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E-PROCEEDING OF

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E-CONFERENCE ON
GREEN & SAFE CITIES
2022

“Sustaining the
Resilient, Beautiful and Safe Cities
for a Better Quality of Life”

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**“ Sustaining the Resilient, Beautiful and Safe
Cities for a Better Quality of Life ”**

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Gresafe_Cities RIG
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EXPLORATION OF USED COOKING OIL THROUGH ART ACTIVITIES AGAINST CHILDREN IN SERI ISKANDAR

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Abstract

Removing used cooking oil into drains and public places has a detrimental effect on the environment, such as clogged drains, polluted rivers, and soil being damaged by the loss of mineral resources. Clogged drains cause pest inbreeding, while contaminated water sources have an effect on the destruction of aquatic life. This issue is one of the primary sources of pollution in the Seri Iskandar area. This study was conducted to explore and identify the potential of used cooking oil through art activities for the Seri Iskandar community, especially children. This study used a qualitative methodology as its primary research approach. Researchers gather information through primary data collection methods such as interviews, observations, and fieldwork. Secondary methods are derived from data sources such as books, journals, and magazines. The findings revealed that used cooking oil can not only be recycled and used to make candles and biodiesels, but it can also be used as an ingredient in the creation of creative artworks. This art activity also helps children learn the fundamentals of art skills such as mixing materials, shaping, and carving. Children are also taught the value of environmental stewardship through the adoption of a sustainable lifestyle. As a result, this study has the potential to increase the public's knowledge and awareness of the potential of used cooking oil to be used as a creative artwork. Furthermore, this study has significant implications for the local community's awareness of the development of environmental sustainability to ensure a better quality of life in the future.

Keywords: *Environmental sustainability, recycling, used cooking oil, children, art activities*

INTRODUCTION

Human life depends mainly on earth's resources such as oceans and forests. These two elements of nature are habitats for animals and plants, as well as natural resources that humans can take advantage of. The deterioration of these two elements of nature has become very drastic nowadays — therefore, action should be taken immediately to reduce habitat loss and biodiversity. Pollution is also one of the causes of these habitats and resources being increasingly depleted due to human negligence.

Through primary data, researchers found out that the biggest cause of pollution in Seri Iskandar is water pollution. The leading causes of water pollution are sewage waste and due to factories dumping liquid and solid waste into rivers as an easy means of disposal. Further observation found that the primary source of pollution in residential environments and shops was the dumping of cooking oil waste into drains and ditches. Cooking oil is an essential

ingredient used in cooking preparation and a convenient ingredient that leads to the clogging of piping systems. Because of this problem, researchers are searching for suitable solutions to prevent cooking oil from turning into waste, and that it should be made into recyclable material instead.

Figure 1

Clogged drain channel in a commercial center, Seri Iskandar.



Source: Photo by Hairulnisak Merman.

Figure 2

Clogged drain channel in a residential, Seri Iskandar.



Source: Photo by Hairulnisak Merman.

This study will try to approach, understand, and at the same time explain the implementation of the initial cycle of cooking oil used in producing creative artworks carried out by children around Seri Iskandar. The objectives of the study are also in line with the answers sought in this study, including: (1) what is the potential of cooking oil in producing

creative artworks; (2) what is the process carried out in producing the creative artworks; (3) what are the creative outputs that are produced.

LITERATURE REVIEW

Environmental Sustainability

The culture of loving the environment is essential and needs to be nurtured in today's society, especially among children, so that future generations can experience a peaceful life with a clean and harmonious environment. It is a process of early exposure and education in continuing environmental conservation efforts. This awareness of the importance of taking care of the environment has long been noted by previous researchers beginning in 1798 through the Malthusian Theory of Population (Malthus, 1798).

Various global joint venture programs have been implemented by the United Nations (UN) to achieve sustainability missions for the benefit of current and future generations, among them the Millennium Development Goals (MDGs). The concept targeted eight sustainability goals to be achieved within fifteen years from 2000 to 2015. Meanwhile, the Sustainable Development Goals (SDGs) program organised by the World Health Organisation (WHO) seek to achieve 17 sustainability goals from 2015 to 2030. This target has been agreed upon by most countries, including Malaysia (United Nations, 2016).

Figure 3

Sustainable Development Goals (SDG)



Source: United Nation (2016)

Used Cooking Oil

According to a 2016 pollution study statistic, each household consumes two kilograms of cooking oil per month, while 45% of unused cooking oil is thrown away. The dumping of used cooking oil into drainages and sewerage systems clogs channel systems. Furthermore, waste dumped into landfills causes environmental problems, especially the pollution of water and soil. It also promotes the breeding of pests that then affects the health of residents (Kalam et al., 2011).

Cooking oil used from the premise sink that flows into the wastewater system cause problems to wastewater treatment plants — or they are integrated into the food chain through animal feeding, thus causing potential health problems for humans (Chen et al., 2009). The

release of used cooking oil into the waters also alters the oxygenation process and destroys aquatic life in the ocean. This is caused by the oil layer covering the water surface which then prevents oxygen from dissolving. The byproduct of oil degradation mixing with water increases the demand for chemical oxygen (COD), thereby polluting the water (Kabir et al., 2014).

At the same time, the dumping of cooking oil into sinks result in water pollution as the oil discharged into the sink goes through the buffer and eventually gets channelled into the water source. Oil layers will thus form, thereby polluting water sources and threatening aquatic life (Mohamad Fazli & Teoh, 2006). Many traders who use cooking oil to fry food use it repeatedly to save capital. This is dangerous because the same cooking oil should only be used three times — more than this, and it can damage people's health (Liyana Rosman, 2018).

Used Cooking Oil Cycle

Based on Act 672 solid waste management and public cleansing 2007, recycling means collecting and segregating solid waste for the purpose of producing products. Recycling occurs when a waste material is processed according to a recycling procedure and eventually produces the same product. Recycling is a process of converting leftover waste materials into forms that have value (The Management of The Rest of the Pepejal And Lay Cleaning, 2013).

The 3R concept explains this initial cycle better: Reduce, Reuse and Recycle. This 3R concept must be implemented in everyday life to reduce pollution and at the same time, maintain the surrounding nature. The 3R concept is often applied to materials such as plastic, glass, aluminium tin, and paper — however, not many people apply it to used cooking oil waste materials. This is because not many people know that actually used cooking oil can also be recycled (Wan Nasriha & Zanaton, 2013).

The 'reduction' concept can be implemented by reducing cooking oil or choosing alternative cooking methods that do not use cooking oil, such as boiling, burning and frying without oil (Satinah Awang, 2015). Furthermore, the reuse concept can be implemented by reprocessing used cooking oil to be used as other ingredients, such as wax and soap.

Finally, the concept of recycling can be implemented by collecting used cooking oil waste that can no longer be used and then sending it to recycling centres. There, this waste will go through several physical, chemical and biological processes to produce fuel for vehicles, thus replacing petrol and diesel (Wan Nasriha & Zanaton, 2013).

In short, used cooking oil can be recycled and has many other uses that benefit the environment and human beings. However, if we look at the issue of pollution caused by clogged pipelines, there is still no end in sight. Here it can be concluded that the level of awareness of our society towards recycling used cooking oil is at a moderate level as they do not at all make this activity part of their life practices (Shahrom et al., 2008).

Referring to a study that was carried out by Satina Awang et al. (2015), there is a low level of knowledge about re-conducting used cooking oil. This study matches the opinion of Erry Arham Azmi (2021) which said that the community does not know where to place the remaining used cooking oil.

The benefits or donations from this study can contribute to the academic world and the practical world. The educational benefits can develop visual arts studies in the area of knowledge about the context of the original "upcycling" of cooking oil used in the form of artworks. Meanwhile, its practical contribution can also be used as a guide to increase the knowledge of nature conservation in the community, especially among children.

Children

According to the fourth edition of the online dictionary, Dewan Bahasa Dan Pustaka (2017) a child means a young boy or girl who are more than seven or eight years old. In addition, the definition of a child is also enshrined in the Convention on the Rights of the Child

and the Children Act 2001 which defines a child as a person under the age of 18 years old. The Child Care Act 1961 divides the interpretation of children into two, namely for Muslim children, whereby the adult age is 18 years old, while for non-Muslim children, the adult age is 21 years old.

Based on Act 611 (A) of the Malaysian Law under the Ministry of Women, Family and Community Development (KPWKM), it is noted that children are the next generation and national heirs who will lead and determine the status of the development of the country in the future. Malaysia ratified the Convention on the Rights of the Child on 17 February 1995 which prioritises the welfare and lives of children in aspects such as survival, protection, development and participation (Children Act, 2011).

Psychologically, children are unique individuals and each child has a different character. The development and learning in children are influenced by their biological maturity and their environment. Children are seen to be able to develop into new skilled human beings if they are given the opportunity to explore themselves. As early as 2 to 14 years of age, children have a strong desire to communicate (Elizabeth B. Hurlock, 2002).

According to Kendra Cherry (2022) in her writing which commented on Piaget's theory, children's cognitive development in learning occurs through four main steps namely the *Sensorimotor stage* (0-2 years), the *Preoperational stage* (2-7 years), the *Concrete operational stage* (7-11 years) and the *Formal operational stage* (12 years and above). The theory of cognitive development introduced by Piaget not only focuses on science but also children's intelligence. Piaget argued that children are like little scientists who are passionately active and creative in exploring new things. Every day, they learn through observing the situation around them.

Art Activities

Art activity is a teaching method to help individuals with specific needs to achieve maximum cognitive, emotional, social and psychomotor development in the teaching and learning process (Yasmin, 2013). For example, the activity of forming dough is one art activity that helps the development of children who have problems recognising alphabets.

Learning and teaching involving interventions and visual arts media can also help develop children's mental health. This method also helps them how to combine images with themes. The assessment of the stage of childhood proficiency ability is taken approximately from formalistic rules through the principles of visual arts language (Lindo & Ceballos, 2019).

Intensive experience in art activities is an essential tool for developing one's creative thinking. This creativity is the ability to create something of value by combining skills in terms of proficiency and imagination. The combined results of this skill and imagination can stimulate children's minds to be more creative in producing works of art. Creativity is derived from the Greek 'create' — meaning 'to fulfil' (Prof. Dr. Abdul Shukor Hashim et al, 2011).

In addition, this process uses images and art media to help form individual creativity and response to create products reflecting the development, ability, personality, interest, concern, and concern of an individual (Yasmin, 2013). It is also used as a therapeutic activity to form emotions and human behaviour.

METHODOLOGY

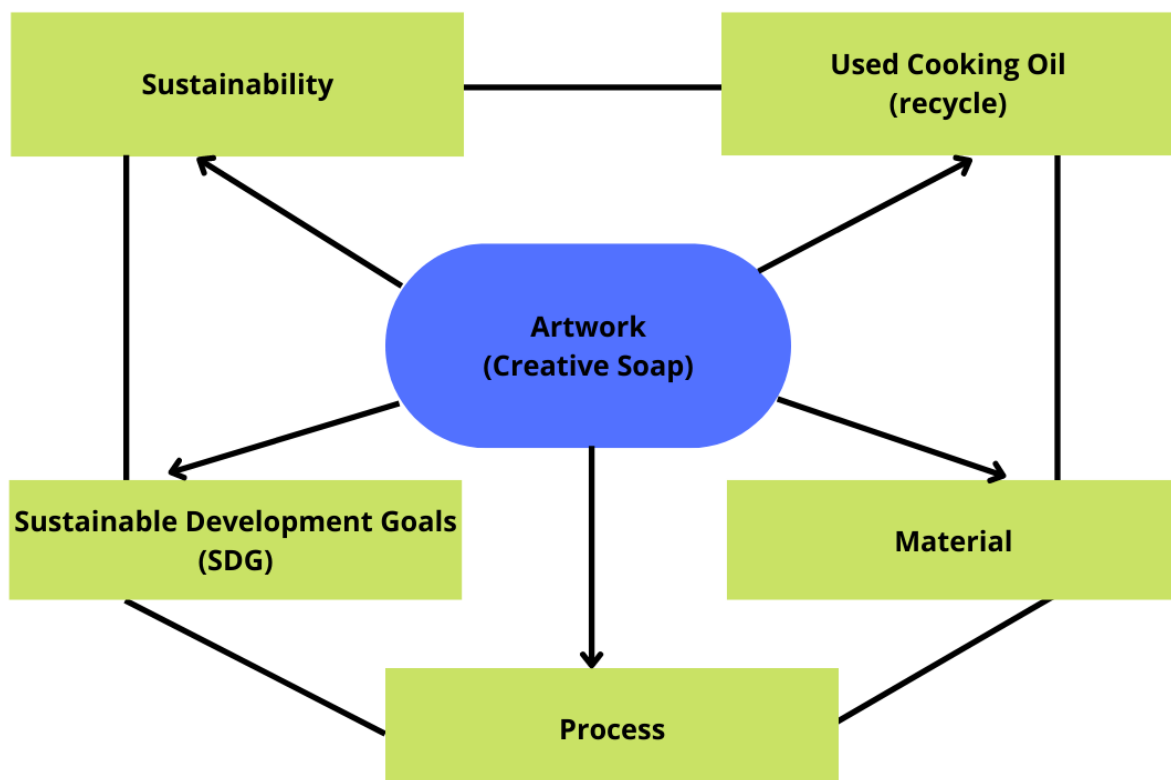
The approach used in this study prioritises the involvement of reviewers in the field by going through an in-depth observation process and meeting and collecting related documents (Cresswell, 2017). For the initial phase, the campaign collection of used cooking oil was carried out in areas around Seri Iskandar, such as Bandar Universiti, Taman Maju, Taman Gemilang, Tronoh, Parit and Bota. This campaign was also spread among residents through the WhatsApp platform and Facebook pages. Through this campaign, the researcher came down to the

spaciousness and met the community around the location while explaining the importance of re-delivering the used cooking oil.

Like any qualitative study, an art study also involves almost the same study procedures and strategies. According to Blomgren (2019), qualitative methods are obtained through field data, interviews, photography, and video recording. This study is based on participatory fieldwork of the process of recycling used cooking oil into a form of creative art carried out by children and researchers around Seri Iskandar. The art activities were conducted in two sessions and there are 26 participants involved in these activities. Investigators used this approach by holding sessions of producing soaps instead of cooking oil. The researchers recorded each step in the process conducted by the children participants in shaping and building creativity from the beginning of production until the final step of the formation of the creative soap.

Figure 4

Used cooking oil exploration study model



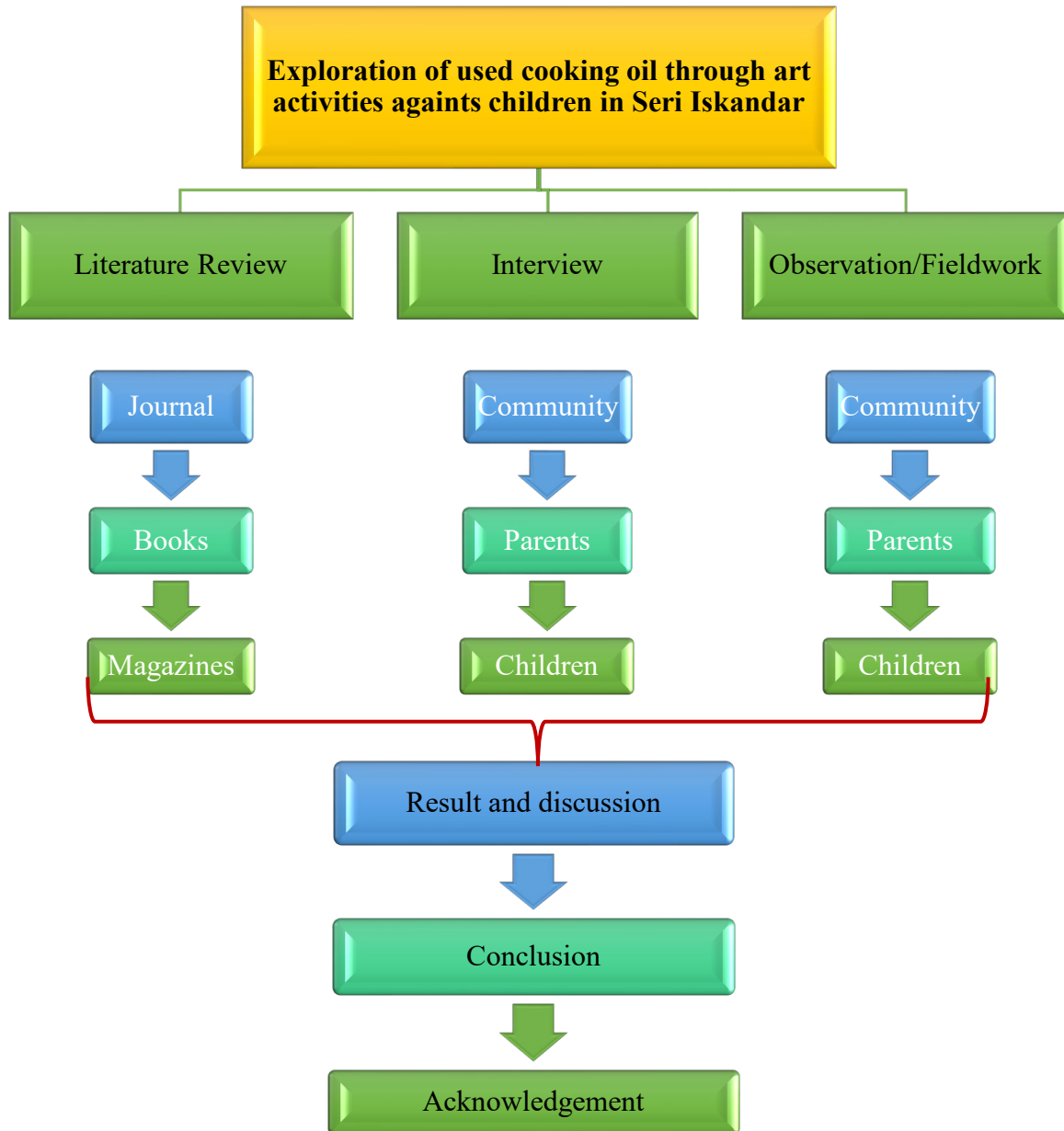
Source : Sukria Fithatmadja (2005)

Through the study model shown above (Figure 4), it can be explained that a work of art is part of the language of humanity. It results from a background that is interconnected to each other. Tjetjep Rohendi Rohidi (2011) also stated that the process of producing a work of art is an activity that can build interaction between individuals.

Figure 5 below shows the procedure of collecting data on the exploration of used cooking oil through art activities against children in Seri Iskandar. The study began with the observation of the local community's awareness on the importance of protecting the environment related to problems around Seri Iskandar, which was water pollution. Further observation found that the primary source of contamination was the dumping of used cooking oil waste into drains around living quarters and commercial buildings.

Figure 5

Research design on exploration of used cooking oil through art activities against children in Seri Iskandar



Next, research was done on the potential of used cooking oil by carrying out recycling activities to be used as a material in producing creative artworks. This recycling activity was carried out with the children around Seri Iskandar. Children were taught and briefed on safety measures and the materials needed to produce the artworks. The children were explained on the steps on how to recycle used cooking oil.

The ingredients used were cooking oil, clean water, sodium hydroxide, coconut oil, and fragrance essence. Dewi P et al. (2015) explains that sodium hydroxide (NaOH) is a dense white substance which is available in the form of pellets and white fragments. NaOH is liquid and spontaneously absorbs carbon dioxide (CO₂) from free air. NaOH is also very soluble in water, releases heat when dissolved, and is quite dangerous for children if not monitored.

Figure 6
Infographic of how and safety measures produce creative soap

SÖAP HOW TO CREATE

Below are the steps to produce soap from used cooking oil. There are a few ingredients and tools to be prepared. Make sure all of the ingredients and tools are complete.

Ingredients:
 Used cooking oil, coconut oil, sodium hydroxide, clean water, perfume and coal.

Tools:
 A jug, a bowl, a spatula, containers/drink packets, a filter, an egg beater, a face mask, a pair of hand gloves, a pair of goggles and an apron.

HÖUSE HOW TO CARVE

Below are the steps to carve a soap into an adorable house. The shape of the house will depend on your creativity. There are several tools that you need to prepare, such as: a paper, a pencil, a pair of scissors, a soft brush, a soft sponge and a carving set.

Note: Children need the supervision of their parents during this activity. Please make sure that you wear the complete safety apparel correctly to prevent accidents and mishaps.

Source: Illustration by Hairulnisak Merman.

Under the monitoring and supervision of the researchers, each child was left to his/her own creativity in shaping and producing creative soaps, in an effort to improve their cognitive skills while also advocating for their right to holistic development, especially in terms of physical development, as stated in the National Children’s Policy. Through this activity, researchers identified the children's abilities and weaknesses in the process of mixing, shaping, and carving through the given infographics.

According to Koster (2012), the exposure and supervision of these creative art activities can help children explore and develop their positive emotions in the aspect of self-thinking. In fact, the functions and approaches applied in this creative soap production activity also provided an opportunity for researchers and children to collaborate artistically through critical thinking in solving the problem of creative soap formation.

Figure 7

Description of the process of mixing ingredient



Source: Photo by Hairulnisak Merman.

The approaches and mechanisms implemented were to (i) recognise the potential of used cooking oil; (ii) understand the processes implemented and (iii) form a work of art — i.e. creative soap. In addition, Williams (2019) found that this approach also opens up opportunities for children's development in understanding art elements and focused design. Figure 6 shows the atmosphere of group creative soap-producing activities carried out by children before performing them.

RESULT AND DISCUSSION

Awareness programs on the importance of recycling used cooking oil should be increased in the local community, especially among the children. This is because they will be the heirs and connectors to the next generation. This activity has opened up a space for researchers and children to identify the true potential of used cooking oil. They found that used cooking oil is not only used as an ingredient in producing biodiesel but can also be used as an ingredient to produce creative soaps.

Figure 8
Children make creative soap



Source: Photo by Hairulnisak Merman.

In general, all children have the potential to be creative. However, because the values of our modern life right now encourage the usage of left-brain function more, children are less involved in creative right-brain activities such as writing, drawing, and producing shapes. Thus, their creative forces become less active and become weak. The implementation of forming and carving soap in groups can indirectly help children prepare themselves to practice their ability to communicate, think critically, and even collaborate with each other (Edward de Bon, 1994).

The children's excitement about producing soap was not solely related to the production process but also included exploring the ingredients and the process of creativity in making creative soaps. The production of the creative soaps allow us to view the artistic understanding and personal balance of the children (Salem et al., 2006). In fact, it can support creative development, which naturally leads to social interaction.

Figure 9
Sample of feedback notes from participants I



Source: Photo by Hairulnisak Merman.

Figure 10
Sample of feedback notes from participants II

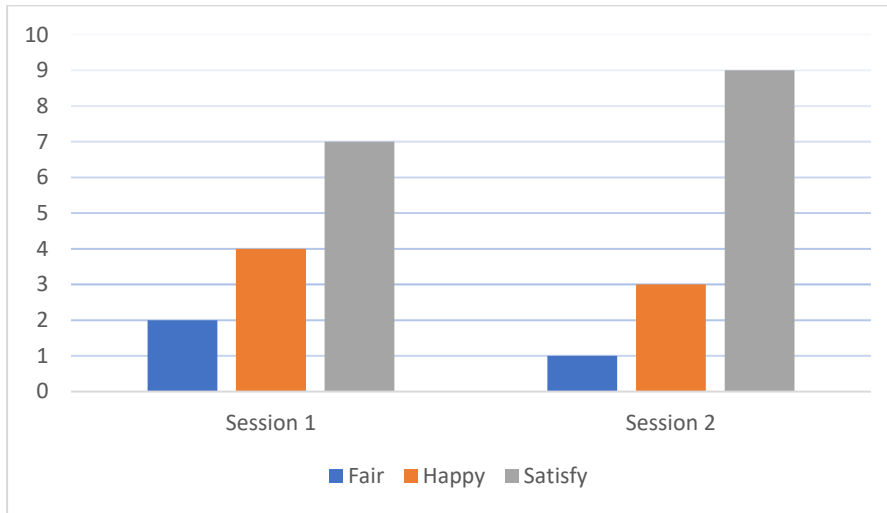


Source: Photo by Hairulnisak Merman.

Figures 9 and 10 are samples of feedback notes from participants. Participants are required to express their feeling about the art activity in form of creative notes. Most of the participants who attended the workshop expressed a good response. Furthermore, some of the participants expressed that they enjoy the process of producing creative soaps from used cooking oil. On the other hand, this art activity also helps participants learn the fundamentals of art skills such as mixing materials, shaping, and carving.

Figure 11

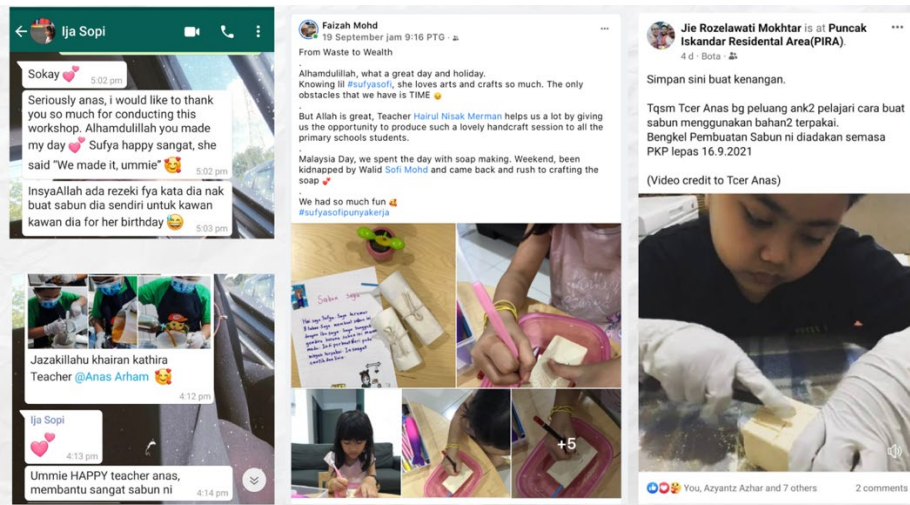
Result of feedback from participants that involved in art activity



Figures 11 show the feedback from participants involved in the art activity. Based on the results above, most participants are satisfied with the program, which is 16 out of 26 participants. Besides, 7 participants are happy, and only 3 are fair with the art activity.

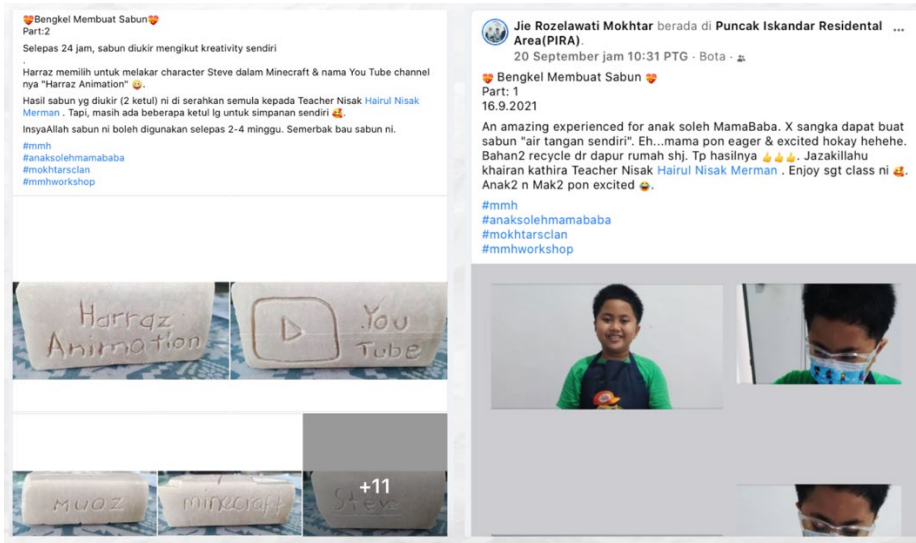
Figure 12

Sample parents' feedback I



Source: Photo by Hairulnisak Merman.

Figure 13
Sample parents' feedback II



Source: Photo by Hairulnisak Merman.

Figures 12 and 13 show samples of parental responses collected after the session, and unexpectedly, the vast majority of parents provide good feedback. Parents believe this art activity will enhance environmental awareness in the future. This activity allows parents to spend time with their children as they make soap. In fact, producing a creative soap can also be utilized for everyday purposes as well.

Figure 14
Creative soap's work on display at Gallery Al-Birunni, UiTM Seri Iskandar, Perak



Source: Photo by Hairulnisak Merman.

For example, children in Seri Iskandar managed to produce creative soaps from used cooking oil. This creative soap is not only on display at Al-Birunni Gallery, UiTM Perak, but it can also be used as hand wash and for floors, shirts, and so on. The production of this creative soap has also become a solution for the local community in solving the problem of water pollution, which causes clogged drains and bad smells.

CONCLUSION

Such is the function of researchers in highlighting artistic knowledge by conducting activities involving used cooking oil materials with children around Seri Iskandar. This study is well-suited to realise the government's challenges in ensuring the involvement of children in producing creative works using wasted materials. Thus, this study also indirectly includes the implementation strategy of the 11th objective of the Children Act, which is to promote a healthy and safe environment for children.

As Pablo Picasso said: "Every child is an artist." Hence, the function of researchers is to provide opportunity and space to activate children's potential. This approach is also an exciting way of education to raise awareness in the local community, especially among the children, on the importance of recycling practices in improving hygiene and better quality of life. This awareness of recycling is no longer an option but rather the duty of all to be nurtured in daily life to ensure the future of the environment.

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Tarikh : 20 Januari 2023

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Tuan,

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Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

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27.1.2023

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