

**3R-BASED LEARNING STRATEGY FOR STRENGTHENING
CREATIVITY AND ENVIRONMENTAL CARE ATTITUDE IN
ELEMENTARY SCHOOL STUDENTS**

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ABSTRACT

Environmental issues, particularly in waste management, remain a significant challenge in elementary schools. The lack of student awareness and low levels of creativity in managing waste call for innovative learning approaches. The aim of this research is to describe the implementation of the 3R method as an effort to enhance creativity and environmental awareness among third-grade students at SD Inpres Pare'-pare', Gowa Regency. The research adopted a Classroom Action Research (CAR) model with qualitative approach. Data acquisition was carried out through various methods, including observation, questionnaires, interviews, and documentation. The study was conducted in two learning cycles, each consisting of planning, implementation, observation, and reflection stages. The results indicate that applying the 3R method has a positive impact on improving students' creativity and fostering their environmental awareness. Students showed greater ability to generate creative ideas using recycled materials and became more engaged in maintaining cleanliness and managing waste responsibly. The learning process became more interactive, with students showing greater enthusiasm in participating in activities to waste management. This improvement was also reflected in the observations where both teachers and students demonstrated active involvement in each stage of the learning process. Therefore, the 3R method can serve as an effective educational strategy to foster environmental values and enhance student creativity from an early age.

Keywords: 3r method (reuse, reduce, recycle), creativity, environmental awareness

ABSTRAK

Permasalahan lingkungan, khususnya terkait pengelolaan sampah, masih menjadi tantangan besar di lingkungan sekolah dasar. Kurangnya kesadaran siswa serta rendahnya kreativitas dalam mengelola sampah menuntut adanya pendekatan pembelajaran yang inovatif. Tujuan dari penelitian ini ialah untuk mendefinisikan penerapan metode 3R sebagai upaya meningkatkan kreativitas dan kepedulian terhadap lingkungan pada siswa kelas III SD Inpres Pare'-pare', Kabupaten Gowa. Penelitian ini menggunakan metode Penelitian Tindakan Kelas (PTK) dengan pendekatan kualitatif. Data dikumpulkan melalui berbagai teknik seperti observasi, angket, wawancara, dan dokumentasi. Pelaksanaan penelitian dilakukan dalam dua siklus, yang masing-masing mencakup tahap perencanaan, pelaksanaan, observasi, dan refleksi. Hasil penelitian menunjukkan bahwa penerapan metode 3R berkontribusi secara positif dalam meningkatkan kreativitas siswa sekaligus menumbuhkan sikap peduli lingkungan. Siswa menunjukkan kemampuan yang lebih baik dalam mengembangkan ide kreatif dari barang bekas, serta semakin terlibat dalam tindakan menjaga kebersihan dan pengelolaan sampah secara mandiri. Kegiatan pembelajaran berlangsung lebih interaktif, dengan siswa menunjukkan antusiasme tinggi saat mengikuti aktivitas terkait pengolahan sampah. Hal ini terlihat dari hasil observasi, dimana baik guru maupun siswa terlibat secara aktif di setiap tahapan proses pembelajaran. Dengan demikian, metode 3R dapat menjadi alternatif yang efektif untuk membentuk karakter peduli lingkungan dan mengembangkan kreativitas siswa sejak usia dini.

Kata Kunci: metode 3r (*reuse, reduce, recycle*), kreativitas, sikap peduli lingkungan

A. Introduction

Concern for the environment is a behavior that every individual should have in order to preserve, restore, and manage the environment in an appropriate and sustainable manner so that it provides continuous benefits. In managing the environment, the community must strive to create a clean and healthy environment, such as by reducing the use of plastic waste. Based on the Governor of South Sulawesi's Circular Letter No.

660/8648/DPLH dated December 18, 2018, regarding Waste Reduction and Management, which states in point 6 that "Initiating and implementing efforts to reduce plastic waste by not using packaging, bags, bottles, straws, and single-use plastic cups, while applying the 3R principle (Reuse, Reduce, Recycle)." The urgency of fostering an environmentally conscious character stems from the fact that the environment plays a crucial role in

supporting human quality of life. However, with the progression of time, this role is increasingly threatened by pollution, excessive exploitation of natural resources, and rising environmental contamination. This issue was also highlighted by Akhmad Muhaimin Azzet, who emphasized that attention to environmental issues is crucial because the Earth is aging and human dependence on nature is increasing. (Sunandari et al., 2023).

One step in addressing this waste problem is The 3R method is used in waste management and sustainable practices. Environmental issues cannot be solved solely through technical approaches; what is more important is making efforts to change mindsets and raise awareness about the importance of environmental management. As we often see, there is a lot of litter scattered around the environment, even though environmental cleanliness is very important and is the responsibility of every individual.

The 3R method consists of Reuse (reusing waste), Reduce (reducing waste), and Recycle (recycling waste). This method is one of the easiest yet most challenging to implement, as its success depends on effective waste

management practices. This process requires the involvement of all members of the school community, including teachers, staff, and students, which can help foster positive habits toward the environment.

Reuse is a waste management technique aimed at preventing the accumulation of waste, one of which is by reusing items repeatedly, such as reusing glass bottle packaging. Reduce is a waste management technique carried out by limiting the use of items that have the potential to pollute the environment. An example of Reduce is when students bring their own shopping bags when shopping instead of using plastic bags to carry their purchases. Recycle is a waste management technique that involves reprocessing used items so they can be reused as useful items, such as recycling waste into crafts or compost.

Waste consists of various types, including organic and non-organic waste. Organic waste is waste derived from natural materials that can decompose naturally through the biodegradation process, such as living organisms, including animals, plants, and humans, as well as food scraps and kitchen waste. Meanwhile, non-organic waste comes from non-living

materials produced through synthetic processes or mining technology. Examples of inorganic waste include metal waste and its derivatives, such as plastic, paper, glass, ceramics, bottles, and unused electronic devices.

The purpose of the 3R method, as explained by Atmajayani and Hermawanto (2020), is to help students understand the importance of waste management, starting with self-awareness and a sense of environmental responsibility. Based on this explanation, schools need to implement environmental policies around the school, such as encouraging students to dispose of waste properly, encouraging students to be creative in managing used items into useful items, for example, turning cans into cosmetic racks, and cleaning classrooms as a form of student discipline.

The advantages of implementing the 3R method in society include reducing national waste, creating more job opportunities, and generating greater income. Another national-level advantage of the 3R method is the reduction in the quantity of waste entering Landfills (Sabihi et al., 2020).

According to Setiawan (2019), the drawbacks of this method include the fact that reusing items made from plastic materials cannot be done repeatedly in the long term, as it may pose health risks. Meanwhile, reducing waste requires providing cheaper and more practical alternatives for daily use. Additionally, recycling recycled items may result in a decline in quality, and recycling plastic waste is not very effective.

In life, fostering creativity is crucial, especially for children. Through creativity, children's competencies and skills can be developed and honed to generate ideas and concepts based on their own thinking patterns, ultimately producing creative works valuable and useful. To enhance creativity, encouragement, support, and appreciation are needed, whether from family, teachers, friends, or other people.

Fostering creative students can be achieved through various activities that encourage curiosity and the desire to try new things. These activities aim to help students understand the techniques and objectives of transforming plastic waste into valuable creative items

through recycling (Santi and Anisah, 2019). For example, the creative use of inorganic waste can serve as an educational tool to nurture creativity in children from an early age. This increase in creativity is also due to the use of the 3R-based learning method. Teachers play a role in creating a supportive learning environment by providing various used materials (inorganic waste) that are then processed and modified into educational tools in the form of simple educational games made from the waste.

One thing that needs attention in classroom teaching and learning activities is the effort to foster creativity in students. The development of creativity is important so that students have the ability to generate new and innovative ideas that can support their success in daily life, while also helping them adapt to changes and developments of the times (Nisa et al., 2019).

Table 1 Creativity Indicators

Indicator	Sub-Indicators
Fluency	Students design items from scrap materials according to their student creativity
Elaboration	Group discussion

Flexibility	Students able to find used items that can be recycled recycled into useful items
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Source: Jasmine & Supratman
(2022)

Based on the table above, indicators of creativity include fluency, elaboration, and skills that can be used as a reference to encourage children's creativity.

According to Erikasari (2019), there are several factors that influence learning creativity, namely (1) Internal factors in students that originate from within themselves, which include two dimensions, namely physical condition and intellectual condition, (2) External factors that influence students include two types, namely social environment and non-social environment. The social environment at school, such as teachers and classmates, also influences the improvement of students' learning creativity. Additionally, there are instrumental factors that include physical facilities such as buildings and classrooms, learning tools and media, teachers, curriculum, and learning strategies applied, all of which contribute to the

learning process and creativity of students.

Caring for the environment is one of the actions aimed at preventing damage to nature and the surrounding environment, while also striving to find ways to repair environmental damage that has already occurred. By fostering an attitude of environmental concern, this action is expected to become part of the effort to address the current crisis of human concern for the environment.

Educating students about environmental awareness from an early age is crucial so that they can manage natural resources around them wisely. Additionally, this aims to build self-awareness and a sense of responsibility in preserving the environment and natural resources for future generations. If environmental awareness becomes a strong part of one's mindset, it can influence an individual's personality in their daily life (Arisona, 2018).

Table 2 Indicators of Environmental Care Attitude

Indicator	Sub-Indicators
Environmental Care	Students' views on maintaining the environment

to keep it clean and neat

Reducing the use of plastic waste views students' views on how how to reduce plastic waste

Waste Management View students' views on the according to its importance of type sorting waste and disposing of waste

Source: Baroroh & Roshayanti (2022)

Based on the table above, indicators of environmental awareness include environmental care, reducing the use of single-use plastics, and managing waste according to type. By building a sense of environmental awareness, it is necessary to develop habits of caring for the environment, such as repeatedly reducing the use of single-use items and disposing of waste in the appropriate place.

Thus, the core of this study is aimed at examining the application of the 3R method in efforts to enhance creativity and environmental awareness among students at SD Inpres Pare'-pare', Gowa District. This study aims to improve the creativity

and environmental awareness of students at the school.

B. Research Methodology

This study employs a qualitative approach, conducted based on real-world conditions in the field using observation tools, interviews, questionnaires, and documentation. The qualitative approach was chosen because the researcher aims to educate students on how to properly maintain the environment through the 3R method (Reuse, Reduce, and Recycle) to enhance creativity and environmental awareness.

The preparatory stage of this research began with the development of a research proposal guided by two supervisors, as well as the development and validation of research instruments, and the submission of a research permit application (Sahabuddin et al., 2023). The sample used was the third grade of SD Inpres Pare'-pare' in Gowa District for the 2024/2025 academic year, consisting of 20 students. The data collection techniques used in this study included observation sheets and questionnaires, while the instruments used consisted of observation, interviews, questionnaires, and documentation.

The research was conducted in two cycles, each lasting four meetings. The research location was SD Inpres Pare'-pare', Bajeng Subdistrict, Gowa District, South Sulawesi Province.

Success in this study was measured through two aspects related to students. The indicators of success were reviewed from two sides, namely:

1. Process Indicators

The implementation process, where the minimum standard of success set in the study to be conducted in terms of process is if 70% of the students meet the criteria for good. The measurement of the percentage is written on a descriptive scale, namely:

Table 3 Teacher Activity		
Score	Category	Description
70%- 100%	B (Good)	Students are able to apply the 3R method in their daily lives.
50%-69%	C (Fair)	Students understand the concept of the 3Rs method but are not yet able to apply it.
0%-49%	K (Less)	Students cannot apply the 3R method

without
guidance.

2. Result Indicator

Student activity outcome indicators are categorized as follows: if 70% of the total number of student creativity indicators achieve a score of ≥ 25 and the number of student environmental awareness indicators achieve a score of ≥ 75 , then the student is considered to have completed the course or met the criteria. The criteria used to determine the success of the implementation are standard categorization techniques, namely:

Table 4 Creativity Indicators

Interval	Category
81-100	Very good
61-80	Good
41-60	Fair
21-40	Deficient
0-20	Very poor

**Table 5 Indicators of
Environmental Care Attitude**

Interval	Category
<60	Less
60-70	Fair
>70-80	Good
>80	Very good

C. Research Results and Discussion

This research was conducted after obtaining approval from the school, namely SD Inpres Pare'-pare', to complete the final project. The research was carried out through two cycles, each cycle consisting of two meetings, and each cycle also had four stages: planning, implementation, observation, and reflection.

Research on the application of the 3R method in enhancing student creativity has been conducted on several occasions, including by Gutiawati et al. (2022), who conducted a study titled "The Application of the 3R Method (Reduce, Reuse, Recycle) to Stimulate Creativity in Young Children in Group A." This study explains that the 3R method was chosen because it can develop children's creativity in transforming used items into useful items.

Another study was conducted by Siskayanti and Chastanti (2022), who investigated the relationship between students' environmental awareness and their knowledge of the 3R method. The study showed that the low level of education on the 3R method among fifth-grade students at SD Negeri 20 Bilah Barat influenced the low level of environmental awareness among students. This study will not analyze

this continuity but will directly educate students about the 3R method to enhance their environmental awareness.

Based on the two previous studies, the implementation of the 3R method (Reduce, Reuse, Recycle) has been proven to have a positive impact on increasing creativity and environmental awareness among students. Gutiawati et al.'s (2022) study showed that the 3R method can stimulate children's creativity in transforming used items into useful objects. Meanwhile, the study by Siskayanti & Chastanti (2022) emphasized that the lack of education on the 3R method contributes to the low level of students' environmental awareness. Therefore, a learning approach that integrates education on the 3R method is important, not only to enhance creativity but also to cultivate students' environmental awareness from an early age.

This study was conducted in two cycles, each cycle consisting of two meetings, and each cycle also had four stages: planning, implementation, observation, and reflection. The details of the implementation of the first and second cycles at SD Inpres Pare'-pare' are as follows:

Meeting 1

In the first meeting, the teacher began the activity by greeting the students, leading them in prayer, and singing a national anthem. The teacher then showed an animated video discussing sustainable living and encouraged the students to discuss the material. At the end of the activity, the teacher provided a brief evaluation and reflection to conclude the lesson. Based on the observation results, the implementation of the lesson in this meeting was still not optimal.

Table 6 Research Results Cycle I Meeting 1

Aspect	Obs erve r	Indica tor Imple mente d	Perc enta ge	Cate gory
Activity Teacher	18	7	38%	Less
Creativity Students	9	3	33%	Less
Environmental Care Attitude	9	3	44%	Less

Cycle I

Students	Activity	18	10	55	Fair
	Teacher			%	
Reflections from this meeting show that many learning indicators have not been achieved. Teachers have not comprehensively conveyed all the important points regarding the 3R method, while student participation is still minimal. Therefore, improvements and replanning are needed for the next meeting.	Creativity	9	5	56	Fair
	Students			%	
	Environmental Care Attitude	9	5	56	Good
	Students			%	

Meeting 2

In the second meeting, the teacher began to explain how to manage waste and apply the 3R method in more depth. The teacher showed an educational video and invited students to discuss and begin practicing making simple collages from waste. The activity ended with reflection, appreciation, and conclusions together with the students.

Table 7 Research Results
Cycle I Meeting 2

Aspect	Observation	Indicator	Percentage	Category
	Teacher	Implementation		
	Students			

Reflection shows an increase in teacher and student involvement in learning, although some indicators are still not achieved. Students began to be more active but still need to strengthen understanding and develop skills.

Cycle II

Meeting 1

The first meeting began with a review of previous material and the screening of an animated video about waste classification. The teacher formed working groups, distributed worksheets, and displayed examples of works made from recycled materials. Students were invited to discuss and design their creative ideas in groups.

Table 8 Research Results Cycle II

Aspect	Meeting 1			Category
	Observer	Indicator	Percentage	
Activity Teacher	18	12	67%	Fair
Creativity Students	9	6	67%	Good
Environmental Care Attitude Students	9	6	67%	Good

Reflection showed that students began to be able to work together in groups, exchange ideas, and understand the concept of recycling better than before. Teacher involvement also showed improvement.

Meeting 2

The second meeting focused on the hands-on practice of making pencil holders from recycled materials. The teacher provided step-by-step guidance, showed tutorial videos, and supervised the group work process. Students prepared the tools and materials and presented their work at the end of the lesson.

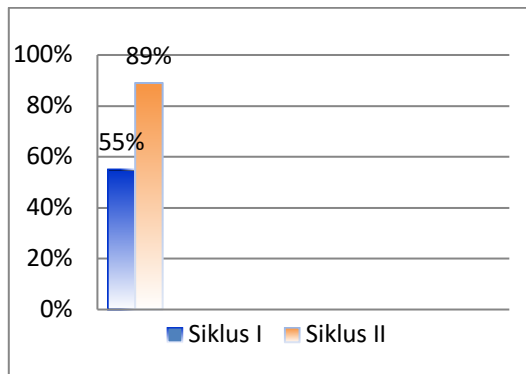
Table 9 Research Results of Cycle

Aspect	II Meeting 2			Category
	Observer	Indicator	Percentage	
Activity Teacher	18	16	89%	Good
Creativity Students	9	8	89%	Very Good
Environmental Care Attitude Students	9	7	78%	Good

In this meeting, the whole learning process was very effective. Teachers show optimal performance and students are able to demonstrate creative abilities and environmental care attitudes in real terms. Group projects ran smoothly and students enthusiastically displayed their work.

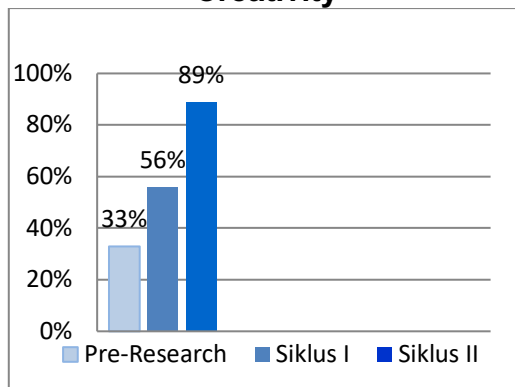
The implementation of learning in cycle II showed a significant improvement compared to cycle I. Improvements to previous shortcomings contributed to increased student learning activity.

Figure 10 Graph of Teacher Activity



The graph of the increase in teacher activity shows significant growth from the beginning to the end of the study. In cycle I meeting 1, teacher activity only reached 38%, which was included in the insufficient category. After improvement and reflection, this percentage increased to 55% at meeting 2. Then in cycle II meeting 1, the implementation increased to 67%, and reached its peak at meeting 2 with a value of 89%, including the good category. This illustrates an improvement in the quality of the teaching process.

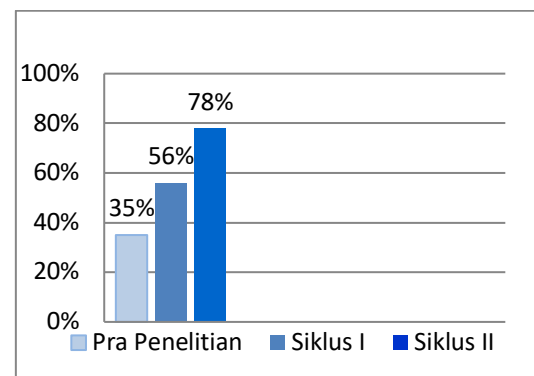
Figure 11 Graph of Student Creativity



The students' creativity graph also shows very positive development. In

the pre-research and Cycle I Session 1, student creativity was at 33% and still categorized as low. After further intervention, there was an increase to 56% in Session 2. In Cycle II, there was a significant surge to 67% in Session 1 and 89% in Session 2, indicating that students are now able to think creatively in transforming used items into something valuable.

Figure 12 Graph of Students' Environmental Care



The graph showing students' environmental awareness also shows a consistent upward trend. Starting at 44% in the first meeting of cycle I, it increased to 56% in the second meeting, then reached 67% in the first meeting of cycle II, and 78% in the second meeting. This increase shows that learning that integrates the 3R method has succeeded in fostering students' awareness and concern for the environment in a tangible way.

D. Conclusion

From the results obtained from this study, it can be concluded that the application of the 3R Method (Reuse, Reduce, Recycle) contributes positively to increasing the creativity and environmental awareness of third-grade students at SD Inpres Pare'-pare' in Gowa Regency. This improvement can be seen from the results in cycle II, which successfully reached the high category. In Cycle I, students' creativity levels were still in the low or adequate category, with a percentage of 56%, and their environmental awareness was also low or insufficient, with the same percentage of 56%. However, in Cycle II, there was a significant increase, with students' creativity reaching 89% and entering the high category according to the creativity indicators. Meanwhile, students' environmental awareness also improved to 78%, meeting the standard of >70-80% and entering the high category based on the established indicators.

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