

Engaging college students in the transition to sustainability through design-based approaches

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Introduction

The transition to sustainability is a long-term goal for human society and will necessarily take place over time, as we are faced with a tremendous challenge, of unprecedented scope, scale and complexity (Unesco 1997). Shifting towards a sustainable living constitutes a process of social learning happening through a systemic transformation (Manzini 2008), hence the social responsibility of all institutions to promote the culture of sustainability, beginning with the local contexts and challenges. It is especially important to promote healthier, sustainable and integrated lifestyles regarding the new generations. Fostering a culture of sustainability among young people is a key strategy, allowing to develop processes and interaction strategies to create 'contexts for change'.

In the context of the transition towards a sustainable culture and lifestyle, the field of Design offers a range of potentialities and interfaces for innovative action. Design principles and practices may contribute for creative innovation and support promising initiatives on sustainability, offering skills, abilities, methodologies and a unique viewpoint (Mouchrek 2014).

The present study aims to investigate the process of change and engagement in sustainability among youth and the potential of Design to support interventions to bridge the value-action gap in sustainable behavior and develop sustainable competencies, especially in the context of Higher Education.

Culture of sustainability among youth

The transition towards sustainability is complex and requires society-wide shifts in priorities and perspectives (Stephen et al. 2008). Culture is an inextricable part of the complex notion of sustainability, being a very practical, concrete determinant in this process (Unesco 1997). The term *culture of sustainability* refers to the necessity and centrality of a cultural shift in how individuals and society address economic, social and environmental issues (Duxbury and Gillette 2007). Changes in lifestyle will need to be accompanied by a new ethical awareness (Unesco 1997). Hence the importance of changing values and developing innovative approaches to evolve into more sustainable and conscious lifestyles.

Engaging young people in efforts around cultural and social forms of sustainability generate positive outcomes to both youth development and community change (Browne et al. 2011), allowing them to develop an optimistic and proactive outlook on the future (Duxbury and Gillette 2007). This study is built around the idea that it is essential to invest in promoting a culture of sustainability among youth, developing tools and innovative strategies of interaction, embracing diversity, promoting skills to deal with the complexity and challenges of the near future and preparing them to participate fully and actively in the sustainable transformations in our society.

Role of Higher Education in building a sustainable society

Universities have a very important role in this process: sustainable education in college *campi* has the potential to achieve long-term results by promoting the development of awareness and skills for young engagement, in order to face the complex challenges, nowadays and in the future. Strategically positioned to encourage synthesis and integration of different types of knowledge and to enhance the application of knowledge to social change, universities may facilitate social changes toward more deliberate societal engagement and to advance sustainable practices (Stephen et al. 2008).

Higher Education may offer experiences for students to develop skills of integration, synthesis, systems-thinking, complex problem solving, awareness of social responsibilities associated with professional practice, self-efficacy, and capacity for advocacy and interdisciplinary collaboration (Sibbel 2009, Stephen et al. 2008).

With the potential to model sustainable practices for society and promoting engagement among students and extended communities, universities may be in the forefront in the process of transition to sustainability. The education for a sustainable living is fundamental in the “whole person” education – therefore the opportunities to experience social engagement and mobilization in the context of Higher Education show excellent potential, especially in young-led programs and projects that stimulate youth expression and autonomy.

Bridging the value-action gap in sustainable behavior

The process of behavior change toward sustainability and social engagement is complex, since it does not correspond to a linear model in which the ecological knowledge would lead to awareness and this directly to action. We observe a value-action gap in these processes, with barriers to behavior change (Roizman 2001, Blake 1999, Kollmuss and Agyeman 2002). Overcome this gap would lead to a fundamental shift in behavior towards sustainability.

Although some authors attribute the value-action gap to the lack of appropriate information (Blake 1999), other authors affirm that the gap will not be overcome simply by increasing information (Sammer and Wüstenhagen 2006, Roizman 2001, Mouchrek 2014, Leitner et al. 2011, Autio and Heinonen 2004). There are several other barriers, which might be:

- personal, structural and social (Jackson 2005, Blake 1999)
- individual, responsibility, practical (Blake 1999).

There are several theoretical models aimed to explain the value-action gap in proenvironmental behaviour and propose strategies to bridge this gap. We would like to highlight the Kollmuss and Agyeman's (2002) model, which lists the following aspects:

- Demographic factors
- External factors (institutional, economic, social and cultural)
- Internal factors (motivation, environmental knowledge and awareness, emotional involvement, locus of control, responsibility and priorities).

In the search of ways to support the process of bridging the value-action gap in sustainability and promote youth engagement, it is fundamental to promote the development of a set of key competencies (Barth et al. 2007), in order to enable an active and reflective participation and increase consciousness and practice around sustainable development goals. The present study aims to investigate which are the key factors and potential strategies to bridge the value-action gap and promote engagement

in sustainability and social change among young people, in particular college students.

Design as a catalyst for change

Design evolved from a specialized profession to an area of knowledge, through reflection on its practice and through the opening of new niches and levels. In addition to the traditional areas of expertise, nowadays we can find great development in new interdisciplinary areas, such as Human Centered Design, Design for Sustainability and Design for Social Innovation. Within this general trend of change of perspective, the field of Design is expanding and there is a growing focus on *design as a process* and a *strategic tool* (Cassim 2013).

Authors point out that Design can be a powerful catalyst for sustainable change, proving to be an effective methodology of intervention (Manzini 2008). Networks of multidisciplinary action about sustainability are being developed. In these networks, designers can contribute in many directions: proposing plural solutions and designing new scenarios (Krucken 2008); establishing conditions for the creative context (Landry, 2000); developing tools, equipment and infrastructure to support promising practices (Malaguti 2009); using their knowledge and specific tools to facilitate convergence towards the shared ideas and potential solutions (Manzini 2008).

The field of Design is valuable to develop alternative strategies to deal with change and complexity in transition to sustainability. Specially about promoting a culture of sustainability among youth, it is relevant to investigate Design's potential and interfaces of action in order to propose and support creative paths for innovative practices in the field. This research aims to study how the integration of design thinking and participatory design applied to Higher Education experiences can promote engagement in sustainability and pro-environmental behavior among young students.

Methodology

The research uses a qualitative multi-method approach, using concepts and tools from the field of Design research to combine knowledge from many disciplines to find patterns to understand and map contemporary and changing issues and to outline opportunities of intervention. We elaborated a composite of traditional procedures and research techniques (literature review, documentary research and content analysis, open and semi-structured interviews, case studies) and other innovative procedures and tools of Design research (rapid ethnographical research; participant observation, visual mapping, co-creation and collective construction of knowledge, collaborative maps).

The preliminary phase of the research was developed at a Master's degree level, being considered as an initial approach to the subject, intended to map the context and understand the general characteristics of the issue. The current phase is in-progress, being developed in the context of a PhD degree, and aimed to advance the research, developing a detailed study on applying Design principles and practices in order to establish novel connections and possibilities of intervention on the youth's engagement with the transition to sustainability.

This paper summarizes the findings of the exploratory phase consisting in literature review, context analysis, and ethnographic observation and pilot application of participatory design activities in undergraduate courses in two universities in Brazil and United States.

Preliminary results and discussion

In this section, we present preliminary results, consisting in:

- 1) Analysis of key aspects and proposition of a set of guidelines for strategies to promote the culture of sustainability among young people – developed in search for priority areas and possible approaches for intervention in the field
- 2) Investigation of the potential of design-based approaches to promote engagement in sustainability among students.

Key aspects and guidelines for strategies to promote the culture of sustainability among youth¹

Youth development happens through processes of learning in the course of action and experimentation. In this stage of life, the person experience different values and positions, in order to find and establish the values and principles that will underpin his/her adult life. Therefore, young people live sustainability aspects related to their concrete situations in real life, as: choices, decisions, school and professional orientation, balance between risk behavior and the need to undergo significant experiences.

The process of behavior change toward sustainability and social engagement is complex, does not correspond to a linear model in which the ecological knowledge would lead to awareness and this directly to action. The overall picture is complex and the notions of citizenship and active social participation are diluted. Thus, it can be difficult for young people devise for themselves an active role in the process of transformation towards sustainable ways of living. There are many evidences that highlight the need to provide new frameworks and foster the development of new skills for creating a culture of sustainability.

A promising strategy would consist in building social contexts to support and strengthen positive characteristics and motivations young people may present as: interest in creating innovative and original discourse and practices, desire to belong to groups of identity and participate on shared initiatives, will to exercise freedom of choice, desire for autonomy and creating a meaningful life, professionally and personally.

The variables of empowerment are essential, as they allow young people to act as agents of change and being active subjects in the community. Accordingly, it is important to create pathways to stimulate their latent intention to act, deepen the understanding of the impact of choices, reinforce their personal and collective power, and propose practical initiatives, allowing concrete experimentation and feedback of peer community.

Following is a set of guidelines for strategies to promote the culture of sustainability among youth, developed as a result of the present research:

¹ This section present findings reported on the author's Master Thesis (Mouchrek 2014).

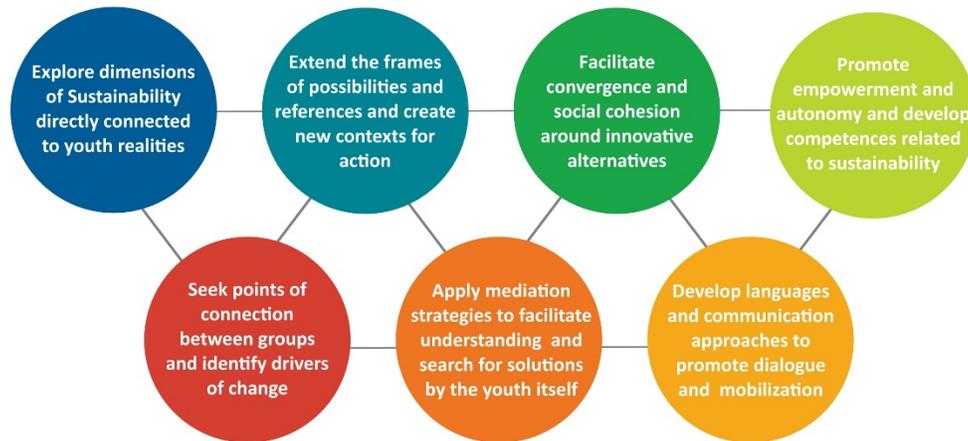


Figure 1 – Guidelines for strategies to promote the culture of sustainability among youth. (Organized by the author)

- *Explore dimensions of Sustainability directly connected to youth realities.* It is recommended to develop more open and integrated sustainability approaches, preferably proposed by young people themselves, starting from reflection and discussions. Contextualizing the issues into youth life context and promoting ways to help them solve their own questions; stimulating experiences through which they may constitute their own principles and motivations for action, individually and collectively.
- *Extend the frames of possibilities and references and create new contexts for action.* It is important to analyze the current contexts, frames of reference and spaces for action available to young people. Is it possible to extend/develop/strengthen/redirect these contexts? It is necessary to open spaces and opportunities for experimentation, create new fields of action, find points of opportunity and create innovative strategies from them. Proposing new policies and concrete actions allows young people to experience new possible identities, reinvent social practices and social interactions.
- *Facilitate convergence and social cohesion around innovative alternatives.* Young people present positive and promising interests and characteristics that may be stimulated, supported and strengthened, in order to promote sustainable change. Among them, we highlight: interest and motivation to create innovative and original discourse and practices; desire to participate, to belong to groups of identity and shared initiatives; will to exercise freedom of choice; desire for autonomy and creation of a path of significant professional and personal life. Therefore, it is necessary to facilitate convergence processes to foster social cohesion so that their choices and aspirations for change could turn into real and concrete alternatives.
- *Promote empowerment and autonomy and develop competences related to sustainability.* Empowerment is fundamental in the development of the citizenship, because young people feel they can be agents of change and active subjects in problem-solving, developing autonomy and self-esteem. It is important to create pathways to stimulate their latent intention to act; reinforce their personal power; deepen the understanding of the impact of choices;

propose practical initiatives, allowing concrete experimentation and the feedback of peers. These strategies can generate relevant changes in youth participation and engagement, while they propitiate the development of innovative attitudes, methods of action and participation.

- *Seek points of connection between groups and identify drivers of change.* Each group has its own agents and drivers of change. 'Agents of change' are young people with the potential to build a 'bridge' between those of different orientations and act as opinion formers. Interventions focused on young people should include a process for identifying and strengthening these motivations as they are key factors that guide, nurture, ensure mobilization and resilience and provide a living and active meaning to transformative processes.
- *Apply mediation strategies to facilitate understanding and search for solution by the youth itself.* Through discussion and interaction dynamics, invite young people to reflect on values, motivations and objectives in the context in focus. Mediation encourages awareness in a practical context and their ability to cope with the challenging issues from their own understanding and willingness to participate. Accordingly, interventions that emphasize co-creation processes and collective management are especially promising.
- *Develop languages and communication approaches to promote dialogue and mobilization.* Communication strategies in this field must provide opportunities to hear what young people have to say. In a dynamic and open communication approach, it is possible to create contexts to transform perceptions, views, demands and desires of young people in practical factors of mobilization and expression. The communication created 'by the young' 'for the young' is a highly creative factor, given the impact that can generate in terms of stimulus, participation and representativeness. This is a key factor to the success of sustainable initiatives in this field.

Potential of design-based approaches to promote the culture of sustainability

Preliminary findings also show that design-based participatory approaches integrated in educational settings offer excellent opportunities to positive intervention to both engage youth in sustainability and support their positive development.

Participatory design is an approach to design and develop solutions that actively involve all stakeholders in the design of products, services, activities and systems. It was originated in movements towards democratization at work in the Scandinavian countries in the 1970s, it reflects design as a social process. Developed as a part of democratic philosophy for participation of people in decision-making processes (Luck 2003), participatory design is well-suited to support social change and engagement in sustainability. Typical features are: collective construction of knowledge, mutual learning, prototyping, iteration and co-creation activities.

Co-design activities stimulate systemic thinking, encourage people to be active participants and suppliers of sustainable solutions, reveal new ways and possibilities of doing things, empower people to act as active citizens and professionals providing self-sustaining and self-regenerating solutions, and seem to strengthen the sense of trust, an essential ingredient for bringing about any real change (Fuad-Luke, 2010).

Considering potential design-based strategies for engaging youth in sustainability, our research shows that:

- Participatory Design processes can provide spaces for experimentation, inviting youth to reflect and enact choices in a non-serious, playful environment.
- From the perspective of development, Participatory Design processes with young people can offer opportunities for peer interaction, equal participation with adults, exploration of diverse identities, and elaboration of possible futures.
- Participatory processes can improve youth's ability to understand and contribute to (trans)forming their life contexts, exercising skills for protagonism and positive intervention (youth as co-creators of public space).
- Open, participatory environments are ideal to enable young people to exercise their critical and creative thinking skills and help them reflect on values and choices and constitute their own principles.
- The integration of designerly ways of thinking in the classroom opens opportunity to develop structured reflection and critical consciousness, both precursors of an intentional and active engagement with sustainability.
- If the Design competencies are combined with a discussion focused on sustainability, the impact in the learning process is expanded, allowing students to articulate their values and discuss potential strategies for application.
- Introducing tools and strategies from designerly ways of doing in the classroom allows students to learn practical skills that would be useful in their engagement in sustainability and social change in the community (such as: graphic design, multimedia, verbal and visual expression, team work etc).

The research also shows that co-creation activities are suited to develop the culture of sustainability among youth (Mouchrek 2014), since they contribute to:

- developing critical thinking to analyze complex problems and find innovative solutions;
- providing fields of experimentation for students to create solutions from their own resources and motivations;
- offering a range of tools and forms of intervention they learn collaboratively how to select and apply;
- developing concrete and action-oriented projects;
- and establishing a dynamic system, in which feedback and confirmation stimulate new cycles of project and applied action

Final considerations

Design proved to be good methodology for intervention for youth engagement in sustainability: both as a way to understand the problem (as a way of knowing and inquiring) and as promising activity to attain the goals (participatory approaches). Design-based activities are opportunities for experimentation that can contribute to both engage youth in sustainability and support their integral development.

The guidelines for strategies in this field reinforce the importance of understanding the values and challenges of youth development, broadening and deepening the concept of

sustainability, taking it closer to youth life's reality, investing in building contexts for transformation, stimulating empowerment and the development of autonomy, seeking possible languages and communication approaches and using mediation strategies to facilitate change processes conducted by young people themselves.

The relationship between youth, engagement in sustainability and its implications for the future is a relevant theme of study, research and development in the field, especially in Higher Education. It matters to investigate the potential processes of learning, socialization and innovation that are able to support and encourage sustainable choices and engagement with sustainability and social change among young people. This research aims to contribute to the advancement of knowledge about youth and sustainability and to the improvement of youth wellness and development, proposing novel processes and methodologies based in interdisciplinary construction of knowledge.

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