

DEVELOPING EMOTIONAL INTELLIGENCE TO FOSTER SUSTAINABLE CONSUMPTION: AN INTEGRATED APPROACH TO FUTURE EDUCATOR TRAINING

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Abstract

The growing complexity of sustainability challenges calls for higher education approaches that integrate cognitive, emotional, and ethical dimensions of learning. This Italian pilot case study investigates how an emotionally engaging, collaborative Design Thinking (DT) intervention can foster sustainability awareness and value-based orientations among undergraduate students. The intervention was implemented during the 2024/2025 Design Thinking course at LUMSA University (Rome). A mixed-method, quasi-experimental case study design was adopted. Qualitative data were collected through an in-class post-it activity, while quantitative analyses focused on matched pre-post questionnaires. Findings reveal multidimensional sustainability conceptualizations, ethically driven SDG engagement, and meaningful associations between pro-environmental behaviors, reduced psychological conflict, emotional variables, and well-being indicators, while short-term behavioral change remains limited.

Keywords: Education for sustainable development, design thinking, emotional engagement, SDGs, higher education.

1. Theoretical framing

Education for Sustainable Development (ESD) promotes pedagogies that are transformative, participatory, and action-oriented, fostering systems thinking, ethical awareness, and responsibility for collective well-being (UNESCO, 2020; Wals, 2020; Sterling, 2011; Bamber & Morgan, 2017). Within this framework, emotionally engaging learning environments are increasingly recognized as enabling conditions for reflective meaning-making and ethical agency (Mezirow, 1991; Ojala, 2023).

Design Thinking (DT), particularly when embedded in Project-Based Learning, offers a human-centered and collaborative approach that connects sustainability challenges to empathy, creativity, and applied problem-solving (Brown, 2009; Condliffe et al., 2017; Razzouk & Shute, 2020). Recent studies suggest that DT can support transformative sustainability learning by integrating reflection, collaboration, and real-world relevance (Leal Filho et al., 2018, 2022; Lehtonen et al., 2023). This study builds on these perspectives to explore how an emotionally engaging educational experience supports sustainability consumption choices and value-based orientations among undergraduate students.

2. Objectives and research question

This study examines an Italian pilot case implemented within a Design Thinking course at LUMSA University (Rome). The overarching research question is: **RQ:** How can a collaborative and emotionally engaging learning intervention foster sustainability awareness, personal reflection, and value-based action in higher education students? To address this question, the analysis focuses on four dimensions:

1. How students conceptualize sustainability;
2. Which SDGs they prioritize, and why;
3. What everyday sustainable behaviors they identify;
4. What preliminary quantitative patterns emerge across psychological barriers, emotional variables, and sustainability-related behaviors.

Prior to data analysis, it was expected that the intervention might elicit more multidimensional and value-laden sustainability conceptualizations and contribute to increased student awareness of the SDGs

and everyday sustainable consumption. It was also anticipated that short-term behavioral indicators would exhibit more limited change than awareness-related outcomes, and that reductions in psychological barriers could be associated with higher pro-environmental behaviors.

3. Methodology

A mixed-method, quasi-experimental case study with a transformative research perspective was adopted. The intervention took place during a Design Thinking course at LUMSA University (Rome). Participants included 150 undergraduate students ($N = 150$) involved in activities for qualitative analysis. Quantitative analyses focused on students who completed both pre- and post-questionnaires with matchable responses ($N = 34$).

For the Intervention and data collection two complementary learning activities were implemented. First, students completed an individual in-class reflection using color-coded post-it notes in response to three prompts (“Sustainability is...”, “Preferred SDG and why”, “Everyday actions to protect the planet”), generating over 280 qualitative responses. Second, students worked in collaborative teams (3–5 members) to co-design SDG-oriented interventions using the Design Thinking framework, presented orally at the end of the course. The learning environment was intentionally non-evaluative to promote psychological safety, creativity, and authentic engagement. Qualitative data were collected in November 2024. Quantitative pre- and post-intervention questionnaires were administered digitally around the intervention.

Qualitative data were analyzed using thematic analysis to identify categories related to sustainability conceptualizations, SDG preferences and motivations, and everyday actions. Quantitative analyses explored exploratory change patterns and correlations across sustainability-related variables, psychological barriers, emotional variables, and well-being indicators in the matched pre-post dataset ($N = 34$). All quantitative measures were derived from previously validated scales approved by the Ethics Committee of Sapienza University of Rome.

4. Results

4.1. Qualitative findings

Students’ conceptualizations of sustainability revealed four core themes: intergenerational equity, environmental stewardship, social responsibility and equity, as well as sustainable lifestyles and innovation, indicating a multidimensional and value-laden understanding of sustainability. From over 100 valid contributions, SDG 5 (Gender Equality) was most frequently cited (~20%), followed by SDG 4 (Quality Education) and SDG 3 (Good Health and Well-being); SDG 8 also received several mentions. SDG 12 was rarely cited, while SDGs 9, 15, and 17 were not explicitly mentioned. Motivational rationales clustered into four macro-categories: ethical values (~37%), intrinsic motivation (~28%), systemic vision (~19%), and personal experience (~16%).

From 125 ideas, students identified everyday sustainable actions related to reducing waste and plastics (33), water conservation (21), sustainable consumption (18), energy saving (14), sustainable mobility (13), information and awareness (11), sustainable nutrition (9), and other creative ideas (6).

4.2. Quantitative findings (matched pre-post, $N = 34$)

Preliminary analyses revealed several relevant patterns. Improvements in pro-environmental behaviors were associated with a reduction in psychological conflict, as indicated by a negative correlation between pro-environmental behaviors and the *Conflicting* barrier ($r = -0.39$). Significant changes were also observed in the psychological barriers scale, with *Conflicting* decreasing and *Lacking knowledge* increasing in the post-test.

Changes in emotion appraisal were strongly correlated with perceived emotional intelligence and emotional competencies (r values ranging from 0.64 to 0.93). Additionally, changes in flourishing were positively associated with changes in happiness ($r \approx 0.60$). The four dimensions of the Pro-Environmental Behavior Scale (conservation, food, transportation, environmental citizenship) were positively interrelated, indicating coherent patterns across private- and public-sphere environmentalism.

5. Discussion and conclusion

This Italian pilot case study suggests that emotionally engaging learning environments can support students’ sustainability awareness, ethical engagement with the SDGs, and everyday sustainable actions. Qualitative findings indicate a shift toward multidimensional, value-based understandings of sustainability, while preliminary quantitative patterns show that improvements in pro-environmental behaviors are

associated with reduced psychological conflict and linked to emotional and well-being variables. These results highlight the relevance of emotional processes in sustainability learning. At the same time, the persistence of the attitude–behavior gap is confirmed, as increased awareness does not automatically translate into immediate behavioral change (Colombo et al., 2023). As a single-case, convenience-based pilot with a limited matched sample, the findings are exploratory and not intended for statistical generalization. Overall, the study supports the integration of emotionally supportive educational practices to strengthen Education for Sustainable Development in higher education and foster more durable pro-environmental action.

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