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by Irena Vg Fajarto, Yudita Royandi

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The using of Metal Wire to Develop Technique in Weaving Recycled Newspaper Strands

Irena VG FAJARTO, Yudita ROYANDI

Maranatha Christian University, Jl. Prof. drg. Suria Sumantri, MPH 65, Bandung 40164 <u>irena_75@yahoo.com</u>, yuditaroyandi@yahoo.com

Abstract - Weaving is one of the most popular and known technique in processing raw material to be goods, especially in the craft industry.

Usually this is done by weaving material in strands form, which is arranged in horizantal and vertical structure in many combination resulting in varied teksture and pattern.

This paper discuss the development of weaving technique, by adding metal wire in the strands. This technique is developed in a research done with interior design students in duration of one semester.

The usage of metal wire opening new design probability, as the strands are now more stiff and yet still fleksible to be formed, resulting in more three dimensional teksture and pattern.

The material used in this technique is recycled newspaper, in order to develop the craft industry in using recycled material. This technique is also applicable for other materials.

Index Terms—newspaper, recycle, weaving, wire

I. WEAVING AS A FORM OF TRADITIONAL CRAFT

Weaving is a form of traditional craft technique which is very well known in Indonesia. Objects are found in every region using varied materials and weaving technique. Most of them has both symbolic and practical functions which relate to social and culture life of the people using it.

Definition of weave according to Merriam-Webster Dictionary is : w[=e]v "to unite, as thread of any kind, in such manner as to form a texture; to entwine or interlace into a fabric; as, to weave wool, silk, etc.; hence to unite by close connection of intermixture; to unite intimately"

Traditional weaving usually use natural material which is easy to find in its region like rattan, bamboo, pandan leaves, *enceng gondok* (some sort of water plants) and various kind of plant roots. Artefacts made from weaving shown nature condition and culture of a society. Bellow are several points which are used to acknowledging an artifact according to Ahadiat Joedawinata [1]:

- a. geographical and ecological conditions of a region
- b. basic material character and availability
- people activity in order to fulfill his or her practical living functions
- d. social events, culture and people's habit

In creating a traditional weaving product which has art values, the artist going through varied process. A research done by Prof. Yusuf Affendi [2] discuss that this process is influence by :

- a. Local genius
- b. Traditional expertise
- c. Indigenous material
- d. Unidentified cultural mystery
- e. New technology and product
- f. Market and management knowledge
- g. Art history/artifact/archeology
- h. World cultural events
- i. Fashion trend/mode
- j. Tourism
- k. Local character
- 1. Natural material processing
- m. Design as art

Hence, a craft product like weaving product is not only influenced by local values, but it is also affected according to the change of time, trend and development.

II. WEAVING AS A MEANS TO INCREASE PRODUCTIVITY FOR MIDDLE-LOW INCOME SOCIETY

According to Soetsu Yanagi [3], craft could be grouped as 2 which are folk craft and artist craft. Folks craft is simple, using local material, handmade,



made in large quantity and usually using natural material which are abundant at that region. Folk craft are usually centralized in areas, for example : batik central, ceramic central, etc. On the other hand artist craft is a work which is created based on subjective vision of its creator, made in limited quantity, relative high price tag and the material used does not have to be local.

This paper will focused more on folk craft. Traditional weaving could be found on crafts centrals. The technique usually is passed on for several generation, have its own esthetic pattern and using abundant material found in its region. For example, Indhiang bamboo weaving [4] comes from Tasikmalaya which has plenty of bamboo trees, and Cintamanis rattan weaving [5] comes from Southern Sumatra, a region which is a rattan supplier since the Dutch colonial era.

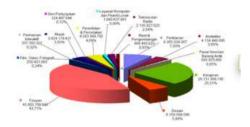


Picture 2. Tasikmalaya woven bamboo basket (source : http://gandskri.files.wordpress.com/2010/ 06/024-bambu-b0b0k0-kecil.jpg)



For Picture 3. Cintamanis rattan Lamp Shade (source : Katalog Anyaman Rotan Cintamanis Koleksi Museum Sumatera Selatan)

Craft, in this case weaving handmade craft, is one of fourteen sector of creative industry which are announced by Indonesian government through its Ministry of Trade of the 2009-2015 period. Contribution of this sector to Product Domestic Bruto of creative industry is significantly large which is about 25.51%. Acknowledging this opportunity, weaving is a potential area to open more job opportunity, which could increase income. Weaving skill could be teached to people with low- medium income since elementary school or to those who could not afford further education.



Picture 4. Creative industry as subsector, contribute to Product Domestic Bruto in 2006 based on constant price of year 2000 (source : Indonesian Ministry of Trade)

III. RECYCLED NEWSPAPER AS WEAVING MATERIAL

As formerly mentioned, traditional weaving industry usually use material found in its region. However, there have to be another strategy in order to develop this industry in urban or city area, which targeted people in productive age but have only elementary education or none. The usage of recycled newspaper could be an alternative, regarding the abundant source of this material in urban area.

There are many society who already using this material to create handmade craft product.





Picture 5. Man weaving recycled newspaper (source : www.thestar.my)

IV. THE USAGE OF WIRE TO DEVELOP DESIGN POSSIBILITIES

Weaving technique commonly used is by interlacing horizontal and vertical strains to form structure of the object being made. Without horizontal and vertical strains interlocking tightly despite it's interlacing variation, the surface wouldn't have enough strength to hold it's form.

Interlacing variation of the horizontal and vertical strain produce the texture and motives of the object's surface. As there are many variations and techniques developed to create wonderful patterns, the weaving texture is limited to two-dimensional texture.

To be able to have a wider variation to the form and texture of an object the strains should be able to have independent strength and flexible at the same time. In order to achieve this, several interior students experimenting to use wire as the core of the newspaper strain to add independent strength.

Material to be used is wire. Many kind of wire can be use, like cooper wire which is usually used for craft projects, or any kind of new and reclaimed wire. Different kind of wire has different dimensions and character. The ideal wire to be chosen is the ones who is thin enough, easy enough to be shaped, but yet strong enough so as not too easy to change form, which will resulted in rigid shape of the object. The wire used in this project is a reclaimed lead wire, which is still in good condition without corrosion.

Recycled newspaper to be used is the ones in good condition, means it is not wet or tore. The newspaper is cut into long strain with certain width. In this project the newspaper is cut into 5-6 cm width. The wire is being hold by one hand, while the other hand wrapping the wire with the newspaper strain in spiral movement. While wrapping the newspaper strain should overlapped significantly to have certain degree of thickness and stiffness. It is possible to wrap until two or three layers. The wrapping process use water base glue to unite the strain.



Picture 6. Newspaper strain wrapped around the wire as the core (photo courtesy Irena VG Fajarto)

The strain could then be shaped in many forms either by hand or by using tools like pencil, spoon handle, etc. Using different kind of tools could resulted in many interesting shapes.

As this strain is going to be an element of weaving an object it is important to control the measurement of the shape, form and pattern. Without this the shape of the resulted object will be untidy.



Picture 7. Strain forming using hand (photo courtesy Irena VG Fajarto)





Picture 8. Strain forming using handle of a spoon (photo courtesy Irena VG Fajarto)

The object being made in project is a basket. The students create varied of interesting shapes using many technique. The process of making one of them is shown below.

Newspaper strain is formed by hand in 'U' pattern of about 1,5 x 1,5 cm2



Picture 9. Newspaper strain is worked by hand to form 1,5 x 1,5 cm2 'U' shape (photo courtesy Irena VG Fajarto)

The strain is bent as such to create the basic form of the basket. The basket dimension will be around $20 \times 20 \times 20$ cm3. Create several strains in this shape as needed. For this basket 16 strains is needed



Picture 10. One strain is bent as such, ready to be weaved into a basket (photo courtesy Irena VG Fajarto)

The formed strains is woven as shown in the picture to create a strong base of the basket. The base is one of the critical part of a basket, as it has to be able to hold the content. It is also the base which hold the shape of the square basket.



Picture 11. The base of the basket is woven by interlacing vertical and horizontal in a basic one on one weaving pattern (photo courtesy Irena VG Fajarto)

After weaving the base of the basket, the walls of the basket are strengthened by weaving a straight newspaper strain. Critical parts which have to be strengthen is the area near the base, the middle part and the top part.





Picture 12. Vertical strain is woven in the area near the base to strengthen the shape and the structure (photo courtesy Irena VG Fajarto)



Picture 14. Final shape of the basket (photo courtesy Irena VG Fajarto)

Next are other shapes which are made by the students using this technique.



Picture 13. Vertikal strain is woven in the middle area to strengthen the shape and the structure (photo courtesy Irena VG Fajarto)

This form the final shape which are quiet strong and have a more three dimensional texture.



Picture 15. A tube form basket created form 'V' shape horizontal newspaper strain interlacing with straight vertical newspaper strain (photo courtesy Irena VG Fajarto)





Picture 16. A tube form basket created form 'V' shape vertical newspaper strain interlacing with straight horizontal newspaper strain (photo courtesy Irena VG Fajarto)



Picture 17. A flower form basket (photo courtesy Irena VG Fajarto)



Picture 18. Another form of basket and strain wrapping technique (photo courtesy Irena VG

Fajarto)

V. CONCLUSION

The usage of wire in newspaper strain adding its flexibility and strength at the same time. Interior students experimenting with this technique have been able to create a variety of basket design by using varied strain form and interlacing method.

The result will be transferred within various workshop to enrich urban people in productive age with skill to work using newspaper which is abundant and cheap, to create and sell attractive craft products. Hence, be able to live and increase their income.

This initial research is still open to be continued in the area such as implementing finishing technique to make it more appealing for commercial use, and or experimenting using other material as recycled newspaper substitute.

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 Gedung Despro Lt 2 Kampus ITS Sukolilo, Surabaya 60111, Indonesia

 Phone
 : +62-31-5910283

 Fax
 : +62-31-5931147

 Email
 : icci2011@prodes.its.ac.id, dyah_ayu@prodes.its.ac.id

Website : http://www.icci2011.wordpress.com

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