



The Effect of Paper Craft Activities on Children's Creativity in Group B: A Pre-Experimental Study with a Single Group Pretest and Posttest Design

Winda Ananta Akmal*, Durrotunnisa, Fitriana, Shofiyanti Nur Zuama

Early Childhood Education Study Program, Faculty of Teacher Training and Education, Tadulako University, 94105, Indonesia

ARTICLE INFO

Article history:

Received: 05 Dec 2025

Revised: 04 Feb 2026

Accepted: 27 Feb 2026

Published online: 05 March 2026

Keywords:

Paper Crafts,
Creativity,
Education,
Early Childhood,
Originality

* Corresponding author:

E-mail: windaanantaakmal@gmail.com

Article Doi:

<https://doi.org/10.31258/jes.10.3.p.212-220>

This is an open access article under the [CC BY-
SA](https://creativecommons.org/licenses/by-nc-sa/4.0/) license.



ABSTRACT

Creativity is a crucial skill for early childhood in generating innovative ideas and original works. This study aims to analyze the effect of papercraft activities on the creativity of children in Group B at Harapan Mulia Kindergarten in Palu City. The research method used a quantitative approach with a One-Group Pretest-Posttest Pre-Experimental design on a sample of 15 children. Data were collected through observation, documentation, and interviews focusing on the aspects of originality, elaboration, and fluency. The results showed a significant increase in children's creativity after the intervention. Before the intervention, most children were in the Not Yet Developed and Beginning to Develop categories, but after the application of papercraft, the children reached the Developing as Expected and Developing Very Well categories. Statistical analysis proved that the research hypothesis was accepted, which showed that paper craft activities were effective in significantly increasing the creativity of early childhood.

1. Introduction

Education is a conscious and planned effort to create a learning environment and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by themselves and society (Abd et al., 2022). Education is not only seen as an effort to provide information and skills, but is expanded to include efforts to realize individual desires, needs, and abilities so that a satisfying personal and

social lifestyle is achieved, but also for the lives of children who are currently developing towards adulthood (Nadia, Durrotunnisa, Amrullah, et al., 2026).

According to the Child Protection Law Number 32 of 2002, Chapter I, Article 1, a child is defined as a person under the age of 18, including unborn children. Meanwhile, according to the National Education System Law No. 20 of 2003, Article 28, Paragraph 1, the age range for early childhood is 0-6 years, as explained in the statement: early childhood education is a guidance effort aimed at children from birth to six years of age (Dwi et al., 2026). This is done through the provision of educational stimulation to assist physical and spiritual growth and development so that children are ready to enter further education (Nadia, Durrotunnisa, Fitriana, et al., 2026).

Early childhood education is a crucial level of education that is carried out before primary education as a development effort aimed at children from birth to six years of age in order to lay the foundation for character and basic skills (Septianingtyas & Khasanah, 2023). This period is often referred to as the golden age, during which an individual's brain experiences the most rapid growth and development throughout their life, starting from the womb to early childhood (Sri, 2022). Therefore, early childhood education aims to provide appropriate motivation, stimulation, and support so that children's physical and mental development can proceed optimally (Zulkaida Karima et al., 2025).

As stated by (Mursid 2015, as cited in Iin et al., 2025), childhood is a golden age where children have a very rapid learning ability compared to other age phases. Early childhood education (PAUD) is a form of educational stimulation designed to promote children's spiritual and physical growth and development so that they are ready to enter the next level of education (Siti & Khamim, 2021). In practice, observing and documenting children's learning processes is central to the success of education in understanding their development in depth (Cowan & Flewitt, 2023). One of the most crucial aspects of development to be developed at this stage is creativity, which is the ability to imagine something new, different, or innovative, also known as originality (Ade & Masganti, 2024).

Children's creativity is a mental process that children go through to do, observe, learn, and discover something new that is beneficial to their lives and the people around them, also known as elaboration (Oktari et al., 2022). Thus, creativity is not only seen as a product, but as a higher-order thinking skill inherent in children's cognitive development to produce ideas and tangible works, also known as fluency (Irna, 2024 in Wardani & Suryana, 2022). Various activities can be used to enhance children's creativity, such as storytelling (Anggraeni & Hibana, 2021), drawing (Risdiyanti & Pamungkas, 2022), role-playing (Rapiatunnisa, 2022), and paper crafts. Based on preliminary observations conducted by researchers in group B at Harapan Mulia Kindergarten in Palu City, several problems were identified.

Most of the children's creativity has not developed as expected. For example, it can be seen that some children are not yet able to create new and different works, children are not yet able to think in detail and complexly, and children are not yet

able to generate ideas in a short time. This is due to a lack of activities that can enhance children's creativity, as well as inadequate facilities and infrastructure, which in turn affects the level of child development. Especially in enhancing children's creativity. Understanding how to enhance children's creativity through paper crafts is very important in providing stimulation. When learning with paper crafts, children are very effective in stimulating the holistic development of early childhood through interactive and fun activities. As a three-dimensional construction art, paper crafts involve complex but applicable technical processes for children, ranging from folding techniques, cutting using precision tools, to gluing various patterns into a single work of art (Ifalahma et al., 2024).

This activity not only serves as a means of artistic expression, but also plays an important role in honing children's fine motor skills and hand-eye coordination through the manipulation of various paper materials. The main advantage of this medium lies in its attractive and innovative design visualization, which stimulates children's curiosity and active involvement in the creative exploration process (Icuk et al., 2024). In addition, papercraft games have been proven to transform children's thinking from simply imitating patterns to a high level of originality in creating new ideas (Padilah & Novianti, 2019). Through this systematic process, children are indirectly trained to have perseverance, patience, and logical thinking skills in solving problems when assembling complex shapes. Therefore, the integration of papercraft in school learning is a strategic solution to improve children's creativity indicators, especially in terms of fluency and elaboration of ideas (A'yunin & Padilah, 2023).

This study aims to determine the effect of paper craft activities in stimulating the development of creativity in early childhood in a school environment. More specifically, this study is designed to describe the process of implementing papercraft games in group B children at Harapan Mulia Kindergarten in Palu City, as well as to identify their creativity levels before and after being given systematic treatment. In addition, the main focus of this study is to analyze the extent of the influence of papercraft games on the improvement of creativity indicators, which include originality, elaboration, and fluency of ideas in children. By achieving these objectives, this study is expected to provide practical contributions for educators in selecting innovative learning media to optimize children's potential during their golden age. Thus, the results of this study not only provide answers to problems at the research location but also serve as scientific references in the development of creativity strategies through effective and efficient manipulation of paper media.

2. Methodology

This study uses a quantitative approach. According to Kuncor, quantitative data is data that can be measured and calculated directly, relating to information or explanations in the form of numbers or statistics (Farsya et al., 2025). The Pre-Experimental Design method was used, specifically the One-Group Pretest-Posttest Design. According to Sugiyono (2015), this design involves a pretest before

treatment, followed by treatment in the form of paper craft activities, and ending with a posttest to measure the changes that have occurred.

However, researchers are aware of the limitations of this pre-experimental design, particularly regarding the absence of a control group as an external comparison, so the results obtained need to be interpreted wisely in accordance with the research context. Through this approach, it is hoped that the dynamics of changes in children's creativity can be well documented to provide a comprehensive picture of the effectiveness of paper craft media. The main focus in each session was to ensure that every indicator of creativity, from originality to fluency of ideas, could be optimally stimulated through the physical manipulation of paper materials provided to the subjects.

Therefore, the treatment results can be obtained more accurately, because they can be distinguished from the conditions before the treatment was given. This research was conducted at Harapan Mulia Kindergarten in Palu with 15 children selected using purposive sampling technique. This design was chosen to observe the real effect of the independent variable, namely paper craft activities, on the dependent variable, namely children's creativity. The research procedure was carried out systematically, starting from the preparation stage, the implementation of the intervention over several sessions, to the final evaluation stage to ensure the validity of the data obtained in the field.

Instruments

The main instrument used in this study was a child creativity observation sheet compiled based on early childhood development indicators. This instrument covered three main aspects of creativity, namely originality, elaboration, and fluency (A'yunin & Padilah, 2023). Each aspect was assessed using a developmental category scale, namely not yet developed (BB) with a score of 1, starting to develop (MB) with a score of 2, developing as expected (BSH) with a score of 3, and developing very well (BSB) with a score of 4. This instrument was used to objectively measure children's creativity levels before and after being given treatment through paper craft activities. Before use, the instrument underwent a validity test to ensure that each observation item was able to measure what it was supposed to measure in the context of early childhood creativity at the research site.

Data Collection

Data collection techniques were carried out in three main ways, namely direct observation, documentation, and unstructured interviews. Observations were made during the papercraft activity process to record children's creative behaviors and responses when manipulating paper media (Ifalahma et al., 2024). The documentation technique was used to collect physical evidence in the form of three-dimensional works created by children and photographs of activities as supporting data for the originality of the research. Interviews were conducted with classroom teachers to obtain additional information about the background of children's motor and cognitive abilities before the research began. All collected data were then

compiled systematically to ensure that no information was overlooked in describing the dynamics of changes in children's creativity during the research period.

Data Analysis

The collected data were analyzed using descriptive and inferential statistical techniques to test the research hypothesis. Data analysis was performed with the help of statistical processing applications to calculate the mean, standard deviation, and percentage of children's development achievements at the pretest and posttest. Hypothesis testing was performed using a paired samples t-test after the data was declared to meet the normality test using the Shapiro-Wilk test. The decision criterion was that if the significance value (2-tailed) was less than 0.05, the null hypothesis (H0) was rejected and the alternative hypothesis (Ha) was accepted, which meant that there was a significant effect of paper craft activities on children's creativity.

3. Results and Discussion

Initial observation data, collected before the treatment in the form of paper craft activities on children's creativity in group B of Harapan Mulia Kindergarten in Palu City. It can be seen from the observations made on 15 children that most of the children were still in the low category, and after being given treatment in the form of paper craft activities, it can be seen that the children were already in the developing category as expected. The aspects observed included Originality, Elaboration, and Fluency. A summary of the results of the Recapitulation of Observation Results Before and After can be seen in Table 1.

Table 1. Summary of Observation Results Before and After

Category	Before Treatment						After Treatment					
	Originality		Elaboration		Fluency		Originality		Elaboratio		Fluency	
	F	%	F	%	F	%	F	%	F	%	F	%
BSB	0	0	0	0	0	0	6	40	6	40	9	60
BSH	1	7	3	20	2	13	7	47	9	60	6	40
MB	12	80	3	20	11	73	2	13	0	0	0	0
BB	2	13	9	60	2	13	0	0	0	0	0	0

Based on Table 1, the results of the recapitulation of observations before and after the paper craft activity can be seen. In terms of originality, the BSB category increased from 0 to 40, the BSB category increased from 7 to 47, the MB category decreased from 80 to 13, and the BB category decreased from 13 to 0. In the second aspect, elaboration, the BSB category increased from 0 to 40, the BSH category increased from 20 to 60, the MB category decreased from 20 to 0, and the BB category decreased from 60 to 0. The last aspect, fluency, shows that the BSB category increased from 0 to 60, the BSH category from 13 to 40, the MB category decreased from 73 to 0, and the BB category decreased from 13 to 0. Therefore, it can be seen that there were significant changes in the observation results before and after the paper craft activity. Observations conducted before and after the treatment

showed positive changes in children's creativity. To determine whether the hypothesis was accepted or rejected, an analysis was performed using a paired sample test, as shown in Table 2.

Table 2. Paired Sample Statistics

	Paired Differences			95 % confidence interval of the difference					
	Mean	Std. Deviation	Std. Error Mean	lower	Upper	t	df	One-sided	Two-sided
Pair 1 Pretest-posttest	-4.73333		1.43759	-5.529	-3.937	12.75	14	<.001	<.001

In accordance with the decision-making process in paired sample testing, this shows that paper craft activities have a significant effect on the creativity of children in the B Tk Harapan Mulia group in Palu City. Before the treatment, most of the results related to originality were categorized as developing (MB) at 80, followed by not yet developed (BB) at 13. However, after the intervention, the results showed a shift, with the dominant categories becoming “Developed as Expected” (BSH) at 47 and “Highly Developed” (BSB) at 40. Based on observations conducted after the intervention related to children's creativity, most were categorized as Developing as Expected (BSH).

The first aspect examined in this study was originality, which is the most fundamental indicator in measuring creativity in early childhood, in line with (Sri, 2022), which refers to an individual's ability to produce unique ideas or new and unusual works from the perspective of their peers and adults around them. In the context of paper craft activities, originality is evident when children are able to modify the basic paper patterns provided into new forms that reflect their personal imagination without simply imitating the teacher's instructions rigidly (Durrotunnisa et al., 2025).

Before the intervention, most aspects of elaboration and accuracy of formation were categorized as developing (MB) at 20, with the category of not yet developed (BB) at 60. After the intervention, the results changed, with the dominant category becoming “Developed as Expected” (BSH) at 60, and “Very Well Developed” at 40. Based on observations made after the intervention, children's creativity was more dominant in the “Developed as Expected” (BSH) category. The aspect of elaboration studied in this research is the ability to develop, elaborate, and expand a simple idea into something more complex and profound. In paper craft activities, this aspect is reflected when children do not just stop at forming basic patterns, but are also able to add various decorative elements or technical details that enhance the aesthetics and three-dimensional structure of the craft (Oktari et al., 2022).

The ability to elaborate ideas shows a high level of precision and patience, where children try to perfect every part of the paper craft to make it look more attractive and realistic (Ade & Masganti, 2024). Papercrafts are defined by experts as a form of three-dimensional art that utilizes paper as the main material through a series of physical manipulation techniques. According to Ifalahma et al. (2024). papercrafts

are constructive activities that involve the process of folding, cutting, and gluing certain patterns to form objects that have volume and space. In line with this, Ningsi et al. (2020) explain that this medium is a very effective educational stimulation tool because it allows children to transform flat (two-dimensional) surfaces into concrete, tangible forms, which directly hones their spatial abilities and creative imagination. In the pre-intervention phase, most children were classified as developing (MB) at 73, and not yet developed (BB) at 13.

After the intervention, the results showed positive changes, with the dominant category shifting to “Developed as Expected” (BSH) at 40, and the “Starting to Develop” (MB) category at 0. Based on post-intervention observations of the children's overall creativity, most children were classified in the “Highly Developed” (BSB) category. The interconnection of these three aspects proves that creativity is not just about beautiful end results, but about the dynamic cognitive process of independently solving spatial and artistic problems (Ade & Masganti, 2024). Consistent stimulation through paper crafts has been proven to synergize these three indicators so that children not only become motorically skilled but also grow into innovative and adaptive thinkers in line with the demands of their golden age of development (Septianingtiyas & Khasanah, 2023). Therefore, the influence of paper craft activities on children's creativity in Group B at Harapan Mulia Kindergarten in Palu City has a significant impact.

4. Conclusion

The results of the study show a significant increase in children's creativity after being given treatment in the form of craft activities. Based on the data obtained, before being given treatment (pretest), most children were in the Not Yet Developed (BB) and Beginning to Develop (MB) categories, especially in terms of elaboration and originality. However, after several intervention sessions, the final test results (posttest) showed a shift in achievement to the Developing as Expected (BSH) and Developing Very Well (BSB) categories. This improvement proves that stimulation provided through paper crafts can trigger children to be more courageous in exploring ideas and forms. Statistically, the paired sample t-test showed a significance value of less than 0.05, so it can be concluded that the research hypothesis was accepted. This effectiveness can be seen from how the children began to be able to add unique details to their paper works without excessive instruction from the teacher, which indicates that the creative process was running independently and innovatively.

References

- A'yunin, Q., & Padilah. (2023). Pengaruh Permainan Papercraft Terhadap Kreativitas pada Anak Usia Dini. *Paud Lectura: Journal of Early Childhood Education*, 6(2), 45–54. <https://doi.org/10.31849/paud-lectura.v>
- Abd, B. R., Sabhayati, M. A., Ansi, F., Yuyun, K., & Yumriani. (2022). Pengertian Pendidikan, Ilmu Pendidikan Dan Unsur-Unsur Pendidikan. *Al Urwatul*
-

- Wutsqa:Kajian Pendidikan Islam*, 2(1), 1–8.
<https://journal.unismuh.ac.id/index.php/alurwatul>
- Ade, S. L. N., & Masganti, S. (2024). Analisis Perkembangan Kreativitas Anak Usia 5-6 Tahun Analysis of the Development of Creativity in Children Aged 5-6 Years. *Jiic: Jurnal Intelek Insan Cendikia*, 1(4), 844–852.
<https://jicnusantara.com/index.php/jiic>
- Anggraeni, D., & Hibana. (2021). Resain Pengembangan Kreativitas Anak Usia Dini Melalui Bercerita. *Journal of Islamic Early Childhood Education UIN Suska Riau*, 4(1), 26–37.
- Cowan, K., & Flewitt, R. (2023). Moving From Paper-Based to Digital Documentation In Early Childhood Education: Democratic Potentials And Challenges. *International Journal of Early Years Education*, 31(4), 888–906. <https://doi.org/10.1080/09669760.2021.2013171>
- Durrotunnisa, Nurhayati, Hesti, S. P., & Besse, N. (2025). Pemanfaatan Limbah Kardus untuk Melatih Kreativitas Anak Usia Dini di Tk Pelangi Palu. *Pengabdian Kepada Masyarakat*, 3(1), 131–138.
<https://journal.unwira.ac.id/index.php/berbakti>
- Dwi, P., Durrotunnisa, Armina, & Andi, A. (2026). The Effect of the Traditional Hide-and-Seek Game on the Gross. *Journal Of Educational Sciences*, 10(1), 1652–1660. <https://doi.org/https://doi.org/10.31258/jes.10.1.p.1652-1660>
- Farsya, L. G., Zulfuraini, Sinta, S. D. S., Rizal, & Ammar, joni A. (2025). The Effect of Crossword Puzzle Learning Media on Student Learning Outcomes in IPAS Class IV SD Karuna Dipa Palu Farsya. *Journal Of Educational Sciences*, 9(4), 2915–2924.
<https://doi.org/https://doi.org/10.31258/jes.9.4.p.2915-2924> This
- Icuk, J. N., Pascalian, P. hadi, & Nurhafit, K. (2024). The Influence of Papercraft on Early Childhood Cutting Ability. *Jurnal Amal Pendidikan*, 5(3), 293–298. <https://doi.org/http://doi.org/10.36709/japend.v5i3.138>
- Ifalahma, D., Yuliana, A., Dinawati Aulia, S., & Md Yatim, N. (2024). Papercraft Method as Stimulation of The Development of Fine Motor Skills in Early Childhood. *Proceeding of International Conference on Science, Health, And Technology*, 188–193. <https://doi.org/10.47701/icohetech.v5i1.4173>
- Iin, N. R., Amrullah, Awalunisah Sita, & Fitriana. (2025). The Effectiveness of Finger Puppet use on Speaking Abilities of 4-5 Year-Old Children in State Kindergarten 2, Parigi Tengah Desa Matolele Village. *Journal of Educational Sciences*, 9(6), 5982–5993.
<https://doi.org/https://doi.org/10.31258/jes.9.6.p.5982-5993> This
- Nadia, Durrotunnisa, Fitriana, & Shofiyanti, Z. N. (2026). The Effect of Colored Sand Media on the Fine Motor. *Journal of Educational Sciences*, 10(1), 135–142. <https://doi.org/https://doi.org/10.31258/jes.10.1.p.135-142>
- Nadia, M., Durrotunnisa, Amrullah, & Nurhayati. (2026). The Effect of Local Wisdom-Based Storytelling Methods on the the Speaking Skills of 4-5 Year Old Children at Kasih Ibu Labuan Lelea Kindergarten Nadia. *Journal Of Educational Sciences*, 10(1), 1899–1912.
<https://doi.org/https://doi.org/10.31258/jes.10.1.p.1899-1912>
- Oktari, E., Aunurrahman, & Miranda, D. (2022). Pemanfaatan Kertas Origami Sebagai Media Pembelajaran Dalam Mengembangkan Kreativitas Pada Anak Usia 5-6 Tahun. *Jurnal Pendidikan Dan Pembelajaran*, 11, 3145–
-

3153. <https://doi.org/10.26418/jppk.v11i12.60042>
- Padilah, & Novianti, R. (2019). Permainan papercraft untuk anak usia dini. In *Jurnal Golden Age: Jurnal Ilmiah Tumbuh Kembang Anak Usia Dini* (Vol. 4, Issue 1).
- Rapiatunnisa, R. (2022). Meningkatkan Kreativitas Anak Usia Dini Melalui Metode Bermain Peran. *Mitra Ash-Shibyan: Jurnal Pendidikan Dan Konseling*, 5(01), 17–26. <https://doi.org/10.46963/mash.v5i01.423>
- Risdianty, R., & Pamungkas, J. (2022). Model Penerapan Metode Menggambar untuk Meningkatkan Kreativitas pada Anak Usia Dini. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 6(6), 6478–6501. <https://doi.org/10.31004/obsesi.v6i6.3149>
- Septianingtiyas, D., & Khasanah, I. (2023). Penerapan Penggunaan Media Permainan Balok Untuk Meningkatkan Kreativitas Anak Usia Dini. *Prosiding Seminar Nasional Program Studi Pendidikan Anak Usia Dini “Transisi Paud Ke SD Yang Menyenangkan.”*
- Sugiyono. (2015). *Metode Penelitian Kombinasi (Mix Methods)*. Bandung: Alfabeta.
- Siti, H. N., & Khamim, P. Z. (2021). Bermain Dan Permainan Anak Usia Dini. *Jurnal Pendidikan Islam Usia Dini*, 4(1), 1–13.
- Sri, W. (2022). Pentingnya Penerapan Merdeka Belajar Pada Anak Usia Dini (Paud). *PEDAGOGY*, 9(2), 36–41.
- Wardani, E. K., & Suryana, D. (2022). Permainan Edukatif Setatak Angka dalam Menstimulasi Kemampuan Berfikir Simbolik Anak Usia Dini. 6(3), 1790–1798. <https://doi.org/10.31004/obsesi.v6i3.1857>
- Zulkaida karima, Andi, A., Fitriana, & Yusdin, G. M. Bin. (2025). Development of Busy Book Learning Media in Improving. *Journal of Educational Sciences*, 9(6), 5177–5191. <https://doi.org/https://doi.org/10.31258/jes.9.6.p.5177-5191>

How to cite this article:

Akmal, W. A., Durrotunnisa., Fitriana., & Zuama, S. N. (2026). The Effect of Paper Craft Activities on Children's Creativity in Group B: A Pre-Experimental Study with a Single Group Pretest and Posttest Design. *Journal of Educational Sciences*, 10(3), 212-220.
