SUSTAINABLE FASHION DESIGN PRACTICE IN THE STUDIO-BASED CLASSROOM

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Abstract

Today's prevailing fashion industry system has become extraordinarily polluting and wasteful. Many have already criticized the considerable waste generated during the current manufacturing process. Fashion practitioners have also proposed plenty of modest attempts. However, as one of the most vital aspects supporting the current industry paradigm, fashion design education must take its sustainable responsibilities thoroughly. Few studies investigate ways to implement sustainability practices in classroom teaching, and literature about creating an unfettered environment for fashion design students to come up with solutions is still relatively rare. With the increasing awareness of environmental issues, fashion design education has reached its curving point. Many researchers have addressed the necessity for an alternative teaching and learning approach in fashion education. How to bridge the gap between values and collaborations, academic practices, and industrial expectations is a paradigm-shifting question to be responded to. In this paper, the authors have set out their experience conducting an innovative sustainable fashion design workshop in the studio-based classroom by outlining the holistic teaching and learning process and proposing critical questions and reflections around pedagogy and projects. The authors wish to provide a reflective example for further discussions around new pedagogical norms, which might generate the collective evolution of a new curriculum to educate future designers to contribute to the sustainable fashion industry.

Keywords: Sustainable fashion, Fashion practice, Fashion design education, Studio-based teaching, and learning.

1. Sustainable fashion practice and education

Today, our prevailing system of the fashion industry has become extraordinarily energy-consuming and wasteful; with its utterly linear way of production, distribution, and consumption, the fashion industry has become the second most polluting industry globally. According to the report of the Ellen MacArthur Foundation (2017), during the conventional garment production process, 25 percent of the material is cut off on average. This figure can sometimes be 40 percent or more, with less than one percent of the factory offcuts recycled into new clothing. The rest is landfilled or incinerated, which leads to a detrimental impact on the environment. Transitioning this current production process to a more efficient one by minimizing offcuts and eventually making it a new normal has become an urgent requirement for fashion designers. Many practitioners have already criticized the considerable waste of the contemporary fabric cutting way. Rudofsky (1947) was among the first to formulate such a critique. By comparing the Western pattern-cutting method with historically efficient cutting examples, such as the ancient Greek dress, he questioned the modernity of fashion. Various methods are then being practiced to reduce fabric waste. Many fashion designers have demonstrated such methods, such as Ernest Michahelles' TuTa in 1919, Zandra Rhodes's Chinese Squares in 1980, Issey Miyake's A-POC in 2002, and Holly McQuillan's Make/Use in 2018. Despite these modest attempts, fashion design education, one of the most vital aspects supporting the current industry paradigm, has not yet taken its sustainable responsibilities thoroughly enough.

Only some studies investigate ways to implement sustainability practices in classroom teaching, and literature about creating an unfettered environment for fashion design students to come up with solutions is still relatively rare. With the increasing awareness of environmental issues in the fashion industry, the necessity to evoke an unconventional teaching and learning approach in sustainable fashion design education has already been addressed by many practitioners and researchers (Fletcher & Williams, 2013; Gardetti & Torres, 2013; Kennedy & Terpstra, 2017). "How to form a bridge between the values

and approaches of collaborative, ecological fashion practice and the expectations of the mainstream industry" (Fletcher and Williams, 2013, p. 86) is a paradigm-shifting question to be responded to. Wals (2011) recommends adopting new forms of teaching and learning within emerging practices, focusing on "real" issues for engaging students, shifting the learning goals to learning processes, and enabling students to find ways to engage in sustainability as practice. Hansen and Lehmann (2006) suggest that partnerships between universities and industries should be established and enhanced to forge the collective evolution of new curricula to educate future designers as agents of change and to develop grounded perspectives regarding their potential. In this paper, the authors described the experience of conducting a sustainable fashion design workshop, adopting the studio-based approach. By outlining the holistic teaching and learning process, proposing testing questions, and critical reflections around pedagogy, activities, and projects, the authors wish to provide a reflective example for further discussions around new pedagogical norms, which might hopefully generate "a continuous recreation or co-evolution, where both education and society are engaged in a relationship of mutual transformation" (Orr, 2001, p. 9).

2. An innovative lining workshop

2.1. Workshop introduction

The workshop was conducted in Politecnico di Milano (POLIMI), School of Design. In the workshop, the international undergraduate fashion design students were encouraged to experiment with new visions of the traditional lining designing a capsule collection of coats and jackets by embracing sustainability in their designs, generating little or no fabric waste to make the design process more sustainable. The textile material used for the workshop was high-quality lining, sponsored by the Tessitura Marco Pastorelli, a four-generation family-run Italian company founded in 1961 that adopts social and environmental sustainability practices during the production process.

Figure 1. Onsite visit to the company Tessitura Marco Pastorelli.

2.2. Background information

Lining generally is an inner layer of fabric sewn inside a garment; this distinctive element enriches construction and appearance and ensures comfort and wearability. In recent years, the lining has transpired from a habitual hidden part of a garment to an overwhelmingly important feature of the entire piece. It has become an instrument of diversification and personalization with remarkable potential. In Italy, the production line of lining is somewhat unique. According to Franco Ghiringhelli, president of the International Association of Users of Artificial and Synthetic Filament Yarns and Natural Silk (AIUFFASS), the supply chain of lining is made up of several small, strongly interconnected links, all essential in giving know-how and quality. If one link is missed or fails, the whole system will freeze. This chain, unique in Europe, involves approximately 2,000 people and is mainly concentrated in the provinces of Varese and Como. It is a partly hidden treasure of extraordinary skills, not acquirable elsewhere, extensively desired by Italian and international fashion designers. Ghiringhelli believes that projects that merge academic and industrial reality could lead to originated achievements. This is an essential step towards a sustainable industry-university partnership and eventually contributes to the current fashion system.

In this workshop, we encourage students to research and work with manufacturers in textiles and clothing for new visions of Made in Italy. By adopting zero-waste methods during the design process, fusing different cultural perspectives with contemporary language, creating new sustainable designs, and providing new meaning to the traditional lining. This design experimentation can be seen as a pilot example, demonstrating new possibilities for fashion designers to engage with fashion manufacturers that may not currently exist.

2.3. Studio-based approach

For classroom management, the instructors intended to create a more democratic learning environment by putting students at the center of class time to deliver students the most extensive knowledge of the fashion design process and leave them more space to explore sustainable practices. In the workshop, a studio-based model is adopted for teaching and learning, which is also a distinguishing characteristic of the POLIMI design education (Lin, 2019).

In fashion and design education, "studio" is one of the most signature methods. This educational innovation emerged at the end of the seventies. Those who supported this innovation considered learning not as the product of the teaching process but as a process in which direct experience activates the learner (Lin, 2018). The "studio" concept was associated with a place where various kinds of experiments are conducted. However, in the last few years, the idea of a didactic practice based on a studio approach has evolved (Fasano & Casella, 2001). It does not necessarily coincide with the common conception of a laboratory but transformed as a creative environment embedding "research, exploration, creative thinking, critical reflection, and observation of others' practice, in a creative community environment that encourages risk-taking and experimentation" (Zehner et al. 2009, cited in McWhinnie and Peterson 2017, 1655). The studio model is based on an intersubjective exchange between students and teachers, through a democratic and unfettered collaboration, allows not only transmitting knowledge but, very often, shaping new paths towards knowledge. In studio-based learning, students would be able to learn by doing. They are encouraged to experiment and consolidate intangible ideas, "the nature of the work in the studio may progress from early, vague understandings of the product requirement and finally arrive at a superior outcome" (Green & Bonollo, 2003, p. 271).

2.4. Design process

Although innate talents could help fashion designers stand out, without a thorough understanding of the systematic structure of the design process, fashion designers would not be able to control and vary their talented abilities when confronting different complex problems. By guiding students walk through a complete design process embedded in concrete projects, students would be able to develop their design thinking roadmaps, in turn, become "sensitive to or aware of problem […] bringing together available information […] searching for solutions […] and communicating the results" (Torrance & Myers, 1974). The workshop was, therefore, constructed out of the following creative stages. Here we offer a vignette of practice-based students' work to bring the holistic design process to life better.

2.5. Example of student work: Hallucination

The concept of this group comes from our everyday modern life; with high levels of working and living pressure, people might manifest hallucinations or deceiving behaviors. The project intends to call attention to mental health problems caused by social forces. The mood expressed the vivid and substantial feeling perceived to be associated with external objective space, which does or does not mimic accurate perception (Figure 2. left). The group has decided to work on an autumn-winter capsule collection (Figure 2. right). They chose to use the sponsored material for the lining (the inner part) and the contrast (the secondary outer part), with self-purchased wool and satin fabric for the shell (the outer part). The choice of the textile and color of the material is inspired by the mood board; with different light effects and movement of the design piece, "deceiving" tonality and silhouette could be created.

Figure 2. Left: Project's mood board, color palette, and fabric selection. Right: Capsule collection overview.

Inspired by various zero-waste methods, each team has developed five looks utilizing different pattern templates. One final look was chosen to be prototyped. The modified pattern could allow a fluid drapery silhouette, at the same time, minimize fabric waste during the design process. Only 3.33% of fabric waste in this group has been created (Figure 3. left). Based on the cut pattern, a toile (the draft version of the final design) is stitched and then fitted on the model; the necessary adjustments have been made at this stage in new patterns before the final cutting. When the toile version is tested and perfected,

the "real" fabric can be cut and assembled into the final garment. When the garment is finished, students are encouraged to use their creativity and imagination to piece together their outfits with models, locations, and setting for the final shooting. For this group, they chose to photograph the design piece in an art museum. The manipulation of the light and the movement of the model have successfully translated their concept into convincing visual stories (Figure 3, right).

Figure 3. Left: Scaled toile test and prototype development. Right: Final shooting of the design piece.

3. Reflective insights

The project introduced above raises some testing questions for studio-based classroom practices around sustainable fashion. In the following paragraphs, the authors offer their reflections on some themes.

3.1. Bridging the university-industry gap

As mentioned by AIUFFASS's president, companies' external network with universities can lead to originated achievements, which is crucial for their innovation capability. Interaction between knowledge, experience, and perspectives could complement the companies' in-house competency. However, gaining a mutual contextual understanding between various stakeholders is one of the fundamental challenges in narrowing the university-industry gap (Wallin et al., 2014). Since universities and industries have different drivers, difficulties in interpreting and appreciating common goals are inevitable (Siegel et al., 2003; Burnside & Witkin, 2008). Rynes (2007) advises that setting up interactive sessions where people from various organizations could work together may reduce the boundaries between academia and industry. Wallin et al. (2014) believe that to build instant contributions, university-industry interactions should be "relevant, visual, tangible." A studio environment, in this case, with its nature of bringing together "disparate thinking into a forum of discussion and idea exchange" (Green & Bonollo, 2003, p. 271), is a perfect facilitate condition to bring people together to share and co-create, by organizing meetings and visits, involving the company for design process critiques, to achieve a mutual understanding. Nevertheless, the authors suggest that, due to the unfamiliarity with each stakeholder's background, support from intermediate facilitators is indispensable to avoid misinterpretations. These facilitators should speak academic and industrial languages by interpreting the implicit message of the contexts to encourage meaningful intercultural and interdisciplinary conversations and eventually balance long-term goals with short-term achievements (Lin, 2019).

3.2. Critique as a method in the studio

In the design studio classroom, critique is central to the design process. Whether it is self-critique, peer critique, or expert critique (this is also the session when companies could be involved in visiting or through virtual online interchanges), it is a moment when independent thinking is nurtured, and self-analysis and reflection are mastered (Scagnetti, 2017). However so, the authors noticed that many students were utterly dependent on the studio leader's opinion of their work; they were using the critiques received from the studio leader to know if their design was working or not, which obstructed them from experimenting with new possibilities, this is not what critiques for. When students are doing their professional practice, they should know how to reflect on that and identify their weaknesses or areas for improvement. Instead of concentrating on shallow visual outcomes, the focus should be on cognitive analysis and synthesis processes (Fletcher & Williams, 2013). The authors recommend that methods of practice-led research should be included in studio teaching, for instance, what critique is, how to design a particular way, and how to reflect on practices, to help students reflect on their practice actively. Consequently, when the course is finished, students will have a clear idea of what they are trying to achieve and what mastery is in real terms of practice, and eventually contribute to the sustainable fashion industry, making connections between academic knowledge and practical applications.

4. Conclusion

With the increasing awareness of sustainable fashion issues, fashion design education has reached its curving point. More profound environmental, cultural, and ethical dilemmas are requested to be addressed in the curriculum to encourage students to reflect on real-life issues and pursue fashion design as a sustainable practice. Common exchanges between industry and academia in the fashion sector have also accelerated the paradigm shift in current educational norms. Universities are pushed forward to explore the boundaries of flourishing and redefine their development and knowledge exchange methods. In this paper, the authors have described her experience conducting an innovative sustainable fashion design workshop, adopting the studio-based approach. By throwing up some critical questions for the fashion industry and its education, the authors wish to provide a reflective pedagogical example with critical insights which might hopefully generate the collective evolution of a new curriculum on educating future designers as agents of in-depth change to contribute to the sustainable fashion industry.

References

Burnside, B. & Witkin, L. (2008). Forging successful university-industry collaboration. *Research Technology Management,* 51(2), 26–30.

Ellen MacArthur Foundation. (2017). A New Textiles Economy: Redesigning Fashion'S Future (online). Ellen MacArthur Foundation. Available at: http://www.ellenmacarthurfoundation.org/publications (Accessed 30 August 2020).

Fasano, M. & Casella, F. (2001). The Didactic Laboratory as a Place to Experiment Models for the Interdisciplinary Research. In: *Proceedings of the International Conference Developing Formal Thinking in Physics*, Udine.

Fletcher, K. & Williams, D. (2013). Fashion Education in Sustainability in Practice. *Research Journal of Textile and Apparel,* 17(2), 81–88.

Gardetti, M. & Torres, A. (2013). *Sustainability In Fashion and Textiles: Values, Design, Production and Consumption.* Routledge.

Green, L.N. & Bonollo, E. (2003). Studio-based Teaching: History and Advantages in the Teaching of Design. *World Transactions on Engineering and Technology Education*, 2(2), pp. 269-272.

Hansen, J. A. & Lehmann, M. (2006). Agents of Change: Universities as Development Hubs. *Journal of Cleaner Production,* 14, pp. 820-829.

Kennedy, T. & Terpstra, C. (2017). From planet to people – How fashion education can contribute to a more ethical and sustainable fashion future. *Scope: Contemporary Research Topics (Art & Design), 15*, pp. 60–70.

Lin, X. (2018). A Case Study of Didactic Laboratory Approach in Fashion Design Education. In: *4º Congresso Internacional de Moda e Design*. Portugal: Centro de Ciência e Tecnologia Têxtil Universidade do Minho, pp. 389-390.

Lin, X. (2019). Internationalizing the Fashion Design Curriculum: Nurturing Internationalized Talents. In: L. Rampino & I. Mariani (Eds.) *Advancements in Design Research*. Milano: FrancoAngeli, pp. 39-51.

McWhinnie, L. & Peterson, F. (2017). Evolving pedagogy: Is studio a state of mind? In: *Design Management Academy Conference*. London: Loughborough University, pp. 1653–1666.

Orr, D. (2001). Foreword. In: S. Sterling [Eds] *Sustainable Education: Re-visioning Learning and Change.* UK: Green Books.

Rudovsky, B. (1947). *Are Clothes Modern?* Chicago: Paul Theobald.

Rynes, S. (2007). Let us create a tipping point: What academics and practitioners can do, alone and together. *Academy of Management Journal,* 50(5), 1046–1054.

Scagnetti, G. (2017). A dialogical model for studio critiques in Design Education. *The Design Journal,* 20, pp. 781-791.

Siegel, D., Waldman, D., Atwater, L. & Link, A. (2003). Commercial knowledge transfer from universities to frms: Improving the effectiveness of university–industry collaboration. *The Journal of High Technology Management Research,* 14, pp. 111-133.

Torrance, E. & Myers, R. (1974). *Creative Learning and Teaching*. New York: Dodd, Mead.

Wallin, J., Isaksson, O., Larsson, A. & Elfström, B. (2014). We are bridging The Gap Between University and Industry: Three Mechanisms For Innovation Efficiency. *International Journal of Innovation and Technology Management,* 11(1), pp. 1-18.

Wals, A. E. J. (2011). Initiative for Transformative Sustainability Education at Wageningen University, the Netherlands. *Journal of Education for Sustainable Development*, 5(2), 251-255.