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The Use of Loose-Part to Improve Early Childhood Self-Sufficiency

Ika Budi Maryatun[1]*, Martha Christianti[1], Eka Sapti Cahya Ningrum[1], Nur Cholimah[1], Luluk Nur Aisyah[1], Aliyah Latifah Hanum[1]
[1]*Universitas Negeri Yogyakarta, Indonesia*

*Correspondence to: ika_budimaryatun@uny.ac.id

Abstract: This research aims to increase independence by using loose parts. The research subjects were children aged 4-5 years, totaling 16 children. The research procedure includes planning, implementation of action, observation, and reflection of each cycle-given action in five meetings. This improvement data was collected using observation techniques and analyzed descriptively, quantitatively and qualitatively. The results show that loose play can increase the independence of children aged 4-5 years. These results are indicated by an increase in the percentage of independence in action from pre-cycle to cycle 1 by 20.84%, then from cycle 1 to cycle 2 increased by 30.73%, and the average percentage of children's independence in cycle 2 was 84.38%. The results of this study can be used as a reference by kindergarten teachers in improving classroom learning related to children's self-sufficiency.

Keywords: children's self-sufficiency, kindergarten, learning media, loose part

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INTRODUCTION

The most critical period in a human's life is early childhood. This period is often referred to as the golden age, where, at an early age in the range of 0 to 6 years, children experience very rapid development (Montessori, 1937; Yamin & Sanan, 2013). Bronowski revealed that it takes a very long time for humans to live in self-sufficiency since they are compared to other living things (Maryatun, 2016). The demands of education in the current era of globalization, especially in schools, create children who can think critically to carry out their activities independently (Septiani & Kasih, 2021) in current global challenges (Rasimin et al., 2022). A critical person has an interest and curiosity to think openly, seek the truth and be tolerant of new ideas, analyze problems well, have a systematic way of thinking, mature, and think independently (Rusmansyah et al., 2023). From an early age, aspects of self-sufficiency are needed in children.

Self-sufficiency in children is an interest in doing things according to their wishes without asking for help from others (Daradjat, 2000). This attitude of self-sufficiency grows along with the emergence of various forms of fear with different intensities that are natural and function as a protective emotion for children that can be stimulated by teachers in the classroom. Teachers who have a role as facilitators in learning need to provide learning media to stimulate children's self-sufficiency (Laksono et al., 2023). In addition, teachers can stimulate self-sufficiency at school through training, giving freedom, and trusting children to be able to do and complete their own activities.

Children aged 4-5 years do not yet have a fully independent character. This is reflected in the attitude of children who still depend on other people such as parents, teachers, and friends around them. However, the stimulation of independent character building in children can be done early on through various efforts. Efforts to stimulate self-sufficiency can be made, such as habituation for children to do things independently without the help of others, giving light tasks such as making their beds, appreciating every effort made by children, and so on (Firdausi et al., 2022). Life skills training, for example, in Montessori learning, can teach children the value of self-sufficiency (Firdausi et al., 2022; Maryatun et al., 2023). Self-sufficiency itself is accompanied by several elements, including (Pedagogy & Surabaya, 2016): 1) Ability to make choices, 2) Dare to decide on their own choices, 3) Responsible for accepting the consequences that accompany their choices, 4) Self-confidence, 5) Self-direction, 6) Self-development, 7) Adjust to their environment, 8) Dare to take risks for their choices.

Low self-sufficiency in early childhood impacts children's participation in higher education, so it becomes an obstacle for them. Cultivating self-sufficiency in children from an early age is essential because training children to be independent impacts children's ability not to be easily dependent on others so that children can grow up with a strong soul and superior personality. In addition, when children grow up, they have ease in making decisions, are responsible, do not easily depend on others, and can adjust to their environment with the cultivation of self-sufficiency from an early age. A child who is not yet independent when his wishes are not fulfilled usually shows reactions such as whining, crying, or taking aggressive actions (Asmanita, 2019).

There are two causes of children not being independent: parents with excessive concern for children and impatient parents; for example, parents rush to help so that it is finished quickly rather than waiting for children to wear their shoes. Both of these lead to no opportunity for children to try new things. Habituation of self-sufficiency in children from an early age will tend to have a more positive impact in the future. Children who are independent in completing their tasks no longer depend on others, so they can be more confident and achieve. Children will grow into people who can think seriously and try to complete something that is their target. This also affects the family and social environment because independent children will quickly adjust and be accepted by their peers (Zimmer-Gembeck & Collins, 2003).

The causes of children not being independent, which mostly come from parents, need to be minimized, one of which is by teachers through nurturing, teaching, assessing, and evaluating by facilitating the practice of self-sufficiency in their classrooms (Hutabarat & Phongsavath, 2023). Learning in kindergarten is carried out by adhering to the principle of play, which is at the heart of activities for children. It provides freedom and voluntariness to express, work, and communicate with others (Maryatun, 2016). Creative learning is conceptually known to make learners actively generate their own independence. Play can be used to learn and optimize aspects of child development so that it is not just a filler of children's free time (Muthmainnah et al., 2016). In addition, play activities can influence children's learning in decision-making, determination, creation, experimentation, opinion and problem-solving, working on something thoroughly, cooperating with friends and feeling various kinds of feelings (Safitri & Lestariningrum, 2021).

The learning process is packaged as playing and exploring independently using a learning model with science, technology, engineering, art, and mathematics (STEAM) content using loose parts materials. Loose parts as materials that can be manipulated, moved, changed, and controlled according to children's imagination (Daly & Beloglovsky, 2015; Caterpillar, 2009; Casey & Robertson, 2019) are stated to be play materials that are rich in learning materials, including independence in managing them. This has also been researched by Spencer et al. (Mastuinda et al., 2020), which states that learning to use loose parts can help children interact with their environment, develop skills, and increase self-confidence and self-sufficiency. Loose parts are items that are easily found in the surrounding environment, such as stones, sand, gravel, cloth, twigs, wood, pallets, balls, buckets, baskets, crates, boxes, logs, stones, flowers, ropes, tyres, balls, shells and seed pods (Nurjanah, 2020).

Learning using loose parts is a means of learning children's self-sufficiency creatively and imaginatively because there is no right or wrong in its use. The devices can also be disassembled and reassembled according to children's needs (Syafi'i & Dianah, 2021). This means that loose parts can be played freely to produce products according to imagination and creativity, which is predictable by educators regarding children's work (Kiewra & Veselack, 2016; Casey & Robertson, 2019). The quality of learning can be improved using this loose part material so that learning also becomes effective because of the opportunity for children to be actively creative (Gibson et al., 2017; Priyanti & Warmansyah, 2021). The results of the beginning observations show that in one class, 16 children, consisting of eight girls and eight boys, are cared for by two teachers. The problem found by researchers at one kindergarten, especially in children aged 4-5 years, is that independent character has not been formed. This can be seen when the teacher always helps and participates in children's activities. The child will be silent and not want to do the activity when the teacher does not help him; even the child cries because he cannot do it himself. 7 out of 16 children depend on the teacher to get the stationery in their bag. There are 8 out of 16 children who always ask for help from the teacher to complete their assignments because they are bored, and 5 children who want to avoid putting their bags in the lockers provided in the classroom.

The results of these observations are supported by the results of an interview with one of the teachers of group A, that there are still children who depend on the teacher to complete the task and do not do the task if not waited for by the teacher, and still ask the teacher to get stationery in the bag. In addition, information was also obtained that teachers are comfortable using worksheets when learning. Another thing is that teachers still use monotonous activities such as coloring and free drawing dominantly. The teacher also explained that several loose parts are already available in the classroom but have not been maximally utilized and are rarely used during learning and play activities. Furthermore, based on the background described, researchers need to improve learning by utilizing loose parts material to increase self-sufficiency in children aged 4-5. This research aims to increase children's self-sufficiency in the classroom and measure how much the increase in self-sufficiency is if learning is carried out using loose parts. Therefore, this article is organized based on the questions of (1) How to increase self-sufficiency using loose part materials in 4-5-year-old children? and (2) How much is the increase in self-sufficiency in learning using loose parts in 4-5-year-old children?

METHODS

This study aims to increase self-sufficiency in children aged 4-5 years using loose parts play activities. Therefore, a type of classroom action research with the design of the Kemmis and Mc. Taggart (1988) model was used. Action research is carried out in four stages: Planning, Action, Observation, and Reflection. Planning

was carried out by compiling instruments containing indicators of (1) daring to express their opinions, (2) being able to carry out instructions and understand the rules, and (3) being able to take responsibility. Researchers also develop lesson plans for implementing actions using loose part materials in the implementation stage. The action stage is carried out by implementing lesson planning in children's activities using loose-part materials. This stage also records children's ability scores according to the instruments made. The reflection stage is carried out to conclude the process and results of the action. The results of the reflection are used to decide whether or not to continue this research action. The research subjects in this study were early childhood children in the age range of 4-5 years at one kindergarten in D.I. Yogyakarta, totaling 16 children, consisting of 8 boys and 8 girls. They are in class or group A Kindergarten with developmental characteristics below elementary school-age children. This research data was collected using observation techniques by giving the appropriate score on the observed indicators referring to the observation sheet instrument in the following table.

Table 1. Observation instrument for increasing self-sufficiency

Variable	Indicator	Score			
		1	2	3	4
self-sufficiency	Children dare to express their wishes				
	Children can understand the rules and instructions for carrying out the tasks.				
	Children can take responsibility.				

The data was then analyzed quantitatively and qualitatively to analyze the data in the form of numbers obtained from the observation sheet. Analysis of the observation sheet of children's self-sufficiency is done by (1) counting the number of children who perform activities according to the observed indicators and (2) finding the percentage of children's self-sufficiency scores for each indicator observed in each cycle by calculating the number of scores obtained divided by the ideal score multiplied by one hundred. The results of calculating the achievement of self-sufficiency are then converted into achievement categories using the following categories (Arikunto, 2010).

Table 2. Achievement categories of increased self-sufficiency

Percentage of Score	Categories
76 % - 100 %	Very Good
51 % - 75 %	Good
26 % - 50 %	Good Enough
1 % - 25 %	Poor

The categorization of this increase in self-sufficiency is used to determine the indicator of the success of the action, which is set at 75% or in the category of at least GOOD. The action is stopped if this increase has reached or exceeded the category. On the other hand, qualitative analysis was also carried out to describe the results of observations of researchers and collaboration with classroom teachers on indicators of self-sufficiency, which aims to determine the extent to which the self-sufficiency of 4-5-year-old children is improved in learning using loose parts.

RESULT AND DISCUSSION

This research answers two predetermined problem formulations. The formulation of how to increase self-sufficiency using loose part materials in children aged 4-5 years and how much the increase in children's self-sufficiency in learning using loose parts obtained the results described below. The research began with preliminary observations and interviews to obtain an overview of the initial conditions of the group to be given action. The results of this preliminary study obtained data that the group academic year had problems with self-sufficiency. These results are further analyzed in order to obtain the right decision in choosing media, methods, or learning strategies that can be used to carry out corrective actions, so it was decided to use loose part media because it is free to use according to children's imagination and creativity (Askar & Durmusoglu, 2023). The use of capable loose parts that can be used for cognitive stimulation (Cankaya et al., 2023) was also chosen because this decision refers to the researcher's understanding obtained from the literature review (Daly & Beloglovsky, 2015; Gibson et al., 2017; Priyanti & Warmansyah, 2021; Casey & Robertson, 2019) (Daly & Beloglovsky, 2015; Gibson et al., 2017; Priyanti & Warmansyah, 2021; Casey & Robertson, 2019). In the initial study before the action was measured, the self-sufficiency of children obtained the results that 16 children's self-sufficiency mainly was in the Good Enough category as many as 8 children (50.00%), the Less Good category was 7 children (43.75%), the Good category was 1 child (6.25%), and the Very Good category did not exist. The

results of the categorization test of children's self-sufficiency can be made into a graph as follows.

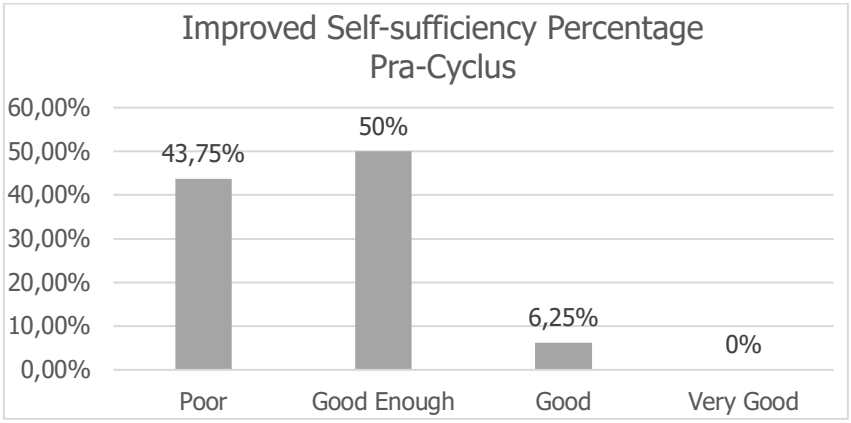

Figure 1. Pra-Cyclus Categorisation Chart

This condition motivates researchers to continue this classroom action research to improve it, starting with implementing the cycle 1 action. Action is given using learning that utilizes loose parts for five meetings. At the end of cycle 1, the achievement of children's self-sufficiency was measured. The results of measuring the improvement in cycle 1 showed that learning using loose parts can increase children's self-sufficiency compared to the results obtained before the action (pra-cycles). This is indicated by the results, which state that the average student has increased from 3.94 to 6.44, with a percentage increase of 20.84% from pre-cycle 32.81% to 53.65% in cycle 1. Detailed data on the achievement of this increase show that 9 out of 16 students have self-sufficiency in the Good category (56.25%) and an increase in the Good Enough category of 7 out of 16 students (43.75%), so it can be said that most children already have self-sufficiency in the Good category. Meanwhile, the Poor and Very Good categories do not exist, as shown in the following graph.

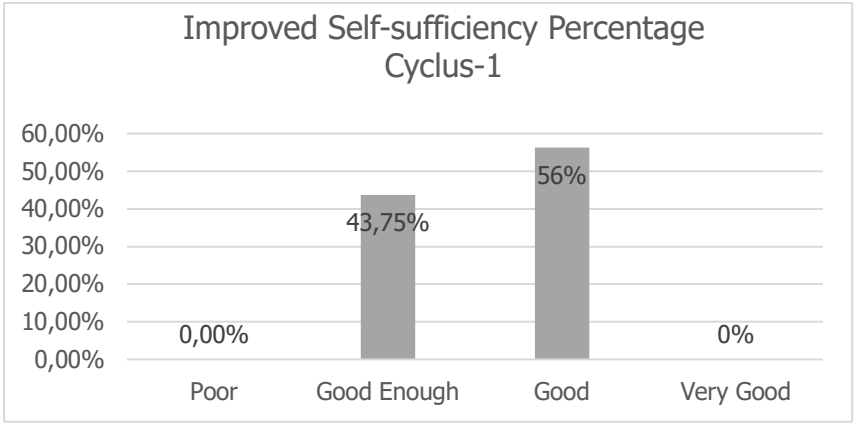

Figure 2. After Cyclus 1 Categorisation Chart

The results of this achievement still have not reached the indicator of the success of the action in this class action research. Researchers and collaborators then reflected on the implementation of the action to find the success factors of the action and the causes of failure and plan further improvements, as shown in the following table.

Table 3. Reflection Findings

The success factors of the action	The causes of failure	Plan further improvements
Loose-part materials that have many variations	Loose parts used are grouped into specific types	Using loose parts with various types of materials in one day of learning activities
Spacious classroom for organizing loose parts	Children are not yet familiar with the use of loose parts in learning	Using loose parts every day in learning so that children are more familiar with it
The freedom of play opportunities provided by the teacher		Continue to provide opportunities for children to learn according to their ideas and interests.

Based on the reflection results, cycle 2 actions are designed so that improvements can achieve the predetermined indicators. Changes in action were made to utilize various types of loose part materials and arranged in one day of learning, no longer using only one type of loose part material. Loose parts are also introduced in various children's activities so they are more familiar with these loose-part materials and can use them independently. Freedom to use loose parts is also still given so children can develop ideas and interests independently. The action in cycle 2 then obtained the results of increasing children's self-sufficiency in group A to mostly the Very Good category with a percentage of 13 children (81.25%) with details of 13 out of 16 children have reached the Very Good category, meaning that 13 children have met the success indicator where this research is said to be successful if it exceeds 75% (12 children out of 16 students) with an average score of 10.13 and a percentage of 84.38% as shown in the following graph:

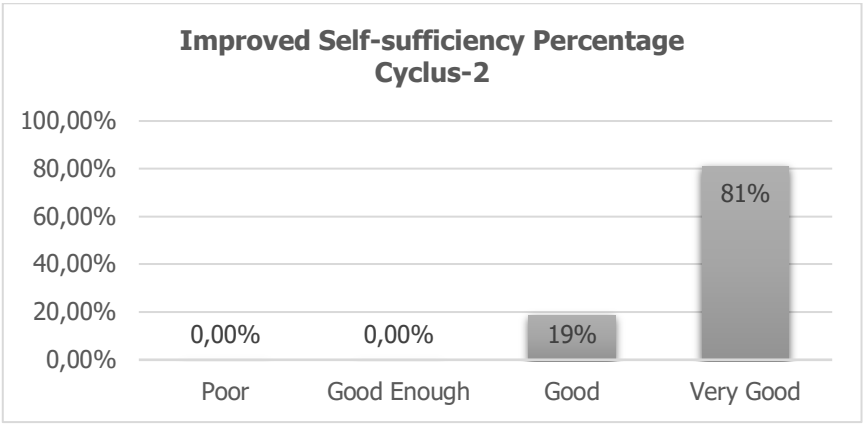

Figure 3. After Cyclus 2 Categorisation Chart

The success of cycle 2 actions that have exceeded the success indicators is a consideration for researchers to stop the action in cycle 2. This success, according to the results of the reflection of researchers and collaborators, was achieved due to (1) changes in the provision of various types of loose materials so that children can independently choose, utilize, and create them in various activities; (2) introducing loose part materials in various activities so that children are more familiar with them and are not confused in utilizing them in learning; and (3) the flexibility given by the teacher in utilizing loose part materials in activities according to children's interests and ideas. The changes in the increase in children's self-sufficiency from before being given action to cycles 1 and 2 can be seen in the following graph:

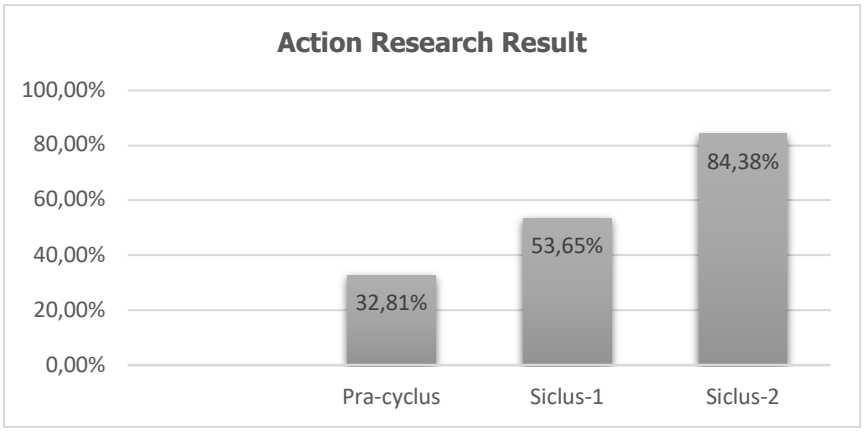

Figure 4. Graph of Pre-Cycle, Cycle 1 and Cycle 2 Results

From Figure, it can be seen that after two cycles of action, there was an increase in children's self-sufficiency through playing loose parts from pre-cycle to cycle 1 by 20.84%, namely from 32.81% to 53.65%. From cycle 1 to cycle 2, an increase in children's self-sufficiency of 30.73%, namely from 53.65% to 84.38%, or it can be said that children's self-sufficiency has exceeded the expected average of 75%. The results of this study show that the actions provided can increase children's self-sufficiency, that is, the ability to make choices and accept the consequences that accompany them (Mustafa, 2010). Loose parts can increase the self-sufficiency shown by children when they think about solving problems, choosing their learning equipment, choosing friends, and arriving at something that is more complex and has more severe consequences. The

characteristics of this self-sufficiency are as described by Susanto, namely 1) having confidence in oneself, 2) having high intrinsic motivation, 3) having the ability and courage to make their own choices, 4) having a creative and innovative attitude, 5) being responsible, 6) being able to adjust to the environment, and 7) not depending on others (Susanto, 2011). These results show that self-sufficiency is one part of the skills that need to be mastered in the 21st century (Sukardjo et al., 2023).

This research also proves that the formation of self-sufficiency can be done through a directed and continuous education and training process. One of the efforts to develop children's self-sufficiency can be done by providing opportunities for children to be involved in various daily activities (Rahardjo, 2019). The intensity of the opportunities given to children will affect the development of their skills, so providing more opportunities for children to do something will make them more independent. Providing opportunities from parents and teachers can also be done by providing opportunities for children to do everything themselves as a means of building competence in children (Askar & Durmusoglu, 2023; Marbiyatun & Widyasari, 2023; Utami et al., 2023). Therefore, in helping children, parents and teachers must be able to restrain themselves and understand when to help children (Sa'ida, 2016).

In this study, efforts can be made to increase children's self-sufficiency through loose-part play activities. Early childhood usually starts playing using game tools such as constructive games (making a shape or building). The age level of a child influences the stages of children's play. Using loose parts can channel children's excess energy during play activities. Loose parts are play materials in the surrounding environment (Priyanti & Warmansyah, 2021; Siantajani, 2020). It can also be used by children according to their ideas and ways of learning, created in various ways, and can stimulate various child development because loose parts can be disassembled and easily used anywhere (Daly & Beloglovsky, 2015; Sardi & Mayar, 2023; Casey & Robertson, 2019; Utami et al., 2023). Organizing and explaining how to use them in implementing play activities with loose parts objects is essential. Loose parts can stimulate children's development, especially creativity and problem-solving (Sardi & Mayar, 2023; Utami et al., 2023). Arranging the selected objects in the classroom and inviting children to use them is an invitation. Something that gives an idea to make children do something is called an invitation. Invitations are sentences shaped to invite children to participate in an exploration or experience based on curiosity. The invitation created or provided will attract the child's attention and interest and invite the child to participate in the play. Play activities using loose parts are carried out in five stages according to existing theories (Daly & Beloglovsky, 2015; Rahardjo, 2019; Casey & Robertson, 2019). First, prepare lesson plans and research instruments. Second, make the invitation sentence and arrangement of loose parts as enjoyable as possible to arouse children's curiosity to play it. Third, the initial activity where the teacher prepares the child's sitting position, asks the child's readiness, prays, and opens the child's insight into the topic with open questions that can stimulate the child's curiosity. Fourth, play activities provide opportunities for children to choose the invitation to be played, giving children the freedom to do activities according to the invitation, mentoring, and documenting children's activities. Fifth, children tidy up the tools and materials that have been used. Previous researchers also used and elaborated on these steps (Askar & Durmusoglu, 2023; Marbiyatun & Widyasari, 2023).

Interesting findings are obtained from research conducted this year in group A, in the form of increased self-sufficiency of children aged 4-5 years by playing loose parts. This is caused by playing loose parts activities that are not monotonous and motivating children to make their own choice of learning media. As stated by Syamsudin et al. (2020), Daly & Beloglovsky (2015), Rahardjo (2019), and Casey & Robertson (2016), the use of loose part materials allows children to learn according to their imagination and creativity (Cankaya et al., 2023; Sardi & Mayar, 2023; Sukardjo et al., 2023; Utami et al., 2023). More varied learning will allow children to play according to their ideas and not depend on the teacher. In addition, the implementation of loose parts play activities with consecutive/consistent intensity also affects the achievement of the objectives of this study, namely increasing the independence of children aged 4-5 years in group A. Therefore, the loose parts of play activities that have been implemented can generate children's self-sufficiency.

CONCLUSION

The results of this study conclude that loose-part play activities can be used to increase the independence of children aged 4-5 years. This is evidenced by an increase in the percentage of children's independence from pre-cycle to cycle 1 by 20.84%, namely from the original 32.81% to 53.65%. From cycle 1 to cycle 2, children's independence increased by 30.73%, from 53.65% to 84.38%. As an implication of this research, schools and teachers can utilize loose parts in the surrounding environment to provide play activities that provide flexibility to children creatively. Further research can be done by examining the effectiveness of loose parts for stimulation of perceptual aspects and discussing issues that can provide other insights to all institutions related to the importance of using loose parts play activities and efforts to increase independence in early childhood.

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