



Batik Colek and Batik Celup Through Community: A Prospect of Introducing The STEAM Strategy to The Community

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ABSTRACT

This training and mentoring program was an effort to introduce the creation for making of batik colek and batik celup shibori to the Padukuhan Kalipucung community, Bangunjiwo village, Kasihan, Bantul, in Yogyakarta, especially through mothers who were members of the PKK/Dasawarsa. The objectives of this activity include: 1) disseminating knowledge to the community, especially among women of the Dasawisma about batik colek and batik celup shibori, 2) improving the abilities and skills of the community, especially mothers who were members of the Dasawisma to make batik colek and batik celup shibori, 3) bringing out the spirit of entrepreneurship among the community, which in turn is expected to improve family welfare. From the participant's questionnaire in training and mentoring, the results obtained show overall participants' perception of training and mentoring activities was on average of 3.23 with high categories. In addition, participants felt motivated in participating in the activities with an average of 3.38. Through the response of the participants, the service and research team believes that the activity of making batik colek and batik celup shibori has good prospects to introduce STEAM strategy among the community because making batik colek and batik celup shibori has aspects such as science, technology, engineering, art, and mathematics.

Keywords: *Batik Colek, Batik Celup Shibori, Dasawisma, STEAM Strategy.*

1. INTRODUCTION

Batik was ratified as an Indonesian Cultural Heritage by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) on 2 October 2009. It has a very broad meaning for human life [1] and has a strong philosophical meaning, therefore it must be studied and preserved [2]. Batiks are also practical in their usefulness for fulfilling human needs, while they have a visual function that involves the elements of beauty and thematicness within batik itself.

There are three types of batik based on the production method: hand-written (batik tulis), stamped (batik cap), and tie dye batik (batik jumputan). Tie dye batik itself has several techniques in its production, one of which is batik colek and batik celup shibori, where the production process is to tie and dip the fabric into the dye, which can produce a variety of motifs in a simple way and does not require a long period of time [3]. The production process of shibori batik is faster than other batik with simple manufacturing techniques, materials and tools that are

easy to find [4]. The results of the findings in the study explain that the shibori batik is very attractive and has a high selling value [5].

Accordingly, the community service team conducted a community service activity entitled "Improving the Creativity of Mothers through the Making of Batik Colek and Batik Celup Shobori, especially for the Dasawisma". This aimed to increase the creativity of mothers resulting in works that have value and knowledge related to batik and can hopefully be used as a business idea to develop the surrounding community in the future. Dasawisma as the smallest group of Family Welfare Development (PKK) groups plays a strategic role in actualizing a prosperous family. Therefore, Dasawisma as a partner is expected to lead implementation of the 10 main PKK programmes and government programmes. Through Dasawisma, there are many things that can be done, such as developing skills for women of the members in order to increase knowledge and develop an entrepreneurial spirit for family welfare. Knowledge and skills are essential for Dasawisma members, in order to advance

and improve the quality and capability of the organisation. The welfare of the nation begins with the welfare of the family, which is one of the targets of development.

The community needs a strategy that helps mothers to absorb the knowledge given in increasing creativity in the Dasawisma through training in making batik colek and celup shibori. With this effort, the team implemented the STEAM learning strategy, which is usually used to improve students' abilities in the school environment, and applied it to community life. The purpose of this STEAM strategy was to enable mothers to develop critical and analytical thinking skills based on their knowledge that integrates science, technology, engineering, art, and mathematics. After analysing the situation and problems in the field, we were interested in carrying out community service with the title "Batik Colek and Batik Celup through the community: Prospects for introducing STEAM strategies to the community."

2. THE PROBLEMS

Based on the discussion with the Chairperson of PKK of Kalipucang, Bangunjiwo Village, Kasihan Sub-district, Bantul, various PKK/Dasawisma programmes and activities have been implemented. However, more activities were needed to occupy the mothers to develop some useful skills. This activity consisted of knowledge and skills which could be acquired at home or within PKK groups, in turn contributing to family welfare and improving the local economy.

3. METHODS OF IMPLEMENTATION

By providing training and mentoring, the community service was carried out by carrying out activities to plan and practice batik colek/celup shibori. For the period from April 2023 onwards, this training took place at two meetings. A number of training methods were used to carry out the community service, such as:

3.1. *Lecture/Information Delivery Method*

At the first meeting, this lecture method has been used. The team presented a number of examples of activities and steps for the design and production of batik colek and celup shibori in this first meeting.

3.2. *Q&A Method*

The question and answer method is a method that allows direct communication that is two ways traffic because, at the same time, there is a dialog between the material provider and the facilitators and mothers. The presenting provider, the facilitator and mothers are directly linked to each other within this communication. Q&A was conducted at the first meeting and the second meeting.

3.3. *Demonstration*

The demonstration was done so that the service provider team, which was also in charge of providing the materials, could show the participants directly how to make batik colek/celup shibori, and then they could put what they had seen into practise.

During the implementation of this community service, a strategy was introduced in the training of making Batik Colek/Celup Shibori using the STEAM method (Science, Technology, Engineering, and Mathematics). Typically the STEAM method is used as a learning method for students that requires them to be active and able to solve problems independently. In this training, the team used the same strategy as the STEAM method, as follows:

a. Science

The participants were given knowledge related to the types and kinds of batik colek/celup shibori by displaying some examples of finished works. In addition, they are provided with knowledge related to techniques in making the batik and understanding related techniques in mixing colours.

b. Technology

The participants were supplied with the equipment used in making batik colek/celup shibori, such as the type of fabric used, the type of colour and colour mixture used, and simple supporting equipment such as rubber or plastic packing rope to tie the fabric.

c. Engineering

The participants of the training demonstrated the making of batik colek/celup shibori in accordance with the directions given previously to make motifs derived from fabric ties with rubber or plastic packing rope.

d. Art

The participants were required to be as creative as possible in combining colours and dyeing or binding techniques to create interesting and well-made Shibori batik motifs. They designed a variety of batik motifs and used a combination of colours.

e. Maths

The participants made some interesting batik works as a result of the proportion or comparison of mixed colours, geometric shapes to form the resulting batik motifs.

The procedure of this community service is as follows:

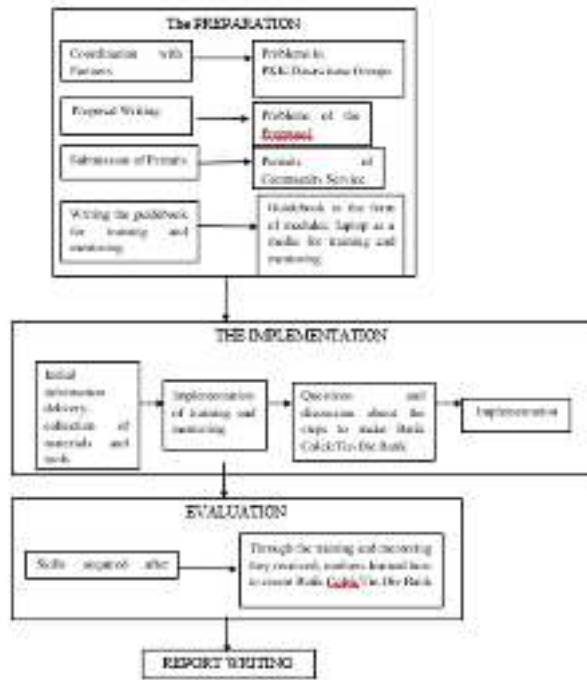


Figure 1. Flowchart of the Community Service

4. DISCUSSION

4.1. The Target Outcomes

In this programme, one of the outcomes was in the form of services. The service provided in this service was a training and mentoring service to the mothers of the PKK/Dasawisma on making batik colek/celup shibori. The assistance provided was to provide training and assistance to mothers to utilise the surrounding environment and simple materials, such as: cloth, plastic packaging rope/rubber bands, textile dyes, used mineral bottles, plastic bowls, brushes, and irons. The approaches in this training and mentoring were to deliver the concept and how to make batik colek/celup shibori and assist the hands-on practice in making it. The community service programme was carried out in coordination with the PKK/Dasawisma of Kalipucang, Bangunjiwo Village, Kasihan Sub-district, Bantul.

The community service team provided guidance, demonstrated, and assisted the mothers in preparing materials, designing activities, and putting the activities into practice by making batik colek/celup shibori. The following are examples of the results of batik colek/celup shibori.



Figure 2. The Results of Batik Colek/Celup Shibori Making

4.2. Results

There are 18 mothers who joined the PKK as part of this community service. The proposal was directed to Kalipucang, Bangunjiwo village, Kasihan subdistrict and Bantul district. All activities of this service were conducted face-to-face and through practical activities. The activities were launched on March 1, 2023, by submitting a request for cooperation letter to the chairperson PKK Kalipucang and immediately received an answer in the form of a statement of willingness as partners.

In order to determine the day for training and mentoring as well as the number of participants involved, a direct coordination with the PKK Kalipucang Chairperson took place. The coordination was carried out on 13 May 2023. It was decided to provide the first assistance on June 11, 2023 and the second on June 18, 2023. Materials used were prepared by the university students. The materials include: 1) *paris* and cotton fabrics in white and light beige colors, 2) textile dyes, 3) small brushes, 4) rubber bands and plastic packing rope, 5) scissors, 6) used plastic containers, and 7) gloves.

Training 1 was held on Sunday, June 11, 2023. The training took place at the house of PKK chairperson of Kalipucang. The initial material presented was an explanation of the making of batik colek and celup shibori. Appendix 1 sets out the explanation. PowerPoint and video footage have been presented in the explanation. Furthermore, the mothers were divided into 6 groups, each group consisting of 3 mothers. The team gave an example of making batik colek with the technique of tying the cloth using rubber bands/plastic packing rope. Then the mothers were invited to mix textile dyes. Red, blue, and yellow are the basic colours of textile dyes. The community service providers guided them in mixing the dyes. Blue with yellow, with a certain ratio, becomes green, red with blue can become orange, and so on. After the cloth was tied according to the pattern of each group's creation, the next step was for the mothers to apply colours with a brush between the cloth ties.



Figure 3. The Process of Applying Colours with a Brush



Figure 4. The Results of Batik Colek Making

On Sunday, 18 June 2023 the second training and mentoring took place beginning at 13 o'clock. The second training and mentoring was to Celup shobori. The materials used in batik colek were still the same, but no brush was used. However, it is also possible to work with brushes in dyeing batik. This method involves dyeing a piece of clothing in textile dye as soon as it has been knotted according to the desired pattern. The results of making celup shobori can be seen below:



Figure 5. The Results of Making Celup shobori

The best work was chosen in order to recognize the mothers' contributions. The following criteria were taken into account when judging the work: neatness of painting, dye techniques, creativity in textile tying, patterns created, and colours. The community service team carried out the judgement. The results of the best work of making batik colek and celup shibori can be seen in the appendix, and souvenirs were handed over to mothers who had made the best work.



Figure 6. Awarding souvenirs for the best work

To determine the perceptions of the participants during the training sessions, a survey was conducted. This survey aimed to find out the participants' responses related to this training. A questionnaire was distributed to the participants to record their perceptions of the training activities. The results were analysed using descriptive analysis techniques. The assessment scale used to measure participants' perceptions was a Linkert scale with 4 assessment categories, which was to be used as the basis for interpreting the average assessment for participants' perceptions.

Categories of Perception Scoring

Description	
	Very Low
	Low
2,51 – 3,25	High
>3,25	Very High

The interpretation of the participants' perceptions was carried out by using the mean value of each indicator answer.

Table 2. Description Analysis of Participants' Perceptions

Perceptions	Mean + SD		Categories
Interest in making batik colek and celup shobori	3.44	0.51	Very High
Having motivation in participating in Making batik colek and celup shobori	3.38	0.50	Very High
Among the 2 activities, the easiest one to do was Celup shobori	2.94	0.44	High
The most enjoyable activity was the process of making celup shobori	3.31	0.60	Very High
Of the two activities, the better result was celup shobori	3.31	0.60	Very High
Both activities can be combined to create another masterpiece	3.44	0.51	Very High
Motifs in batik colek were more varied	3.19	0.54	High
Through the training, there was a desire to create their own masterpieces with both celup shobori and Batik colek	3.06	0.25	High
Celup shobori motifs have a connection with maths	3.06	0.25	High
The making of celup shobori and batik colek may serve as a side activity for mothers	3.13	0.34	High
There is a great opportunity to develop celup shobori and batik colek in the future	3.25	0.45	High
There are great opportunities in the economy through promoting celup shobori and batik colek in the future	3.31	0.48	Very High
Total	3.23		High

Based on the table above, an assessment was obtained regarding the participants' perceptions of the community service activities that had been held. The average score of participants was 3.23, with a high category, as regards their perception of the community service activities. This indicates that participants were responding well to community service activities. The highest response was that there was an interest in making celup shobori and batik colek as well as a special interest where this activity could make the two modes of batik into new masterpieces with an average of 3.44 each. The participants were also motivated by the average of 3.38 to participate in the production of these two batiks. In essence, the participants in this activity expressed great

interest and enthusiasm to learn and explore how the process of making celup shobori and batik colek work so that they can produce excellent innovative works of art.

According to the final findings of the training activities for making batik colek/celup shobori with the mothers of the PKK/Dasawisma in Kalipucang hamlet, Bangunjiwo Village, Kasihan Sub-district, Bantul, it can be concluded that the activities could attract the participants' interest to be creative and channel their bright ideas related to making batik ornaments. In addition, having the STEAM approach as the main strategy in this training provided insight that many elements were essential in this training activity, for instance, linking science, technology, engineering, art, and maths. This approach is very effective in engaging

the community's enthusiasm in the future. According to studies by [6], this batik-making activity will help community groups become more skilled. Therefore, it is anticipated that this activity will enhance batik-making abilities in the future, provide insights into how to increase the value of family welfare, and provide information on the advantages of jumputan batik as a national treasure as well as various simple batik designs [7][8].



Figure 7. Image of Participants' Perceptions on the "Community Service Activities"

CONCLUSION

Based on the implementation of the activities, the results of data analysis, and discussion, it can be concluded that the training of making batik colek/celup shibori with the mothers of the PKK/Dasawisma of Kalipucang, Bangunjiwo Village, Kasihan Sub-district, Bantul as follows: a) Successfully provide new knowledge and insights about batik colek/celup Shibori for the community, where the results of batik can be used for personal purposes and also for business purposes (improving the creative economy); and b) Successfully increasing community creativity through the making of batik colek/celup shibori, which is seen from how to fold cloth and dye colours to produce new batik motifs that are unique and have their own distinctive texture of each work made. Additionally, the community learned about the STEAM strategy in making batik colek/celup shibori, which can be used as an insight because in making batik, knowledge is obtained from various elements, including science, technology, engineering, art, and mathematics. In the future, the effectiveness of community service programmes still needs to be developed further. For example, the needs for training in the utilisation of batik colek/celup shibori and the marketing strategy for batik colek/celup shibori products.

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