

Integrating Sustainability in a Garment Construction Course

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This paper will describe changes made to an existing apparel design studio course to integrate sustainability into the content, the outcomes of those changes, and plans for further revisions. The catalog description of the 200-level course is “Assembly methods for and evaluation of ready-to-wear apparel including terminologies, production techniques and price/quality relationships.” The objectives are to: 1) identify appropriate garment assembly techniques for specific fabrics, markets and pricing categories and apply correct ones to assigned projects, 2) execute various assembly techniques in different types of apparel, and 3) plan the apparel assembly process for different garments based on analysis of ready-to-wear samples. Within the course, students are guided through the construction steps of several different garments. All students sew from the same pattern, so the focus is on learning assembly techniques and working with a variety of fabrics. The past assignments met the course objectives and increased students’ skills for more advanced assembly methods, but sustainability had not been specifically addressed in this course. Since it is widely accepted that product designers are responsible for as much as 80% of the decisions related to environmental and economic impact (Lawless, E. & Medvedev, K., 2016; Palomo-Lovinski, N. & Hahn, K., 2014), it is critical to educate apparel design students so they will make sustainable choices in their personal and professional design practices.

With support from a small internal grant funded by the VF Virtual Collaboratory for Sustainable Business Practices, existing assignments were modified based on design for sustainability (D4S) strategies outlined in The United Nations Environment Programme report *Design for Sustainability: A step-by-step approach* (Crul et al., 2009). The three garment assignments to be modified are discussed below. The focus was on three sustainable practices for apparel design: design for disassembly and recyclability (pant), designing a multi-look garment (reversible vest), and zero waste pattern design (skirt).

The existing pant assignment was modified to fit within two D4S strategies: Selection of low-impact materials and optimization of end-of-life systems. Using the existing pant pattern from previous semesters, we discussed ways in which deliberate choices at the material sourcing stage would allow for disassembly and recyclability. The pant is a pull-on pant with patch and welt pockets. Using all cotton fabric is a selection of low-impact materials in that it can be recyclable. Add to that eliminating the elastic at the waist and replacing it with a self-fabric drawstring and using cotton thread throughout, and end-of-life systems are optimized by allowing for the entire garment to be disassembled, recycled, or composted easily. The D4S strategy of optimization of product lifetime was used to create a reversible garment.

A vest used in previous semesters was modified to be reversible. It is a hooded vest with elastic casing at the waist and several pockets. Product lifetime will be optimized because the

garment can have multiple looks. Fabric, thread, and reversible zippers were purchased for all students using grant funds.

The skirt assignment uses a zero waste pattern based on triangle and trapezoid shapes. Use of zero waste patterns is a D4S strategy, optimization of production techniques: less waste. (Note: due to course delivery changes because of the global pandemic, the skirt was not constructed in the Fall 2020 semester).

In addition to teaching sustainable approaches to garment assembly, I used an online discussion board to generate peer-to-peer discussion of sustainability and sustainable dress. The first prompt was “What comes to mind when you encounter the term ‘sustainable fashion?’” Most students responded with environmental or ecological answers such as:

Whenever I come across the term "sustainable fashion", I think about apparel that is eco-friendly, fashion companies that use methods to create garments without harming the environment, and are ethical.

What comes to mind when I think when I encounter the term "sustainable fashion" is natural materials, responsibly sourced materials, and creating fashion that will not harm the planet.

The second prompt was “Do you dress yourself in a sustainable manner? Explain.” Regarding their own dress, a large number of the students reported that they dress in a sustainable manner by wearing second-hand items and upcycling garments. Below are examples of three responses:

A way I dress in a sustainable manner is by wearing clothes that are from thrift stores and up-cycling apparel that I do not wear as much to prevent throwing them away.

I try to dress myself in a sustainable manner by mainly purchasing second-hand clothes, especially clothing that is higher quality. I also prefer clothing that is mainly made of renewable or biodegradable materials like cotton, linen, wool, and leather, as opposed to items made of plastics like polyester and pleather. I also really like higher quality clothing because it doesn't have to be replaced as often which keeps clothing out of landfills.

I buy most of my clothes from thrift stores to save money, to find unique pieces, and to stop the spread of fast fashion.

Students benefited from having some materials provided for them (vest) and from learning about sustainable garment production methods. Ideally, this course will foster a mindset of sustainable problem-solving in the students who will utilize sustainable production methods as they execute future design projects. Additionally, they can take the new knowledge into their internships and

work experiences to impact the fashion industry in a positive way. The garment patterns and instructions can be shared as part of the presentation.

Based on the large number of students reporting upcycling and thrift store shopping as part of their wardrobe practices, I do plan to explore ways that an upcycling project can be worked into future classes.

References

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