

PROFICIENCY AND COMPETENCE IN SUSTAINABILITY AND SUSTAINABLE MARKETING IN TEXTILES AND CLOTHING – STUDENT AND INDUSTRY PERSPECTIVES

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ABSTRACT

Globalisation has contributed to unsustainable clothing and textile industries because companies increasingly outsource production to developing countries to incur lower production costs. The abundance of cheap clothing in developed countries due to fast fashion has created a throwaway society where consumers purchase things because they are cheap and may not necessarily need them. Fast fashion consumers may choose to purchase fast fashion products to avoid feeling guilty of their clothing purchase because fast fashion tends to be inexpensive, which helps fast fashion consumers justify their expenditures on clothing (Fletcher 2014). As such, a more concise educational programme is necessary to increase consumer knowledge related to sustainability (Duong 2021). These consumer tendencies exacerbate sustainability issues and hence the need to involve the educational sector to improve knowledge on sustainability. To move the industry towards an ethical and sustainable future, there is need for a multi-disciplinary approach to ensure that our future is safe. Students have been identified as key in this effort and were included in this research. In this research, level of students' understanding of the current sustainability drive and sustainable marketing by the stakeholders in the industry was explored. The research focused on determining students' awareness of sustainability impacts from their clothing consumption, sustainability initiatives by industry stakeholders, and the willingness of students to engage in more sustainable clothing practices. The purpose of the research was to bring forth the concept of sustainability in engineering within the

clothing and textiles discipline and lay foundation for advanced engineering around the theme mentioned above. The students' project integrated various subjects taught in the programme at the second year level. A qualitative investigation was used employing two survey questionnaire instrument to administer students and another for other stakeholders in the industry. This was coupled with practical verification of some claims attached to some textile items as well as marketing. The investigation and tests of garments students had purchased, disposed of or labelled to be sustainable indicated that these were of unsustainable fibre composition. In focusing on students' participation, the project integrated various themes and subjects taught in the clothing and textiles engineering discipline in the department. In the process of participating and interpreting the research data, the students gained a deeper mastery of the subject.

KEYWORDS

sustainability, sustainable marketing, student perspectives, collaborative, constructive and transformative learning

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INTRODUCTION

The issues of sustainability are broad in magnitude and complexity. It presents one of the major challenges faced by modern society. Lack of sustainable practices and problems, as Albert Einstein stated, 'cannot be solved at the same level at which we created them'. Consequently, fashion and apparel educators have adopted a paradigm that can prepare professionals to move away from just profit and performance centred approaches to a balance of economic, environmental, and societal considerations. This paper is based on a teaching model developed by the authors (Figure 1), and it presents an integration approach that embeds the concept of sustainability within the fashion and apparel program at a university of technology. Three strategies that promote the concept of sustainability within the curriculum were identified. These strategies include intentional readings, deliberate conversations, and purposeful projects. Although the teaching model was developed for a liberal arts institution, it can be easily adapted and adopted in other institutions of higher education.

The sizeable increase in garment production over the last decades has generated several benefits in terms of social and economic sustainability. The benefits include economic growth and employment opportunities in low- and middle-income countries, raising the income of many households (Mottaleb and Kalirajan 2014; Uddin 2014; Olds 2009) and expanding availability of affordable garments for low-income households (Taplin 2014). The

vast growth, however, has brought enormous negative impacts for the environment and considerable social costs (Niinimäki *et al.* 2020). The demand for better environmental practices along the whole life cycle from fiber production to garment disposal and higher labor standards, including living wages and adequate health and safety measures, attests to the downsides of these developments (Biadgo *et al.* 2021; Steinisch *et al.* 2013; Peters, Li, and Lenzen 2021). Transforming the textile and garment sector toward a full-spectrum approach to sustainability will require phasing out and substituting unsustainable manufacturing practices. Among the environmental issues, with increasing fashion consumption on a global scale, textile waste is becoming a particularly difficult and growing problem (Sandin and Peters 2018; Shirvanimoghaddam *et al.* 2020). This challenge includes industrial waste such as fibers, yarn, fabric, garment remnants, unsold stock from rejects and overproduction, and post-consumer waste of worn garments. Sustainability process adoption as a deliberate socio-technical transition entails both social transformation and technical innovation as well as broad inclusion of sustainable solutions (O'Brien 2018; Geels 2019). While global fiber production has almost tripled from 1975 to 2018 (EEA 2021), many European brands doubled their fashion release from 2001 to 2011 (Remy, Speelman, and Swartz 2016). At the same time, clothing prices dropped in Europe by approximately 30% when corrected for inflation and European textile consumption is estimated to be 26 kilograms (kg) per person (EEA 2021). The COVID-19 pandemic lowered fashion consumption temporarily because brands responded with heavy discounts and purchase incentives to increase sales back up again (Brydges, Retamal, and Hanlon 2020; Dowsett 2020). Garments fulfill several functions beyond protecting bodies from the environment with fashion serving as to express status and identity (Crane, 2000). The fashion industry is built to continuously

reinvent and to provide an increasing number of products (Taplin 2014). With ethical fashion, slow fashion, and reduced consumption in fashion being only niche phenomena confined mainly to industrialized countries (Joergens 2006; Vladimirova 2021), we can expect a continuing increase in garment production and consumption accompanied by an increase in textile waste in coming decades.

This paper is based on a teaching model developed by the authors (Figure 1), and it presents an integration approach to imbed the concept of sustainability within the second-year Diploma in Clothing and Textile Technology level programs.

LITERATURE

Why do we need sustainable fashion and clothing?

The first principle of a climate justice perspective on the fashion and clothing industry holds that people should not be

harmed in the manufacturing, movement, or sale of clothing. The second principle of a climate justice perspective impacting the fashion and clothing industry is that the natural environment should not be harmed in the manufacturing, movement, or sale of clothing. As such, fast fashion increases consumption and generation of high volumes of waste. Leading brands such as H&M, Zara and Forever 21, are ever ready to respond to emerging trends quickly at low cost with products that are less expensive than their conventional counterparts. Fast fashion is manufactured in a few weeks, while conventional apparel-manufacturing timelines deliver products in six to twelve months. These quickly produced goods have reduced expectations and lifespan. These products are usually destined for disposal due to their low economic value; consequently, adding to the proportion of textile waste. Transporting goods worldwide also inevitably generates carbon dioxide emissions. Fibres such as cotton might be grown in India, spun into thread, and woven into fabric in China, then cut and sewn in Bangladesh, before being sold in North America. When the multi-layered

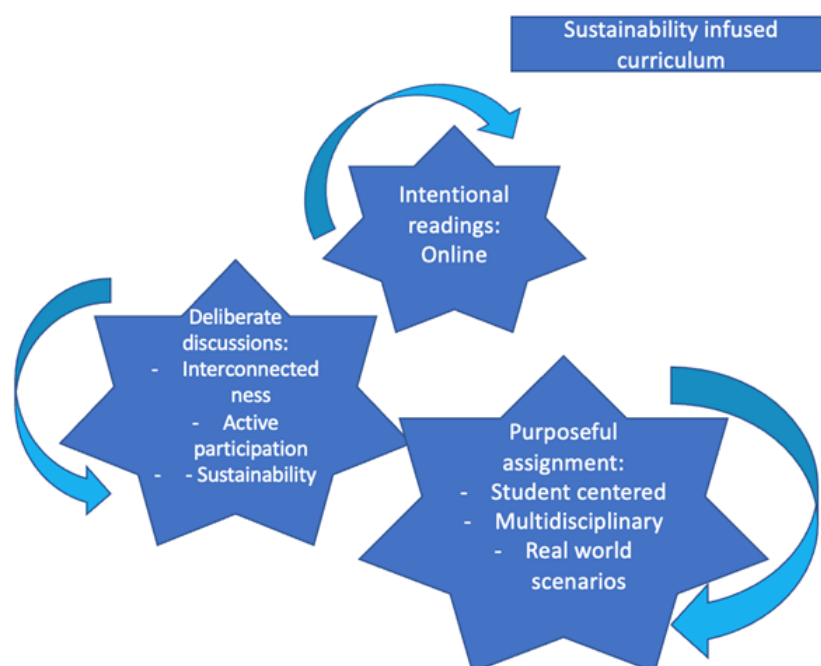


FIGURE 1: TEACHING MODEL CREATED BY THE AUTHOR

environmental impacts of global apparel manufacturing are considered together, this industry is responsible for increasing global carbon emissions. The market is flooded with fashion industry certifications rendering assurances thinly veiled marketing ploys. Many of these certifications do not originate from government sources, and are usually unfamiliar and vague, hence the need for a universal labelling system.

Theoretical perspectives

The authors' interpretation of sustainability blends with the vision and mission of the university in which they teach. Sustainability is not a new concept, but rather one that has for various reasons stagnated. Educational theories provide a teacher with multiple ways of promoting learning of concepts. In teaching the concept of sustainability, this research shows the influence of the behavioural and constructivist learning theories. Behavioural learning theory emphasises positive and negative reinforcement and pairing of information to help retention; constructivist learning theory assumes that students create knowledge from the interaction between their existing knowledge and the new ideas or situations they encounter in the classroom. Thus, a Project-based engagement with the concept of sustainability enhanced an effective learning paradigm involving active, collaborative, and transformative learning for students (Cone 2001). Active learning provides students with the ownership of their learning as they discover, process, and apply what they learnt to shape their values and attitudes (McKinney n.d.). Collaborative learning supports critical thinking and active exchange of ideas among individuals in the group and engages the group members (Gokhale 1995). According to Cranton (n.d.), transformative learning is 'the revision of previously unquestioned perspectives and assumptions based on critical reflection and critical self-reflection, leading to more open,

permeable, and better justified perspectives. Use of new learning theories to transform curriculum to incorporate sustainability requires scrutiny at the conceptual level. The goal of incorporating sustainability throughout the fashion and apparel curriculum is to encourage students to challenge assumptions, be active and life-long reflective learners and team players and become the agents of change. The use of projects and assignments that directly relate to real world situations help the students make a connection between their knowledge and its contextual application.

RESEARCH AIMS

The research was aimed at a teaching exercise for the students as participants in the project and to assess the level of response to the sustainability drive by the stakeholders in the industry. This research explored students' knowledge and in-depth understanding of sustainability, sustainable marketing and deduce the role of various supply chain partners in ensuring sustainability is achieved at all levels. Thus, the purpose of this project was to i) Measure students' awareness of the sustainability impacts of their clothing consumption, ii) document and understand sustainability initiatives carried out by industry stakeholders, and iii) explore the willingness of students to engage in more sustainable clothing practices.

The project brought forth the concept of sustainability in engineering within the clothing and textiles discipline and laid a foundation for advanced engineering around the theme mentioned above.

To evaluate achievement of the aims through this integrated project, students were assessed in the course of the year through various ways as described below:

- Students had to show their understanding of the correct terminology, definitions and theories around sustainability. They were required to carry out some online research to broaden their knowledge on sustainability and its current approaches in the industry, locally and globally, as part of their marketing assessment.
- Students tested the sustainability claims on selected products or other aspects thereof. This involved testing of textile products and the outcome of testing was compiled in a form of a report and oral presentation.
- At the end of the project students drew out conclusions based on their understanding, challenges, constraints and success stories via digital storytelling. They were graded within their respective subjects for the work submitted.
- Lastly, the students completed a feedback form created using google forms to rate the performance of the project and its impact towards their learning and knowledge building.

METHODOLOGY – INTERMESHING STRATEGIES

The teaching model (Figure 1) developed by the authors includes readings and observations from online sources, deliberate conversations and projects as three intermeshing strategies.

Readings and observations

To generate a common frame of reference across the clothing and textile curriculum, the authors asked the students to do some reading as part of their curricular content as well as look for similar information online. With sustainability being a rapidly evolving concept, additional academic papers, and news articles from a variety of sources always become helpful. Supplying additional current references specifically related to each course

ensures students build through insights about sustainable fashion. Furthermore, students were given purposeful assignments that enhance the collective body of sustainability knowledge. Being faced with the pandemic the online platforms were employed as the resources were readily available in multimodal platforms. Texts used focused on sustainability, sustainable consumption and role of sustainable marketing and media. In addition, the authors introduced the concept through Power Point that covered several terms such as sustainability, social responsibility, ethical fashion, and clothing practices, eco fashion and fast fashion. The role of individuals and sustainable approaches during all the stages of the supply chain were briefly discussed through case studies on supply chain.

Students were exposed to the economic impact of textiles and apparel recycling and considered the challenges facing the global marketplace today and how their decisions impact the industry. Discussions included the economic considerations of ecological textile development, and the long-term costs of unsustainable textile development.

Deliberate discussions

The provision for improvement of the curriculum encourages engagements and conscious conversations with students to foster student-centredness and learning. Attempts were made to put the conversations together whether formal and informal by the authors and the students in their respective lecturing sessions to internalise the interconnectedness of the subjects that they were assessed on to the broader issues of sustainability and social responsibility as citizens. Students are encouraged to participate. They were encouraged to understand the concept of slow fashion, 'where pleasure and fashion is linked with awareness and responsibility' (Fletcher 2008),

where fewer clothes are worn in new ways, where the quality of the product is ensured for longevity of garment and where garment produced in socially responsible factories. To foster a broader conversation with the industrial stakeholder, two seminars were organised over last year where an industry top management executive and an academic from another institution that specialises in sustainability were invited to share their thoughts and ideas of the current world scenarios, what the future holds, and what the student could do to make it safer and environmentally conscious.

Purposeful assignments

‘As most educators intuitively know, students learn more when they are creating their own learning opportunities’ (Bradford 2005). Assignments for the clothing and textile curriculum are carefully crafted to create learning activities that are student-centred, multidisciplinary, and integrated with real world issues and practices. The real-world issues arise from multiple disciplines and their resolution can best be reached by multidisciplinary approach. Multidisciplinary knowledge weaves through disciplines and infuses multiple perspectives. Students share their research with the class and have an open dialogue to understand the depth and the breadth of the sustainability movement within their field and broader society.

The project assigned was multi-faceted and integrated in the curriculum. The project received ethical clearance as it involved students and industry perspectives and feedback. Students were expected to be enriched with knowledge on sustainability and various concepts and theories associated with it. The assessment compelled students to demonstrate what sustainability meant to them when they see content on social media platforms like Facebook and Instagram and create a mood board thereafter. Usually,

sustainable products and their manufacturing and sustainable marketing are seen as the same entity. Hence this part of the project played an essential role in defining the differences.

Textile material footprint

Students in the Textiles course were assigned a project on textile sustainability by means of a survey and experimental. This second survey was prepared to collect data on the textile consumption patterns, resource use, disposal management and related social and environmental impacts which directly affect sustainability. The respondents had to give information about the new textile items they acquired or disposed of during the year. The information from individuals detailed their behaviour since the purchase and use of new textiles and disposing the old ones is important in planning about sustainability intervention. Much can be drawn from the data about their understanding of the issues involved. In this research, using a questionnaire, the collected data provides information on the *textile material footprint*. Textile material footprint measures the amount of raw material extracted to meet consumption demand. The Sustainable Development Goal, SDG, 12 calls for a profound business transformation towards sustainable consumption and production patterns. This involves the entire value chain from a holistic perspective, from raw material to consumer, both globally and locally. The students collated and present data was on new textile garments that were bought or disposed of in 2021. In the laboratory, student did fibre identification on items that were disposed of since it has a bearing on the sustainable disposal method.

On completion of the above tasks as stated above, they had to develop digital story videos highlighting their understanding, challenges, constraints, and success stories. And finally,

they were provided with google feedback forms to rate the project and its impact towards their learning and knowledge building. Another source of information were employed alumni students in the industry to get their perspectives of this project. They in turn shared with their peers and management in compliance with the POPI Act and keeping the identity of all participants protected.

FINDINGS

The findings were drawn from the mood board (which showed their level of clarity and cognisance in sustainable marketing); the reports and oral presentation (which showed their in-depth understanding of the subjects and their related concepts); digital stories (which highlighted their learning, successes, and loopholes); and final feedback from students and industry experts.

The mood board created by students made them realise that sustainability was more complex beyond adopting a waste minimization approach. Students chose various modes to express sustainability for some it meant choosing natural colors wisely while dyeing, some chose dressing sensibly, some chose regional themed attires, while others chose brands adopting sustainable measures in marketing their products.

Through their reports and oral presentation, demonstrated impressive self-learning from further individual in-depth research and constructive collaboration amongst each other to take the learning to another level.

The digital stories were quite professional demonstrating competitiveness and efficiency in creation of digital content. The digital stories spoke about minimising waste, being environmentally friendly, suggesting incorporation of Patagonia method, ensuring that the balance between the environment,

economy and society is maintained, etc as some of the sustainable measures that companies need to adopt.

The feedback provided via google forms were of two types one via students and another by industry experts.

Students' responses to survey questions

- On being asked which terms they have heard during the duration of their study till date, they responded by highlighting waste management, circular economy, sustainable marketing, sustainable fabrics or garments and sustainable supply chain management as the most common ones.
- Sustainable clothing for them means – reduction in chemicals, fair labour practices, recycled fabrics, and durable and long lasting.
- 95% of the students' response agreed that they are concerned about the social, environmental and ethical impacts the fashion and clothing industry.
- 86% agreed that if their favourite store sold a new line of sustainable, eco-friendly apparel, they would buy more items from them.
- Considering style, comfort and quality being the same, 60% considered purchasing sustainable clothing if it costs more than what they would normally pay.
- On being asked if sustainable marketing is interesting following are some of their responses:

"Sustainability teaches us of how to improve the quality of lives, protects our ecosystem and preserves natural resources for future generations."

"Sustainable marketing assists companies to better their public relations as people are concerned about their environment. So the different methods used to promote sustainable marketing is indeed very interesting."

"It educates people on the principles of sustainability and how consumers should adhere and practice them. It provides people with more information on how the product is sustainable from raw material to finished goods. It is not only caring for the environment but for the workers as well so that they can get paid a living wage and be protected against harmful products used during the manufacturing process of a product."

"Sustainable clothing is a way to change the world because most of the companies are following sustainability even during this time of the Covid-19, consumers are busy doing more research sustainability so that in future they can reuse what they have. For example, make a bag using the old jeans."

"We get to learn new things every day. For an example, I didn't know what sustainable marketing was before. The reason for saying so, is that the sustainable marketing is improving the safety of the world and also balancing it by limiting the use of resources."

"Studying sustainable marketing for the past few months has required research into organisations strategies of implementing sustainability, which is the most interesting to me. Giving old garments new lives by recycling is beautiful. Protecting the environment is too an important aspect in my life,

thereof sustainable marketing is a means of creating a healthier earth."

Industry's responses to survey questions

- 70% responses reiterated that they were introduced to sustainability issues in the industry via training and due to personal interest.
- 92% pronounced issues of sustainability is worthy worrying about in Africa.
- 77 % of them feel that industry needs to make effort when engaging with sustainability issues.
- On being asked which aspect of sustainability they use in marketing your product following came up – localising the message, certification, transparency, humanise and visualise, and environmentally and socially responsible.
- The factors that concern them more when customers enquire about sustainability are dyeing of fabrics, environmental issues, fast fashion, fabric waste, raw materials, how companies can head in a sustainable direction, filling up landfills due to discarding clothes, biodegradable clothing, environmentally friendly, etc as some of them. About 23% said their customers have never asked such questions.
- Finally asking what according to them are sustainability aspects that are not covered or needs to be covered within the departments' curriculum, following are some of the responses:

"How can a person make a difference with raising the awareness of Sustainability. What measures can be taken for those who are interested in making a difference? Covering more than just reusing, reducing and

recycling. How can waste material from landfills be cleaned and reused instead of letting it affect the environment more? The processes that waste fabric can go through to make it useable again."

"How can the department itself can be more sustainable and contribute more to sustainability and cover more topics about fast fashion and how it harms the environment. And why it isn't as covered on media as it should be."

"Some technology helps us to sustain products and processes however is there some technology that contributes to harming the environment?"

At the end students were asked if they were benefitted by being part of this project and what impacted them the most and the least. Following are some of the responses:

"Companies really promoting sustainability stood out the most for me, while companies using sustainability as a front to gain more customers was a huge disregard for me."

"The opportunity to create complete new textile garments from old, unused material has impacted myself the most, as I am aware of my capability to create change for the environment. The least was upon my research many high fashion brands are not encouraging environmental friendly chemicals and processes into their textile industry."

"I'm aware of companies that doesn't consider the environment on their products the fact that some of the companies have been implementing sustainability for more than 30 years. before sustainability was even a trend or talked about it this much. and what

has impacted me the least is that even today big companies are still not sustainable but are just marketing them self as they are while still taking short cuts and putting profit over the planet."

"One of the things that impacted the most is that sustainability teaches us how to think out of the box, also reuse what you have and create an item."

"What impacted me was the fact that many companies lie about being sustainable by making use of green washing. And that was super unprofessional and it was companies that it was expected of."

The fact that not many companies has made huge changes when it comes to sustainability"

These findings showed that the project was helpful for students and in refining and improving strategies and processes.

Less new clothing purchases compared to those disposed of. This could be attributed to the COVID pandemic that depleted the purchasing power of many since the study was done in its midst. Most of the disposed clothing items were undergarments. Another concern for recycling was the high percentage textile disposed of being blends which poses challenges in recycling such textile materials. The exercise was beneficial for the student who became more conversant regarding sustainability and the broad issues concerned.

CHALLENGES AND OPPORTUNITIES

Just as the concept of sustainability within the fashion and clothing industry has implications and challenges that have not been fully grasped, so does the project implementation within an institution of higher education. The

authors themselves are still struggling with the broad girth of the sustainability term and are still very many learners in both the conceptualisation of the term and the multiple processes that the concept encompasses within the fashion and apparel industry. Likewise, as assignments become more student-directed and initiated, it is difficult for the authors to give up some of the control on the learning process. For instance, sometimes the discussion of industry labour standards will progress in the direction dependent on the most verbal students, and not always include essential aspects of the intended structured controversy discussion. Aiding students in discovering all angles of the topic is challenging. One of the greatest fears in transforming the fashion and clothing related projects to incorporate sustainability was student receptivity and engagement in the learning process. Students have been overwhelmingly receptive to the general concept but have been slower to engage fully in their responsibility of self-directed learning. The additional time commitment required to collaborate with team members outside of the structured class time has garnered negative feedback due to pandemic and its challenges.

The opportunities provided by creating such a project to incorporate sustainability have been truly amazing. The aim for creating such project around a common concept has given the authors a chance to doubt, to examine, to dispute and to reflect. It has provided the authors with a chance to model collaborative learning to students while investigating and challenging the topics and ideas research brings forth. If, according to Jacques Delors (1996), a French economist who had a deep interest in education as a lifelong learner stated that “sustainability is going to be a major intellectual and political issue for the twenty-first century”, then this is our opportunity as a department to truly prepare pre-professionals for a sustainable world. The endeavour has also opened a new door by

allowing the authors to bring change within their sphere of influence and inspire others to look at new ways of approaching a paradigm shift. Although making the concept of sustainability multidisciplinary was also listed as a challenge earlier in the paper, the authors also look at this as an opportunity to start new conversations within the department and further on within the faculty and institution in ways that are still unexplored and unknown. Undoubtedly, the greatest benefit of developing this teaching model is that the authors are progressively transforming themselves.

CONCLUSION

Transforming the fashion and apparel curriculum to incorporate sustainability is a vital program within higher education to improve participation from a larger spectrum of citizens to make change. It continues to be a work in progress. Buoyed by student's enthusiasm and colleague's support, the research will be repeated for continuing the transformation.

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