



Pieces of Ocean

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Keywords: Modular Design, Experimental Patternmaking, Digital Textile Printing, Sustainable Design

Modular design, one of the sustainable apparel design methods, features small components or units that can be independently detached, or combined with other components (Koo et al., 2014). The word of modular can be defined as “constructed with standardized units or dimensions for flexibility and variety in use” (“modular,” 2021, para. 1). The concept of modularity has been variously interpreted in the apparel design field and represented different types of modular design: (a) modular textiles or (b) component modular design. Modular textiles (i.e., Chen & Lapolla, 2021) are featured small standardized units that can be independently combined to represent various formations and shapes. Also, component modular design refers to a design consisting of multiple modular units, that can be transformable to various items or styles (Chen & Li, 2018). All types of modular designs should employ durable but functional fastening systems for easily disassembling and assembling, for example, interlocking method using various geometric shapes (Chen & Lapolla, 2021) or knotting or pre-developed closures such as zipper, Velcro, button, or snap.

This design concept is an extension of the previous design approaches of modular design, mainly focusing on developing various examples of modular design by exploring experimental pattern-making with fastening systems for convertibility. Modular design has the potential to “surpass the consumption mechanism for novelty and variety (Fletcher, 2008, p. 132).” These types of garments can be featured in diverse shapes; therefore, consumers can enjoy the designs in different ways and the products can have extended usage cycles.

Based on the literature review of the modular design, the designer generated several design sketches that can be changeable and convertible. Two design items were selected from the designer’s sketch ideas and eventually can be represented as an ensemble. To demonstrate the transformability, The two design pieces are: (a) pants that can be transformable to a cropped top jacket and (b) dress can be transformable to a top piece with sleeves.

Pants to jacket: Since the designer intended to use the inseams of the pants as the underarm seams of the jacket, pants pattern blocks were drafted and compared with the draped pattern pieces. The amount of allowable eases was estimated. Through several modifications, the

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proper fit of both two styles (pants to jacket) of the first design item was determined. In the process, elastic bands were used to replace the back darts of the pants but provide flexibility when it is worn as a jacket. Snaps were used to create removable front tucks of the pants. The entire length of the crotch seam of the pants was decided detachable with an installation of a separating zipper. When the zipper is disassembled, the pants can be transformed as a jacket with another separating zipper installed at center back of the jacket.

Dress to top: The second design began with the idea that detachable center front and back seams of a slip dress can be re-assembled and represented as underarm seams of sleeves. As conducted for the first design, various experiments were employed, and first sample was developed based on several comparisons between draping and pattern-drafting. Elastic bands, convertible separating zippers, and hook and eyes were used to provide flexibility in both wearing styles— a slip dress and a bra-top with sleeves (see Figure 2).

Gradations that nature creates with three combinations of blue, red, and yellow are the major aesthetical interest of the designer. The consecutive yellow and pink shades on the surface design were intended to resemble the twilight along with the ocean blue. To develop the print, various methods were employed. Based on the hand-water-colored images, Adobe Photoshop was utilized to edit the images. It was to effectively represent a more vivid and dramatic shift of the gradations toward deeper navy. Calculated the size and shapes of the developed pattern pieces, a series of the prints were produced, and the fabrics were digitally printed. For the first design (pants to jacket), medium-weighted Polyester Satin was used. Also, light-weight 100% silk charmeuse was used for the second design (dress to top).

The imagery of the nature motif encompasses the ensemble from lower center to the corners of both sides. The placement of the color accent contrasting between the lighter and darker shades provides strong rhythm both on the two looks, however, also the symmetrical print design is well-balanced. Appropriate construction techniques were selected to execute two garment items that function multiple purposes and work well with the concept of modular design.

This experimental design approach contributes to practical knowledge for modular design. The outcome is an aesthetic design ensemble creating transformable design items for sustainable design practice. Also, it demonstrates the importance of durable and functional fastening system but also of flexibility of the design features for versatility.

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