



Creative Character-Based Curriculum Development for Students in Phase C

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Abstract

One effort to support the implementation of the Independent Curriculum in elementary schools, especially for Phase C students, is through the development of a creative character-based curriculum. This study aims to detail how to process, use, and assess the practical activity of processing used cooking oil waste into aromatherapy candles. Qualitative descriptive research was used, and data collection was described through observation and documentation. The Miles and Huberman model is a data analysis process, which includes equipment, drawing conclusions, and data reduction. In addition, data validity was tested through triangulation of techniques and sources. The results of the study indicate that the practice of processing used cooking oil waste can be effective for students. In the assessment aspect, it obtained very good results, such as activity planning, idea creativity, cooperation, process skills, and work safety. This activity trains students to think creatively and collaborate, increases environmental awareness, and provides contextual learning experiences. Thus, the practice of processing used cooking oil waste can be applied as an effective learning strategy for Phase C elementary school students who want to follow a creative character-based curriculum.

INTRODUCTION

Elementary education is a strategic way to instill character and competency in students at the next level of education. Learning in elementary schools is aimed at developing 21st-century character and skills, in line with the implementation of the Independent Curriculum. Creativity is a crucial characteristic within the Independent Curriculum, demonstrated through students' ability to think

creatively, flexibly, and innovatively, and find solutions to real-world problems.(Anwar & Sodik, 2025)(Diputera et al., 2024)

At the elementary school level, Phase C (grades V and VI), students are at a stage of cognitive and social development that allows them to explore, think more critically, and develop ideas independently and in groups. Therefore, learning in this phase must be designed to foster students' creative character through meaningful, contextual, and challenging learning experiences. However, the process in the field shows that the curriculum and learning activity procedures still do not implement creative character strengthening, and the focus of learning is still on cognitive aspects and material completion.(Nessa Mezhila Akrima, Muhammad Sofwan, 2025)

Education is a systematic effort to shape a young generation with noble character and readiness to face challenges. Referring to the contents of Article 1 of Law No. 20 of 2003 concerning the National Education System, the purpose of education is to enlighten the nation's life and develop Indonesian people who are faithful, have noble character, are intelligent, and skilled. Education is defined as a conscious and planned effort to create an atmosphere and learning process so that students actively develop their potential. The development of student creativity is an important object that needs to be emphasized in education. In education, creativity is also considered an indicator of high competence in certain fields. In the current era of globalization, the ability to think creatively, adaptively, and find solutions is highly prioritized..(Wahyuni et al., 2023)(Lestari et al., 2024)

In shaping students' personalities to face the era of globalization, creative character is highly expected to emerge. In addition to discipline, students must be accustomed to creative attitudes to help them think and act in very interesting ways. Marzuki (2015) stated that teachers can play a role in innovation in developing student creativity in the teaching and learning process. He also said that students should not only obtain information, but also be given the opportunity to solve the problems they face..(Nilai et al., n.d.)

Students lack the opportunity to explore and develop their creativity, resulting in lecture-driven, theoretical learning. Consequently, students lack the opportunity to develop their creative character, express ideas, try new things, and solve problems. This situation demonstrates a mismatch between learning practices that focus solely on cognitive learning outcomes and curriculum demands that emphasize character building.

Environmental problem-based practicums such as processing used cooking oil waste are one way to motivate Phase C students to develop creative characters. Used cooking oil is a household waste that is often found by students, but if processed improperly it can harm the environment, human health and damage soil fertility. Used cooking oil, on the other hand, can be processed into useful and economically valuable products, such as soap or candles, through a process that is easy and safe to learn and practice.(Studi et al., 2024);(Ismah et al., 2024);(Saepuloh & Rizki, 2024);(Indriastiningsih & Primasanti, 2024);(Baskora et al., 2024);(Azahra et al., 2024);(Nur Isna Inayati, 2021);(Amin & Bahri, 2022)

Cooking oil is a liquid fat refined from animal or vegetable fats that is placed at room temperature and is usually used for frying food. Palm oil is used in large capacities as a raw material for cooking oil production in Indonesia. Sitepoe (2008) Palm oil is usually processed twice to remove the unsaturated layer, in order to

produce a higher content of unsaturated fatty acids in the cooking oil. If the temperature of the cooking oil is high during the frying process, the cooking oil becomes easily damaged. As a result, the oil will immediately mix with the outside air during the frying process, resulting in an oxidation reaction (Sartika, 2009). This cooking oil is often used for frying, which is called used cooking oil..(Sekaran & Semarang, n.d.)(Meningkatkan & Keluarga, 2021);

To reuse used cooking oil, often referred to as household waste, several efforts have been made, one of which is reprocessing it into raw material for candle making. Reprocessing used cooking oil into candles is an environmentally friendly solution and can reduce waste. When molded into beautiful and attractive glass containers, the candles produced can be used for lighting at home or as decoration/complementary items. The quality of the produced candles can be tested by observing the color, flame quality, smoke, and odor produced during the combustion process.(Kalurahan et al., n.d.)

Students not only gain an understanding of science and environmental concepts from the used cooking oil processing lab, but they also learn to think creatively when designing products, organizing work steps, processing materials, and solving problems that arise during the lab. This activity helps students innovate, develop new ideas, dare to try, and collaborate with peers. Hands-on experience fosters a naturally creative character.

However, implementing a practical activity on waste cooking oil processing integrated into a curriculum designed to foster creative character requires careful preparation. To achieve the goal of fostering creative character, learning planning must be comprehensive. Formulating learning objectives, developing practical steps, selecting learning methods and media, and determining indicators of creative character development are all indicators of this character. Practical activities have the potential to become merely technical activities without impacting student character development.(Lestari et al., 2024)

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The success of cultivating creative character is linked to practical activities in addition to planning. Learning activities must provide space for students to think creatively and explore ideas for implementation. Students can discuss their actions through reflection and discussion. Teachers serve not only as sources of information but also as facilitators, providing support and encouragement. Practical activities are often instructive and teacher-centered, which can hinder the development of student creativity.

Learning evaluation is also a crucial part of the process of developing a creative character-based curriculum. Comprehensive evaluation processes in elementary schools only evaluate final results and cognitive aspects, with only a few

evaluating the process of cultivating students' creative character. Therefore, creative character can be measured not only by the product produced, but also by the process of how students think, behave, and act during practical activities. Therefore, objective and sustainable evaluation instruments are needed to measure students' creative achievements.

Thus, it can be concluded that developing a creative character-based curriculum through a practical work on waste cooking oil processing for Phase C students is crucial. Planning, implementing, and evaluating practical activities aimed at instilling creative character in students requires specific evaluation of this character development. This concept is expected to make the learning process more effective and not only improve students' understanding of ideas but also help them become more innovative and environmentally conscious, ready to face future challenges.

METHODS

This study used the following data collection methods to obtain comprehensive data: Observation: Observation was conducted to directly observe the process of used cooking oil waste collection practicum activities; Documentation: This documentation was obtained from photos and rubrics from the evaluation of used cooking oil processing practicum activities. The Miles and Huberman model was used to analyze the data, which includes data presentation, drawing conclusions, and data analysis. (Nessa Mezhila Akrima, Muhammad Sofwan, 2025)

RESULT AND DISCUSSION

From the results of field observations, the collection of household waste cooking oil from students in grades 1-6 during one semester is:

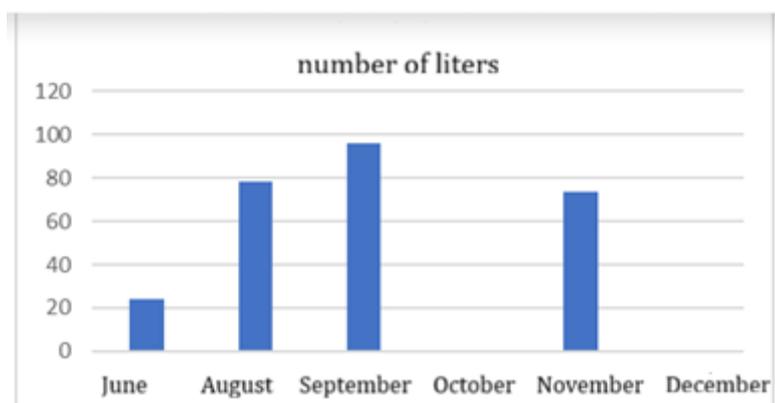


Figure 1. Graph of oil spill collection

The results of the collection of used cooking oil waste in June 23.79ℓ, August 78.57ℓ, September 96.08ℓ, October 0ℓ, November 73.53ℓ and December 0ℓ. The results of the collection of used cooking oil waste in June were 23.79ℓ, August 78.57ℓ, September 96.08ℓ, October 0ℓ, November 73.53ℓ and December 0ℓ.

Used cooking oil obtained from student collection will be used as an ingredient for making aromatherapy candles. To eliminate/reduce the smell of used cooking oil, used cooking oil waste must be left in a jar with charcoal with a ratio 1:5, for example 20 grams of activated charcoal for 100 milliliters of used cooking oil. The clarification process is carried out for 24 hours, with the aim that the charcoal can absorb dark colors, odors, and impurities from used cooking oil. After that, the used cooking oil is filtered until clean. The wax material is made from paraffin, waste oil, used cooking oil, dye from crushed crayons as an ingredient dyes, and eucalyptus oil as aromatherapy ingredients. (Nur Isna Inayati, 2021); (Lupita Atika Rachma, Sinta Maharani, Khoirul Alfatul Huda, Tri Adita Vianni, Ahmad Jazuli, Dinna Muthia Atsa, Fani Al Anam, Farid Khoirul Huda, Fatkhuliya Rizkiana, Ila Lutfi Maziyah, Indah Mustafidah, Ponang Yoga Subasa Putra Exann, Qonik Atul Mardiyah, N, 2025); (Ismah et al., 2024); (Anas, 2025)



Figure 2. Waste cooking oil processing



Figure 3. Processed waste oil products

No	Rated aspect	Indicator	4	3	2	1
1	Activity planning	Able to design candle making steps sequentially and independently	Very clear & coherent	Quite coherent	Not coherent	Not coherent
2	Creativity of ideas	Come up with ideas for scent, color, or shape of candles	Ide orisinal & variative	The ideas are quite varied	Limited ideas	No idea
3	Collaboration	Take an active role in the group	Very active & cooperative	Active	Less active	Not cooperating
4	Process skills	Processing materials according to procedures	Highly skilled & independent	Skilled with a little help	Much help	Unable
5	Work safety	Using tools safely	Always apply K3	Sometimes neglect	Often negligent	Not applicable

Table 1 Assessment of waste oil processing activities

Skor	Criteria
4	Very good
3	Good
2	Enough
1	Not enough

Table 2. Rubric assessment scale

The following are the assessment results from the rubric of 20 sixth grade students who participated in the process of making aromatherapy candles.

No	Aspect	Frequansy			
		4	3	2	1
1	Activity planning	16	4	0	0
2	Creativity of ideas	18	2	0	0
3	Collaboration	18	2	0	0
4	Process skills	17	3	0	0
5	Work safety	16	4	0	0

Table 3. Distribution of students' creative character rubric assessments

The processing of value data from the rubric obtained from 20 respondents will be calculated using the formula:

$$\text{Percentage} = \frac{\text{Total Score}}{\text{Maximum Score}} \times 100\%$$

Value Range	Kategory
86–100	Very good
71–85	Good
56–70	Enough
≤55	Need Guidance

Table 4. Value categories

The activity planning aspect obtained a percentage of 95%, which is included in the Very Good category. These results show that most students have been able to plan aromatherapy candle making activities in a sequential and systematic manner. Students can understand the work stages and prepare tools and materials well before practical activities begin.

The highest percentage in the aspect of idea creativity, namely 97.5%, with a Very Good category. This shows that students have creative character in determining the ingredients of aroma, color, and aromatherapy candle shape. Students look very creative and brave and are willing try new ideas. In the aspect of cooperation, the percentage obtained was 97.5%.

This is included in the Very Good category. These results show that students can work well in groups during the practicum. To completing the making of aromatherapy candles, students help each other, share tasks, and communicate well. The percentage of process skills is 96.25%, which is included in Very Good category, shows that students have the competencies good in the process of processing used cooking oil waste properly. With With a little help from the teacher, students can do practical work independently and use tools and materials properly.

Percentage of 95% in the Very Good category in the aspect occupational safety, which shows that students have understood and apply work safety principles during practicals, such as being careful in using tools and maintaining a clean and safe learning environment.

CONCLUSIONS AND RECOMMENDATIONS

The results of the study showed that the practical activity of processing used cooking oil waste into aromatherapy candles succeeded in instilling and developing the creative character of students in Phase C. The results of the study showed that each assessment instrument for ideas, cooperation, process skills, work safety, and planning in the overall activity process was in the very good category.

Highest percentage in the aspect of creativity of ideas and cooperation. Which shows the existence of students' ability to express ideas creatively when creating the process of mixing aroma, color, and product shape, and working together in groups. In addition, aspects of process skills and activity planning also showed very good results. This shows that students are able to design and carry out practical activities systematically and according to procedures.

Practice of processing used cooking oil waste demonstrate students' awareness of aspects of work safety processes and environmental concern in the process of making scented candles therapy. so that this activity not only increases students' creativity but also provide experience, responsibility and practical skills

that are needed in everyday life. Overall, the practical activities of the processing process used cooking oil waste can be used as a learning strategy which is effective in developing a creative character-based curriculum for Phase C students. This activity is worth implementing and developing further as part of contextual learning that centered on strengthening the creative character of students in elementary schools.

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