



THE APPLIKATION OF DEEP LEARNING USING LOOSE PART TO ENHANCE EARLY CHILDHOOD CREATIVITY DEVELOPMENT

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Abstract

Background: Creativity is a fundamental aspect of early childhood development because it supports children's ability to generate original ideas, solve problems, and express themselves through meaningful learning experiences. The Deep Learning approach integrated with Loose Parts media has been introduced as an innovative child-centered learning strategy that promotes mindful, meaningful, and joyful learning. However, empirical evidence regarding its implementation in authentic early childhood classrooms remains limited. **Objective:** This study aimed to analyze the effect of the Deep Learning approach integrated with Loose Parts media on the creativity development of children aged 4–5 years at PAUD Joel, Kupang City. **Method:** This quantitative study employed an ex post facto research design involving 20 children selected through total sampling. Data were collected using observation, documentation, and creativity assessment instruments and analyzed using descriptive statistics and simple linear regression. **Results:** The findings revealed that the implementation of the Deep Learning approach with Loose Parts media had a positive and statistically significant effect on children's creativity development ($p < 0.05$). The coefficient of determination ($R^2 = 0.131$) indicated that the approach explained 13.1% of the variance in creativity development, while the remaining variance was influenced by other factors. **Novelty:** This study provides empirical evidence of integrating the Deep Learning approach with Loose Parts media through an ex post facto design in an authentic early childhood education setting. **Conclusion:** The Deep Learning approach with Loose Parts media can positively support children's creativity development by providing meaningful, exploratory, and child-centered learning experiences.

Keywords: Deep Learning; Loose Parts; Creativity Development; Early Childhood Education; Ex Post Facto.

INTRODUCTION

Early childhood education is an effort to develop fundamental abilities that are very important for children from birth to the age of six years as the golden age, realized through the provision of educational stimulation that supports physical growth, nutrition, health, and the holistic development of children's potential, including physical-motor, cognitive, creative, socio-emotional, language, religious, and moral aspects, so that children are well prepared to continue their education through formal, non-formal, and informal pathways (Amseke, 2023). As the foundation of lifelong learning, early childhood education plays a crucial role in fostering children's readiness to adapt to future academic, social, and personal challenges. Therefore, providing developmentally appropriate and innovative learning experiences during this period is essential for optimizing children's overall development.

One of the main developmental aspects emphasized in early childhood education is creativity development, which enables children to generate original ideas, solve problems, and express themselves in various learning situations. In the Regulation of the Minister of Education, Culture, Research, and Technology Number 32 of 2022 concerning Standards for Early Childhood Education, developmental achievement standards are established according to children's age levels. Children aged 4–5 years are expected to explore various ideas, create unique products, utilize objects in different ways, demonstrate curiosity, and express imagination through play, movement, or artistic activities. Creative thinking skills developed during early childhood serve as an important foundation for lifelong learning, innovation, and adaptability in an increasingly dynamic society (Munandar, 2022). Consequently, developing children's creativity has become one of the primary goals of contemporary early childhood education, particularly within child-centered learning environments.

The problem of creativity development currently observed among young children is the tendency toward convergent thinking, in which children focus on only one answer or one form of output considered "correct." This tendency can be identified through children's limited ability to generate diverse ideas, imitate teachers or peers, hesitate to explore alternative solutions, demonstrate low curiosity toward surrounding objects, and experience difficulty transforming ordinary materials into new forms according to their imagination (Wulandari & Anwar, 2024). These conditions indicate that many classroom learning activities still provide limited opportunities for children to explore, experiment, and express their own creative ideas independently. As a result, children's creative potential may not develop optimally despite being at a critical stage of development.

Amseke et al. (2024) stated that young children require learning environments rich in stimulation to maximize their imaginative capacity. Therefore, learning experiences should actively engage children's senses, encourage exploration, and provide opportunities for self-expression. Similarly, Fatimah et al. (2025) reported that 42.5% of children in early childhood education

institutions remained in the low to moderate category of creativity development because they tended to rely heavily on teacher guidance and experienced difficulty producing original ideas. Furthermore, Sari and Lestari (2023) explained that limited creativity development reflects weak divergent thinking skills and reduced ability to transform ideas into meaningful products or play experiences. Likewise, Magasida et al. (2024) found that children who are not consistently provided with open-ended and meaningful learning opportunities tend to experience difficulties in developing flexible and innovative thinking skills when entering primary education. Taken together, these findings indicate that creativity development remains a significant challenge in early childhood education and highlight the need for more innovative instructional approaches capable of promoting children's imagination, exploration, and independent thinking.

In early childhood, creativity development is essential because children's ability to generate ideas, imagine, and solve problems plays an important role in preparing them to face broader social and learning environments. Without adequate opportunities to think creatively and explore their surroundings, children may experience difficulties adapting to future environmental changes. Creative thinking also enables children to recognize their own potential, develop their talents, and build confidence through meaningful learning experiences. This is consistent with the view of Jeane (2025), who stated that children with well-developed creative thinking skills are more capable of adapting to new situations, becoming independent learners, and demonstrating higher self-confidence. Therefore, creativity should be continuously stimulated through learning environments that provide opportunities for exploration, experimentation, collaboration, and self-expression.

Daly and Beloglovsky (2022) and Nicholson (2023) explained that Loose Parts media consist of open-ended learning materials that are flexible, multifunctional, and can be manipulated, moved, combined, and reconstructed according to children's imagination. Wulandari (2024) further defined Loose Parts as natural, recycled, or manufactured objects that are safe for children and allow them complete freedom to determine the function and meaning of the materials during play. Daly and Beloglovsky (2023) also emphasized that children who are given opportunities to play using Loose Parts tend to demonstrate higher levels of cognitive and creative development, including flexible thinking, originality, and elaboration. The use of Loose Parts media has gradually been implemented in early childhood education institutions, including PAUD Joel, where teachers have begun shifting from teacher-centered instruction toward active play-based learning in line with the Merdeka Curriculum. Fatmawaty (2024) explained that open-ended media such as Loose Parts can stimulate deeper learning because children not only manipulate objects but also interpret, analyze, and construct meaning from their learning experiences. Although Loose Parts media have been widely recognized as effective learning resources, their successful implementation depends greatly on the instructional approach

adopted by teachers. Consequently, integrating appropriate learning approaches with open-ended learning materials is expected to maximize children's creativity development.

The Deep Learning approach emphasizes meaningful understanding, authentic learning experiences, and the integration of children's prior knowledge with new learning experiences. According to Supriyadi et al. (2025), this approach encourages teachers not only to deliver knowledge but also to facilitate children's active exploration, reflection, and conceptual understanding. Within early childhood education, Deep Learning promotes learning that is mindful, meaningful, and joyful, enabling children to participate actively while developing emotional engagement and cognitive understanding simultaneously. Teachers are therefore expected to create safe, stimulating, and child-centered learning environments that encourage curiosity, independence, and creative expression. When integrated with Loose Parts media, the Deep Learning approach enables children to construct knowledge through direct exploration, collaboration, experimentation, and reflection, thereby strengthening both the learning process and creativity development.

Research conducted by Rochanah et al. (2023), involving 30 early childhood participants, found that meaningful and reflective learning approaches play an important role in supporting children's creativity development. The study also reported that children who learned through the Deep Learning approach supported by open-ended media achieved higher creativity scores and better problem-solving skills than children who experienced conventional teacher-centered instruction. Likewise, Magasida (2025) reported that 85% of children who learned using Loose Parts media reached the Very Well Developed (VWD) category of creativity, demonstrating originality, flexibility, collaboration, curiosity, and persistence during learning activities. Similarly, Sari and Wati (2024) found a significant positive relationship between Deep Learning-based instruction and children's creative thinking abilities.

Although previous studies have consistently reported positive outcomes regarding the implementation of the Deep Learning approach and Loose Parts media, most investigations were conducted using experimental or descriptive approaches and focused on different educational contexts. Empirical studies examining the integration of the Deep Learning approach with Loose Parts media in authentic classroom settings at PAUD Joel, Kupang City, remain limited. This gap highlights the need for further investigation to provide context-specific empirical evidence and strengthen the existing body of knowledge regarding creativity development in early childhood education.

Early childhood creativity development is a continuous process through which children explore, imagine, experiment, and create meaningful products and experiences (Suyadi, as cited in Wulandari, 2023). However, according to Misni (2024), creative learning cannot be separated from the learning media used because appropriate media provide opportunities for children to express ideas, explore various possibilities, and construct new experiences independently. Therefore, creativity development

requires not only appropriate learning media but also instructional approaches that encourage children to actively construct knowledge, solve problems, and express original ideas through meaningful learning experiences.

Based on the results of interviews and classroom observations conducted at PAUD Joel, Kupang City, several challenges were identified in the implementation of creativity-oriented learning. Children frequently imitated the teacher's examples without modification, became bored with repetitive classroom activities, experienced difficulty explaining or presenting their work, and relied heavily on teachers' instructions during learning activities. In addition, teachers still predominantly used printed instructional materials with fixed functions, limiting children's opportunities to explore, experiment, and express creativity independently. These classroom conditions indicate that learning practices have not yet fully facilitated children's creative potential, highlighting the importance of implementing innovative instructional approaches supported by open-ended learning media.

Although previous studies have demonstrated the effectiveness of the Deep Learning approach and Loose Parts media in improving children's creativity, most studies have focused on general classroom implementation or experimental interventions conducted in different educational settings. Limited empirical evidence is available regarding the combined implementation of the Deep Learning approach and Loose Parts media in authentic early childhood classrooms in Kupang City. Consequently, further investigation is needed to provide context-specific empirical evidence that can enrich the existing literature and support the implementation of innovative learning practices in early childhood education.

The novelty of this study lies in examining the integration of the Deep Learning approach with Loose Parts media to enhance the creativity development of children aged 4–5 years within an authentic classroom context at PAUD Joel, Kupang City. Unlike previous studies, this research emphasizes the principles of mindful, meaningful, and joyful learning while utilizing open-ended learning materials to encourage exploration, imagination, collaboration, and creative expression. The findings are expected to contribute both theoretically and practically by providing empirical evidence that can support educators in designing more innovative, child-centered, and meaningful learning experiences in early childhood education.

Based on the background described above, the researchers were interested in examining the application of the Deep Learning approach integrated with Loose Parts media in improving the creativity development of children aged 4–5 years at PAUD Joel, Kupang City. Specifically, this study aims to provide empirical evidence regarding the implementation of this learning approach in an authentic classroom setting and to contribute to the development of innovative teaching practices that foster children's creativity through meaningful, mindful, and joyful learning experiences.

METHODS

The research method employed in this study was a quantitative approach using an ex post facto research design. Ex post facto research aims to examine the relationship between naturally occurring variables without manipulating the independent variable. This design was selected because the researcher investigated the implementation of the Deep Learning approach with Loose Parts media as it naturally occurred in classroom learning activities at PAUD Joel, Kupang City.

There were two variables in this study, namely the independent variable and the dependent variable. The independent variable (X) was the implementation of the Deep Learning approach integrated with Loose Parts media, while the dependent variable (Y) was the creativity development of children aged 4–5 years. The research participants consisted of 20 children aged 4–5 years enrolled at PAUD Joel, Kupang City, who were selected using a total sampling technique, in which all children meeting the research criteria participated in the study. The inclusion criteria included children aged 4–5 years who actively participated in classroom learning activities and completed the learning program during the research period.

The Deep Learning approach is a learning process that emphasizes real experiences, meaningful understanding, active participation, and reflective learning. Loose Parts media consist of natural, recycled, and manufactured materials that are open-ended, flexible, and can be manipulated according to children's ideas and imagination to encourage creativity. Creativity development refers to children's ability to demonstrate fluency, flexibility, originality, and elaboration in generating ideas, solving problems, and expressing imagination through meaningful play activities. These operational definitions were used to ensure consistency in measuring both research variables throughout the study.

The research instrument for measuring the implementation of the Deep Learning approach was developed based on the learning principles proposed by Fatmawaty (2024), including contextual learning, child-centered learning, socio-emotional learning, and reflective learning. The instrument consisted of 18 statement items. The validity test using the Corrected Item–Total Correlation indicated that all items were valid, while the reliability test using Cronbach's Alpha produced a coefficient of 0.712, indicating acceptable internal consistency.

The creativity development observation instrument was developed based on Munandar's (2022) theory, covering four dimensions: fluency, flexibility, originality, and elaboration. The instrument consisted of 20 observation items. The validity test confirmed that all items met the required validity criteria, and the reliability analysis using Cronbach's Alpha yielded a coefficient of 0.689, indicating that the instrument was sufficiently reliable for research purposes.

Data collection was conducted through classroom observations, documentation, and creativity assessments during learning activities using the Deep Learning approach with Loose Parts media. All

observations were carried out using standardized observation sheets to ensure consistency in data recording.

The collected data were analyzed using descriptive statistics and simple linear regression with the assistance of SPSS version 25. Descriptive statistics were employed to describe the implementation of the Deep Learning approach and children's creativity development, whereas simple linear regression was used to examine the relationship between the independent and dependent variables. Statistical significance was determined at the 0.05 level. Prior to hypothesis testing, the data were examined to ensure that the assumptions required for regression analysis had been met.

This methodological approach was expected to provide valid empirical evidence regarding the implementation of the Deep Learning approach with Loose Parts media in supporting the creativity development of children aged 4–5 years at PAUD Joel, Kupang City.

RESULTS AND DISCUSSION

RESULTS

The statistical description of data on the application of Deep Learning with Loose Parts media and early childhood creativity development can be outlined as follows:

Table 1. Category of the Implementation of the Deep Learning Approach with Loose Parts Media

Category	Interval	Frequency	Percentage
High	65–72	5	25%
Medium	56–64	11	55%
Low	48–55	4	20%
Total		20	100%

Based on Table 1, the implementation of the Deep Learning approach integrated with Loose Parts media was predominantly classified in the medium category, involving 11 children (55%). Meanwhile, five children (25%) were categorized in the high category, and four children (20%) were classified in the low category. These findings indicate that the implementation of the Deep Learning approach with Loose Parts media at PAUD Joel, Kupang City, was generally carried out at a good level.

The descriptive results suggest that teachers were able to implement learning activities that encouraged children's active participation through meaningful, contextual, and exploratory experiences. However, variations among participants indicate that the quality of implementation was not entirely uniform across all learning activities.

These findings are consistent with the principles proposed by Fatmawaty (2024), which emphasize that Deep Learning promotes meaningful learning through real experiences, social

interaction, scaffolding, and reflection. Such learning experiences encourage children to actively construct knowledge while developing curiosity, independence, and creative thinking.

Table 2. Category of Children's Creativity Development

Category	Interval	Frequency	Percentage
High	65–72	5	25%
Medium	56–64	11	55%
Low	48–55	4	20%
Total		20	100%

Based on Table 2, children's creativity development was also predominantly classified in the medium category, with 11 children (55%), followed by the high category with five children (25%) and the low category with four children (20%). These findings indicate that most children demonstrated a moderate level of creativity development, while only a smaller proportion reached a high level of creative performance.

The descriptive statistics demonstrate that children generally showed the ability to generate ideas, explore different possibilities, and express creativity during learning activities. Nevertheless, differences in creativity levels among participants suggest that children's creative development may also be influenced by individual characteristics and other environmental factors beyond the implementation of the Deep Learning approach with Loose Parts media.

According to Munandar (2022), creativity development is reflected in children's fluency, flexibility, originality, and elaboration in producing ideas and creative products. Therefore, the descriptive findings indicate that these creativity dimensions had begun to develop among the participants, although further improvement remains necessary.

Table 3. Summary of Simple Linear Regression Analysis (Simultaneous F-Test)

Relationship	F	p-value	Decision	Conclusion
Application of the Deep Learning Approach with Loose Parts Media on Children's Creativity Development	30.716	0.000	$p < 0.05$	Hypothesis Accepted

Table 3 presents the results of the simultaneous F-test obtained from the simple linear regression analysis. The analysis produced an F value of 30.716 with a significance value of 0.000, which is lower than the predetermined significance level of 0.05 ($p < 0.05$). These findings indicate that the regression model is statistically significant, suggesting that the implementation of the Deep Learning approach integrated with Loose Parts media is significantly associated with children's creativity development. Therefore, the proposed research hypothesis is accepted.

The significant F-test demonstrates that the regression model is appropriate for explaining the relationship between the independent and dependent variables. This finding indicates that the implementation of meaningful and child-centered learning supported by Loose Parts media contributes positively to children's creativity development.

Table 4. Coefficient of Determination (R Square)

Model	R	R Square	Adjusted R Square
1	.371	.131	.015

Table 4 shows that the coefficient of determination (R Square) is 0.131. This result indicates that the implementation of the Deep Learning approach with Loose Parts media explains 13.1% of the variance in children's creativity development. The remaining 86.9% is influenced by other variables that were not included in this study, such as children's individual characteristics, family support, classroom environment, teacher competence, learning motivation, and other educational experiences.

Although the contribution of the independent variable is relatively modest, the statistically significant regression results indicate that the Deep Learning approach integrated with Loose Parts media remains an important factor in supporting children's creativity development within the observed classroom context.

Table 5. Summary of Partial Regression Analysis (t-Test)

Relationship	t	p-value	Decision	Conclusion
Application of the Deep Learning Approach with Loose Parts Media on Children's Creativity Development	3.125	0.000	$p < 0.05$	Hypothesis Accepted

The results of the partial t-test presented in Table 5 indicate that the implementation of the Deep Learning approach with Loose Parts media has a positive and statistically significant effect on children's creativity development. The analysis yielded a t-value of 3.125 with a significance value of 0.000, which is lower than the significance level of 0.05 ($p < 0.05$). Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted.

These findings suggest that better implementation of the Deep Learning approach supported by Loose Parts media is associated with higher levels of children's creativity development. Consequently, meaningful, exploratory, and child-centered learning activities contribute positively to improving children's creative abilities.

Table 6. Descriptive Statistics of Children's Creativity Development

Statistic	Fluency	Flexibility	Originality	Elaboration
N (Valid)	20	20	20	20
Missing	0	0	0	0

Mean	3.45	3.28	3.15	3.20
Median	3.50	3.00	3.00	3.00
Mode	4	3	3	3
Std. Deviation	0.60	0.73	0.81	0.75
Range	2	2	3	2
Minimum	2	2	1	2
Maximum	4	4	4	4

Based on Table 6, the fluency aspect obtained the highest mean score ($M = 3.45$; $SD = 0.60$), indicating that children demonstrated a relatively strong ability to generate multiple ideas during learning activities. The elaboration aspect ranked second ($M = 3.20$), followed by flexibility ($M = 3.28$) and originality ($M = 3.15$). The originality aspect showed the highest standard deviation ($SD = 0.81$), suggesting greater variation among children in producing unique and original ideas.

Overall, the descriptive statistics indicate that the implementation of the Deep Learning approach with Loose Parts media supported the development of all dimensions of creativity, although originality remained the aspect requiring further improvement. These findings suggest that children were generally able to participate actively in creative learning activities while still needing continuous opportunities to strengthen their confidence in expressing original ideas.

DISCUSSION

The findings of this study indicate that the implementation of the Deep Learning approach integrated with Loose Parts media has a positive and statistically significant effect on the creativity development of children aged 4–5 years at PAUD Joel, Kupang City. The significant results obtained from the regression analysis demonstrate that meaningful, child-centered, and exploratory learning experiences contribute to the development of children's creative abilities.

The coefficient of determination ($R^2 = 0.131$) indicates that the implementation of the Deep Learning approach with Loose Parts media explains 13.1% of the variance in children's creativity development, while the remaining 86.9% is influenced by other factors not examined in this study. These factors may include family support, teacher competence, classroom environment, children's motivation, learning experiences, and individual developmental characteristics. Therefore, although the contribution of the independent variable is relatively limited, the findings confirm that the Deep Learning approach remains an important component in promoting creativity among young children.

The descriptive analysis further demonstrates that fluency achieved the highest mean score, indicating that children were generally capable of producing multiple ideas during learning activities. Meanwhile, originality obtained the lowest mean score, suggesting that children still require continuous opportunities to develop confidence in expressing unique ideas independently. This

finding reflects the developmental characteristics of children aged 4–5 years, whose creativity continues to evolve through repeated exploration, experimentation, and meaningful play experiences.

The present findings are consistent with the study conducted by Magasida et al. (2025), which reported that the use of Loose Parts media significantly enhanced children's creativity by encouraging imagination, exploration, and problem-solving during play activities. Likewise, Wulandari and Anwar (2024) found that experiential learning was strongly associated with children's creative thinking skills, while Fatmawaty (2024) demonstrated that reflective and meaningful learning positively influenced children's creativity and problem-solving abilities. These studies collectively support the present findings that integrating the Deep Learning approach with Loose Parts media provides meaningful opportunities for children to construct knowledge through active exploration.

The findings are also supported by Daly and Beloglovsky (2023), Rochanah et al. (2023), and Nicholson (2022), who emphasized that open-ended learning materials encourage children to think creatively, collaborate with peers, and develop higher-order thinking skills. Similarly, Supriyadi et al. (2025) concluded that the Deep Learning approach improves learning quality by fostering meaningful engagement, reflection, and active participation. These characteristics are consistent with the principles of mindful, meaningful, and joyful learning promoted within the Deep Learning framework.

The successful implementation of the Deep Learning approach with Loose Parts media was also reflected in the descriptive findings presented in Table 1, where the majority of learning activities were categorized at the medium to high level. These findings indicate that teachers were generally able to implement meaningful, child-centered, and exploratory learning experiences that encouraged children to participate actively during classroom activities. The interview results further supported these findings, revealing that children demonstrated greater curiosity, confidence, and willingness to explore various materials and express their own ideas throughout the learning process.

Teachers reported that providing children with opportunities to manipulate natural, recycled, and manufactured materials without predetermined outcomes encouraged active participation and increased children's motivation to learn. Furthermore, children became more confident in sharing their ideas, collaborating with peers, and completing creative tasks independently. These findings support the principle that creativity develops more effectively when children learn in environments that value exploration, experimentation, and self-expression.

The descriptive findings presented in Table 6 indicate that fluency achieved the highest average score among the four creativity dimensions. This suggests that children were generally able to produce multiple ideas during learning activities. Meanwhile, flexibility, originality, and elaboration also demonstrated satisfactory levels of development, although originality remained comparatively lower than the other dimensions. This finding indicates that producing unique and original ideas requires continuous stimulation and repeated opportunities for creative exploration.

The flexibility dimension demonstrates children's ability to use a single object for different purposes and to consider multiple possibilities when solving simple problems. During classroom observations, children frequently transformed Loose Parts materials into various objects according to their imagination. Such experiences encourage divergent thinking and help children develop adaptive problem-solving skills. These findings are consistent with Fatmawaty (2024), who emphasized that flexible thinking is a core component of creativity developed through meaningful and exploratory learning experiences.

Originality represents children's ability to generate ideas that differ from those of their peers. The observation results showed that many children gradually became more confident in creating unique products without relying solely on teacher demonstrations. This improvement indicates that the Deep Learning approach created a supportive classroom environment where children felt safe expressing their own ideas. Daly and Beloglovsky (2023) similarly argued that originality develops when children are provided with freedom to explore without fear of making mistakes or being judged negatively.

The elaboration dimension reflects children's ability to develop simple ideas into more detailed and meaningful products. During learning activities, children gradually added more details to their constructions, drawings, and role-play scenarios after receiving opportunities to reflect and discuss their work with teachers and peers. These findings support Munandar's (2022) view that elaboration demonstrates children's ability to expand and refine creative ideas through continuous learning experiences.

Overall, the findings of this study support constructivist learning theory, particularly Vygotsky's perspective that children's cognitive and creative development is strongly influenced by meaningful social interaction, teacher guidance, and learning experiences within supportive environments. The Deep Learning approach integrated with Loose Parts media provides opportunities for children to actively construct knowledge through exploration, collaboration, reflection, and problem-solving activities. Consequently, creativity development becomes an integral part of children's authentic learning experiences rather than merely an instructional outcome.

From a practical perspective, these findings suggest that early childhood teachers should consistently implement the principles of mindful, meaningful, and joyful learning while utilizing open-ended learning materials such as Loose Parts. Such learning environments encourage children to explore, imagine, communicate, collaborate, and express original ideas more confidently. Therefore, the integration of the Deep Learning approach with Loose Parts media can serve as an effective strategy for fostering children's creativity in early childhood education settings.

CONCLUSION

Main Findings: This study found that the implementation of the Deep Learning approach integrated with Loose Parts media provided meaningful, child-centered, and exploratory learning experiences

that supported the creativity development of children aged 4–5 years at PAUD Joel, Kupang City. The regression analysis showed a positive and statistically significant effect of the Deep Learning approach with Loose Parts media on children's creativity development ($p < 0.05$). The coefficient of determination ($R^2 = 0.131$) indicated that the independent variable explained 13.1% of the variance in children's creativity development, while the remaining 86.9% was influenced by other factors beyond the scope of this study. **Research Contribution:** This study contributes empirical evidence regarding the implementation of the Deep Learning approach with Loose Parts media in an authentic early childhood classroom through an ex post facto research design. The findings demonstrate that meaningful and exploratory learning experiences can positively support children's creativity development. **Theoretical and Practical Implications:** The findings support constructivist learning theory by emphasizing the importance of meaningful experiences, active exploration, social interaction, and reflection in fostering children's creativity. Practically, early childhood teachers are encouraged to integrate the Deep Learning approach with Loose Parts media to create mindful, meaningful, and joyful learning environments that stimulate imagination, creative thinking, and active participation. **Research Limitations:** This study involved only 20 children from one early childhood education institution and examined a single independent variable, limiting the generalizability of the findings. **Future Research Directions:** Future studies should involve larger and more diverse samples and examine additional variables, such as parental involvement, teacher competence, classroom environment, and learning motivation, to provide a more comprehensive understanding of factors influencing early childhood creativity development.

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