



Process Dialogue: Layering Complexity Through 3D Sketch and Drape. Learnings from Multi-course Sustainable Design Challenge

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Background and Purpose: Textile waste, whether pre-consumer or post-consumer, is considered to be almost 100% reusable or recyclable, but textile recovery rates remain relatively low (Rissanen, 2005). There is a growing focus on reducing textile waste around the world as waste management systems and limited landfill space become a global environmental concern. There are many creative approaches to pattern cutting that focus on sustainability (Orzada, 2017). Zero waste design, or low waste design has as its goal to eliminate fabric waste during the design and/or construction process. In addition, incorporating waste back into the supply chain as ‘raw materials’ is a circular model that helps reduce waste, reuse valuable resources, and save costs on virgin materials at the same time (Redress, 2017). One example is the reinvigoration of deadstock/end-of-rolls towards the development of new designs. “End of rolls” are factory surplus textiles that have been left over from garment manufacturing.

Purpose: Re-engaging with the process and materials of making is a form of transparency common in sustainable design approaches. The current academic studio model, wherein a student chooses a retail fabric for a one-off design or stand-alone collection, does not reflect resilient circular models of apparel production. An opportunity exists to model ways in which the designer might be empowered to designing out waste and keep materials in use by re-utilization (Ellen MacArthur Foundation, 2017). This project focuses on sustainable material selection, creative ideation and design process as strategies toward a considered and sustainable design solution. As design researchers exploring sustainable design in our own scholarship, we were eager to embed resilience and circular strategy into our teaching. Rather than a one-off module on sustainable strategies in design, we collaborated on a multi-course sustainable design challenge from concept through to prototype, launched over a two year period. We embedded a cross-studio learning collaboration into junior-level studio courses “Professional Portfolio Development” and “Draping”, both required for Apparel Design majors. The professors engaged the students in a hands-on lottery-style selection of the fabric they would use to complete the assignment, discussing the fabric properties for draping and designing based on the variety of fabrics that were selected. Students were asked to drape donated fabric on dress forms and conceptualize garments, concurrent with using various creativity tools to push their ideas to demonstrate the creative ideation process through photographs, sketching and schematics.

Teaching Strategy and Implementation: For this activity, we adopted the Redress competition design challenge. Initially, students were introduced to sustainable design techniques of zero-waste, utilizing up-cycling and reconstruction through lecture and discussion of Redress materials. Fabric (dead-stock) donated by Calico Corners (an interiors fabric producer) was randomly assigned to students for use in creative design explorations of zero waste techniques. The students were required to use a specific amount of fabric. Additional fabrics could be added, but no more than 10% of the garment yardage. All additional fabrics were required to fulfill a sustainability goal. Professional Portfolio Development students conducted creative research and exploratory exercises to develop designs concurrent with Draping studio exercises creating a single garment using zero-waste techniques. Specifically, in Professional Portfolio Development, students were charged to develop creative works guided by visual research triangulation strategies in combination with imaging processes such as collage, photomontage, drawing/sketching, fabric manipulations. Draping experimentation involved an organic process, wherein students were encouraged to drape from different fabric directions and to consider what would happen if and when the fabric is cut and how excess fabric might be handled. When the draped design was finalized, students developed a marker schematic.

Effectiveness of the Strategy: To assess learning, students engaged in post-learning reflections. Based on feedback, students benefited from what they coined as a “partner project” for example, a student reflects that “*I liked doing the tactile mood boards/inspiration in the journals I would continue to do that for next year. Also continue to do a partner project with draping because that really saved us a lot of time and it made us dig deeper and do better in both classes*”. Upon reflection, the faculty recognized the appeal of an experimental draping exercise that enables students to break the rules, a faculty member reflects “*Students have a fun time designing away from the body in this project. So often in draping, they create skin tight designs because they forget to add ease. It's also a symptom of stress and anxiety at a new technique. Here, the garment could be voluminous and bulky.*” Faculty also recognized that some project strategies could be guided more, “*students were afraid to cut into the fabric, perhaps they were given too much fabric*” and improved for future iterations.

Recommendations and Future Plans: The purpose of this cross-studio learning collaboration was to deepen the learning of sustainable design strategies by embedding a design scenario into two courses, providing students with opportunities to deepen their inquiry of sustainability from many facets. One goal of 21st century fashion education is to engage students as change agents. This breed of student is articulate in its unique perspective on creativity, sustainability, practicality, empathy and confidence which are embedded in their approach. But how is this taught? As design educators, we believe this happens at studio level, through meaningful, engaged learning opportunities for students and immersion in the possibilities of sustainable design.

References

Gwilt, A. (2014). *A practical guide to sustainable fashion*. Bloomsbury: London

Orzada, B.T. (2017). Upcycle and Zero Waste Ensemble. *International Textile and Apparel Association (ITAA) Annual Conference Proceedings*, 36.

Redress. (2017). Eco Chic Design Award Sustainable Fashion Educator Pack.

Rissanen, T. (2005). From 15% to 0: Investigating the creation of fashion without the creation of fabric waste. *Creativity: Designer Meets Technology Conference*, Copenhagen.

Ellen MacArthur Foundation (2017). A new textiles economy: Redesigning fashion's future. Retrieved from: <http://www.ellenmacarthurfoundation.org/publications>.