



Measuring the “Clothing Mountain”: Action Research and Sustainability Pedagogy to Reframe (Un)Sustainable Clothing Consumption in the Classroom

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Rationale. There is an urgent need for disseminating sustainability-related knowledge across the Textile and Apparel (T&A) discipline because students in T&A related areas commonly perceive fashion products as disposable (Connell & Kozar, 2012; Paulins et al., 2020) and also have difficulty making the connection between clothing consumption and sustainability (Yan et al., 2017). Consequently, they do not understand that unsustainable clothing consumption behaviors have broad and undesirable impacts on society and the environment (Hiller Connell & LeHew, 2020; Hill & Lee, 2012). These knowledge gaps suggest educational interventions are needed in T&A classrooms to help students understand the organic synergy between sustainability issues, on one hand, and individual behaviors on the other (Burns, 2015). This study contributes to the scholarship on sustainability education in the postsecondary T&A field by providing practical guidance on embedding sustainability pedagogy into a class project. Specifically, the current study sought to support transformative learning through a class project examining students’ unsustainable clothing consumption behaviors using both action research and the holistic principles of the Burns Model of Sustainability Pedagogy (Burns, 2009). This study had three main objectives: 1) to engage students in action research in which students were asked to measure the clothing volumes they bought, used, and discarded during one school semester; 2) to identify the various aspects of students’ unsustainable clothing consumption behaviors; and, 3) to use educational intervention as a pedagogical tool to expand students’ awareness of their unsustainable clothing consumption behaviors. The overriding goal was cultivating learners who would become capable of affecting holistic sustainable change.

Methods and Approach. The Burns Model of Sustainability Pedagogy provides an adaptable model for teaching sustainability in a variety of academic contexts (Burns, 2015). The model itself contains five key dimensions: *design, content, perspectives, process, and context*. To examine unsustainable clothing consumption behavior, we created a semester-long *action research project*, entitled “Measuring Clothing Mountains,” for students enrolled in T&A programs at two large American universities. The project was carried out in the classroom for a fifteen-week period at each institution. Participation in this project was required, and 755 students successfully participated in the project. The educational intervention in our case involved instructional implementation of carefully planned action research stages, including *action, research, and participation* (Ruppert-Stroescu et al., 2015). The stages naturally aligned with the sustainability pedagogy dimensions which are always thematic (content), actionable (process), participatory (perspective), and contextual (context), and are designed to mitigate and improve a sustainability issue (design). In the first stage, students were required to take an *action*

by tracking and keeping a record of the volume of clothing they bought, used, and discarded over a twelve-week period. In the second stage, students were required to conduct *research*; they had to gather the collected data in an Excel spreadsheet in order to quantify and measure clothing volumes. In the third *participation* stage, students were required to actively participate in the discussion and provide written reflections of their experience during the last three weeks of the semester. To evaluate the effectiveness of the transformative teaching and learning, we evaluated students' written reflections collected in the class during the participation stage of the research project.

Results. The size of the clothing mountain amassed over the 12-week period among 755 student participants was very large. Students had cumulatively purchased 10,931 apparel items, for a total value of \$754,239. The mean price per item was \$69 (price range: \$6 - \$580). On average, each student purchased 14.5 new items. Students reported numerous reasons driving their purchases (e.g., price-motivated purchases, emotional purchases, impulsive purchases). Of the 10,931 items students cumulatively purchased, every 6th item was not worn. This means 1,821 of the recently-purchased items (approximately 17%) were added to students' collections of inactive wardrobe pieces. The remaining 9,110 of the recently purchased items were worn on average five times. Of all items purchased during the semester, every 4th item (n= 2732) was intentionally thrown away (approximately 25% of newly purchased items) and ended up in a local landfill. Garments were usually discarded when damaged (e.g., by stains, garment pilling, discoloration, fading, and holes). Most students were more likely to throw away their wearable clothing items rather than donate them. In fact, only every 10th student reported donating wearable clothes to local charities meaning from among 10,931 items purchased, students donated 750 wearable garments.

Evaluation of Transformative Learning. In their reflections, students reported the project was "eye-opening", useful, fun, and helpful for building sustainability competencies. Prior to engaging in this project, fewer than 10% of students were already practicing some form of sustainable behavior (e.g., limited purchasing or buying second hand). Likewise, their initial attitudes toward clothing consumption did not indicate a relationship to sustainable behaviors. Two positive themes emerged in student reflections after they had completed the project. The first theme related to attitude changes, in the sense that unsustainable-consumption attitudes changed to pro-sustainability attitudes. The second theme related to reported changes, in the students' consumption behavior. Based on students' reflections on, if and how, such change occurred, the students could be divided into three groups: *early adopters* (20% of students reported the education intervention was immediate concerning a change in their consumption behavior), *followers* (72% of students indicated a commitment to change unsustainable practices sometime in the future), and *individuals resistant to change* (8% of students would not commit to any pro-sustainability behavior change).

Discussion. Although 92% of the students were open to change concerning their consumption behavior, 8% of our students remained resistant to change. Students often mentioned that they are unable to engage in more ethical actions simply because they did not understand what they can do to practice them. Some students thought that unsustainable consumption is a generational

mindset that is hard to change. Other students believed that overconsumption is rather an “occupational mindset”, meaning those in the fashion industry have to stay attuned to new trends, which promotes buying more, not less. Lastly, students mentioned that they were often not motivated to act in a pro-sustainable manner in the “real world” because there is no motivation to engage in such consumption behaviors because such behaviors are not publicly encouraged or supported. Therefore, we believe educators in T&A curricula should require courses covering sustainability practices including assignments over an extended period of time with targeted goals concerning sustainable clothing consumption. For example, an assignment could include designing a public-service announcement around sustainability and consumer behavior. Building sustainability awareness in college could be instrumental in developing better consumption behaviors for the future and provide students with the information needed to influence others positively.

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