

# DEVELOPING CHILDREN'S CREATIVITY THROUGH MANUFACTURING ECOBRICS FROM INORGANIC WASTE

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**ABSTRAK:** *Kreatifitas perlu distimulasi dari usia dini, sehingga dapat mengembangkan potensi yang dimiliki oleh anak dengan optimal. Ada beragam cara untuk menstimulasi kreatifitas anak, salah satunya adalah melalui pembuatan ekobrik. Kegiatan ini akan mengajarkan anak memanfaatkan sampah menjadi sesuatu yang bermanfaat dan menjadi hal baru sesuai dengan imajinasi masing-masing anak. Penelitian mengenai hal di depan tersebut menggunakan penelitian tindakan kelas yang dilaksanakan dengan empat tahapan, yakni perencanaan, pelaksanaan, pengamatan, dan refleksi. Hasil yang diperoleh dari pelaksanaan ini adalah terjadi peningkatan terhadap kreatifitas anak dari pra siklus 40 %, menjadi 65 % pada siklus I dan terus meningkat pada siklus II menjadi 85 %.*

**Kata Kunci:** Anak-anak; Kreativitas; Ecobrics

**ABSTRACT:** *Children's creativity must be encouraged from a young age in order for them to reach their full potential. There are several techniques to encourage children's creativity; one of them is to create eco-bricks. This exercise will educate youngsters how to recycle trash and create new objects based on their imaginations. The preceding research makes use of classroom action research, which is conducted in four stages: preparation, implementation, observation, and reflection. This implementation resulted in an increase in children's creativity from 40% pre-cycle to 65% in cycle one, which increased to 85% in cycle two.*

**Keywords:** Children's; Creativity; Ecobrics

## INTRODUCTION

The preschool period is the most influential or important age in the development of a person's character and personality. The potential to maximize developmental activities in early life has a significant impact on a child's growth. Every human being, without exception, is born with creative potential; however, the sort of potential varies.

Creativity is derived from the word creative. The Big Indonesian Dictionary defines creativity as possessing creative force, i.e., the ability to create. In ordinary life, the term "creativity" is always connected with exceptional successes in the creation of something new, the discovery of solutions to issues that most people cannot solve, the generation of new ideas, and the recognition of diverse possibilities (Ardiyani, 2012).

Creativity is a mental process that humans engage in to generate new ideas or goods, or a mix of the two, that will eventually remain with them. Creativity may also be defined as the ability to think, which is distinguished by succession, differentiation, and integration at each level of growth (Rachmawati, 2010). Creativity is the capacity to create new combinations using existing facts, knowledge, or materials. Creativity may also be defined as the act of creative thinking or divergent thinking, which is a skill based on accessible data or knowledge. Someone who has numerous solutions to an issue, with an emphasis on quantity, efficacy, and diversity, is said to be creative (Andriyanto, 2013).

Children's creativity, potential, and abilities are defined by a love of imitation, as imitation is one of the mechanisms that shapes

their behavior. Thus, in order for this potential to develop as expected during the learning process, a teacher must be able to apply methods and strategies relevant to the child's developmental phases. Children can grow in accordance with their qualities through creative thinking. Allah Subhanahu wa Ta'ala states in QS An-Nahl verse 78 as follows:

وَاللَّهُ أَخْرَجَكُمْ مِنْ بُطُونِ أُمَّهَاتِكُمْ لَا تَعْلَمُونَ شَيْئًا  
وَجَعَلَ لَكُمُ السَّمْعَ وَالْأَبْصَارَ وَالْأَفْئِدَةَ لَعَلَّكُمْ تَشْكُرُونَ

Meaning: "And Allah brought you out of your mother's womb in a state of not knowing anything, and He gave you hearing, sight, and conscience, so that you may be grateful" (An Nahl; 78).

According to the understanding of the passage above, Allah provides us with hearing, sight, a heart, and a mind with the intention of being appreciative. It is up to us to use all God has handed to us in accordance with its purpose without violating any of His commands. Because the infant is still in the womb, he knows nothing until someone informs him. Similarly, with thinking ability. Every kid has the ability to think creatively; thus, this ability must be fostered and used appropriately as a sign of thankfulness for what God has given His followers. As a result, cultivating creativity is critical since it can boost academic performance. As a result, the greater a person's inventiveness, the higher their academic achievement. Creativity is essential for development since it plays such a significant part in a person's life. As a result, creativity must be nurtured from a young age.

Someone can discover or develop new things through creativity and innovation, such as turning inorganic waste into usable objects. Nowadays, we see a number of things that employ inorganic trash to create new, sellable commodities. Aside from that, instructors might use inorganic waste as a teaching tool in schools. The learning process will be more successful if these resources are used, as they are inexpensive and accessible to both instructors and parents.

Currently, we can see every day that humans produce inorganic waste in various forms, including plastic waste, plastic bottles, food containers, and so on. Unused inorganic waste pollutes the environment around us,

destroying the soil ecosystem because waste cannot be broken down by the soil. We often ignore the use of inorganic waste. With creativity and innovation, everyone can turn inorganic waste into useful items (Anistya, 2019).

Even after being burnt, inorganic trash degrades into smaller forms known as microplastics. This substance is hazardous if mixed with soil and water because it becomes poisonous when mixed with water and enters the human body. Aside from that, the buildup of inorganic waste disrupts soil systems. Inorganic waste accumulates in the environment due to the difficulty of digesting it.

One option for dealing with inorganic trash is to use ecobricks or inorganic waste bottles. Ecobrick is derived from the words eco and brick, and it refers to an ecologically friendly brick that may be used in construction instead of traditional bricks. Ecobricks are a creative endeavor that turns inorganic waste into usable products while minimizing pollution and toxicity (Jupri, 2019).

Ecobricks are an innovative solution for dealing with inorganic trash. Its purpose is not to eradicate inorganic garbage but to extend the life of these polymers and convert them into something valuable for the benefit of mankind in general. Ecobricks are a collaboration-based technology that offers free solid waste solutions to individuals, homes, schools, and communities (Jupri, 2019). Students will feel more enthused if they are directly involved in the creation of ecobricks as a learning medium. Aside from that, this exercise may help youngsters improve their gross and fine motor abilities, increase their imagination and creativity, boost their thinking capacity, and train their focus.

According to the findings of the observations, there are 20 group B pupils at the Kasih Bunda Muaro Jambi Kindergarten. The number of pupils indicates that the majority of children have little inventiveness. According to the findings of interviews with group B class instructors at Kasih Bunda Kindergarten, children's inventiveness, particularly in constructing ecobricks from inorganic waste, remains low.

It is known from the results of observations at Kasih Bunda Kindergarten that

in developing creativity, they have not used appropriate teaching strategies. So far, the school has not implemented the method of making ecobricks from inorganic waste to develop children's creativity. The school only conducts classroom activities such as coloring, folding, and writing, as well as free play such as swings and slides; therefore, children's creativity has not grown as intended. Appropriate learning approaches are required to promote children's creativity in light of some of these issues. The approach employed is to make ecobricks from inorganic trash.

According to Anistya Rahcmandani, humans create inorganic trash in a variety of ways on a daily basis, including plastic garbage, plastic bottles, food containers, and other items. Unused inorganic waste pollutes the environment and destroys the soil ecology since it cannot be broken down by the soil. We frequently disregard the use of inorganic waste. Everyone has the ability to transform inorganic waste into usable goods through creativity and invention. (Anistya, 2019)

Playing while creating is one type of activity that may give youngsters enjoyment and happiness. The importance of play in children's lives is so high that using play activities in establishing activity programs for kindergarten children is an imperative need that cannot be ignored since for kindergarten children, learning is playing, and playing is learning (Hidayani, 2013). Researchers took the initiative to investigate how learning can be depicted using ecobrick making from inorganic waste in order to develop children's creativity, as stated in the research title, Efforts to Increase Children's Creativity through Making Ecobricks from Inorganic Waste for Children Aged 5–6 Years at Kasih Bunda Tanjung Lanjut Sekernan Muaro Jambi.

## METHOD

The Classroom Action Research method is used in this study. Classroom Action Research (CAR) is a technique of researching learning challenges in the classroom through self-reflection in order to fix these problems by carrying out various planned actions in real-life circumstances and assessing each treatment's impact (Sanjaya, 2009).

Classroom action research involves a strong emphasis on processes and products

during direct action; researchers must document all of the effects of all actions carried out. Aside from that, CAR is a study that uses cycles and continuous action research, which requires at least two rounds or cycles (Arikunto, 2017). According to John Elliot's research model idea, classroom action research takes the shape of cycles with four components: planning, acting, observing, and reflecting (Sanjaya, 2009).

The research participants were 20 children aged 5–6 years old from Kasih Bunda Tanjung Lanjut Kindergarten, comprising 12 males and 8 girls. During the planning phase, researchers created a daily learning implementation plan and produced media and research equipment in the form of observation sheets. Then, in the implementation stage, learning is carried out as normal in accordance with the learning design that has been developed. The next step is to see if making ecobricks improves children's inventiveness. The final stage is reflection, which involves evaluating the actions implemented and the results produced. If the classical completion results do not meet the objective, they will be continued in the following cycle.

## RESULTS AND DISCUSSION

The process of increasing children's creativity through making ecobricks from inorganic waste in cycles I and II starts with the teacher providing an explanation of the activities that will be carried out as well as the rules that must be obeyed during the activity, such as that children should take turns and respect their friends during the activity.

When carrying out the activity to create ecobricks from inorganic waste, the instructor first supplies adequate materials. Next, the instructor allows each kid to directly participate in the action of manufacturing ecobricks from inorganic waste while being watched by the teacher. When giving information about inorganic waste, the instructor also shared an Islamic belief about cleanliness and urged the students to be grateful to Allah, the creator of the universe.

According to Antino, ecobricks are one of the recycling methods for reducing plastic waste. Ecobricks are constructed from recycled plastic bottles packed with plastic wrapping, plastic bags, and other plastic

materials. Ecobricks may also be used to create artistic works. This work of art presents a recycling concept as well as a novel approach to producing ecologically friendly bricks and ecobricks (Samad, 2021). In the ecobrick-making stage, the youngsters are divided into four groups of five. Two groups carried white kerosetis, while the other two carried black kerekets. Cycles I and II employ three themes: nature, my surroundings, and inorganic trash.

The first cycle's activities focus on the environment and the introduction of inorganic trash, with students mentioning several sorts of inorganic garbage that they are familiar with. Several youngsters are already familiar with various forms of inorganic trash. Examples include plastic bottles, kerosene, cans, and aqua glass. b) The instructor displays some of the inorganic garbage he brought, and the students state the name of the waste. Some of the inorganic trash brought by the instructor includes: a) plastic bottles and plastic bags; b) the teacher provides material on how to care for the environment and introduces hadiths about cleanliness; and c) the teacher introduces the children to the difference between a clean environment and a dirty environment. Ask and answer questions with children about the theme of my environment, such as what environment they like, what happens when the environment is dirty, and so on.

The second task involves manufacturing ecobricks. In this exercise, children fill plastic bottles with given inorganic trash (plastic) until they are full and solid. This looks like a great activity for kids. The children appear to be enthusiastic about learning about the environment and creating ecobricks.

The third activity involves counting. In this game, students sort plastic bottles into two groups: white and black, and then count the total number in each of the groups.

The fourth activity is creating the creation. In this exercise, youngsters use insulation to combine all of the plastic bottles that have been filled to the point of being full and solid into one rectangular form. Then, in the bottom of the plastic bottle, they place two pieces of cardboard cut into a rectangle shape and tape them together so that they form a chair and table. The next stage is sticking. The

children put two cardboard boxes on the bottom of a plastic bottle that has been molded into a rectangle to make it pleasant to sit on. In all of these activities, the instructor engages in active conversation with the children and asks and answers questions regarding the activities or work done by the students.

According to Syardiansyah, the benefits of creating ecobricks include trash management, an effective approach to dealing with plastic garbage that anybody can do since it is simple, and environmental protection by lowering the amount of plastic waste. The key benefit of utilizing ecobricks in early life is that it helps youngsters enhance their fine motor skills and inventiveness. Ecobrick activities like decorating, stitching, painting, cutting, and molding into toys or dolls might have an impact on children's fine motor abilities. (Syardiansyah, n.d.)

Making ecobricks from inorganic trash is an activity accomplished at Kasih Bunda Kindergarten Tanjung Lanjut Sekernan Muaro Jambi with the goal of increasing children's inventiveness. This practice is also extremely useful for one's personal growth and development. Aside from improving children's creativity, this exercise can also promote physical, motor, verbal, social, and emotional development.

The results of observations in cycle I revealed that the growth of children's creativity began to increase; out of a total of 20 children, 8 reached the traditional completion standards, namely 40% with an average score of 4.15, while 12 had yet to finish. Children, specifically 60%, but it did not meet the success requirement of 80%; therefore, it must be continued in Cycle II in a more fascinating and entertaining way while carrying out ecobrick-producing activities from inorganic waste.

The following indicators are used to assess children's creative development: 1) Children recognize the items around them, 2) Children ask inquiries fluently, 3) Children can be passionate about making ecobricks, 4) Children may place plastic bottles into plastic bottles without the teacher's assistance, 5) Children can count the number of bottles filled with both white and black bottles, 6) Children can do their own work without support, 7) Students can respond to teacher-posed

questions, 8) They can display their ecobrick work.

The completion objective was not achieved for various difficulties with ecobrick-making activities, including children's impatience to begin, Some students remain unorganized and difficult to handle because they do not listen to the teacher's explanations, Children still lack freedom and need to be accompanied by a teacher, Some youngsters still struggle to use play or learning instruments, and With 20 students and one instructor, the teacher is overburdened, and the lesson becomes unproductive.

There are numerous solutions to these difficulties that may be applied as part of Cycle II. 1) Teachers can motivate students to remain calm and patient as they wait for the activity to begin 2) Before beginning the activity, the instructor clarifies and explains the regulations that the students must follow. 3) Teachers may encourage students to be more confident and fearless. 4) The teacher may show how to utilize the tool frequently, 5) Two or more teachers can be added to ensure that learning runs smoothly.

Meanwhile, activities in cycle II are continuations of activities in cycle I, which were not ideal. After taking action in cycle II, there was a significant improvement, with an average score of 6.75 for a total of 20 children. A lot of children's creative talents appear to be improving, with 17 out of 20 achieving a completion percentage of 85%, above the traditional completion level of 80%.

Children get more interested in participating in activities, making learning more dynamic and enjoyable. However, some youngsters have yet to complete it because they lack independence and are unable to create or ask inquiries fluently. These three youngsters have made significant progress in their development, yet it is far from complete. To help children develop the three skills, instructors can give particular attention to them by continuing to motivate them and instilling confidence in themselves, allowing them to be more autonomous and confident in communicating ideas or queries. Based on the foregoing estimates, it can be stated that the development of children's creativity in cycle II was effective and sufficient. As a result, ecobrick-making activities using inorganic

waste are highly suggested as a learning approach in schools to encourage children's creative ability.

According to Yeni Rahmawati, creativity is a mental process in which individuals generate new ideas or goods, or a mix of the two, that will eventually remain with them. Creativity is defined as the ability to conceptualize in terms of succession, continuity, differentiation, and integration throughout developmental stages. (Rachmawati, 2010)

Based on the researcher's observations before conducting the classroom action research process by implementing the production of ecobricks from inorganic waste, the achievement score for the creative abilities of children in group B during the pre-cycle can be described as follows: the total score for the 20 children reached 29, and the average score was 1.45 with a 40%. When action research was conducted in cycle I to promote children's creativity by creating ecobricks from inorganic waste, children's creative talents improved, with an overall score of 113 and an average of 5.65, representing a 65% improvement.

After analyzing the study data from cycle I, it can be concluded that it is beginning to develop in comparison to pre-cycle values. However, the value obtained does not meet the KKM, hence it cannot be considered successful. As a result, cycle II was implemented with an overall score of 135 and an average score of 6.75, resulting in an 85% completion rate. The findings of the translation of values from the pre-cycle to the execution of cycles I to II show that the percentage of children's creative talents in group B has grown.

Children's creativeness has risen from pre-cycle to action in cycles I and II. The pre-cycle total score for children's creative ability was only 40%, with a total score of 29 and an average of 1.45, but grew after the cycle I action study, with a total score of 113 and an average of 5.65 and a percentage of 65%. Meanwhile, in cycle II, children's imaginations improved, with a total score of 135 and an average of 6.75, for a percentage of 85%. The table below shows the growth in mastery scores in children based on changes in accomplishment from pre-cycle I to cycle II.

Tabel 1. Comparison of Recapitulation in Developing Children's Creativity

No	Result	Pre Cycle	Cycle I	Cycle II
1	Classical completeness	40%	65%	85%
2	Average value	1,45	5,65	6,75

Based on the table above, it can be concluded that there was an increase in children's creativity in group B at Kasih Bunda Tanjung Lanjut Kindergarten Sekernan Muaro Jambi from pre-cycle, cycle I, and cycle II.

Before conducting action research to increase children's creativity in group B, it was discovered that children's creativity was still not developing well, as evidenced by many children who were still less active in asking questions, had difficulty expressing their ideas and opinions, were less enthusiastic about participating in learning, and were less skilled in completing everyday problems. This is due to boring learning and a lack of instructor innovation in encouraging children's creative potential. Teachers frequently employ lecture methods and writing on the board, which causes students to become bored quickly. The material used is also deemed extremely basic and does not pique children's attention throughout the learning process.

The implementation of Cycle I showed that changes happened in the process of developing children's creativity, namely that children grew more engaged and passionate about participating in learning. Using delectable inorganic waste media increases children's enthusiasm since the learning environment is unique and enjoyable. Children can learn while playing by participating in question-and-answer activities that occur concurrently with the activity. Children have also begun to appear more confident while asking questions, sharing tales, and expressing their opinions. Children are allowed to ask questions, express themselves, and produce works based on their imagination and creativity. Activities in cycle I cannot be considered successful since they still lack the minimal standards of completion; thus, they must be continued in cycle II. Meanwhile, activities in cycle II are continuations of activities in cycle I that were not ideal. In cycle II, children's creative talents appear to be improving. Children who previously disliked

and did not care about activities have begun to exhibit interest. Children have also begun to become adept at doing daily tasks, and they can use tools properly and accurately.

Children appear to be more passionate and confident in asking and answering questions and describing activities they have completed. Children also become more interested in asking questions, observing, and attempting to create something that is unique or distinct from their peers. Making ecobricks from inorganic trash enhances children's interest and desire to try new things, as well as their ingenuity, making it simpler for them to fulfill the completion standards.

According to Asih, one of the methods used to manage plastic waste is the manufacture of ecobricks. Ecobricks are a method of dealing with plastic trash that involves packing clean and dry plastic inside plastic bottles until it achieves a certain density (Asih, 2018). According to the explanation above, efforts to increase children's creativity through the creation of ecobricks from inorganic waste for children aged 5–6 years at Kasih Bunda Tanjung Lanjut Kindergarten Sekernan Muaro Jambi for the 2022–2023 academic year were successful in helping children increase their creativity. A child progressively develops.

## CONCLUSION

Increasing children's creativity by creating ecobricks from inorganic waste, specifically by discussing the need for environmental protection and presenting the media that will be utilized in learning, The youngsters will next put inorganic garbage into plastic bottles until they are full and solid, after which they will unite all of the plastic bottles that are totally filled and solid using insulation until they are strong. The youngsters offer two heaps of cardboard and use tape to secure them to the bottom of the plastic bottles, completing the ecobrick process of production. Children are actively involved and enthusiastic in implementing learning; therefore, this activity enhances children's creativity because they can make their own creations with excitement and without assistance. This implementation resulted in an increase in children's creativity from 40% pre-cycle to 65% in cycle one, which increased to 85% in cycle two.

There are several activities that teachers and parents may engage in to encourage children's creativity. This type of stimulus must begin at a young age. When selecting an activity, the value of the benefits (meaningfulness) and the child's sentiments of delight while doing the activity must be considered so that the outcomes are ideal.

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