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Indonesian Tie-Dye Exploration with Fabric Manipulation

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ABSTRACT

From the global fashion perspective, many countries have already established their own tie-dye styles. On the contrary, Indonesia with their strong culture in textile hasn't had their own tie-dye style that is known worldwide. The aim of this research is developing a new technique by integrating pattern and texture design principles in tie-dyed textile so that the textile could have the attractive potential towards the wider individuals as a wearable art. This experimental method will be done in four stages of the experimental research consist of: 1) Data collection; 2) Technique and material experiment; 3) Tie-dyed fabric development; 4) Implementation of the tie-dyed fabric into a ready-to-wear Outer apparel. The final result of the experiment is a tie-dyed Organza silk made into a ready-to-wear Outer with extra fabric manipulations without altering the characteristics yet enhance the shape of the textile by the Gathering techniques with the result of wrinkled and bubbly texture. Furthermore, the texture has the ability to cover the printed pattern developed from the tie-dye technique for both the perfect and imperfect pattern made from the improper binding technique. Consequently, by the fabric manipulation applied, the same idea could aid the problem of unsellable defective tie-dyed pattern faced by the traditional textile craftsmen.

KEY WORDS: Tie-dye, dyeing, fabric manipulation, gathering

1 INTRODUCTION

Fabric texture is the appearance of the fabric surface that defined by the fibre, woven construction, and textile finishing. The trend of fabric texture itself is very dependent on the current technology of textile manufacturing for mass production textile. However, a fashion designer has the ability to fabricate new textile variety through fabric manipulation techniques by altering the mass-produced plain fabric into various three-dimensional fabric texture.

In 2009, a textile researcher, Diane Sparks developed a fabric-pleating technique based on Japanese tie-dyeing technique called Arashi shibori. Fundamentally, Arashi shibori needs to be pleated orderly and tightly by binding the fabric to a tube with a large diameter. Subsequently, the fabric dipped into color and unbound. The bind produced an irregular geometrical pattern, such as willow tree. Sparks further explored the pleating on Arashi shibori

thus developed a new Arashi shibori pattern with structure and pleat effect. Sparks aimed to satisfy the need for new fabric manipulation technique as pushed by the fashion trend.

Some traditional textile fabrication needs to pass fabric manipulation processes such as crimping, pleating, tied up and twisting. The processes thus develop a pattern after coloring process. Kain plangi and tritik are one of many Indonesian traditional textiles that made with tie-dye technique in which is a technique that utilizing a threat binding technique to retain the color to penetrate the binding part (Callan, 2008). The idea to texturize the traditional textile such as Kain plangi and tritik also possible to happen, as on the vast development of fashion trend itself Kain plangi and tritik still yet to be accepted in many parts of the world compared to other tie-dyed textile technique.

Based on previous research, tie-dye process, and fashion trend development mentioned above, a study of Indonesian tie-dye exploration, in this case, is the tritik and jumputan motifs onto kain plangi with fabric manipulation have not yet been further explored. This experiment aims to explore more about kain plangi and tritik with fabric manipulation techniques to find new textile variant by tie-die, jumputan and tritik motifs. Thus could be further developed into a wearable art.

The aim of The research is developing a tie-dye technique by combining both pattern and texture design to produce a new textile variant as a wearable art.

2 SUPPORTING STUDIES

Primarily, tie-dyed fabric in Indonesia utilized a natural fibre such as cotton and silk in which is produced by both machine and ATBM. A great deal textile with tie-dye technique found in coastal areas of South East Asia such as Kelantan, Pontianak, Palembang, Java, Bali, Sumbawa and found very popular in areas with a strong Moslem culture (Maxwell, 2003). However, tie-dye technique popularity is not merely limited to South East Asia, but also popular in areas spread from north-west of India to Central Asia areas with a Moslem culture. It is strongly agreed that Indian textile influenced a lot of textile art in South East Asia.

There are two types of tie-dying textile found in South East Asia, especially Indonesia:

2.1 Kain Plangi (Rainbow cloths)

Pelangi or the plangi word taken from Malay language as it uses colors of rainbow. The motif is called by jumputan itself was made from wrapping small things and tied tightly with rope/thread. In Indonesia and Malay area this technique known as Plangi or Jumputan technique, in Japan known as Shibori and known as Bandhani in India and Pakistan.

2.2 Tritik

Tritik fabric utilized stitched-resist dyeing technique in which uses tusuk jelujur (running-stitch) and pulled up technique. The developed pattern is a continuous dashed. In Nigeria, the same stitch-resists dyeing technique was called Adire Alabere. This technique also often found in Japan and West African Countries such as Senegal, Mali, Gambia, Sierra Leone, Burkina Faso, Nigeria, and Cameroon.

Other researches related to tie-dye technique done by Bintan, Kahfiati & Intan (2014). This research consisted of tie-dye technique development with geometrical pattern with a focus on sasirangan fabric from Banjarmasin. The tritik motifs on sasirangan with hand-stitch mainly

produced an abstract tritik motifs, so that there is a need to develop a new pattern or running stitch pattern.

Based on the explanation of the above, it can be concluded that the tie-dye technique spread in Indonesia have the characteristics:

a. Bright and strong colors like red, yellow, blue, green, purple, and so on.
b. Using monochromatic colors, triadic, double split and other complementary harmonies.
c. Geometric patterns such as straight lines, zigzag lines, curved lines, circles, and boxes are shaped by stitch- resist techniques (tritik motif) and tied-technique (jumputan motif).

2.3 Fabric Manipulation Concept

Fabrics processing, especially in manipulating the fabric surface is never separated from sewing process. Through the sewing process (manually hand sewing or machine), the structure of a plain fabric can be changed, its surface or texture becomes wrinkled, rough, wavy, grooved or many others. Various fabric surface was made by using various techniques such as gathering, pleating, tucking, smocking and quilting (Wolff, 1999). Furthermore, the basic technique of fabric manipulation can be developed based on the research of fashion patterns, the cloth pattern, or based on the process of making a traditional pattern. Effects of wrinkles that exist in jumputan and tritik called gathering. Gathering can be made hand-stitched or by machine. But in the process of jumputan and tritik, wrinkles made by machine will not produce the expected tritik motif, because the thread stress is too tight. Thus, the effects of wrinkles, bubbles, and gathers produced by jumputan and tritik techniques can be made permanent by considering the materials and tools used.

2.4 Existing Data

The contents of this sub-chapter is a collection of references on the collection of fashion designers and textile artists who utilized tie-dye and fabric manipulation techniques as the material in their collection which is the reference in the research of tie-dye exploration with this fabric manipulation.

a. Valentino
   Valentino is an Italian designer who has a strong characteristic with a collection of red dresses known as "Valentino Red". Furthermore, tie-dye has become an inspiration for ready to wear collections especially for the Spring Summer season in recent years and the color selection is natural colors and has similar tie-dye motifs from Africa.
b. Tory Burch
   Tory Burch is an American designer, he uses a typical Japanese shibori material with Indigo dye blue color for Ready to Wear Resort collection in 2017 and Ready to Wear Spring Summer 2013 collection.
c. Roberto Cavalli
   Roberto Cavalli is an Italian designer. Cavalli has a characteristic with an exotic print and distressed effects on jeans for ready to wear collection. But in the latest collection of 2017, Cavali chose a dye with a pleated texture.
d. Anne Selby
   Anne Selby is a textile artist from England. Characteristic of his textile work is Arashi shibori, gradation coloring, the Arashi technique of Arashi shibori produces the texture of small soft pleated textile, with silk.

d. Amy Nguyen

Amy Nguyen is a textile artist based in Boston. The characteristic of his textile work is shibori itajime, which is the art of textile dyeing with folding techniques and texture processing of fabrics with various techniques such as slashing, gathering, stitching, and cording.

Based on existing research and data from various fashion designer and textile artist at abroad, traditional Indonesian textile especially tie-dye has not been used in the collection of designers and textile artist abroad. Thus, this experimental research aims to develop a new form of tie-dye technique and thus could inspire other researchers to develop other traditional Indonesian cloth, so it can be known and become the inspiration of other fashion designers, a textile artist in both inside and outside Indonesia.

Table 1: Research position towards Indonesia tie-dye currently, existing research and existing product

Items	**Indonesia Tie-dye fabric currently**			**Existing research**		**Textile artist**		**This research (juniati, 2018)**
	Sasirangan, Banjarmasin	Triti, Java	Kain pelangi, Palembang	Sparks, (2004)	Bintan, Kahfiati & Intan, (2014)	Nguyen	Selby	
Fabrics								
1. Satin Silk	√	√	√	√		√	√	
2. Poly Satin	√		√	√		√	√	√
3. Cotton	√	√	√		√	√		
4. Organdy						√	√	√
5. Organza						√	√	√
6. Chiffon								√
7. Polyesther	√							
Tie-dye Techniques								
1. Tritik	√	√			√			√
2. Jumputan	√	√	√					√
3. Shibori				√		√	√	
Fabric manipulation								
1. Gathering						√		√
2. Pleating				√			√	
3. cording						√		
4. smocking								
5. quilting						√		
6. Heat-set						√		√

(Source: Juniati, 2018)

3 RESEARCH METHOD

This research methodology utilized experimental approach. This experimental method was used in fabric manipulation exploration on dyeing cloth and its use in ready to wear clothing. In the experimental method will be done in 4 stages:

3.1 Data collection

Collecting required data related to the preparation of the material experiment and dyeing technique, such as: Fabric type, the type of dye used, resist techniques include fabric manipulation and existing data

3.2 Experimental stage of materials and techniques to be used

This stage aimed at Identifying and exploring the type of fabric, fabric manipulation and colouring techniques to be used.

3.3 Experimental stage of tie-dye fabric

Applying fabric manipulation technique and pattern design in accordance with the fabric that has been tested at the previous experiment stage.

3.4 Tie-dye fabric implementation to be wearable art.

Implementation stage resulted in ready to wear clothing in the form of an Outer.

4. RESEARCH RESULT

4.1 The research process with the experimental method

Based on observations done in Kadipiro village, Surakarta, Central Java in May 2017, the required data collected related to the preparation of materials and techniques experiment, such as:

a. Types of fabrics used for the experimental stage are:
   1) Natural fibre in the form of Organza silk
   2) A man-made fibre in the form of poly satin, organdy and poly chiffon
b. The type of dye used which is made by boiling with adjustment on each fibre type on textile, such as:
   1) Natural fibre with Dylon Dyes
   2) A man-made fibre with Iretsu Polyester Dyes
c. The techniques used
   1) Resist techniques on tie-dye such as tritik and jumputan
   2) Fabric manipulation selected is gathering and Heat-set to maintain gathers, bubbles, and wrinkles on the cloth so as not to disappear when used or washed.

b. Existing data, in the form of current fashion trends, drawings or photographs of various types of dye tie-dye clothes and photographs of works of a textile artist.

4.2 Experimental stage of dye materials and techniques to be used

Table 2: List of dye materials and techniques to be used

Textile / **Techniques**	***Natural fibre***		***Man-made fibre***		
	Organza	**Cotton**	***Satin***	***Chiffon***	***Organdy***
Tie-dye					
1. Tritik	√	√	√	√	√
2. Jumputan	√	√	√	√	√
Fabric Manipulation					

1. Gathering	√	√	√	√	√
2. Heat-Set:					
2.1 Iron pressing	√	√			
2.2 Heat-gun			√	√	√
2.3 Boiling	√	√	√	√	√
2.4 Steaming			√	√	√

(Source: Juniati, 2018)

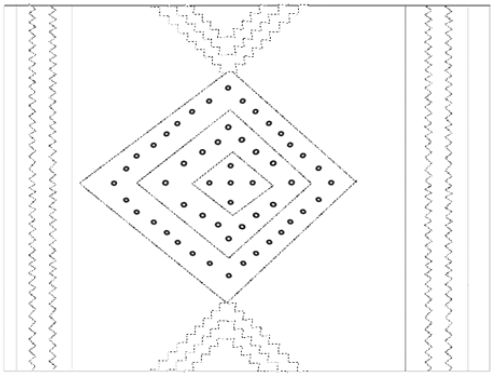
The synthesis of the experiments of the materials and the tie-dyeing technique used were as follows:

Experimental results of man-made fibre fabrics were failed. The color of the fabric as a whole were uniformly colored but Tritik and jumputan motifs blended into the tied bond, so there was no motif made from bonding. The texture of tritik and jumputan motifs were wrinkles in the form of small pleats formed and not loosen even though it was washed with water.

Based on the above observations it can be concluded that the best material suitable with the tie-dye technique with fabric manipulation is organza silk because the motifs from jumputan and tritik were well formed and the texture resulting from the bonds still appear.

4.3 Design stage of dye fabric (tie-dye)

Based on the existing product data can be identified some form of textures such as bubbles, gathers and wrinkles. As for the geometric pattern, it consisted of zigzag patterns, two straight lines, boxes with pointed corners and rounded boxes. Based on reviews on the mood board above then design pattern as follows:



Source: Juniati, 2018

Figure 1: Tie-dye fabric design

4.4 Results of Experimental Research

The synthesis of the experiment and observation, it can be concluded that:

1) Fabric manipulation can be applied to the dyed fabric to enrich the shape of the fabric.
2) Fabric manipulation in the form of wrinkles, bubbles and gathers on the texture of fabric made the fabric pattern do not look intact and perfect, but with the addition of texture on the surface can cover the motifs that fail due to less precise binding techniques.

3) Fabric manipulation of wrinkles, bubbles, and gathers applied to the fabric organza silk does not change the properties of the fabric. The finished results of fabric experiments applied to ready to wear clothing in the form of outer look lightweight as the body of the wearer moves and easily blown off by wind

Source: Juniati, 2018
Figure 2: Close-up fabric detail

Source: Juniati, 2018
Figure 3: Model wearing the designed outer with many poses and moves

5 CONCLUSIONS

5.1 The purpose of this research is to develop the technique of making traditional fabrics by adding fabric manipulation into a traditional fabric with a new pattern/motifs and texture design so that it can be accepted by the community as a work of art that has high wearability (wearable art). Fabric manipulation applied to the dye (tie-dye) fabric is wrinkles, bubbles and gathers so that the shape of the fabric becomes richer and varied because there are three elements in one sheet of fabric that is color, pattern, and texture.

5.2 From this experiment, a dyed cloth (tie-dye) in a new shape is developed with texture contained on the entire surface of the fabric. The fabric pattern resulting from the dyeing

technique of tritik and jumputan did not look intact and perfect. However, with the addition of texture on the surface can cover the pattern that fail due to the less precise binding techniques.

5.3 Fabric manipulation in the form of wrinkles, bubbles and gathers applied to the fabric organza silk does not change the properties of the fabric. The finished results of fabric experiments applied to ready to wear clothing in the form of outer were look well attached to the body and also has the lightweight feeling when the wearer's body moves and the outer got blown by the wind.

5.4 The addition of fabric manipulation on dyed binds may become an alternative to perfect dyeing fabrics for the dye fabric craftsmen whose production results are not maximized in this particular case due to a less precise binding technique so that the bond pattern disappears or staining results that are less in accordance with the wishes of craftsmen. So with the idea of adding texture elements through fabric manipulation, the defects can be covered so that has a selling value and is expected to reduce the loss the damaged fabrics.

5.5 Suggestion

Based on the above conclusions, suggestions that can be done for further research are as follows:

1. Develop other traditional Indonesian fabrics such as weaving, batik, even traditional embroidery into new textile forms that match the ongoing trend.
2. Develop other fabric manipulation techniques not only in the form of wrinkles, bubbles and gathers that could be applied to various types of fabrics both natural fibres and man-made fibres without changing the nature of the fabric or even altering the original properties and shapes of the fabric. Other manipulation fabrics can be like pleating, tucking, smocking and quilting.

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