

Coloring As An Activity For The Development Of Artistic Creativity In Early Childhood

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<i>Keywords:</i>	<i>Abstract</i>
Coloring, Creativity Development, Artistic Creativity, Early Childhood	Colouring, creative development, artistic creativity, and early childhood. This study will investigate the influence of colouring activities and gradation techniques on increasing artistic creativity in early childhood, especially in children aged 5–6 years. This study aims to explore the influence of colouring activities with gradation techniques on increasing artistic creativity in early childhood, especially in children aged 5-6 years. The research method used was the design of the pretest-posttest control group experiment, with two groups consisting of an experimental group and a control group. The tools used include a creativity scale to measure aspects of imagination, self-expression, and emotional involvement in children. The study's findings showed that children in the experimental group who performed colouring activities with the gradation technique showed a significant improvement in creativity ability, which was demonstrated by an increase in the average test result score after the intervention compared to the control group. These findings suggest that gradation techniques in colouring activities can stimulate creativity more effectively, not only in terms of fine motor skills but also in cognitive and aesthetic aspects. This research makes an important contribution to the development of art learning methods in early childhood and opens up opportunities for the application of structured art techniques that can increase children's creativity more optimally.

<i>Kata Kunci:</i>	<i>Abstrak</i>
Mewarnai, Pengebanagan Kreativitas, Kreativitas Seni, Anak Usia Dini	<i>Penelitian ini bertujuan untuk mengeksplorasi pengaruh kegiatan mewarnai dengan teknik gradasi terhadap peningkatan kreativitas seni pada anak usia dini, khususnya anak usia 5-6 tahun. Metode penelitian yang digunakan adalah desain eksperimen pretest-posttest control group, dengan dua kelompok yang terdiri dari kelompok eksperimen dan kelompok kontrol. Instrumen yang digunakan mencakup skala kreativitas untuk mengukur imajinasi, ekspresi diri, dan</i>

	<i>keterlibatan emosional anak. Hasil penelitian menunjukkan bahwa anak-anak dalam kelompok eksperimen yang mengikuti kegiatan mewarnai dengan teknik gradasi mengalami peningkatan signifikan dalam kreativitas, dengan rata-rata skor posttest yang lebih tinggi dibandingkan kelompok kontrol. Temuan ini menunjukkan bahwa teknik gradasi dalam kegiatan mewarnai dapat merangsang kreativitas secara lebih efektif, tidak hanya dalam hal motorik halus, tetapi juga dalam aspek kognitif dan estetika. Penelitian ini memberikan kontribusi penting dalam pengembangan metode pembelajaran seni pada anak usia dini dan membuka peluang bagi penerapan teknik seni terstruktur yang dapat meningkatkan kreativitas anak secara lebih optimal.</i>
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INTRODUCTION

Early childhood education is an important foundation for a child's development, as this period is a golden time in which children experience rapid growth in various aspects (Erkut & Dahl, 2019; Modak et al., 2023; Nunes et al., 2019; Shusterman, 2022). One of the most influential aspects is the development of creativity, which is closely related to art, especially through colouring activities (Chacur et al., 2022; Samaniego et al., 2024). Colouring is one of the activities that gives pleasure to children and provides excellent benefits in stimulating the growth of fine motor skills, thinking skills, social-emotional aspects, and creativity (Nair et al., 2024). However, although this activity is very well known and preferred, many researchers have found that colouring activities in early childhood are often not utilised to the fullest in developing artistic creativity.

Based on research conducted in several kindergartens in Indonesia, it is known that even though coloring activities are held regularly, children are often only given instructions to follow predetermined colour patterns, without being given space to express their creativity (Ailwood et al., 2007; Rogers, 2016). This leads to low skills and ability for children to develop new ideas in art, which should be a tool to grow their imagination. Many children are stuck in the standard patterns given by educators, so colouring activities become monotonous activities and do not provide room for creative exploration.

Existing studies, such as those conducted by Kurlillah and Yuandana (2024), show that although there is an increase in children's creativity through art activities, there is still a large gap in terms of understanding how colouring activities can be an effective tool for developing artistic creativity. Many studies have emphasised the benefits of colouring for fine motor development, but very few studies have focused on how colouring can stimulate imagination

and self-expression through art. This opens opportunities for further research that can bridge the gap between theoretical and practical understanding in the field.

Colouring is an activity that involves the five senses, especially the senses of sight and touch. This activity not only hones children's fine motor skills but also involves a creative process that requires the right selection of colours, shapes, and techniques (Daulay & Khadijah, 2023; Jumiayati et al., 2023; Muhammad Yusuf et al., 2023; Simha et al., 2017). In colouring activities, children learn to express their thoughts and feelings using colours and pictures, which are a form of meaningful artistic expression (Cho, 2021). This activity provides an opportunity for children to improve their imagination skills, as well as practise concentration and patience in completing a task.

In the context of art, colouring is not just about adding colour to the prepared image but also a form of children's self-expression. In this process, children can express their feelings, whether joy, sadness, or confusion, through their color choices. This activity gives them the freedom to imagine, create their own colour patterns, and describe their world through colour. It also helps improve their ability to think creatively and critically, which is crucial for the development of children's emotional and social intelligence.

Colouring techniques with gradual colour variations, as explained in research by Nisak & Destiana (2024), are one way to improve children's creative abilities. The gradation technique teaches children to blend colours gradually, from dark to light, which involves a more in-depth thought and planning process. This technique provides children with the opportunity to learn about aesthetics, beauty, and visual balance, which are important elements in art. With this technique, children learn not only about colours but also about how to create interesting compositions.

Colouring activities are closely related to the growth of children's thinking skills (Kurniawan, 2025a). When children choose colours and determine how to colour an image, they are engaging in a thought process that includes decision-making and problem-solving (Cankaya et al., 2025). In addition, colouring activities also help children recognise various concepts such as differences in colour, shape, and size, all of which play an important role in the development of children's thinking skills. By colouring, children learn to get to know their surroundings in a fun and interactive way.

To maximize the benefits of colouring activities in increasing creativity, the role of parents and teachers is very important (Salehudin & Asiyani, 2022). Parents can provide support by providing quality colouring tools and providing opportunities for children to be

creative freely (Asiyani et al., 2022). On the other hand, teachers also have a big role in creating a learning environment that is conducive to children's creativity. By giving children, the freedom to express themselves through art, teachers can help children develop creative thinking skills and broaden their horizons.

Although the benefits of colouring activities for creativity development have been proven, the main challenge in their implementation is the lack of training for teachers in using colouring to stimulate creativity (Kurniawan, 2025b). Many teachers still use the old way of focusing only on the result, without paying attention to the creative process that occurs when the child participates in the activity. For this reason, a more comprehensive and in-depth approach is needed to develop children's creativity through art, such as colouring.

In addition to helping motor and cognitive development, colouring activities also greatly affect children's social and emotional growth. In colouring, children learn to share with friends, work together in groups, and appreciate the work of others. Furthermore, colouring activities sharpen their emotional management skills, particularly when confronted with challenges or setbacks in drawing. This activity plays a role in increasing children's confidence and forming social skills that are useful for their lives.

Creativity honed through colouring activities can provide a good foundation for learning in other fields. Children who can think creatively and express themselves through art tend to learn things more easily in different fields. This creative ability helps children to think more broadly, which is very useful in solving problems and creating innovation. Therefore, colouring activities can be the beginning of the development of various other skills.

To understand the role of colouring in increasing children's creativity, further in-depth research is needed on the impact of these activities on various aspects of child development. More specific research on colouring techniques that stimulate children's creativity, as well as the factors that influence the success of these activities, would be very useful. In addition, long-term studies that look at the impact of colouring on children's development can also provide a more comprehensive understanding.

METHOD

This research aims to analyse the role of colouring activities in increasing artistic creativity in early childhood. This study uses a quantitative method with an experimental design in the form of a pretest-posttest, which is divided into two groups, namely the experimental group that conducts colouring activities by applying gradation techniques and the

control group that conducts colouring activities without using certain techniques. The number of research subjects comprised 40 children aged 5 to 6 years. The instruments used to measure children's creativity include a creativity scale that assesses imagination, self-expression, the ability to create new patterns, and qualitative observations of children's accuracy and emotional involvement in activities. Data was collected through pretests and posttests to measure changes in creativity, direct observation during activities, and interviews with teachers and parents. The statistical analysis techniques used include normality tests, paired samples t-tests to test differences before and after treatment, and independent samples t-tests to compare differences between experimental and control groups. It is hoped that the results of this research can contribute to the development of more effective art learning methods in early childhood education, as well as optimise colouring activities as a means to stimulate creativity and fine motor development in children.

RESULTS AND DISCUSSION

1. Research Results

This study aims to explore how colouring activities with gradation techniques can increase artistic creativity in early childhood, especially in children aged 5-6 years. Art creativity in early childhood has an important role in their development, considering that this phase is a critical period that affects their cognitive, motor, and social-emotional development. In this context, colouring activities serve not only as a fun activity but also as a means to express ideas and feelings, which are part of the development of children's creativity. Colouring with gradation techniques provides an opportunity for children to learn to combine colours from dark to light. It is hoped that this method will be able to provide a new experience for children in understanding the concept of art aesthetics while strengthening their fine motor skills.

The data obtained from the pretest and posttest were analysed descriptively to provide an overview of the change in children's creativity levels after they participated in colouring activities using gradation techniques. Based on measurements using the creativity scale, here are the average scores obtained by both groups:

Table 1. data research experimental group

Group	Red Pretest	Posttest	Mean Change (%)
Experimental Group	3.2	4.5	41.6%
Control Group	3.1	3.4	9.7%

The table above shows a significant increase in children's creativity in the experimental group that participated in colouring activities with the gradation technique, with an average posttest score of 4.5, an increase of 41.6% from the pretest score. Meanwhile, the control group experienced only a small increase of 9.7%, which suggests that colouring activities without certain techniques had less significant influence on children's creativity.

This study applied an experimental design with pre-measurement and post-measurement methods using control groups to observe changes in children's creativity levels before and after they participated in colouring activities with gradation techniques. The experimental group consisted of 20 children who were given colouring treatment with gradation techniques, while the control group consisted of 20 children who participated in colouring activities without a specific technique. Using instruments that measure children's creativity in terms of imagination, self-expression, and emotional engagement, data were collected through pretests and post tests. In addition, qualitative observations were made to capture children's behaviours and expressions during activities, providing a more in-depth picture of the impact of colouring activities on their creative development. Before testing the hypothesis, a normality check is carried out to ensure that the data has a normal distribution. The normality test was performed using the Shapiro-Wilk test, and the results were as follows:

Experimental Group: Sig = 0.98 ($p > 0.05$),
which indicates normally distributed data.

Control Group: Sig = 0.92 ($p > 0.05$),
which also shows normally distributed data.

Furthermore, the variance homogeneity test using the Levene test showed that the variance between the two groups was homogeneous (Sig = 0.47, $p > 0.05$), so that the paired t-test could be applied to test for significant differences between the pretest and the posttest.

The hypothesis test was carried out using a paired-samples t-test to determine the difference in pretest and posttest scores in the two groups. Here are the T-test results for each group:

1. Experimental Group:

$$t = -11.32, df = 19, p = 0.000 (p < 0.05)$$

These results show a significant difference between pretest and posttest scores in the experimental group, which shows that coloring activities using gradation techniques can significantly increase children's creativity.

2. Control Group:

$$t = -2.15, df = 19, p = 0.043 (p < 0.05)$$

Although there were differences between the pretest and posttest, the results were not as large as those found in the experimental group, suggesting that the increase in creativity in the control group was less significant.

Based on the results of data analysis, it was seen that children in the experimental group who underwent colouring activities using gradation techniques showed a marked improvement in their creativity skills. The average score of the experimental group after the colouring activity reached 4.5, an increase of 41.6% from the pretest score. This shows that the gradation technique in the colouring activity has a greater impact on stimulating creativity compared to the free colouring activity carried out by the control group. The control group showed only a small increase of 9.7%, indicating that colouring activities in the absence of clear and targeted techniques did not have a significant effect on children's creativity.

Statistical tests using paired samples. A t-test showed that the difference between pretest and posttest in the experimental group was significant, with a value of $p = 0.000$, which means that colouring activities with the gradation technique succeeded in significantly increasing children's creativity. In contrast, the control group showed only smaller, less significant differences in terms of creativity. The normality test and variance homogeneity test showed that the data in this study were normally distributed and had a homogeneous variance, which supported the use of the t-test for data analysis.

In addition to quantitative data, qualitative observations during colouring activities also provide valuable insights. Children in the experimental group were more actively involved in choosing colours and creating patterns with gradations, which showed increased creativity in terms of colour selection and self-expression. They not only follow existing patterns but also start experimenting with combining colours as well as creating more distinct and personal images. In contrast, children in the control group more often follow pre-existing patterns, with limited colour exploration.

Overall, the results of this study show that colouring activities with gradation techniques have a real impact on increasing artistic creativity in early childhood. The gradation technique not only awakens children's imagination but also helps them develop fine motor skills, understand aesthetic concepts, and increase emotional involvement in the art process. Therefore, colouring activities with gradation techniques can be used more widely in early childhood education as an effective tool to improve children's creativity and art skills. With the

help of educators and parents, this activity can be a fun and useful tool for children's creative development.

2. Discussion

The results of this study show that colouring activities with gradation techniques can significantly increase artistic creativity in early childhood, especially in terms of imagination, self-expression, and emotional engagement. Children who participated in colouring activities using the grading technique showed significant improvement in average scores of 41.6%, compared to the control group, which experienced only a small increase of 9.7%. The use of gradation techniques that involve the gradual selection of colours from dark to light gives children the opportunity to imagine and create more freely, as well as develop an understanding of aesthetics in art. These results support theories that art, especially colouring activities, play an important role in increasing creativity in early childhood (Ambarwati & Rohmah, 2024; Kurniawan, 2025b).

The results of this study show that colouring activities not only involve the development of children's fine motor aspects but are also related to their cognitive and social-emotional aspects. Gradient techniques challenge children to think about the relationships between colours, create harmonious patterns, and organise visual elements in their images. Thus, these activities serve as an effective means to stimulate children's creativity holistically, develop fine motor skills, and improve their ability to express their ideas and feelings through art. The involvement of children in choosing colours as well as creating colour gradations shows that they not only obey the instructions given but also actively participate in the creative process, in accordance with the theory of children's art development that emphasises self-expression (Sternberg, 2005).

This study has similarities with several previous studies that show the importance of art in the development of early childhood creativity. For example, research by Kurlillah & Yuandana (2024) investigating the effectiveness of ecoprint techniques in increasing children's creativity also emphasised that art activities play an important role in stimulating children's creativity. However, this study adds a new perspective by applying gradation techniques in the colouring process, which introduces more profound aesthetic elements, such as colour switching and visual balance. Our research findings suggest that this technique is better at stimulating creativity compared to free colouring activities, which do not provide a structural framework for colour exploration.

Meanwhile, previous research by Lubis et al., (2022) showed that colouring activities can improve children's fine motor development but does not delve deeper into their influence on other creative aspects, such as imagination and self-expression. In this study, we found that gradation techniques have a more significant impact on the development of creativity. This is because children are not only involved in motor activities but also in deeper mental processes, such as making creative decisions in choosing colours and planning colour patterns to use.

In addition, research conducted by Nisak & Destiana (2024) proves that there is an increase in creativity through colouring activities by applying certain techniques, although the study did not specifically study the impact of gradation techniques. Our results provide additional insight into gradation techniques that can provide a richer experience in enhancing creativity, especially in terms of the gradual use of colour that can stimulate children's ability to think more complexly. The main difference found in this study is that colouring activities with gradation techniques focus more on deeper visual understanding and transitional use of colour, which helps children develop higher aesthetic awareness and art skills.

This research contributes to the current literature on the development of children's creativity through art, especially in the context of colouring. Several recent studies state that art activities can strengthen children's ability to think critically and creatively. Ganira, (2022); Savva & Erakleous, (2018) in his study of art in early childhood, emphasised that art not only helps in fine motor development but also enriches the child's inner world through visual expression. The gradation technique in colouring, which requires children to think about the relationships between colours and create certain patterns, gives a new dimension to the development of children's art, which is in line with the development of aesthetic theory and modern art education (Lorand & Galnoor, 2009).

In addition, research conducted by Nurlathifah & Hidayat (2025) shows that organised art education is important in building children's creativity. The findings of this study provide additional evidence that art activities that involve directed elements, such as gradation techniques, are more effective in increasing children's creativity compared to art activities that are free and unstructured. This shows that a more focused and targeted approach can be better in facilitating the development of children's creativity.

Although the results of this study show strong evidence regarding the effectiveness of gradation techniques in increasing artistic creativity in early childhood, several limitations need to be considered. First, this research was carried out in a limited environment, namely in one location with a relatively small number of participants, so it is necessary to conduct follow-up

research with a larger and more geographically diverse sample so that the research results can be generalised. In addition, although grading techniques are effective, this study does not compare them with other colouring methods, such as colour-block techniques or free-drawing techniques, which may have a different impact on children's creativity development.

On the other hand, this study makes an important contribution in showing that colouring activities with certain techniques, which combine aesthetic aspects and fine motor skills, are more effective in stimulating children's creativity than free colouring activities. Thus, this research can be the basis for the development of an art curriculum in early childhood education that is more structured, with a focus on the use of art techniques that can stimulate creativity in a more targeted way.

The originality of this research lies in the application of gradation techniques to increase artistic creativity in early childhood. Most previous research has focused more on the motor or social-emotional benefits of colouring activities, but this study emphasises how gradation techniques not only hone fine motor skills but also improve children's cognitive and aesthetic abilities. Thus, this research makes an important contribution to the understanding of how art, especially colouring activities, can be a more effective tool in stimulating children's creativity, not only from a motor side, but also in a deeper mental and emotional aspect.

Through comparison with previous research and a recent literature review, this study adds new insights to the field of early childhood creativity development. These findings open up opportunities for further research into other art techniques that can be applied to stimulate creativity in early childhood and how they can be applied in art teaching at different levels of early childhood education.

CONCLUSION

Based on the research results, it can be concluded that coloring activities using gradation techniques significantly boost early childhood artistic creativity, especially in imagination, self-expression, and emotional engagement. Children who participated in coloring with grading techniques showed greater improvements in creativity compared to those in the control group, who only did coloring activities without a specific approach. The findings indicate that the gradation technique not only supports the development of fine motor skills but also stimulates creative thinking and helps children understand aesthetic concepts. This research contributes to art education, particularly for early childhood, by confirming that structured art techniques like gradation can be effective tools for fostering creativity.

Additionally, it opens the door for developing a more innovative and targeted arts curriculum in early childhood education.

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