria
1	A1	5	62,5%	BSH	10	A10	3	37.5%	MB
2	A2	3	37.5%	MB	11	A11	4	50%	MB
3	A3	2	25%	BB	12	A12	3	37.5%	MB
4	A4	3	37.5%	MB	13	A13	3	37.5%	MB
5	A5	3	37.5%	MB	14	A14	2	25%	BB
6	A6	4	50%	MB	15	A15	6	75%	BSH
7	A7	3	37.5%	MB	16	A16	2	25%	BB
8	A8	3	37.5%	MB	17	A17	3	37.5%	MB
9	A9	2	25%	BB	18	A18	3	37.5%	MB

Based on the results of observations table 3, it was found that the majority of Flamboyan PAUD children had fine motor skills in the low category. The data shows that in the developing according to expectations category, there are 2 children, 12 children are in the beginning to develop category, and 4 children are in the not yet developing category. With these results, the researchers attempted to carry out origami folding play activities with the aim of improving the fine motor skills of Flamboyan PAUD children. The following is an explanation of play and learning activities in each cycle.

Planning actions in cycle I is a crucial first step in ensuring the smooth and successful implementation of research. Cycle I was designed based on the results of the initial observations that had been made. This action plan is expected to have an impact on improving children's fine motor skills. The planning activity began with researchers preparing origami materials that would be used in the paper folding activity in the form of origami paper, pencils, and rulers. Researchers also made observation sheets as instruments for children's fine motor skills through origami activities.

In this implementation activity, the activity begins with the teacher and children starting to play and sing the song Pak Tani and clapping one finger. The teacher also invites the children to do warm-up movements, such as body exercises, so that they can start folding origami paper flexibly. Next, the teacher explains the paper folding activity to the children. By preparing origami and giving it to the children evenly. The teacher gives an example of how to fold to the children so that they can fold according to the expected pattern. Children are given origami paper with colorful and interesting motifs. This choice of paper can influence the final appearance of the children's origami work. After obtaining the desired paper,

children place it in front of them with the desired position facing up. Instruct children to form corners and bend lines well. You may need to use a ruler or fingernail to make sharp, neat folds. Teachers help children who have difficulties. After the main activity is finished, the children are asked to take turns collecting the folded paper. Next, the children were asked to take a short break. Then pray and go home.

Based on the observations made, the following results were obtained: (1) in this first cycle, the children still felt stiff when folding colorful origami paper; (2) they often played around when folding without paying attention to the instructions given in the example; and (3) there was minimal guidance from teachers, which was not evenly distributed. Based on cycle 1 activities, it was stated that this research was not optimal. Based on success indicators, 75% of children overall achieved the minimum category of developing according to expectations. However, cycle 1 showed that 1 child was in the very well-developing category, 9 children were in the developing according to expectations category, and 8 children were in the starting to develop category. Thus, there are 55.55%, or 10 out of 18 children in total, who are in the development category according to expectations or indicators of research success. Therefore, with the results obtained in this first cycle, the teacher will prepare an action plan for the next cycle.

**Table 4. Cycle I Observations of Children's Fine Motor Ability**

No	Cycle I				No	Cycle I			
	Child Code	Score	Value	Criteria		Child Code	Score	Value	Criteria
1	A1	7	87,5%	BSB	10	A10	3	37.5%	MB
2	A2	5	62,5%	BSH	11	A11	5	62,5%	BSH
3	A3	2	25%	BB	12	A12	4	50%	MB
4	A4	3	37.5%	MB	13	A13	3	37.5%	MB
5	A5	3	37.5%	MB	14	A14	6	75%	BSH
6	A6	5	62,5%	BSH	15	A15	4	50%	MB
7	A7	3	37.5%	MB	16	A16	2	25%	BB
8	A8	3	37.5%	MB	17	A17	5	62.5%	BSH
9	A9	2	25%	BB	18	A18	4	50%	MB

The results of the cycle we reflect on can be explained in detail as follows: 1) In particular, teachers are still unable to organize their classrooms, and it can be seen when several children are playing inside, 2) Children are not yet used to the activity of folding origami paper, so they tend to be nervous, 3) Children also do not understand the instructions given, 4) There are still children who often play and don't focus on their role. The results of the revision in cycle 1 obtained the following revision plan: a) Efficient and effective time management, as possible; b) Instructions for giving examples of folding origami paper that are more optimal and detailed; c) Carry out stricter control and observation of each child when folding origami paper.

Activities to overcome deficiencies in cycle I, then carry out activities in cycle 2 with two meetings. The origami paper folding activity provides motivational reinforcement and guidance as well as examples of appropriate origami paper folding techniques as agreed and planned after the cycle I activity ends.

At this first meeting, the teacher invites the children to sing and do gymnastics to stretch the children's bodies, especially the children's hands, which will be used in folding

origami paper. The teacher then gives a detailed explanation of folding activities in the wild. Children were asked to relax and remain focused on the activity of learning to fold colorful origami paper. The teacher then distributes colored origami paper to the students. The teacher gives an example of folding origami paper well and neatly, showing how to fold origami paper slowly and focusedly. When they have finished giving examples, the children are asked to try and carry out the activity of folding origami paper independently. The children in this activity looked enthusiastic and very focused on folding origami. After finishing, the children rested for a while. Next, pray and go home, ending with greetings.

Observation activities are carried out when the learning activities are completed. In cycle II, researchers observed an improvement in children's fine motor skills when learning to fold origami paper. Observations were carried out to determine the improvement in children's fine motor skills in accordance with the indicators of success in the research. Based on the results of observations made by the teacher, the following results were obtained: (1) the children appeared to be more enthusiastic and their fine motor skills improved; (2) after being given sufficient motivation and assistance, the children became motivated to carry out origami folding activities; (4) there was an increase in the fine motor skills of Flamboyan PAUD children in cycle II, which reached 94.45%, or 17 out of 18 children in the total, which met the indicators of success. which can be seen in the following table 5.

**Table 5. Cycle II Observations of Children's Fine Motor Ability**

No	Cycle II				No	Cycle II			
	Child Code	Score	Value	Criteria		Child Code	Score	Value	Criteria
1	A1	8	100%	BSB	10	A10	5	62.5%	BSH
2	A2	7	87,5%	BSH	11	A11	6	75%	BSH
3	A3	5	62.5%	BSH	12	A12	6	75%	BSH
4	A4	5	62.5%	BSH	13	A13	5	62.5%	BSH
5	A5	5	62.5%	BSH	14	A14	8	100%	BSB
6	A6	6	75%	BSH	15	A15	6	75%	BSH
7	A7	5	62.5%	BSH	16	A16	4	50%	MB
8	A8	5	62.5%	BSH	17	A17	6	75%	BSH
9	A9	6	75%	BSH	18	A18	5	62.5%	BSH

Based on the results of observations, it can be concluded that the origami folding activity in improving children's fine motor skills at PAUD Flamboyan 60 has tried as hard as possible, which has produced maximum results and has achieved indicators of success. In his observations of cycle II, there were activities that followed the following steps: a) planning the origami medium and what would be made; b) providing tools and materials; c) explaining and introducing origami and giving examples of making origami in detail and repeatedly; d) guiding children when carrying out origami folding activities; e) explaining how to fold properly and correctly.

Origami activities develop children's fine motor skills through the action of folding paper into various shapes, providing repetitive practice and training finger coordination, including small movements such as folding, tearing, and measuring. This activity can effectively overcome weaknesses in Cycle I. This shows that children's fine motor skills increase from cycle 1 to cycle 2 through origami training. This increase in fine motor skills can be seen from the achievement of indicators of success, such as an increase in children's fine motor skills

from cycle I, which reached 55.55% of children getting the minimum category of developing as expected, to 94.45% in cycle II. In cycle II, the value of children's fine motor development through origami activities improved, as evidenced by the fact that 17 out of 18 children overall were in the minimum category of developing according to expectations. Based on the success indicator that 75% of children were in the category of developing according to expectations, in cycle II this success indicator had been achieved, and the research was not continued in the next cycle. Based on this data, the second cycle has achieved indicators of success, and this research has succeeded in improving children's fine motor skills through origami activities.

Children's fine motor development can be identified in several ways by paying attention to small movements during activities or games. These various activities and games need to pay attention to the steps. Starting with the teacher, he can give an example of folding origami or ask the students a question: who can fold origami paper according to the pattern? This activity can certainly help children's growth and development. The use of origami in playing and learning activities at PAUD Flamboyan 60 helps children achieve the learning goals that will be achieved in the form of the development of children's fine motor skills.

In implementing Cycle I, which consisted of two meetings, several obstacles and weaknesses were found, starting with the introduction of classical education in class, such as a lack of time efficiency and limited time due to the lack of development of origami activities. Children's self-confidence is not yet well formed. This is reflected in the fact that there are still children who are nervous and do not understand the instructions given, as well as children's participation in educational activities, which is starting to appear but is not yet optimal. There are still students who don't pay attention to the material and students who are still playing. So, with the existing weaknesses, the researchers made improvements in the form of 1) managing time as efficiently and effectively as possible, 2) providing more examples and instructions in giving more optimal and detailed examples of folding origami paper, and 3) carrying out stricter control and observation of each child in folding origami paper.

In cycle II, learning went better and more smoothly, the teacher's readiness was more stable in providing learning direction so that the learning flow given to children was clear and coherent, and students were more enthusiastic and more active in the paper folding learning activity. Paper folding activities are carried out by: a) starting to plan the origami medium and what will be made; b) providing tools and materials; c) explaining and introducing origami and giving examples of making origami in detail and repeatedly; d) guiding children when carrying out origami folding activities; and e) explaining how to fold properly and correctly.

Based on the activities of cycle II, the results of the analysis showed that in cycle II there was an increase from cycle 1, and in cycle II the indicators of success had also been achieved. With this, researchers can conclude that children's fine motor skills using origami paper folding activities have an important role in improving the fine motor skills of young children. By folding origami paper, children are able to participate in learning activities and can complete tasks instructed by the teacher so that they can fold paper neatly according to the teacher's example.

Based on the analysis in cycle 2, it was found that there was an improvement in cycle 2 compared to cycle 1, and indicators of success were also achieved in cycle 2. Thus, the researchers concluded that children's fine motor skills using origami activities origami played an important role in improving children's fine motor skills. Origami allows children to participate in learning activities and complete tasks given by the teacher by folding paper neatly according to the teacher's pattern. The results of this research are reinforced by



previous research, learning origami folding activities have a positive influence on the development of creativity and fine motorics of children (Munisa et al., 2024). Origami paper folding exercises have a striking positive impact on the development of students' fine motor skills (Fiqri et al., 2024). Art activities folding paper through youtube to improve child's fine motor skills (Agustin et al., 2024). Improve motor development at an early age with effective folding activities and can affect the motor development of the child (Ahmad Yanuar Syauki, Fatmawati, 2024). According to the findings of this review, in the first group, traditional play-based children's learning is capable of optimizing kindergarten children's basic motor development, with a track record of implementing the concept/theoretical basis, activity stages, social systems, reaction principles, support systems, and impact models, and increasing students' basic skills for high motor skills (Suryadi et al., 2024)

## CONCLUSION

Based on the results of classroom action research (PTK) and data analysis carried out collaboratively between teachers and researchers, it can be concluded that the activity of folding origami paper can improve children's fine motor skills, which can be seen in the increase from cycle I, which obtained a percentage of 55.55% of children. Classical children who were at the minimum criteria for developing according to expectations experienced an increase in cycle II, which obtained a percentage of 94.45% of classical children who were at the minimum criteria for developing according to expectations. With these results, because in cycle II the success indicators have been met, the research has been completed.

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