

Action Research in Apparel Design Using Digital Textile Printing Technology

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Introduction

Conducting research in design is a process of investigating how materials, ideas, and systems intersect and operate, and then further impact the society, culture, and people’s lives (Crouch & Pearce, 2012). Qualitative research is the major form of design research, which assess the behavior and sensitivities of human beings (Swann, 2002). When designers face research problems, a key strategy is to ask basic questions (Crouch & Pearce, 2012). Lawson (1984) also stated that when designers need to solve a problem, they propose a variety of possible solutions until they find a gratifying one. Different from the “problem-focused” strategy posed by natural scientists, designers employ “solution-focused” strategies. Thus, “synthesis” is emphasized in the design research process (Swann, 2002). The purpose of this study is to employ the action research model in design. It synthesizes designing textile prints and apparel design.

Literature Reviews

Action research is a practical study method (McGrath & O’Toole, 2012) that practitioners employ to solve a problem, address a dilemma, or clarify ambiguity. Action research is conducted through both “action” and “research” which interact in the process of design activity. This interaction may be emphasized differently in different situations; sometimes action is primary and sometimes research is more important (Swann, 2002). In this design project, action is primary. The results of design research contain both action outcomes and research outcomes (McGrath & O’Toole, 2012). Another component of action research is to make the research process visible; to achieve this, documentation of the

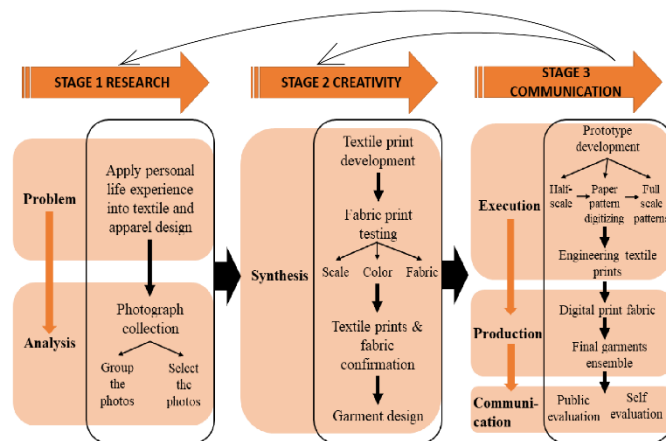


Figure 1. Proposed design process model. There are three stages. Stage 1 contains problem definition and analysis phases. Stage 2 focuses on synthesis. Stage 3 includes execution, production, and communication phases. Detailed steps are also listed in the model.

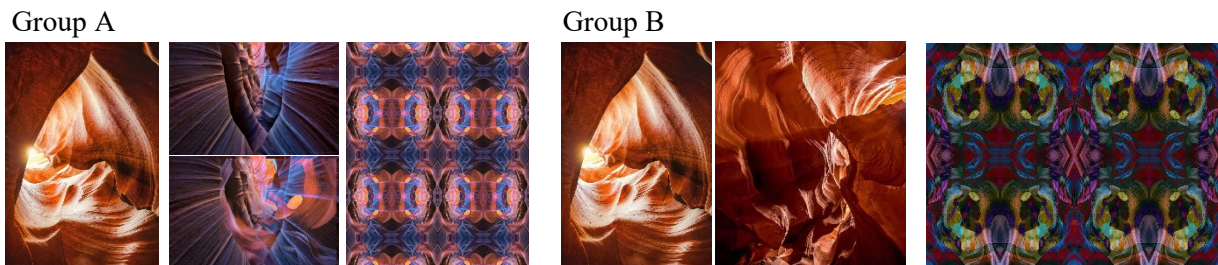
design process and public- and self-evaluations are essential (Swann, 2002).

The descriptive model (Swann 2002) was adopted to implement action research in this apparel design project (see Figure 1). There are research, creativity, and communication stages in the model. Different from other existing design process models, this model emphasizes the synthesis and reiteration phases. The model “can only be effective if it is a constant process of revisiting the problem, re-analyzing it, and synthesizing revised solutions” (Swann, 2002, p. 53).

Implementation

Stage 1 – Research. The major question in this design project regarded what the design process optimizes a creative development combining the researcher/designer’s life experiences, textile print design, and garment design. The project started with an exploration of textile print design instead of creating a mood board or sketches. The researcher/designer collected photographs of her favorite United States national parks (photographs gifted by *Lin Li*) then grouped the photos based on the location, colors, object shapes, and textures present in images. Two or three photographs were selected from each group. The success of the garment design relied on the outcomes of the textile print design.

Stage 2 – Creativity. The photographs were modified using a variety of tools in Adobe Photoshop. Several design options were created using the same photographs (see Figure 2). The motifs were printed on different natural fabrics (cotton and silk) to evaluate the scale size and the colors. By comparing the motifs, the researcher/designer determined the fabric most appropriate for the garment designs. Once the textile prints were finalized, the researcher/designer started working on the garment silhouette and construction of the designs. A major challenge was in how to highlight the aesthetics of the textile prints with the silhouette and structure of the garment.



Stage 3 – Communication. To eliminate fabric waste, a half-scale dress form (size 8) was used for the prototype and the development of pattern making. The half-scale paper patterns were digitized into Lectra Modaris and then scaled up to the full-size patterns for engineering the prints on the garment patterns. The development of the half-scale pattern is critical to achieve accurate shapes and measurements of the full-scale patterns. A variety of silk fabrics were printed using a digital textile printer (Mutoh 1638X). Three garments were ensembled combining handcraft embellishments to enhance the visible texture. The process and outcomes of action research “demands public accountability and visible self-evaluation” (Swann, 2002, p. 57). The garments in this collection were exhibited in different juried exhibition for public evaluation. The researcher/designer performed self-evaluation of the design and the design process after each garment was completed. A second round of self-evaluation was performed based on the comments from the jurors of the juried exhibitions.

Conclusion

The researcher/designer implemented the action research model in this creative apparel design work. Compared to the traditional design process, this project focused on converting inspiration into textile print design. The silhouette and structure of the garment served the purpose of highlighting the aesthetics of the textile prints. This innovated design process revolves around combining multiple ambiguous inspirations into a creative apparel design collection. This collection was then improved through comprehensive public evaluations. This design process could further be elaborated as a design process model for researchers or designers facing similar challenges in combining textile design and creative apparel design.

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