



The Effect of Batik Activities Using the Ecoprint Technique to Increase the Creativity of 5-6 Year Old Children

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Abstract. The background of this research is the lack of learning activities that introduce local culture to early childhood, resulting in a lack of creativity in children. Batik activity using the ecoprint technique is one of the activities that can develop early childhood creative abilities, namely the child's ability to be curious and create new ideas. Therefore, the goal to be achieved from this research is to prove the influence of ecoprint batik activities on the creativity abilities of early childhood. This study uses a Pre-Experimental Design with the type of One-Group Pre-test Post-test Design. The subjects of this study were 20 children in group B at Khadijah Kindergarten Surabaya. Data collection methods used are observation and documentation. The data analysis technique used is a nonparametric statistical analysis technique using the Wilcoxon Match Pairs Test. From the calculation results, the average pre-test result is 37.25 and the post-test average is 42.5 with $T_{count} \leq T_{table}$ ($0 \leq 52$). So H_a is accepted and it can be stated that the use of ecoprint batik activities has an effect on creativity abilities in early childhood.

Keywords: Batik, Ecoprint, Childhood

1 Introduction

The world of early childhood is a world filled with high curiosity about everything around them and has a passion to explore knowledge about things related to the natural surroundings. Early childhood is the next generation of the nation, so it is important to provide the right stimulus according to their stage of development. According to Munnandar in [1] Increasing children's creativity needs to be stimulated from an early age

because creativity is the ability to generate new ideas that can be used to solve problems or identify new relationships between existing elements. Creativity is the ability to create novelty. [2] explained that Creativity needs to be grown from an early age. Early childhood is indeed the time to play, therefore their process of obtaining information or learning must be through play. It can be concluded that creativity is the capacity to offer ideas and their application can be done through learning and playing activities. Yazid et al., in [3] that early childhood has the right to get education to develop himself. Therefore educators are required to be able to provide space for children to develop creative imagination both physically and spiritually so that they can support children's development in continuing their education to the next level. One of the activities that can increase the creativity of early childhood is the ecoprint technique. Ecoprint is a way of decorating fabrics using various plants by utilizing their natural colors [4]. Ecoprinting is a printing technique that utilizes natural dyes. The ecoprint technique is a coloring technique using raw materials from nature, the absorbed color blends with the fibers in the fabric. Every plant has the potential to be used as a fabric dye, including leaves and flowers [5].

[3] explained that ecoprint has 3 types of techniques namely; (1) Pounding technique, (2) Boiling technique, (3) Steaming technique. Of course, these three techniques can be implemented in children. The benefits of natural materials for children are that children can explore and improve all aspects of their abilities. Natural materials can be used in learning to stimulate aspects of child development. [5] Argued that Ecoprint is a technique of directly transferring shapes (patterns) of leaves or flowers onto the surface of the fabric. This activity is carried out by printing leaves on plain cloth by being beaten to produce colors according to unique and attractive motifs (patterns) by showing natural colors without using chemicals. [6] Explained that Through the ecoprint technique, children are expected to be able to create interesting works using various natural materials around them with motifs of flowers and leaves, of course, children are free to choose. The ecoprint technique using natural materials is also an environmentally friendly activity.

Pressinawangi & Widiawati in [6] explained that ecoprinting techniques are usually applied to natural fibrous materials such as canvas or cotton which are able to absorb colors well. There are several ecoprinting techniques that are commonly used, namely by arranging leaves or flowers on a piece of cloth and then rolling it around a log and then steaming it, fermenting the leaves and flowers to extract the color pigments in the plant and the simplest is hitting the leaves or flowers up cloth using a hammer.

As for the previous research conducted by [3] where the research aimed to increase children's creativity through the use of the ecoprint technique and the results of the research show that the use of the ecoprint technique can increase the creativity of early childhood, especially aged 5-6 years. A study by [7] about increasing children's creativity through ecoprint activities with pounding techniques and the results of this study indicate that through ecoprint activities with pounding techniques can increase children's creativity from an average cycle I of 3.16 with an adequate category to an average of cycle II of 4.19 with good category.

Based on initial observations made at Khadijah Kindergarten Surabaya, it was found that children's imagination had not fully developed due to less varied learning. In addition, batik activities using the ecoprint technique have not been carried out and educators see that batik activities are generally not suitable for early childhood. While batik activities are not only batik in general but can be done with different materials and techniques according to the abilities of early childhood. So it is important for educators to implement activities that can support children's creativity. Therefore this study aims to analyze how the influence of batik activities using the ecoprint technique increases the creativity of early childhood through fun activities or playing and learning to use materials available in nature.

As for the results of research by [8] proves that the ecoprint technique can increase the creativity of children aged 5-6 years by obtaining an average pre-test score of 20.5 and experiencing an increase in the post-test average with a value of 37.66, the overall average of creativity development children 205. Sejalan dengan penelitian yang dilakukan oleh [9] resulted in an increase in the creativity of children aged 5-6 years by implementing ecoprint batik activities with the results of an analysis of the level of creativity of children in cycle I obtaining a percentage of 53.4% in the Starting to Develop category, in the next cycle, the increase in children's creativity increased to 71.7% with the criteria of Developing According to Expectations (BSH). From the description above, the researcher is interested in researching "The Influence of Batik Activities Using the Ecoprint Technique to Increase the Creativity of Children Aged 5-6 Years"

2 Methods

2.1 Research Design

This research was conducted using quantitative methods with this type of experimental research. The experimental research design used was the one-group-pretest-posttest design. In this research design there will be a pre-test and post-test, thus the results of the treatment will be known more accurately, because they can be compared with the conditions before being given treatment [10]. The following table research design:

Table 1. Research design

Pretest	Treatment	Post test
O1	X	O2

Information:

O1 = pre-test, before being given treatment

X = treatment, namely the experimental method

O2 = post-test, after being given treatment

Research procedure:

1. Give O1, namely a pre-test to find out the score of creativity ability before receiving treatment in the form of an experimental ecoprint technique.
2. It is known that the score of children's creative ability is given treatment in the form of batik activities using the ecoprint technique within a certain period of time.
3. Give O2, namely a post-test to measure any changes in the treatment of batik activities using the ecoprint technique.
4. Comparing O1 and O2 to find out any changes that occur after being given treatment in the form of batik activities using the ecoprint technique.

2.2 Participants

The population is defined as the entire research object consisting of humans, objects, plants, symptoms, test scores, or incidents which are the source of data that has exclusive characteristics in a study [11]. Researchers took research samples from a total population of 20 in Kindergarten Khadijah Surabaya. Sampling in this study will be carried out by total sampling. [12] explained that total sampling is a sampling technique as if all members of the population were used as samples.

2.3 Settings

This research took place at Khadijah Kindergarten Surabaya and data collection was carried out during one session a week.

2.4 Data Collection

Data collection was carried out naturally with experimental methods carried out at the school, to be precise, TK Khadijah Surabaya with observation and documentation techniques. Where in collecting data researchers are directly involved in applying the methods given to children.

Table 2. Assessment Instrument for Eco Print Batik Activities at Kindergarten Khadijah Surabaya

No	Rated Aspect	Score				Description of Achievement
		1	2	3	4	
1	Children are in high spirits					1 = Not Developed 2 = Start Growing
2	Children are able to give spontaneous ideas					

3	Children are able to do experiments independently					3 = Growing As Expected 4 = Very Well Developed
4	Children are able to create their own					
5	Children have high imagination					
6	Children are not influenced from the outside					
7	Children are able to develop a variety of ideas					
8	Children are able to add details of an object					
9	Children are able to explore with various media and activities					
10	Exploring emotions in accordance with existing conditions					
11	Make works like the real shape with various materials (paper, plasticine, blocks, etc.)					
Amount						
Score						
<p style="text-align: center;">Total Score Criteria:</p> <p style="text-align: center;">Information = ----- x 100 % Very Good (A) : 91 ≤ A ≤ 100</p> <p style="text-align: center;">Max Score Good (B): 81 ≤ B ≤ 90</p> <p style="text-align: center;"> Enough (C) : 71 ≤ C ≤ 80</p> <p style="text-align: center;"> Not enough (K) : ≤ 70</p>						

2.5 Data Analysis

The data analysis technique used is a nonparametric statistical analysis technique using the Wilcoxon Match Pairs Test.

3 Findings and Discussion

3.1 Preparation Stage of the Study

This research was conducted as an effort to increase the creativity of children aged 5-6 years at Kindergarten Khadijah Surabaya in 2023. In implementing batik activities with the ecoprint technique, researchers used observation and documentation data collection techniques, which in its application there are

steps that must be taken, namely: -upstream, explanation, and recalling activities can be explained as follows:

- a. The introduction begins with the activity of preparing tools and materials, namely: (fabric bags, leaves, plastic, stones). Next, prepare the child for the activity.
- b. Provide information regarding how to use ecoprint tools and materials and then carry out activities, namely: Taking the cloth bag that has been provided, Choosing leaves according to the child's interests, Arranging the leaves in the bag, Hitting the surface of the bag that has been arranged with leaves in it until colors and shapes appear leaves on the surface of the bag.
- c. Allow children to do activities.
- d. Recalling activities are asking back activities that have been carried out by children as a fun direct learning experience. In recalling the activity, it can be seen that the enthusiasm of the children in telling their experiences and the results of the ecoprin produced by the children varied greatly, because the leaves used were different according to the tastes and interests of the children. they can carry out activities independently, conduct experiments independently, be creative, and explore materials that have been prepared, children can also express and control their emotions in hitting the leaves until the colors and shapes appear according to the original design.

Furthermore, the researcher used the Wilcoxon Matched Pairs Test non-parametric statistical test with the Wilcoxon auxiliary table. This test is intended to determine the direction and size of the difference. The Wilcoxon match pairs test was conducted to test the comparative hypothesis of two paired samples with ordinal data.

3.2 Evaluation Stage of the Study

The following is a table showing the recapitulation of pre-test and post-test results using the Wilcoxon helper table:

Table 3. Table Helper Wilcoxon Analysis Before Treatment and After Treatment

No	Subject name	X ₁	X ₂	Dif-ferent	Degree Sign		
					De-gree	+	-
1	LFT	38	42	4	4,5	+4,5	
2	ARK	38	41	3	2,5	+2,5	
3	CLO	39	44	5	8,5	+8,5	
4	BZM	40	42	2	1	+1	
5	SFI	40	44	4	4,5	+4,5	
6	SRH	40	44	4	4,5	+4,5	
7	RNA	39	44	5	8,5	+8,5	

8	YMN	34	41	5	8,5	+8,5	
9	NLH	36	43	7	17,5	+17,5	
10	AQL	36	43	7	17,5	+17,5	
11	AZM	37	43	6	11,5	+11,5	
12	ETN	36	43	7	17,5	+17,5	
13	HRO	35	42	7	17,5	+17,5	
14	QNA	35	41	6	11,5	+11,5	
15	SLM	37	41	4	4,5	+4,5	
16	NFS	38	44	6	11,5	+11,5	
17	SZF	38	41	3	2,5	+2,5	
18	ZZE	37	43	6	11,5	+11,5	
19	HNA	36	42	6	11,5	+11,5	
20	NMI	36	42	6	11,5	+11,5	
	Jumlah	745	850			188,5	T=0
	Rata-rata	37,25	42,5				

Based on the calculations in the table above, to test the significance of the relationship using the Wilcoxon auxiliary table for $N = 20$ with a significance level of 5%, then $T_{table} = 52$. From the calculations above it is known that none of the research subjects had no effect, the results can be seen in post-test, therefore the value of T_{count} obtained is 0. If $T_{count} \leq T_{table}$ then H_0 is rejected and H_a is accepted. So from the calculation results above it is known that $T_{count} = 0$, while $T_{table} = 52$ so that $T_{count} \leq T_{table}$ and the research hypothesis is accepted. So it can be concluded that there is an influence of batik activities using the ecoprint technique on the creativity abilities of early childhood.



Fig.1 . Implementation of Batik Treatments Using the Ecoprint Technique



Fig.2. Results of Batik Activities Using the Ecoprint Technique

4 Conclusion

Based on the formulation of the problem, it can be concluded that the use of the ecoprint technique can increase the creativity of early childhood. Experimental method techniques can be applied and have a significant influence on creativity abilities in group B children at Khadijah Kindergarten. This can be seen by increasing the score between before (pre-test) and after giving treatment (post-test), with the results $T_{count} = 0$ and $T_{table} = 21$ where $T_{count} \leq T_{table}$ so that H_0 is rejected and H_a is accepted. Thus, the research hypothesis that reads "the experimental method has a significant influence on the ability of creativity in early childhood has been proven.

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