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RESEARCH ARTICLE

STUDY OF PROCESSING THE SHELLS AS EMBELLISHMENT MATERIAL WITH BEADING TECHNIQUES

Marissa Cory Agustina Siagian, Caitlan Suki Delphia, Silvia Hana Fairuz

Craft Study Program, Telkom University, Bandung, Indonesia.

* Corresponding Author Email: marissasiagian@telkomuniversity.ac.id

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ABSTRACT

There are 4 shell processing in the creative industry world is an innovation of surface embellishment design with the application of beading techniques. Utilization of each character shells good surface shape and color, further for processing shell clams that such kind of scallop and abalone, where both types of shells have significantly differenced and produce variations. This research methods using the comparative method by examining the results of exploration based on shell shape characters, modular composition, color characters and application techniques. The results of this study are information that these two types of shells are innovations of variations in material embellishment by means of processing, proper techniques and utilizing the character of each shell will provide more value as a surface design. It's hoped to be beneficial to the creative industry worlds as a variety sustainable material.

KEYWORDS

Embellishment, shells, beading techniques.

1. INTRODUCTION

Embellishment is one of the surface design techniques with the aim of adding value to the decoration on the fabric surface. Embellishment applied to cloth and clothing can provide variations both in form and material. Beads, pieces of glass, seeds, shells, feathers, and so on have the potential to add new colors, motifs, and textures to the surface of a fabric (Udale, 2008). In the creative industry sector, the development of shell embellishment continues to be developed as a natural material. Among them are the types of green shells (*Perna Viridis*) whose application is in the form of serving containers and lamp shades with cutting experiments as well as furniture coatings and candle containers with mixing experiments of resin and white cement (Hidayat, 2008). However, there are other types of shells that have the potential to be used as a variety of embellishment materials in a sustainable manner.

Among the types of scallop shells and seven eye shells. In previous studies, they produced processed scallop shells and seven eye in a modular form with beads as embellishment techniques (Delphia, 2020; Fairuz, 2020). Modular shells of the two types of shells differ in terms of processing, shape, color, and application technique. The special and different character of each type of shell can be used and has the potential to find variations in material beads. The embellishment application technique uses beading by sewing the yarn media on the fabric surface to produce more value. Based on the application technique, where the shells as one of the embellishment materials that have different characters, each type becomes an incentive to be reviewed. The goal is that each of these shells

will produce sustainable variations in material variations with appropriate application techniques so as to produce motives, values with high craftsmanship for the creative industries, especially in the fashion sector.

2. LITERATURE REVIEW

2.1 Scallops

Placuna Placenta or scallop clams are one of the biotas found in protected marine waters of Indonesia such as on the north coast of Central Java (Brebes, Pekalongan, Pemalang, Kendal) and the north coast of East Java. In tropical and subtropical waters several species of the genus *Amusium* are captured as commercial catch. The results of research conducted in certain areas such as Brebes, have annual average production data of around 52.82 tons (Suprijanto, 2007).

The Scallop Shell has two round, smooth, thin, flat shells that are slightly transparent. The shell diameter of this species can reach 150 mm. They live in shallow waters with a muddy substrate. These shells have separate sexes (dioecious) where males and females can be distinguished by looking at the color of the gonads. In the world of fisheries, *Simping* clams (*Placuna Placenta*) have quite high economic and ecological potential. The clam meat is edible, its shell can be used as raw material for handicrafts and lamp decorations, while the pearls can be used as jewelry. In some parts of Asia, bivalves or shellfish have long been recognized as a nutritious food source. In Asia, *Placuna Placenta* has used especially the shells as decoration. In Indonesia, scallops are widely distributed,

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including in Kenjeran (East Java), Pasuruan (East Java), Demak (Central Java), Kupang (NTT), and Tangerang (Banten).

2.2 Seven Eye Shells

The seashell has a shallow shell-shaped ear that is thin, flat, and asymmetrical, greenish-brown on the outside of the shell. This shell has a characteristic opening of about 7 open holes in its shell along with the dorsolateral-shaped shell (tends to be concave). In some species, the inner shell of the seashell is brightly colored with a hologram-like coating, making it an attractive material for the manufacture of jewelry as well as for the production of pearl blisters.

2.3 Surface Design

There are two things that form the basis of textile design, namely the structure design and surface design. Focusing on the study of surface design, it is assumed that surface design is an attempt at ornamental design techniques in textiles that emphasizes giving beauty values to the finished fabric, starting with a plain cloth and then given a touch of decorative techniques. The beauty of this surface design technique is done to produce the quality and aesthetic appearance of the textile surface design. In principle, the surface design technique applies the design technique treatment to the surface of the fabric after the fabric has been formed. And according to Budiyo, Surface Design is a design aimed at enriching the surface of the fabric. In principle, surface decorative textiles provide or create decorative elements on a surface, in this case, the surface of the textile fabric.

One of the efforts to enrich surface design is through stitching techniques, which have a coherent meaning with embroidering or sewing activities. Embroidery is a decoration made on cloth or other materials with the help of basic tools such as sewing/embroidery needles and threads. Apart from threads, decorations for embroidery or embroidery can use other materials such as pieces of parrel, pearls, beads, bird feathers, ribbons, and sequins. Meanwhile, the sewing technique in surface engineering is the work of joining fabrics, fur, animal skins, and other materials that can be passed through sewing needles and threads. The art of embroidery is a skill that is passed down from generation to generation. The art of embroidery is also not just decoration on a material, but also a way of expressing the art of the maker. Embroidery is also a work of art that contains beauty, thoroughness, perseverance, work ethic, life philosophy, and personal supreme values.

2.4 Embellishment

According to the Oxford dictionary, embellishment can be defined as decoration or other additions that make something more beautiful or attractive. According to a study, embellishment shows the last step, finishing touches, additions, but not without prior consideration (Marlianti and Handayani, 2017). Embellishment is a way to add a decoration to the fabric surface besides printing and embroidery to add a unique and 3D impression (Udale, 2008). Beads, pieces of glass, seeds, shells, feathers, and so on have the potential to add new colors, motifs, and textures to the surface of a fabric. In 1920, beads like sequins were very often used as an embellishment in the Flapper Dress of that era, with the aim of adding a shiny effect to the dress with every movement.

In some cultures, many embellishments are used as a marker of their social strata, for example, buttons, medals are used by soldiers as a sign of courage and also their position. However, there are several things that must be considered, namely the selection of threads that are suitable for the material to be sewn on the surface of the fabric, whether it is able to hold it properly, and is also strong and durable. The types of embellishment that are often applied to couture clothing are embroidery, beading, and patchwork. Before being applied, all clothes really have to be in the right size and the placement of the embellishment application has

been thought of from the start. Usually using a transparent material first, such as tulle, and then sewn into clothing to reduce damage to the fabric and keep it neat.

2.5 Beading

Sequins or beading techniques are embellishment techniques that add texture to fabrics, for example using glass sequins, sequins or stem sequins on clothes that give a quality and luxurious impression that reflects light (Udale, 2014). A technique of applying materials such as beads, pieces of glass, seeds, feathers, shells, and so on by sewing using a suitable thread on the surface of the fabric. The use of beads (beads) can give the impression of luxury and also give the texture of an outfit. The use of beading or beadwork techniques is also the most common technique for knowing the character in the details of the material (Siagian et al., 2019).

3. RESEARCH METHODOLOGY

The research method used in this study uses a comparative method by direct observation with stages, namely:

1. Comparative study of the two types of shells, namely the shell of the scallop shell and the seven-eye shell as the object of research with consideration of the characteristics of the shape of the shell.
2. Observations/field studies based on the results of exploration processes that have been carried out in the form of exploration of the formation of modular embellishment, exploration of coloring, exploration of applications, and composition as embellishment surface design.

4. FINDING AND DISCUSSION

In this study, the material that was the object of research was scallop type or placental placenta which had the type of shell type with thin shells on both sides, and the type of eye shells seven or abalone with shells on one side had 7 or more holes on the left side depending on age or big shells and thick shell types. This type of shell is generally used as handicrafts, interior products, and fashion products. The use of the shell can be developed based on surface design techniques because the shell is included in one of the materials that can present the possibility of new trends and innovations as decoration elements in fashion (Volpintesta, 2014). According to a study, the surface design technique is an ornamental design technique on textiles that begins with a plain cloth and is then given a touch of decorative techniques (Marlianti and Handayani, 2017).

Marlianti and Handayani emphasized that surface decorative textiles in principle provide decorative elements on a textile fabric surface (Marlianti and Handayani, 2017). The process of applying embellishment needs to be considered based on the character of the material. Recognizing the basic character of embellishment types in the form of beads, stones, sequins, can determine the embroidery beads work technique in applying detailing (Siagian et al., 2019). Based on this research, this research is the basis that the scallop shell and the seven eye can be processed into modular material embellishment innovation, but there are several things that need to be considered to produce a modular shell and scallop shell and the consideration of its application, are:

1. Anatomy of the character of a scallop shell and seven eye shells.
2. Exploration of the modular formation of each shell
3. Coloring exploration
4. Exploration of application and composition techniques as surface designs

4.1 Comparative Anatomy of the Scallop Shell and the Seven Eye Shell's Characters

Both types of shells have different shell characters, visually these differences can be seen in the following anatomy:

Table 1: Comparative Anatomy of Shells	
<p>Scallop Shell</p> 	<p>Seven Eye Shell</p> 
<p>1. Form Shaped round and flat shells</p> <p>2. Surface color - The inside is reddish-white - The outside is reddish-brown</p> <p>3. Structure The surface structure has spread lines like a fan of the same color</p> <p>4. Size The size reaches a diameter of 15cm, and the thickness of the shell is relatively thin 0.1 cm.</p> <p>5. Processing The treatment process is carried out by means of erosion which results in the shell becoming transparent and accentuating the silver hologram.</p> <p>6. Modular formation process The process of forming a modular form by cutting and combustion produces powder-like glass because of the thickness that is classified as thin and brittle.</p>	<p>1. Form Shaped like the shape of the ear, has a depth of space due to the arch, the elongated shape has a hole in the shell.</p> <p>2. Surface color -The inside is a mixture of colors with a white background so it looks like a hologram -The outside is greenish-brown with a fine tinge of lines.</p> <p>3. Structure The surface structure forms a low spiral and opens to resemble an uneven smooth wave texture on the inside of the shell.</p> <p>4. Size The largest size has a length of 13cm and the smallest of 5cm, the thickness of the shell is classified as the type of thickness 0.2-0.3 cm.</p> <p>5. Processing The treatment process is carried out by cleaning without changing the color of the shell and does not damage the colorful hologram layer on the inside of the shell.</p> <p>6. Modular formation process The process of forming a modular shape is done by breaking up with a rectangular shape that is angular and measured.</p>

The observation of the comparative anatomy of the scallop shell and the seven eye above shows differences in the character of each shell. The scallop shell has the character of a thin and brittle type of shell, while the seven eye shells have a thick shell-type character. Both differences in shell thickness character affect the way the micro modular is formed and the resulting modular character. The surface structure characteristics of the two shells basically have a similarity, namely the color characteristics of the hologram, but what distinguishes it is the process of shell processing. The hologram on the cut shell is obtained from erosion and produces a transparent impression while the seven eye shells already have a hologram base on the surface of the inner shell. The equation of the two

types of the shell is texture such as strokes or lines and smooth waves on the surface of the shell. Based on this comparative data, it can be concluded that the modular form produced from the forming process will have differences and determine the appropriate modular formation process technique based on each shell character.

4.2 Exploration of Modular Formation of Each Shell

In the following exploration table is a comparison of modular shapes based on appropriate techniques according to each shell character.

Table 2: Exploration of Modular Formation	
<p>Scallop Shell [LASER CUT TECHNIQUE]</p>	<p>Seven Eye Shell [SHATTER AND PUNCH TECHNIQUES]</p>
 <p>1. 1 sheet of the shell using a 5cm laser cut technique can produce 6 modular 1cm shells, 10 modular sizes 0.8cm, and 10 modular sizes 0.5cm (circular).</p>	 <p>1. 1 sheet of seven eye shells using a breaking technique with ballast such as a 140ml beverage glass bottle with maximum punch strength. The resulting shape is not the same and impressive irregular angles. There are large modules and small ones.</p>
 <p>2. The cutting process does not need a finishing process and can simultaneously produce holes in each modular when using a 0.2 mm laser-cut technique. After going through the laser-cut cutting process, the modular is given a clear pylox finishing.</p> <p>3. Cutting using a laser-cut more can achieve perfect round easily and more consistent cutting results.</p> <p>4. The resulting shell bias is like a ring around a circle which is considered to make each round module of the shell has its own characteristics.</p>	 <p>2. After the process of solving the finishing process is necessary for the form of hole relief with an electric drill with a sharpness of 0.1mm and smoothing with sandpaper on the sides of the shell.</p> <p>3. The resulting modules are more square, rectangular, parallelogram and triangular, and angular. The results produced vary.</p> <p>4. Finishing results do not damage the hologram character and shell surface character.</p>

The results of the comparative exploration observation of the modular formation above concluded that the chosen technique was adjusted to each shell character. The proper technique for the scallop shell is the laser-cut technique that produces a solid modular shape, consistent size, and shape, the shape to be produced can be determined in advance and is more efficient in the finishing process. While the right technique for the seven-eye shells is a breakdown technique using ballast tools that produce abstract modular modules so that the shape of each modular is

more varied. But it takes time for the finishing process so that the process takes longer.

4.3 Exploration of coloring techniques, application, and composition

The following table is a coloring table, application, and comparison of exploration composition by considering the character of each shell:

Table 4: Exploration of application	
Scallop Shell	Seven Eye Shell
 <ol style="list-style-type: none"> 1. Modular scallops from laser-cut, cannot go through the coloring process by immersion caused by laser-cut heating results. Laser-cut heating results in an open and brittle layer. 2. Exploration of the composition by applying the laser-cut modular shell as an embellishment with a combination of beads application. 3. Exploration of the application as an embellishment surface design with beading technique type stop stitch for flat-back gems. 4. The composition of the laying of the modular embellishment of the shell does not resemble a specific motif, due to the size of not more than 1cm Visual silhouette of a modular composition seems like a dot or dotted arrangement that is dense and spread out. 5. However, laying the shell layering will give the impression of 3D and also transparent scallop can absorb the color sourced from the beads that are placed above or around the shell. 	 <ol style="list-style-type: none"> 1. Based on the character of the seven eye shells which have a thick and coloured hologram can be developed by the exploration of synthetic coloring by immersion. The result of coloring the surface of the shell becomes darker or firmer by finishing with clear pylox finishing. 2. Exploration of the composition with the application of the modular seven eye shells resulting from the breakdown was applied by sewing or embroidery techniques. 3. Exploration of the application as embellishment surface design can be formed certain motifs. The composition of the modular laying of a rectangular shape produces a silhouette of the camps. 4. The modular character of the seven eye shell looks more sturdy and is textured, the shape resulting from the breaking process is more varied and graded in size. So that achievement in forming a motive will be easier.

The results of observations based on the comparative table above can be concluded that the staining technique on the scallop shell cannot be by immersion process, because the results will be fragile. While the seven eye shells using a process of immersion with synthetic dyes still produce a sturdy modular and does not damage the holographic surface of the shell. The composition of the right application for the two shells is very adapted to the character. The treatment technique chosen for the shell is more towards the beading technique, namely: the stop stitch for flat-back gems technique in which this technique is a sequins type embellishment sewing technique.

Sequins beads and modular shells are a type of flat-shaped and perforated beads. Beads work techniques that require locking in the form of micro-sized beads with back seams. while the composition of motifs is more difficult to achieve a particular shape, due to the small modular shape and size. The composition that can be sought from the shell of this scallop shell is the composition of layering or overlapping so as to impress the volume dimension. While the seven eye shells the most appropriate application technique is a sewing technique that utilizes existing holes. These seven eye shells can be categorized as embellishment types of stones or flat stones. The results of the composition of the seven eye shells can be more diverse by utilizing a graded size with different shapes.

5. CONCLUSION

Based on observations of the conclusions the results of exploration above are:

1. The anatomical character of the scallop shell and the eye of the seven will affect the technique and processing until the results of the modular embellishment form are applied as surface designs. The treatment of each shell according to its character includes shape, size, surface texture, color characteristics as shell characteristics. The processing technique used can optimize the shell material as a modular embellishment with the use of beading techniques.

2. The result of observing comparative tables can be concluded that there are opportunities for material embellishment innovation by highlighting the character of each type of shell when applied as surface design. The most appropriate application technique is the beads work technique, adapted to a modular form similar to the type of embellishment beads in the form of sequins and flat stones.
3. The shell and eyes have a high level of craftsmanship, in terms of the modular process to the application process as surface design. By going through the process and proper treatment of each shell, it will produce modular products of good quality so that they can potentially be used in the long run for fashion products. The right processing can be developed into mass products, variations in shape, product innovations so that the potential to be produced and utilized sustainably in the creative industry in the field of fashion.

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