

Development of Paku Hata Craft Products in Citumang, West Java

Rachmah Firstriani¹, Fajar Ciptandi²

¹Department of Textile Craft and Fashion, Faculty of Creative Industries, Telkom University, Bandung

²Department of Textile Craft and Fashion, Faculty of Creative Industries, Telkom University, Bandung

¹rachmafirst@gmail.com, ²fajar@tcis.telkomuniversity.ac.id

Abstract *Lygodium flexuosum* (L.) Sw. (*Schizaeaceae*) or paku hata is grown in West Java, especially in Citumang, Pangandaran Regency. The local community of Citumang use paku hata as the main materials to produce crafts such as bracelet, hat, bag, wall hanging, and many more.

Unfortunately, the crafter of paku hata in Citumang still can't show the identity of their product because they don't have much information about design and lack of technique development of paku hata craft product. So, they need to create a way to show the characteristic of Citumang's paku hata product, which can be applied through the textile technique.

Based on the observation, interview and exploration result, natural dye and embroidery technique are applied as patterns that is consists of the meaning of Citumang local value. An effective process is applied on making the natural dye and embroidery technique for paku hata crafter to follow. The application of the techniques is applied on the popular hata bag.

The presence of characteristics in Citumang's paku hata product can give more aesthetic value. Also, the crafter of paku hata in Citumang can have more creativity and insight about production process of paku hata product.

Key words: Paku hata, characteristic, effective

1. Introduction

Citumang, located in Pangandaran Regency, West Java, has huge nature resource potential in the form of fern or in Bahasa known as paku hata. Based on the interview with Misman (2018) He said that the people in Citumang use paku hata as main materials of craft products.

Misman also explains that in 2015 Dinas Perindustrian Kab. Pangandaran held training and workshop for people in Citumang to give them new skills to create paku hata craft products. Based on writer's observation, the paku hata crafters in Citumang still use simple and traditional tools to make their products.

Results of paku hata craft products in Citumang are good, but they still can't show their own character. This is because many crafters in Citumang have not enough information about product technique development.

Textile techniques can be applied to show visual character in paku hata craft products in Citumang, through easy and adaptable experimentation process, then it can create effective textile techniques process based on crafter environment in Citumang.

2. The Research Method

The methodology on this research is qualitative and quantitative. The writer has done interview with paku hata crafters and paku hata collectors to gather all the data about paku hata in Citumang.

Letter, the writer collects objective information on literature study related to paku hata, Citumang area, appropriate technology, craft and fashion theory.

The writer also does observation in Citumang to understand the process of making paku hata craft products. Also, the writer learns about paku hata crafter skills. By doing the observation, the writer has actual data of Citumang's paku hata crafter environment.

Then, the writer does the experimentative methodology to analyze the most effective process on textile technique application for paku hata craft products in Citumang.

3. Literature Study

3.1. Paku Hata

According to Kinho (2009) *Lygodium flexuosum* (L.) Sw. (*Schizaeaceae*) is one kind of *Lycopodiinae* fern (wire fern) which has fibrous roots and yellow stems characteristics. The character of young fern is straight, but when it grows older, it will twist other plants around it. This type of fern has 5 to 70 leaves with 5 cm until 9 cm long and 0,5 cm until 2 cm wide. *Sorus*, or people in Citumang usually called it as *Bongkot*, is located below the leaf bone with brown color and irregular lines. The wire fern usually lives in open area and around 130 meters above sea level.

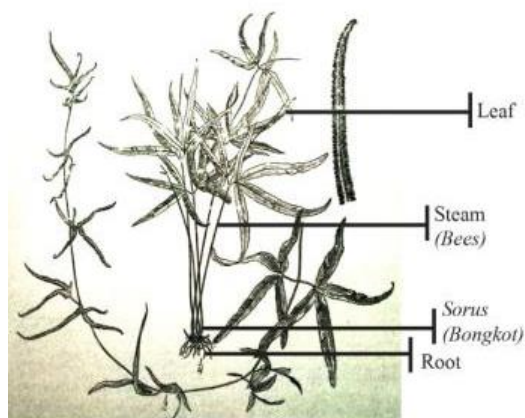


Figure 1. Morphology of Paku Hata
Source: Ochse, Indischie Groenten, 1931:653

3.2. Appropriate Technology

Based on Munaf, *et al* (2008) appropriate technology is a technology based on peoples need. Appliance of appropriate technology requires an effective problem-solving skill.

The explanation has same meaning with the theory of diffusion of innovation that suggested by (Ciptandi, 2018:25) by referring to (Rodgers, 1983:10-27) that the theory of diffusion of innovation is a theory of communication used to deliver a new idea for peoples in the same social system with periodic communication time.

4. Discussion



Based on interview, literature study, and observation, it is known that paku hata crafters in Citumang need an inside of natural color dyeing. Then, it is applied with coil weaving technique and hand embroidery using paku hata fiber to give the characters of Citumang communities into their products.

4.1. Natural Color Dyeing

From the result of observation, it shows that at first the paku hata crafters in Citumang use *Bongkot* to add more colors into their products. However, small segment of *Bongkot* cannot give them much chance to make more variety of patterns. To develop the pattern and characteristic of paku hata products, then natural color dyeing is used.

The process of natural color dyeing uses Secang (*Caesalpinia sappan*) as natural color resource. Secang can be found easily around Pangandaran area. Based on the result of color experimentation, the best result come out from the use of secang mix with salt and tunjung as the mordant without scouring and bleaching process. The color from secang with salt mordant is red, and the color from secang with tunjung mordant is black.

Table 1. Result of Natural Color Dyeing Process with Secang on Paku Hata Fiber

Salt Mordant	Tunjung Mordant
	
Analyze	Analyze
The color is red with a little of brown, inside surface of paku hata has darker color than the outside surface.	The color is black and the color dye cover both of the surface of paku hata

The result of coloring process in paku hata fiber with secang use salt and tunjung as the mordant is fade, but it can be prevented by takes longer time for immersion process. This makes the color of paku hata fiber more pigmented and last longer.

Table 2. Color Faded Comparison





1 Month	3 Month
Salt Mordant	Salt Mordant
	
Red fibrant color	Red colors become darker and little bit brown
Tunjung Mordant	Tunjung Mordant
	
Black dark color	Black color faded and little ashy



Figure 2. Natural Color Dyeing Process in Citumang

The paku hata crafter in Citumang can easily adapt the natural color dyeing process. They use traditional burner to cook the extracts of Secang boiled with paku hata fiber. With the use of traditional tools, the result of coloring process is good and pigmented, then it indicates that the process of natural coloring can apply effectively for paku hata crafter in Citumang.

4.2. Color Composition

The color composition is applied based on paku hata crafter skills which use coil weaving technique. The color pattern is formed in geometrical shape and arranged in three basic forms and have meaning according to Sundanese culture.

According to Wiartakusumah (2012:66-74) on Sundanese traditional proverb (*peribahasa Sunda*), there were three basic symbols in Sundanese peoples. They represent the balance of life performed in triangle, square and circle. The basic three forms are shaped according to environment where Sundanese peoples live.

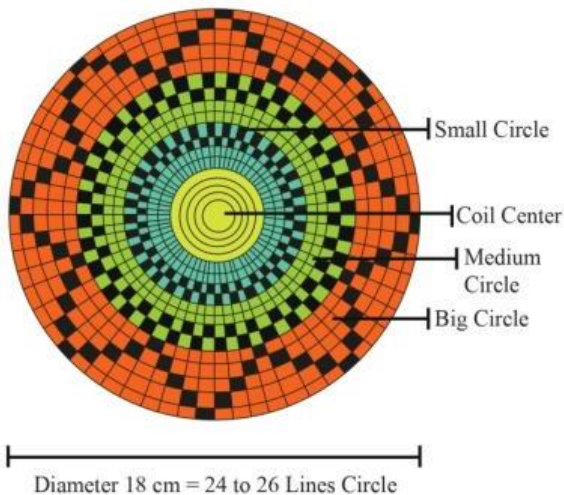


Figure 3. Pattern Composition Area

To arrange the pattern composition of paku hata, use basic size of circle paku hata product. It has 18 cm diameters with average of 24 to 26 lines. Then, every line is divided into three part or circle.

Based on the divided area then, the basic three forms can be added as modular shape and they can easily arrange in every area that already set.

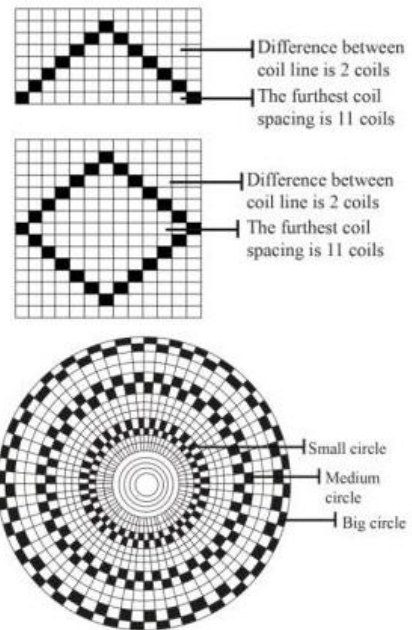


Figure 4. Triangle Modular (top); Square Modular (middle); Circle Modular (bottom)



The colors composition is arranged with rhythm and unity that based on Sundanese value and Citumang communities. It is applied based on basic skills of Citumang's paku hata crafter which is and used paku hata fiber that already colored.



Figure 5. Color Composition

By using color composition and natural color dyeing, it gives more information and opportunities for paku hata crafter in Citumang to make many kind of pattern. Rather than using *Bongkot*.

Table 3. Result Comparison between *Bongkot* and Color Composition

Before	After
	
<i>Bongkot</i> used to make pattern on paku hata craft products. The results are limited by the size of <i>Bongkot</i>	The patterns have more varieties also show rhythm and unity

4.3. Hand Embroidery

In daily tools of Sundanese people, there were found many kinds of pattern that are inspired from natural form. For example, in batik patterns, there was *Lereng Areuy* pattern from Tasikmalaya, West Java. The pattern is a siltation from paku or fern. Based on Ciptandi, F., *et al* (2016) said that traditional textile has its own philosophy or meaning influenced by people's daily activity.



Figure 6. *Lereng Areuy*

Source: Sumarsono, Batik Garutan: Koleksi Hartono Sumarsono, 2016:203

From the observation, it shows that paku hata crafters in Citumang have basic knowledge of embroidery, but they cannot apply the embroidery technique properly especially used as an application on paku hata craft products.

The explorations of embroidery techniques are applied to show characteristic of paku hata craft products. The result from embroidery explorations is used as simple and straight stitch as embroidery modular. Later, the modular is composited into composition that shown characteristic of paku hata in West Java.





Figure 7. Embroidery Modular (top right and left) Embroidery Composition (bottom right and left)

The appliance of embroidery technique can be followed by paku hata crafters in Citumang, but they need more regular practices and workshops until they can have neat result of embroidery and show rhythmic composition on the pattern.



Figure 8. Embroidery Techniques Practice with Paku Hata Crafter in Citumang

Table 4. Result Comparison between Embroidery Technique Training

Before	After
	
Result of embroidery technique has no concept and it is not neat	The embroidery looks more prominent, neat and show unity with paku hata craft products

5. Conclusion

Based on the result of interviews, literature study, observation, and experimentation, it shows that paku hata fiber can be optimized as craft product and accessories by using paku hata fibers through textile techniques in effective process.

The appliance of effective textile techniques on paku hata craft products uses natural color dye process and embroidery techniques. The natural color dye is based on availability of tools and environment of Citumang. Then, the process of natural dye uses secang without scouring and bleaching process on paku hata fiber. In fixation of coloring process, it uses salt and tunjung as mordant. The color result of this coloring process is red and black.

The colored paku hata fiber is applied with embroidery technique on paku hata craft products. The kinds of embroidery stitch used are straight and simple stitch. The simplicity of embroidery process can be followed by paku hata crafter in Citumang. However, they need more practice to be able to make their own composition.

Color composition is also shown to give character on paku hata craft product in Citumang. The patterns from colors composition have philosophy of Sundanese culture. Also, the appliance of color composition used is basic skills of paku hata crafters which is coil weaving.

The step by step process from natural color dyeing, color composition and embroidery process can be applied as

easy and simple as possible, and paku hata crafters in Citumang can follow every step properly. It also shows that natural color dyeing process is the fastest adaptable process for paku hata crafter in Citumang.

Then, all the processes of developing paku hata craft products show that natural color dyeing and embroidery techniques have potential to create characteristic of paku hata craft products. By showing their own character, it can give more value on the paku hata products. Also, it gives more aesthetic value. Then, it is required more developing program to keep paku hata products grows.

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