

SUSTAINABLE DESIGN FOR HEALTHY COMMUNITIES

FASHION ACTIVISM FOR PROSPERITY THROUGH SERVICE LEARNING

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Abstract

Empowering students with knowledge of sustainable development can inspire them to become fashion activists. This case study, Sustainable Design for Healthy Communities, demonstrates how service learning deepens students' understanding of sustainability through real-world application. Design students engaged with concepts such as material selection, circular and zero-waste design, and lifecycle thinking, while also incorporating user experience strategies. Through rapid ethnography, students identified local community needs, built personas, and created journey maps to develop impactful, community-centered design solutions. This process shifted their perspective from fashion designers to fashion activists committed to community well-being. In collaboration with instructors and community partners, students produced a sustainable product collection, a web-based marketing campaign, and a series of educational craft workshops. These workshops empowered them to lead initiatives promoting sustainable lifestyle changes. The project illustrates how a systems-thinking approach can transform fashion education and activate students to use design as a tool for social change and environmental impact.

Keywords: *Sustainability, Fashion, Activism, Service-Learning, Eco-Local*

INTRODUCTION

The 1987 report *Our Common Future* highlighted the need for sustainable development: “development that meets the needs of the present without compromising future generations.” (Brundtland, 1987) This challenge is particularly pronounced in the fashion industry, where “sustainable” and “fashion” often conflict (Aakko & Koskennurmi-Sivonen, 2013). The fashion industry is notorious for promoting planned obsolescence, driving consumers to seek new products each season (Anian et al., 2020; Grose, 2019)

As the second-largest contributor to the global economy, the fashion industry (The World Bank Group, 2019; UN Environment Programme, 2024) faces significant issues like climate change,

waste, and social inequity, exacerbated by a “rush to the bottom” (Chang, Nasir, & Min, 2023) that compromises safety standards and exploits vulnerable workers (Grose, 2019; United Nations Department of Economic and Social Affairs, 2024). Fashion products are often designed for quick disposal, failing to meet consumer's needs (Hirscher, 2013). This presents challenges and opportunities for sustainable fashion designers, who must create perceived value and foster consumer attachment to counter fleeting trends (Copper, 2000; Hirscher, 2013).

To counter these challenges, Aakko and Koskennurmi-Sivonen (2013) propose several strategies for sustainable fashion design, including circular design models (Blum, 2021; Ellen

MacArthur Foundation, n.d.), functional design (Papanek, 2019), care and repair strategies (de Castro, 2022; Rodabaugh, 2018), and thorough evaluations during processing and production. They also suggest *fashion activism* as an “intentional effort for change in environmental, political, or social situations” (p. 18).

This paper discusses a study that uses a service-learning model to empower emerging fashion designers as community activists and sustainability leaders. Alvarez-Vanegas and Volante (2024) emphasize the transformative potential of service-learning (SL) in enhancing sustainability competencies for a better future. The “Sustainable Design for Healthy Communities” case study demonstrates how interdisciplinary methods in a summer fashion studio course can link to fashion activism. By adopting a system-thinking approach, students can explore how sustainable design fosters healthier, socially responsible communities, showcasing fashion as a platform for activism and positive change.

OVERVIEW OF THE RESEARCH PROJECT

This study explores sustainable development strategies through interdisciplinary pedagogy, engaging fashion design students with insights from various fields at a US institution. In the *Sustainable Design for Healthy Communities* (SDHC) course, students participated in a service-learning project focusing on critical making and public engagement to promote sustainable development. The goal was to encourage students to consider environmental, political, social, and interpretive sustainability to foster a prosperous community.

Faculty researchers used a mixed-method approach to assess student outcomes by analyzing reflections, workshops, surveys, and observations. They identified conflicts between product development, environmental concerns, and community needs, which led to discussions on consumer attitudes and design practices, promoting transformative change in students and the community.

LITERATURE REVIEW

The following section describes this research project’s underlying pedagogical frameworks and theoretical underpinnings.

PROJECT-BASED LEARNING AND PROBLEM-BASED LEARNING

Design education focuses on project-based and problem-based learning. In project-based learning, participants analyze problems from multiple perspectives, including environmental and social factors (Wijnia et al., 2024). The SDHC project exemplifies this within a constructivist framework, as learners use their knowledge to address issues, employing abductive reasoning to explore options and deductive reasoning to devise practical solutions (Tejedor et al., 2019).

SERVICE-LEARNING IN DESIGN EDUCATION

Service-learning (SL) engages learners in action-oriented, real-world scenarios, often in local contexts. SL involves tangible community service within the educational curriculum, allowing students to identify and address pain points at the local level. (Alvarez-Vanegas & Volante, 2024) SL often involves two phases for effective deployment, with phase one related to learning. In contrast, the second phase involves some action to bring about a preferable solution or outcome based on a given situation (Blanco-Gutiérrez et al., 2022).

FASHION ACTIVISM

Activist research is project and problem-based research organized in conjunction with the target community, where the participants actively engage in the data collection, interpretations, and analysis, to design some form of transformative action. (Jones, 2018) Fashion activism is similarly structured as a tool for raising awareness, changing behavior, and generating a greater understanding of a topic, often through the experience of engaging in a participatory design process. (Hirscher, 2013) The goal of the SDHC project was to inspire a transition away from traditional forms of consumer behavior and instead focus on responsible citizenship by developing an alternative perspective on the relationship individuals have with the products they own.

CASE STUDY EVALUATION

BACKGROUND OF THE SDHC PROJECT

The SDHC study aimed to help students recognize and change their behaviors related to sustainable development in the fashion industry. Preliminary findings indicated that students needed help to link

apparel and textiles with sustainability. The SDHC research project encouraged reflection on how products, development, and community collaboration can lead to a more sustainable future. This service-learning project explored whether creating sustainable clothing could encourage participants to consider sustainability across different backgrounds and disciplines.

PARTICIPANT PROFILES

Two fashion design educators and three interior design educators participated in this project, all with expertise and a background in sustainable design research. Guest speakers from user-experience design shared their insights, and a fashion design graduate student assisted throughout the course, facilitating data collection and analysis workshops.

The participants in this fashion design project were a diverse group of college-aged students: 2% identified as male, 7% as female, and 1% as non-binary. Their academic levels included 1% sophomores, 6% juniors, and 3% seniors. Demographically, 3% identified as Black or African American, 1% as Hispanic, 3% as Asian, Pacific, or Islander, and 3% as Caucasian.

Student teams were created through self-selection and instructor guidance to boost engagement and leverage technical strengths, linking seniors with undergraduates. This method aimed to build interpersonal relationships and mutual respect. Educators helped students choose roles, fostering ownership in their responsibilities while acting as tutors and observers to support the teams during development.

METHODOLOGY: RESEARCH DESIGN AND PROJECT DELIVERY

The project delivery consisted of multiple phases, beginning with a didactic phase focused on building knowledge and preparation. During this first phase, the students engaged with educational materials and discussions to frame sustainable development in the fashion industry.

Educators utilized the Socratic method during classroom discussions to encourage critical reasoning (Whipple, 1996). Students explored related concepts, identified personal applications, and constructed logical arguments supported by facts.

The second phase focused on applying knowledge to develop solutions through action

research, emphasizing participants' actions (Howard et al., 2023). Students and educators engaged in an iterative process with feedback cycles for ongoing reassessment. This method, grounded in problem-based learning and Piaget's constructivist theory (1954), included peer feedback across modules. The final phase encouraged participants to evaluate their progress and foster transformational learning by applying knowledge to higher-order thinking.

COURSE MODULES

The course outline was carefully planned to avoid predetermined student outcomes based on grounded theory. It utilized three sequential modules—Explore, Create, and Disseminate—to facilitate transformational learning, with the faculty instructor curating the flow of information. Table 01 outlines the module flow and related activities for the course.

MODULE ONE: EXPLORE (PROBLEM IDENTIFICATION)

The "Explore" module introduced design strategies and research methods from experience design, prompting students to view the project as a community intervention. Once the student groups were formed and the project topic of sustainability was established, key touch points were created to enable students to engage with essential educational materials while aiming to learn through project development and share that knowledge publicly.

The course started with a survey to assess students' understanding of the topic and featured a guest speaker who was a subject matter expert in user experience and design advocacy. The speaker engaged students in discussing case studies, focusing on ethical community connections and participatory design for equitable outcomes.

As the course evolved, the facilitator encouraged students to think beyond traditional product solutions based on the new training methods they were learning. They trained in rapid ethnographic studies and data evaluation based on grounded theory, using the campus as their context. Initial exercises focused on participant vs. observer dynamics, data review techniques, and thematic classification. On the second day, students explored community locations to identify and define personas based on earlier discussions.

The students identified various personas from their community-based field study, which

Table of Module Flow of SDHC Course Activities.

Theme week	Goal	Activity	Specifics
1. Explore	Project Identification	Guest Speaker: Intro to Problem Identification	Guest Speaker UX, Concept Mapping Exercise
	Research Methods	Guest Speaker: Intro to Research Methods	Ethnographic Observation exercise on campus
	Field Work	Data Collection/ Ethnographic Observations	Launch of Pre-Survey, Site Visit to Denton Square
	Research Methods	Data Analysis/Personas & Journey Mapping	Identifying community members and their lived experience
	Case Study & Guest Critic	Guest speaker/Interior Design: Solar Decathlon Project	Present preliminary findings, feedback, and discussion
2. Create	Identify Methods and Materials	In-depth sustainability study	(CA) Life Cycle Case Study Analysis, Circular Design Process
	Identify Methods and Materials	Guest Speaker: Material Selection Expert	Re-assess findings, sort and analyze material options
	Plan Research Design	Guest Speaker: Interior Design	Reconsidering our Relationship to the Built Environment
	Field Work	Data Collection/ Ethnographic Observations	Embedded ethnography in GDAC community workshop
	Plan Research Design	Data Analysis and Discussion	Present preliminary findings and generate discussion
3. Disseminate	Identify formats for dissemination	Team Breakout Session	Launch of Project Website, PSA Campaign, and display items
	Execute formats for dissemination	Team Work Sessions	Design, Develop, and Execute products and com strategy
	Finalize formats for dissemination	Team Work Sessions	Finalize website, marketing materials, and display items
	Presentation and Discussion	Teams present final project to audience of faculty and peers	
	Post-mortem	Data Collection	Post-survey and reflective narratives

Tab. 01

they then narrowed down for manageability. They found commonalities among clients, tourists, and hospitality vendors, prompting them to consider individuals' motivations and underlying needs in the community context. The personas generated from their research demonstrated preferences for healthy lifestyles, linking sustainable choices to health.

Because the students recognized the fashion and textile industries as significant polluters, they used the information as a starting point to connect sustainability to their community. Their desire to provide alternative, more sustainable lifestyle choices led to discussions that broadened their understanding of "sustainable design for healthy communities," moving beyond simply creating another sustainable product collection.

MODULE TWO: CREATE (PROJECT IMPLEMENTATION AND PRODUCTION)

During the "Create" module, the facilitators encouraged the students to develop holistic strategies for their final design solutions. Guest lecturers presented multidisciplinary topics from the design department, introducing students to material specification strategies, lifecycle analysis, and the circular economy (Ellen MacArthur Foundation, 2021). These concepts prompted students to rethink traditional studio practices, encouraging them to use innovative materials and incorporate the three Rs of sustainable design: reuse, renew, and recycle, from a systems-thinking point of view.

Classroom workshops engaged students in discussions about sustainability and life cycle thinking in the fashion and textiles industries. The goal was to help them reach a consensus on their understanding and define the problem. In these workshops, educators acted as facilitators. At the same time, students shared their understandings. They presented their views on adopting a more sustainable design model for the apparel industry, aiming to communicate this effectively to their communities.

In this second module, the guest speakers also presented case studies of inhabitants in symbiotic relationships with the built environment. These interactions with faculty from different disciplines encouraged students to explore alternative approaches to their design problems.

MID-POINT OF PROJECT

At the midpoint of the second module, students presented their findings on their chosen community to a faculty panel, proposing strategies for addressing the SDHC challenge.

Under faculty guidance, they identified two potential community partners. The first was a distant regional community combining urban gardening with outreach for lower-income members, requiring transportation for engagement. The second option they provided identified the nearby Community Arts Center (CAC), which was more accessible and already had a relationship with the university. The CAC supports local designers and artists through workshops and exhibitions.

After selecting the CAC, students contacted its program administrators and attended a weekly open studio for a "meet and greet." This collaborative work session allowed them to engage with community members through various arts and crafts activities. By sharing stories about their experiences, students gained more profound insights into the community's values and needs, which informed their final projects and reflective narratives.

SDHC PROJECT OUTCOMES

Embedding the students within the CAC was transformational. It helped them better understand their audience and inspired multiple design alternatives. The cohort began to form sub-groups based on a shared vision for tackling the SDHC challenge. Two groups chose to pursue a service design solution for the SDHC project. One group proposed a swap event for community members to trade gently used items, preventing waste. The other suggested a mending workshop where community members could bring worn items for repair, supported by students' sewing skills.

Another student group suggested a traditional approach, suggesting products inspired by art from the community center using draping, flat patterns, and garment construction. Their designs would utilize natural dyes, organic materials, and zero-waste techniques.

However, the last group of students proposed a holistic approach to the SDHC problem, integrating ideas from other groups. Their strategy included workshops, a website, and a marketing campaign to engage the community through the arts center, emphasizing education on sustainability and personal choice impact.

They proposed arts-based workshops and exhibitions focused on sustainable techniques, introducing concepts like natural dye, local ecology, and upcycling materials to engage the community. These sessions raise awareness of a garment's lifecycle and encourage mindful clothing choices. An accompanying website would promote events, share resources, and showcase students' design projects.

MODULE 3: DISSEMINATE (PROJECT PRESENTATION)

After finalizing their design strategy, students completed their projects and presentation materials, showcasing their personas, user journey maps, garments, and marketing designs for workshops. They launched a website to archive their project development and shared a grant proposal for future funding. Faculty provided feedback to refine materials before the students presented them to arts center administrators. Figure 01 illustrates the research journey of the SDHC project and the students' outputs.

METHODOLOGY: DATA COLLECTION METHODS

To evaluate the impact of the SDHC project, the faculty research team conducted pre (N=17) and post (N=16) surveys about students' perspectives using questions based on a 5-point Likert-type scale (1 being "Strongly agree" and five being "Strongly disagree"). Independent t-tests were then used to compare means between pre- and post-project surveys. The results of independent t-tests showed that 12 out of 15 items significantly improved after implementing the project (Table 02).

Feedback from the post-course survey and reflection narratives revealed that students shifted from essential operational thinking to a deeper understanding of the topic, allowing them to integrate this knowledge into their lives and future careers. They also recognized the value of actively promoting sustainability practices within their community.

ANALYSIS: ASSESSMENT OF THE SDHC PROJECT

Each development phase included checkpoints for assessment and feedback, promoting self-evaluation and engagement with project objectives. Chandrasekaran and Al-Ameri (2016) emphasized that project assessment effectively evaluates student

learning through reflection diaries and narrative journey mapping. These modes can help visualize team projects and reflect indicators of personal growth, traits that had begun showing up on the students' project e-portfolio websites.

The fashion students documented their project development milestones using formats similar to traditional apparel product life cycles, aligning with industry practices. Peer reviews were encouraged to enhance skills in assessing social and environmental impacts (Hall & Velez-Colby, 2018).

The primary assessment of the efficacy of the SDHC project focused on team process development, aligning with problem-based learning that values theoretical application over physical outcomes (Sandri, 2021). Pre- and post-surveys evaluated students' understanding using questions from (Trippeer et al., 2022), focusing on critical design education attributes.

The students' prototypes were also reviewed through material sciences and ethnographic research lenses. Student reflection diaries and journey maps indicated that students' understanding of sustainability evolved to encompass health and well-being.

FINDINGS

One of the goals set by the educators in this study was transformational learning, which requires a reflection component. Schön (1983) emphasized that reflection is essential for knowledge transformation, enabling learners to deepen their understanding and connect their experiences to broader concepts beyond their immediate context.

Out of fifteen students, about one-third focused on product creation, while two-thirds concentrated on developing community workshops and marketing strategies. All students felt connected to their work and confident in contributing to a more sustainable future. A small group committed to continuing the workshop series with the CAC for two years as an extracurricular activity for the community.

SIGNIFICANCE

Sustainable development in the fashion industry is crucial (de Castro, 2022; Kent, 2024) yet challenging to implement (McKinsey Insights, 2024). Universities need strategies to integrate sustainability into curricula through life cycle assessments and interdisciplinary approaches.

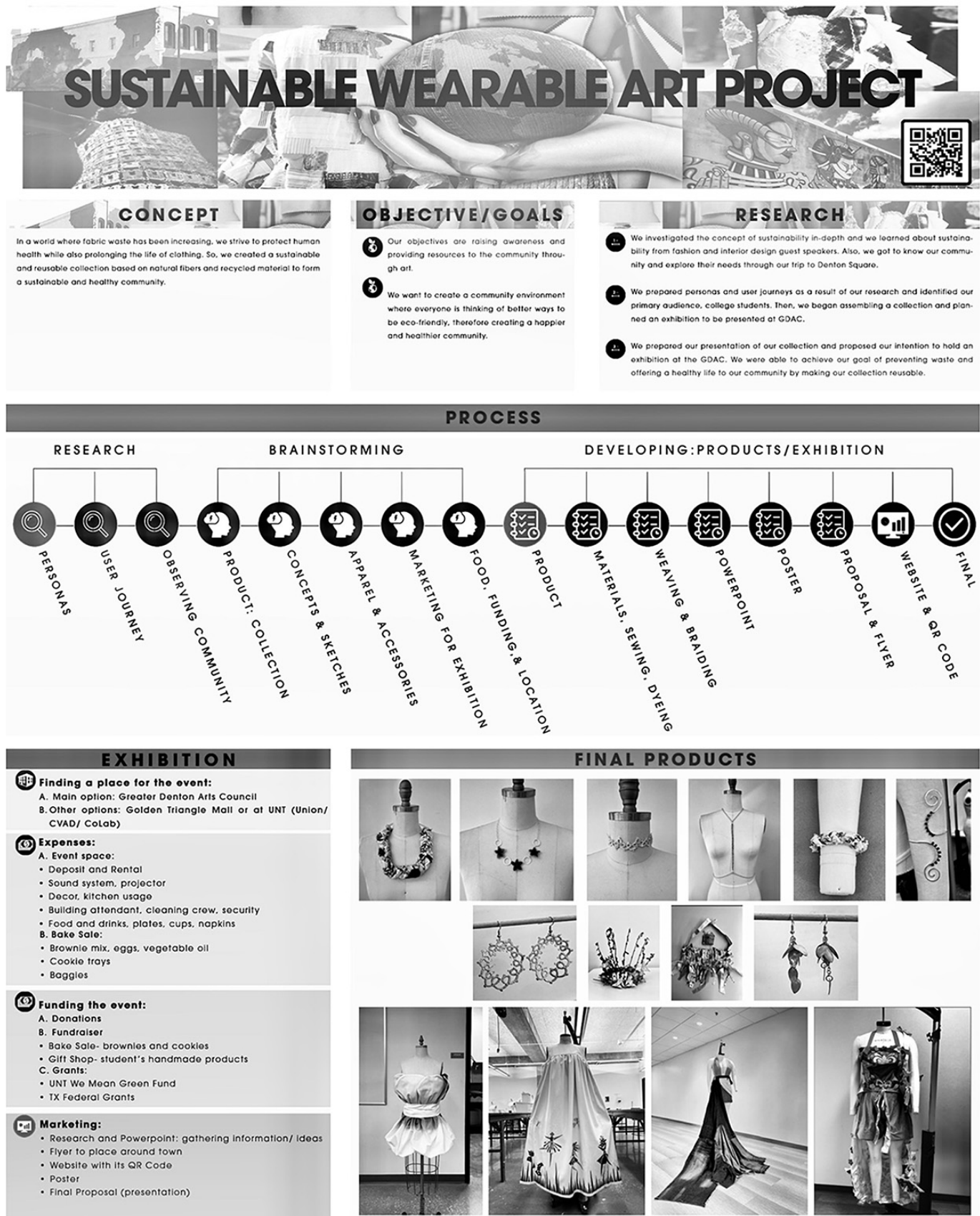


Fig. 01

Results of Independent t-tests.

	Pre (n=17)		Pre (n=16)		I-test
	Mean	SD	Mean	SD	
I understand the roles and functions of various industry sectors in which products are developed, produced, marketed, sold, and consumed, including construction, sourcing, manufacturing, marketing, and merchandising processes.	1.94	.64	1.31	.46	2.80**
I can Identify and interpret the needs and wants of consumers. I understand how industry processes are applied to plan, develop, produce, communicate, and sell profitable product lines.	1.88	.58	1.44	.50	1.96
I can use industry terminology in appropriate ways.	2.18	.86	1.38	.60	2.07*
I can apply research regarding appearance and human behavior to industrv.	1.88	.58	1.25	.43	2.87**
I understand the interrelationships among socio-cultural and psychological factors of fashion and their impact on human ochavior.	2.24	.73	1.56	.50	2.96**
I understand aesthetics and the design process.	1.65	.59	1.19	.39	2.55*
I can use the design process to create products that meet marketplace needs.	1.88	.76	1.31	.48	2.62*
I can relate the elements and principles of design to product development, use, and evaluation.	1.94	.54	1.38	.48	3.11**
I understand how dynamic and diverse political, cultural, and economic systems impact industry processes.	1.88	.76	1.31	.46	3.28**
I can analyze and evaluate issues related to environmental sustainability as they relate to industry activities and processes.	2.12	.76	1.31	.46	2.66*
I can demonstrate critical and creative thinking skills, including the ability to critically evaluate and compare diverse perspectives.	1.71	.67	1.50	.61	.94
I can apply quantitative and qualitative skills to problem-solving within the textile and apparel complex.	2.12	.76	1.44	.61	3.28**
I can communicate ideas in written, oral, and visual forms using appropriate technology.	1.76	.55	1.19	.39	3.45**
I can function as a team member and leader within professional and culturally diverse environments.	1.65	.59	1.38	.48	1.68*

* p<.05; **p<.01

(I= strongly agree, 5=strongly disagree)

Tab. 02

While some students wish to adopt sustainable practices, many need more awareness of the fashion industry's environmental impact. Sandri (2021) stresses the need for a "point of entry for learners to engage with sustainability" (p. 66). Structuring the curriculum around a sustainability project can inspire students and support community outreach efforts.

LIMITATIONS

Some project areas faced challenges in fostering team synergies and implementing the learning agenda despite positive feedback from students and educators. The interdisciplinary project initially aimed to unite interior design and fashion students for a shared experience. However, limited curricular time restricted exposure to both fields, leading to only fashion students participating in the compressed studio course. To address this, interior design and user experience faculty offered their expertise through lectures and workshops.

CONCLUSIONS

Teaching students about the impact of their daily habits on global sustainability can inspire them to become "fashion activists" (Hirscher & Niinimäki, 2013). Alvarez-Vanegas and Volante (2024) highlight the role of service learning in enhancing sustainability competencies, as illustrated by the case study "Sustainable Design for Healthy Communities" (SDHC), which showcases the use of interdisciplinary methods in a summer fashion studio course. This course became a springboard to train students as sustainability leaders within their community as a form of fashion activism.

Nelson and Stolterman (2003) note that sustainability encompasses moral and practical challenges. Achieving it requires a shift in aims and behaviors. Hall and Velez-Colby (2018) stress the importance of behavior change for genuine sustainable living.

Community workshops became a central platform to promote sustainable practices in this project. At the same time, student teams created a website and educational outreach materials designed to shift the public away from traditional consumer thinking and develop a more meaningful relationship with the textiles and apparel products they encounter daily. This new approach connects lifestyle goals with an understanding of consumer choices and demonstrates a new form of fashion

activism, once which inspires a more holistic relationship between persons, products, and nature.

CAPTIONS

[Fig. 01] Figure 01 illustrates the research journey of the SDHC project and the students' outputs.

[Tab. 01] Table of Module Flow of SDHC Course Activities. Table 01 outlines the module flow and related activities for the SDHC course.

[Tab. 02] Table 02 showcases the results of independent t-tests, indicating that 12 out of 15 items significantly improved after implementing the project.

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