

DEVELOPMENT OF ENVIRONMENTALLY FRIENDLY BATIK PRODUCTS IN 2D AND 3D MEDIA

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ABSTRACT

Various methods of developing batik have been promoted in Laweyan Surakarta to increase sales volume, however, seeing the phenomena in the field shows that the accelerated growth of the batik creative industry is often not accompanied by an increase in awareness of the ecological impact it causes. If this condition is not taken seriously, it will lead to prolonged social conflicts and environmental problems. The coloring system in the home industry batik industry has a few problems that have not been handled properly. This study aims to find an effective method to overcome these conditions. One of the steps taken is the provision of knowledge to the community. This can be started from the community of batik artisans. The eco-friendly batik creative industry is a creative industry that develops on a small or medium scale while still paying attention to the surrounding natural conditions. The initial step of this research is to conduct a study on the sustainability of the batik creative industry through the development of environmentally friendly Laweyan batik products that have export potential in 2D and 3D media. The development of the eco-friendly Laweyan batik creative industry is carried out using an environmentally oriented batik creative industry approach. This research is descriptive qualitative research. The research was conducted by adapting the procedural model research design of Borg and Gall (1989: 784-785) and Bryan Lawson (2007: 36). Data collection was carried out using in-depth interviews, documentation studies and indirect observation (questionnaire). The results of the research show that environmentally friendly batik products can not only be applied to cloth media but can also be developed on 2D and 3D media. This product development can be done through 2D and 3D product diversification to help increase sales volume.

Keywords: Eco-friendly batik, export potential, 2D batik products, 3D batik products

1. Introduction

The presence of creative industries on a small scale is principally an effort to create new livelihoods for the community. At a higher level, the creation of new livelihoods is expected to be in line with the concept of environmental ecology. Industrial growth is expected to continue to pay attention to environmental sustainability. Attention that is quite balanced between increasing economic growth and ecological sustainability will have an impact on maintaining ecological life so that the environment will not be disturbed using hazardous substances that have the potential to cause pollution. Conditions in the field show that the use of synthetic dyes in batik is not taken seriously. If this phenomenon is allowed to continue, it will disrupt the ecosystem around the craft centers. Education for the community of batik artisans to empower the community is a program of alleviating social, cultural, and economic problems that is carried out, run, and supervised by the local community under the guidance of competent partner organizations. Community education for artisans in community empowerment programs has been implemented in various forms since the New Order era. This program generally aims to build community competency structures independently so that they can carry out analysis and synthesis of local regional potential, which in turn is able to drive economic growth in the real sector. Partner organizations

in community empowerment programs can be in the form of institutions or individuals who have significant competence with the needs of the community.

The need for teaching materials for community education in the artisan community empowerment program plays a role in bridging the understanding gap in the analysis and synthesis of local regional potential. Similar programs have been implemented showing that community empowerment programs can run optimally if they receive political and cultural support from the local environment [1]. In this regard, an understanding of cultural wisdom and local socio-economic potential needs serious attention. Craftsmen's society is a social structure that is bound socially with the surrounding environment. This social bond can be seen from the high level of solidarity among them. This potential for solidarity can be used as significant social capital to build alternative economic bases. Social bonds are manifested in attitudes that tend to be passive towards changes that can be assumed to disrupt social harmony. Social change, which has implications for behavior change, can be carried out through an approach to socio-cultural nodes in certain areas. Socio-cultural nodes can take the form of non-formal organizations or communities formed based on similar religious understandings, professional affinity, arts or sports communities, or religious activity groups [2].

The main objective of the education of artisans in the community empowerment program is to create changes in thinking patterns which have implications for changes in life orientation by using the economic level variable as an indicator of success [3]. An empowered community is a community that is economically able to meet its needs independently so that it has implications for increasing welfare [4]. The basic problem for artisans is the lack of information to access alternative economic sources. Conditions that are often encountered in the field show that the search for alternative economic sources often ignores ecological aspects. The use of chemical substances harmful to the environment is considered a common action. This condition is more caused by the ignorance of batik artisans, bearing in mind that there is no institution that intensively provides insight into the systemic ecological impacts that may arise. It is hoped that the growth of people's creative industries will be accompanied by insights into environmental preservation, bearing in mind that disruption to ecological systems will in turn have a significant impact on reducing production yields in the agricultural sector.

2. Research methods

In carrying out this research using the Borg and Gall procedural model research design which consists of 10 steps (1989: 784-785) [5]. For the development of environmentally friendly batik products, this research was developed following the product design development stages of Bryan Lawson (2007: 36) combined with the stages in Borg and Gall's development research [6]. According to Lawson, product development is divided into 4 development stages, which consist of the assimilation process, general study, development stage and communication stage. The details of Lawson's thinking are depicted in chart 2.1:

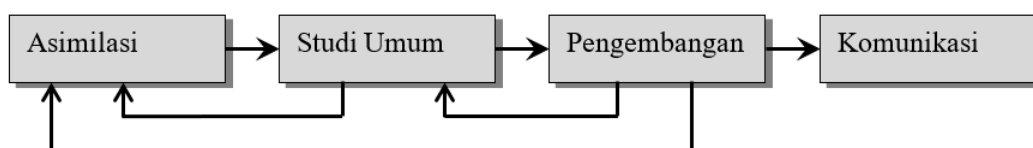


Chart 1. product design stages by Briyan Lawson (2007)

Explanation of each stage is as follows: 1) Assimilation stage is the stage of general information accumulation and information related to the problem to be handled; 2) The general study stage is the problem investigation stage, which summarizes the investigation of solutions and the availability of solutions to be offered; 3) The development stage is the tentative solution modification stage; 4) The communication stage is the stage of communicating solutions to interested parties.

Based on Lawson's product development model, the research objectives to be carried out can be grouped into four categories. The four research objectives are 1) research aimed at scientific development, 2) aimed at developing the community's creative industry, 3) aimed at improving the process of a product work, and 4) the purpose of product beneficiaries. The research subject and data source is the artisan community in the East Java region.

This study uses 4 methods of data collection. These include in-depth interviews, Participatory Rural Appraisal (PRA), direct observation or observation and studies or documentation studies [7]. Data analysis was carried out by following the following steps: (1) analyzing and reducing data, (2) identifying and uniting data, (3) categorizing and classifying data, and (4) interpreting and explaining the meaning of the data.

3. Discussion

Contribution of Community Empowerment of Batik Craftsmen to Development Community empowerment views society as the subject of development. Thus, the development carried out is oriented towards community development. In this case the community is seen as having social capital that can exercise internal control over both material and non-material resources. However, the phenomena in the field, the potential possessed by the community, especially the artisan community, has not been optimized. Problems that arise are not only caused by behavioral deviations but also due to policies that are not on target, and the implementation of policies that tend to be inconsistent. As a result of policies that tend to be centralized, problems that arise are handled unevenly and incompletely. Such conditions are largely due to the lack of opportunities given to the community to explore their potential in solving social problems. Basically, community development can be carried out better if the community is equipped with sufficient knowledge and understanding. This of course requires the involvement of various parties. Development that tends to be centralized will not work better. Therefore, the handling of social problems needs to be done with a decentralized approach by changing the reorientation of development.

Regarding the issue of empowering the artisan community, especially batik artisans, special handling is needed. This is an effort to optimize local potential as a basis for determining the direction of local development. Empowerment can be carried out with a mentoring process. Assistance can be carried out by various parties, either with the central government, regional or partners from community elements or institutions that work closely with batik artisans. This assistance needs to be carried out intensively to provide direction, knowledge, understanding and all things to explore the potential of the artisan community, the potential of the local area, the opportunities that exist and all things that are beneficial for the progress of society. In this case the approach puts the community of batik artisans as a potential subject. This community-centered development places greater emphasis on the aspect of empowerment, in this case the community's creative initiatives as the main development resource, and views material and spiritual well-being as the main goal in the development process.

Empowerment contributions for artisan communities for innovation and science and technology development include: 1) recognition of local regional potential; 2) the level of needs of the local community in obtaining eco-friendly batik arts and crafts education services; 3) the formation of cooperation between partners and the community in the context of developing environmentally friendly batik; 4) the creation of teaching materials for the education of batik artisans; 5) build community awareness about the importance of education in the arts and crafts of batik for the artisan community [8].

Eco-Friendly Traditional Batik Motifs in 2D and 3D Media Traditional batik is one of the works of art that is widespread in Indonesia. The motifs contained in traditional batik art always display unique motifs. The uniqueness of these motifs is widely explored from regional potentials related to the decoration in each region. Each region in East Java has a decorative variety of local geniuses. Various batik motifs can be explored from this decoration. In East Java, decoration is divided into 2 major groups, namely 2-dimensional decoration, and 3-dimensional decoration. The 2-dimensional decoration is found in batik decoration, while the 3-dimensional decoration is found in the decoration of buildings, temples, or masks. The types of decoration can be grouped into: 1)

Geometric decoration, consisting of meanders, twists, slopes, banji, kawung and tumpal; 2) Variety of decorative flora such as flowers; patra (leaves), lungs (shoots/stems) and tendrils, fruit, roots, tree of life motifs; 3) Variety of decorative fauna, including: poultry, peacocks, hornbills, eagles, phoenixes, roosters, parrots, other birds, aquatic animals and reptiles such as fish and snake motifs, dragons, crocodiles, monitor lizards and lizards, snails, centipedes and scorpions, land animals and creatures motifs; 4) imaginative: motifs of buffaloes, horses, elephants, lions, deer and other animals, imaginary or imaginative animals; 5) Various decorative human figures, including: whole figure motifs, masks and kala, mamuli and other body parts, wayang motifs; 6) Natural object and landscape motifs such as sun, moon and stars motifs; clouds and rocks, fire and water; scenic motifs.

Many of the existing motifs are developed from the potential of the local area, such as the development of motifs from farmers' crops, including corn, pumpkin plants, rice, and others. Various methods of developing batik have also been developed to increase the product as a commercial item. However, phenomena in the field show that the accelerated growth of the batik creative industry is often not accompanied by an increase in awareness of the ecological impact it causes. If this condition is not taken seriously, it will lead to prolonged social conflicts and environmental problems. The coloring system in the home batik industry is a problem that has not been handled properly. Therefore, the development of the quality of batik products needs to be accompanied by the development of adequate technology that considers the health of the local environment.

Batik Motif Designs with Export Potential and Their Applications Design is an activity to find a solution, or an effort taken to solve a problem. The problem that designs deals with is generally the maximum effort to meet the needs in all respects, therefore in general design can be seen as a technological endeavor. Batik motifs that have less potential in the market are then redesigned to attract market interest as an effort to increase purchasing power in the community. With the broad scope of knowledge in the field of design, which results in the emergence of various interpretations of the meaning of design, the various definitions of design ultimately agree that design is always related to solving functional problems. After the process of designing batik motifs is carried out, the motifs are then applied to wearables, using the method with the following stages: 1) mapping of batik motifs 2) selection of potential motifs; 3) design of batik motifs; 4) application of motifs on wearables.

The design will have high value if it is applied to the right media. Various batik motifs have now been used on various disposable objects, such as the example of applying batik motifs to cell phone covers. The following are various batik motifs that are applied to 2D and 3D media on disposable objects:



Figure 1. Contemporary Batik Motif Design of Laweyan crown applied to 2D and 3D media.
(Sayekti, 2012)

Evaluation results of design development by cultural experts and design experts:

Evaluated Components	Question Items	Comment	Suggestion
Visual Review	<ol style="list-style-type: none"> 1. The Clarity of the Mapping of Batik Motifs 2. Diversify Product Appearance 3. The Process of Forming Works 4. Selection of Batik Motifs 	<p>There needs to be a classification based on traditional and profane motives. Diversification can be done more broadly in more varied media.</p> <p>Need an explanation of the process of forming works. Selection of batik motifs can be done based on uniqueness.</p>	
Product Review	<ol style="list-style-type: none"> 1. Clarity on the use of materials 2. Diversification of raw materials 3. Diversify the use of new materials. 4. Efficiency of work production 5. Optimization of functions (aesthetic, ergonomic, and economical functions) 	<p>Need an explanation of the material used.</p> <p>Need a brief explanation of the diversification of raw materials.</p> <p>Need a brief explanation of the diversification of the use of new materials.</p> <p>It is necessary to show in more detail the efficiency of the production of works.</p> <p>Need to reveal more about the function (aesthetic, ergonomic, and economical)</p>	
Economic Studies	<ol style="list-style-type: none"> 1. Value added products 2. Economic value of materials 3. Cost optimization 4. The economic impact of the product 	<p>Need a more detailed explanation of economic studies to provide a clearer picture.</p>	
Design Sociology Studies	<ol style="list-style-type: none"> 1. Clarity of crafter mapping 2. The concept of product diversification 3. The clarity of the character of the batik motif 4. The possibility of forming a community of artisans using batik motifs 	<p>The clarity of the mapping of artisans needs to be balanced with the regional potential for product diversification.</p>	

From the results of the evaluation by experts consisting of cultural experts and design experts, they provide various inputs related to all the components being evaluated. From the results of the evaluation, the research team conducted focused discussions for the next stage to revise based on the evaluation results to make draft II of the product. In the table above, on average, it is necessary to make improvements for product perfection.

The results of the limited field test of the first draft of the batik design:

Evaluated Components	Question Items	Average	Criteria
Visual Review	1. The clarity of the mapping of batik motifs	3,5	Good
	2. Diversify product appearance	3	Good
	3. The process of forming works	3	Good
	4. Selection of batik motif style	3	Good
Product Review	1. Clarity on the use of materials	3	Good
	2. Diversification of raw materials	3,5	Good
	3. Diversify the use of new materials	3	Good
	4. Efficiency of work production	3	Good
	5. Optimization of functions (aesthetic, ergonomic, and economical functions)	3,5	Good
Economic Studies	1. Value added products	3,25	Good
	2. Economic value of materials	3,25	Good
	3. Cost optimization	3,25	Good
	4. The economic impact of the product	3	Good
Design Sosiologi Studies	1. Clarity of crafter mapping	3,5	Good
	2. The concept of product diversification	3	Good
	3. The clarity of the character of the batik motif	3,5	Good
	4. The possibility of forming a community of artisans using batik motifs	3	Good
Total Average		3,57	Good

The table above shows that on average draft I is said to be good, namely 3.57. However, there needs to be improvement in several aspects to get maximum results.

4. CONCLUSION

The decoration is divided into two classifications of decoration as materials for the development of batik motifs which have certain characteristics according to their respective regions. Namely two-dimensional decoration and three-dimensional decoration. These various forms of decoration can be used as a regional-based design literacy that can be applied to various media, both two-dimensional and three-dimensional media. Utilization of batik motifs with regional characteristics can increase sales value because of their uniqueness. Designs on eco-friendly batik motifs are not carried out thoroughly for all types of motifs but are selected based on the potential attractiveness and uniqueness of the motifs. However, all efforts to develop the batik industry need to pay attention to the surrounding environmental factors.

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