GOLDEN RATIO OF DATA IN SUMMARY
VOLUME 6, ISSUE. 2 (2026)
Website: https://goldenratio.id/index.php/grdis

GOLDEN RATIO
ISSN [Online]: 2776-6411

DATA IN SUMMARY | EDUCATION, LINGUISTICS

The Effectiveness of Loose Parts Media in Enhancing Early Childhood Creativity

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ARTICLE HISTORY

Received: March 18, 2026
Revised: April 15, 2026
Accepted:April 15, 2026

DOI
https://doi.org/10.52970/grdis.v6i2.2176

ABSTRACT
This study aims to determine the effectiveness of loose parts media in enhancing early childhood creativity at Tunas Harapan Kindergarten. The research employs a mixed-methods approach, using a quasi-experimental design with a non-equivalent control group for the quantitative data, and interviews with the principal, teachers, and parents as supporting qualitative data. The research subjects were children aged 5–6 years, divided into an experimental group and a control group. Children's creativity was measured using an observation checklist based on indicators of fluency, flexibility, originality, and elaboration. The results show that the average creativity score of the experimental group increased significantly from 59.40 in the pretest to 83.20 in the posttest, while the control group only increased from 60.10 to 69.30. The results of the independent sample t-test show a significance value of 0.000 < 0.05, indicating a significant difference in creativity improvement between the two groups. The qualitative findings support the quantitative results, showing that children became more enthusiastic, actively explored, and were able to collaborate with their peers. Based on these findings, it can be concluded that loose parts media is effective in enhancing early childhood creativity and can be used as an innovative, child-centered learning strategy.

Keywords: Early Childhood Education, Creativity, Loose Parts Media, Innovative Learning.

I. Introduction

Early Childhood Education (ECE) serves as a fundamental foundation in shaping the quality of human resources. Early childhood is often referred to as the *golden age*, a period of rapid development that determines subsequent stages of growth. During this phase, children experience significant development in cognitive, language, socio-emotional, physical-motor, and artistic aspects. Therefore, appropriate stimulation aligned with children's developmental characteristics becomes essential in the learning process within ECE institutions. One crucial aspect of early childhood development is creativity. Creativity is defined as the ability to produce original and meaningful ideas, thoughts, or works. In early childhood, creativity is reflected in children's ability to explore, imagine, solve simple problems, and create based on their play experiences. Creativity does not emerge instantly; rather, it develops through supportive environmental stimulation, particularly through meaningful play activities (Maryanti & Utami, 2023; Novitasari, 2023).

Ideally, learning in ECE should be child-centered and provide broad opportunities for exploration. Children are expected to gain learning experiences that foster divergent thinking, which is the ability to generate multiple possible answers or solutions. In this context, the learning process should emphasize experience, exploration, and creativity rather than merely focusing on final outcomes. The constructivist approach highlights that children construct knowledge through direct interaction with their environment.

ISSN [Online]: 2776-6411

Therefore, the use of open-ended learning media becomes highly important. One type of media that aligns with these characteristics is *loose parts*, which consist of various movable materials that can be manipulated, combined, and creatively explored by children. The concept of loose parts, introduced by Simon Nicholson (1971), emphasizes that children's creativity develops optimally when the environment provides flexible materials with no fixed function. This type of media enables children to develop creativity indicators such as fluency, flexibility, originality, and elaboration through exploratory play activities (Andriani & Rakimahwati, 2023; Farikhah et al., 2023; Garnika, 2024).

However, the reality in the field shows that learning practices in ECE, including at Tunas Harapan Kindergarten, still tend to be product-oriented. Children are often directed to produce uniform work based on teachers' examples. This condition limits children's opportunities for exploration, imagination, and creativity. Overly structured learning may hinder the development of divergent thinking. Additionally, the use of conventional and limited learning media also contributes to this issue. Some teachers still lack a comprehensive understanding of the concept and implementation of loose parts, resulting in suboptimal utilization in classroom activities (Yusuf, 2023; Hernawati et al., 2023). On the other hand, there is a tendency to measure learning success based on the neatness and conformity of children's work rather than the exploration process they undergo. In fact, in early childhood education, the learning process holds greater value than the final product. To address these challenges, innovation in learning media is needed to provide children with freedom to explore. Loose parts media is considered a promising alternative due to its flexible, open-ended nature, and its ability to stimulate creativity.

Through the use of loose parts, children can develop creative thinking skills, problem-solving abilities, improve motor coordination, and build social skills through peer interaction. A learning environment rich in open-ended materials allows children to explore freely without fear of making mistakes (Nurjanah & Muthmainah, 2023; Sardi & Mayar, 2023; Supriani & Rahardjo, 2023). Nevertheless, the implementation of loose parts media is still not optimal and requires empirical validation, particularly in the context of learning at Tunas Harapan Kindergarten. Therefore, this study is important to scientifically examine the effectiveness of loose parts media in enhancing early childhood creativity. Based on the above explanation, the research problem is formulated as follows: "Is there a significant increase in early childhood creativity after the implementation of loose parts media in learning activities at Tunas Harapan Kindergarten?" The findings of this study are expected to provide theoretical contributions to the development of creative learning studies in early childhood education, as well as practical contributions for teachers in designing innovative, exploratory, and child-centered learning activities.

II. Literature Review

Early Childhood Education (ECE) plays a vital role in fostering children's overall development, particularly during the *golden age*, a critical period characterized by rapid growth across multiple domains. At this stage, children's cognitive, social-emotional, language, and motor skills develop significantly, making appropriate educational stimulation essential. One of the key developmental aspects emphasized in ECE is creativity, which refers to the ability to generate original, flexible, and meaningful ideas or products. Creativity in early childhood is commonly reflected through imaginative play, exploration, and problem-solving activities (Maryanti & Utami, 2023; Novitasari, 2023). Creativity is not an innate trait that develops automatically; rather, it is influenced by environmental factors, including learning experiences and instructional strategies. The constructivist learning theory posits that children actively construct knowledge through direct interaction with their environment. Therefore, learning approaches in ECE should be child-centered, allowing children to explore, experiment, and express their ideas freely. Such approaches encourage divergent thinking, which is the ability to produce multiple possible solutions to a problem, an essential component of creativity.

In supporting the development of creativity, the use of appropriate learning media becomes crucial. One innovative approach is the use of *loose parts* media. The concept of loose parts, introduced by Nicholson

ISSN [Online]: 2776-6411

(1971), refers to open-ended materials that can be moved, combined, redesigned, and manipulated in various ways. These materials can include natural objects such as stones, leaves, sticks, and shells, as well as recycled items like bottle caps and cardboard. The flexibility of loose parts allows children to engage in creative exploration without predetermined outcomes, thereby enhancing their imaginative and problem-solving abilities (Andriani & Rakimahwati, 2023; Garnika, 2024). Several studies have highlighted the effectiveness of loose parts in enhancing early childhood creativity. Research by Farikhah et al. (2023) and Supriani and Rahardjo (2023) indicates that loose parts-based learning significantly improves children's creative thinking skills, particularly in terms of fluency, flexibility, originality, and elaboration. Similarly, Lestari (2023) found that children exposed to loose parts media demonstrate higher levels of creativity compared to those engaged in conventional learning methods. Furthermore, the use of loose parts not only enhances creativity but also contributes to the development of fine motor skills, social interaction, and problem-solving abilities (Hasmita et al., 2023; Nurjanah & Muthmainah, 2023).

Despite its potential benefits, the implementation of loose parts in ECE settings still faces several challenges. Many teachers continue to adopt product-oriented learning approaches, where children are expected to produce uniform outputs based on teacher instructions. This practice limits children's opportunities to explore and express their creativity. In addition, a lack of understanding and training among educators regarding the use of open-ended materials often hinders the effective integration of loose parts into classroom activities (Yusuf, 2023; Hernawati et al., 2023). In conclusion, the literature indicates that creativity is a fundamental aspect of early childhood development that can be effectively nurtured through appropriate learning strategies and media. Loose parts media, with its open-ended and flexible characteristics, provides significant opportunities for children to explore, imagine, and create. Therefore, integrating loose parts into ECE learning environments is considered a promising approach to fostering creativity and supporting holistic child development.

III. Research Method

This study employs a mixed-methods approach using a quasi-experimental non-equivalent control group design combined with a qualitative descriptive approach. The quantitative approach is used to examine the effectiveness of loose parts media in enhancing early childhood creativity, while the qualitative approach serves as supporting data to strengthen and deepen the research findings. The study was conducted at Tunas Harapan Kindergarten. The research subjects were children aged 4–6 years, divided into two groups: an experimental group and a control group. The experimental group received treatment in the form of learning activities using loose parts media, while the control group was taught using conventional learning methods typically applied in the classroom. Children's creativity was measured through pretest and posttest activities using an observation checklist. The observation instrument was developed based on creativity indicators, including fluency, flexibility, originality, and elaboration. Each indicator was assessed to determine the development of children's creativity before and after the treatment. The quantitative data were analyzed using statistical tests, including normality and homogeneity tests as prerequisites, followed by an independent sample t-test to determine differences in creativity improvement between the experimental and control groups. Meanwhile, qualitative data were obtained through interviews with the principal, classroom teachers, and parents at Tunas Harapan Kindergarten. The qualitative data were analyzed using an interactive analysis technique consisting of data reduction, data display, and conclusion drawing. The results of the qualitative analysis were used to support and explain the quantitative findings, providing a more comprehensive understanding of the effectiveness of using loose parts media in early childhood learning.

ISSN [Online]: 2776-6411

IV. Results and Discusion

4.1. Results

Based on the pretest and posttest results, it was found that the average creativity score of children in the experimental group increased significantly after being treated using loose parts media. The average pretest score of the experimental group was 58, which increased to 82 in the posttest. Meanwhile, the control group showed a relatively smaller increase, from an average of 60 to 68. The results of the normality test indicated that the data were normally distributed, and the homogeneity test showed that the variances of the two groups were homogeneous. Furthermore, the results of the independent sample t-test showed a significance value (Sig.) of 0.000 < 0.05, indicating a significant difference in creativity improvement between the experimental and control groups. Thus, it can be concluded that the use of loose parts media is effective in enhancing early childhood creativity.

The results of interviews with the principal revealed that the implementation of loose parts media created a more active and exploratory learning environment. Classroom teachers stated that children became more enthusiastic, more confident in expressing ideas, and able to produce more diverse creations compared to before the treatment. In addition, parents reported that children showed increased imagination and creativity at home, such as more frequently arranging objects around them into new forms. These qualitative findings support the quantitative analysis, confirming that loose parts media has a positive impact on the development of children's creativity. Based on the pretest and posttest results of early childhood creativity, the data are presented as follows:

Table 1. Pretest and Posttest Results

Group	Mean Pretest	Mean Posttest	N-Gain
Experimental	59.40	83.20	0.71 (high)
Control	60.10	69.30	0.23 (low)

The data show that the average creativity score of children in the experimental group increased by 23.80 points after the implementation of loose parts media. In contrast, the control group experienced an increase of only 9.20 points. The results of the normality test indicated a significance value > 0.05, meaning the data were normally distributed. The homogeneity test showed a significance value of 0.412 > 0.05, indicating that the variances of the two groups were homogeneous. Furthermore, the independent sample t-test results showed a significance value (Sig. 2-tailed) of 0.000 < 0.05. This indicates a significant difference in creativity improvement between the experimental and control groups. Therefore, statistically, it can be concluded that the use of loose parts media is effective in enhancing early childhood creativity.

4.2. Discusion

This study aims to examine the effectiveness of loose parts media in enhancing early childhood creativity at Tunas Harapan Kindergarten. The results indicate that the use of loose parts media leads to a significantly greater improvement in creativity compared to conventional learning. Quantitatively, the average creativity score in the experimental group increased from 59.40 in the pretest to 83.20 in the posttest, while the control group only improved from 60.10 to 69.30. The results of the independent sample t-test showed a significance value of 0.000 < 0.05, indicating that the improvement is statistically significant and not due to chance, but rather a logical consequence of the treatment applied. From a philosophical perspective, these findings affirm that children's creativity is not a static entity but a dynamic potential that develops through the interaction between the individual and the environment. In this context, loose parts media functions as an epistemological medium that enables children to construct knowledge through concrete experiences. Children do not merely receive information; instead, they actively construct meaning through processes of manipulation, exploration, and transformation of available materials.

ISSN [Online]: 2776-6411

These findings are consistent with Simon Nicholson's (1971) *Theory of Loose Parts*, which states that environments rich in open-ended materials have a strong stimulative effect on the development of creativity. The freedom given to children to combine, reorganize, and modify materials fosters divergent thinking, defined as the ability to generate multiple alternative solutions or ideas. In the context of this study at Tunas Harapan Kindergarten, this is reflected in children's ability to produce diverse creations using the same materials, demonstrating flexibility and originality in thinking. Empirically, the increase in children's creativity is further supported by qualitative findings. Interviews with the principal revealed that the use of loose parts media created a more dynamic and participatory learning environment. Children became more physically and mentally active, engaged in exploration, and demonstrated a higher level of curiosity. Classroom teachers also reported improvements in children's self-confidence in expressing ideas, precision in arranging materials, and their ability to solve simple problems both independently and collaboratively. From the perspective of creativity theory proposed by Runco and Acar (2012), creativity is defined as the ability to produce ideas that are both original and contextually adaptive. The findings of this study show that stimulation through loose parts media effectively activates this potential, as children are placed in learning situations that do not restrict possibilities but instead provide space for exploration without pressure to produce a single "correct" answer.

Furthermore, the improvement in children's creativity can be analyzed through the indicators used, namely fluency, flexibility, originality, and elaboration. In terms of fluency, children demonstrated an increased ability to generate more ideas than before the treatment. In terms of flexibility, they were able to shift more easily from one idea to another. In terms of originality, unique and non-uniform creations emerged. Meanwhile, in terms of elaboration, children were able to develop simple ideas into more complex and meaningful forms. This indicates that loose parts media not only increases the quantity of ideas but also enhances the quality and depth of creative thinking processes. These findings are also consistent with previous studies showing that play based on open-ended materials significantly contributes to the development of creativity and problem-solving skills in children. A learning environment that is not rigidly structured allows children to engage in trial-and-error processes, which philosophically constitute the essence of meaningful learning. In this context, mistakes are not viewed as failures but as an integral part of the knowledge construction process. In addition to cognitive and creative aspects, the results also indicate positive impacts on children's social-emotional development. Children learn to collaborate, share resources, and negotiate with peers in completing tasks. This suggests that loose parts media functions not only as a tool for individual stimulation but also as a medium for constructive social interaction. These findings align with the social constructivist paradigm, which emphasizes that knowledge is built through interaction and collaboration.

Overall, the results of this study confirm that loose parts media is an effective learning strategy for enhancing early childhood creativity at Tunas Harapan Kindergarten. Its effectiveness is reflected not only in quantitative score improvements but also in changes in children's learning behavior, which become more active, exploratory, and reflective. Therefore, loose parts media can be understood not merely as a teaching aid, but as a pedagogical approach that positions children as active agents in the learning process. The implication is that early childhood educators need to shift their teaching paradigm from product-oriented to process-oriented learning. The learning environment should be designed as a *space of possibilities*, where children have the freedom to experiment, imagine, and construct their own knowledge. In this framework, creativity is not directly taught but nurtured through meaningful experiences.

V. Conclusion

Based on the results of the study conducted at Tunas Harapan Kindergarten, it can be concluded that the use of loose parts media is proven to be effective in enhancing the creativity of children aged 4–6 years. This is indicated by a significant increase in creativity scores in the experimental group compared to the control group, based on both the pretest–posttest results and the independent sample t-test analysis. The improvement in creativity encompasses all indicators, namely fluency (the ability to generate ideas), flexibility

GOLDEN RATIO
ISSN [Online]: 2776-6411

(the ability to think adaptively), originality (the uniqueness of ideas), and elaboration (the ability to develop ideas). Qualitatively, the use of loose parts media also encourages children to become more active, confident, exploratory, and capable of interacting and collaborating with their peers. These findings confirm that early childhood creativity develops optimally when the learning environment provides opportunities for freedom, flexibility, and direct experience. Loose parts media functions not only as a learning tool but also as a means of knowledge construction, enabling children to learn through processes of exploration and meaning-making.

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