

Further Insights I.3 Towards a more effective and efficient SD incorporation into the universities

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INTRODUCTION

For centuries, universities have been at the forefront in creating and breaking paradigms, as well as educating the future leaders, decision makers, entrepreneurs, and intellectuals (Cortese, 2003; Elton, 2003; Lozano, 2006). However, universities have remained largely traditional (Elton, 2003), where far too much of modern education has continued to rely upon Newtonian and Cartesian mental models, which relegate learning and action to reductionist thinking and mechanistic interpretation (Lovelock, 2007; Nonaka and Takeuchi, 2001). Relying on these mental models and scientific positions has led to the conquest of nature through competition (Cortese, 2003),

industrialization (Carley and Christie, 2000; Orr, 1992; Reid, 1995; WCED, 1987), overspecialization and disciplinary isolation (Cortese, 2003; Costanza, 1991), and testing by repetition (Burke, 2000; Lozano, 2010). Such reductionist education has fostered highly individualistic, greedy and self-interested behaviours (Lozano, 2007; Stead and Stead, 1994).

These paradigms present a daring challenge to higher education institutions (HEIs) and society in general, in order to achieve a sensible future for those not yet born generations, especially if the rate of change in universities is taken into consideration.

To overcome this an increasing number of HEIs have engaged in incorporating and insti-

tutionalizing sustainable development (SD) into their systems (Boks and Diehl, 2006; Calder and Clugston, 2003; Cortese, 2003; Lozano, 2006, 2010; Lozano-Ros, 2003; Wemmenhove and de Groot, 2001). It is commonly agreed that this system has the following principal elements (Cortese, 2003; Lozano, 2006):

- (a) Education (referring to Curricula)¹
- (b) Research
- (c) Campus operations
- (d) Community outreach
- (e) Assessment and reporting

These elements are not mutually excluding;

on the contrary, they are interlinked and interdependent.

The university system is also composed of different stakeholders such as academic directors (for example deans, rector, president, directors of department, directors of divisions), the professors (in the undergraduate and postgraduate courses), researchers, staff, and students, among others (Lozano, 2006).

Nonetheless, education for sustainable development (ESD) has not fully permeated all disciplines, scholars, and university leaders (Fien, 2002), or throughout the curricula (Matten and Moon, 2004). The number of universities engaged with SD is still small compared to the total number of universities in the world. For example, out of 14,000 universities in the world (IAU, 2011), only 15 have published sustainability reports (Lozano, 2011).

The burning questions for universities, as centres of excellence, and key players in the SD debate, are: (1) how can SD be effectively and efficiently incorporated into the university's system? And (2) how can universities better contribute to the four dynamic and interlinked dimensions of sustainability (economic, environmental, social, and time)?

This chapter aims to provide some answers to these questions with the help of the declarations, charters, and initiatives for SD in higher education, as well as through a brief overview of barriers to change and some strategies developed to overcome them.

DECLARATIONS AS MEANS TO FACILITATE EMBEDDING SUSTAINABILITY INTO THE UNIVERSITIES' SYSTEM

At the Stockholm Conference in 1972 (UNEP, 1972) education was formally recognized on an international level to play an important role in fostering environmental protection and conservation. Since then many academic declarations, charters and partnerships have been developed that were designed to foster environmental education (EE), SD, and ESD. From 1987 there has been a large increase in such initiatives. The declarations, charters and partnerships have been designed to provide guidelines or frameworks for HEIs to better embed sustainability into their systems.

The increasing importance of such decla-

rations, charters and partnerships, to foster transformative SD is evidenced by the more than 1000 university leaders who ratified their commitment to work to advance SD education and research by signing the Talloires Declaration, the Kyoto Declaration, and the Copernicus University Charter by the end of 2003 (Calder and Clugston, 2003).

The declarations, charters and partnerships highlight the moral obligation of universities to work towards a sustainable future, as well as the following themes (Calder and Clugston, 2003; Lozano-Ros, 2003; Wright, 2004):

- Highlight the importance of education, especially higher education, as a multiplier of SD
- Focus on environmental degradation, threats to society, and unsustainable consumption
- Engage the institution to SD
- Create a culture of sustainable development within and outside the institution
- Include SD throughout the curricula in all disciplines, campus operations, courses, and research
- Encourage SD research
- Move towards more sustainability oriented university operations
- Engage with stakeholders, for example public, governments, non-governmental organizations (NGOs) and businesses, for collaboration, engagement and outreach
- Communicate SD efforts to the community
- Address intra- and inter-generational equity

From the above, and their recent analysis of 11 declarations, charters and partnerships Lozano et al. (2010) propose that five more elements that could be added to the university's system: (1) universities' collaboration, (2) transdisciplinarity, (3) implementing SD through campus experiences, by incorporating SD into the day-to-day activities in the university life experience, (4) 'educating-the-educators' on how to educate their students in SD and help foster multiplier effects, and (5) including SD in the institutional framework, where SD should evolve as the 'Golden Thread' integrating all of these.

RESISTANCE TO SD IN UNIVERSITIES

In spite of the calls from the declarations,

there have been several other reasons that explain the resistance of universities to engage with SD, such as:

- Little or no motivation or realism (Boks and Diehl, 2006)
- Lack of SD awareness (Lozano, 2006)
- SD considered to be radical (Lozano, 2006)
- Changes in curricula translated into budget claims (Peet, Mulder and Bijma, 2004)
- Insecurity and threat to academic credibility from teachers and professors (Peet et al., 2004)
- Confusion about SD (Velazquez, Munguia and Sanchez, 2005)
- Broadness of SD (Chau, 2007)
- Lack of financial resources (Velazquez et al., 2005)
- Overcrowded curricula (Abdul-Wahab, Abdulraheem and Hutchinson, 2003; Chau, 2007)
- Lack of SD knowledge from administrators (Davis, Edmister, Sullivan and West, 2003) or support (Velazquez et al., 2005)
- Lack of mental and financial support, and discipline-restricted organizational structures (Lambrechts, Vanhoren, and Van den Haute, 2009; Velazquez et al., 2005)
- Some lecturers being unaware, or failing to see, the relevance of SD to their teaching (Lozano, 2006)
- Teachers who might prevent or fail to support the diffusion (Barab and Luehmann, 2003)
- SD considered to be radical (Lozano, 2006; Lozano-Ros, 2003)
- SD considered to have little or no relevance to the course or discipline
- Uncertainty of the efforts required to engage and incorporate SD (Lozano, 2010)
- Academic traditions that tie universities to old mechanistic mental models

Some of the proposals that have been made to help address and overcome the resistance to make universities more sustainability oriented, such as:

- Placing a higher priority on teaching SD concepts (Davis, et al., 2003)
- Including more realistic classroom experiences when teaching SD (Davis, et al., 2003)

- Using 'carrots and sticks' from financial, internal funds, staff promotion, or top-down managerialism (Elton, 2003)
- Intertwining SD as a concept in regular disciplinary courses, tailored to the nature of each specific course (Abdul-Wahab, et al., 2003; Kamp, 2006; Peet, et al., 2004; Shi, 2005; Thomas, 2004)
- Incremental implementation of SD (Lozano, 2006)
- Implementing SD through campus experiences, by incorporating SD into the day-to-day activities in the university experiences (Lourdel, Gondran, Laforest, and Brodhag, 2005)
- Making SD the 'Golden Thread' that permeates the university's educational, research, physical plant operations and societal outreach activities (Lozano Garcia, Kevany and Huisingh, 2006)
- Using leverage (Lozano, 2008)
- 'Educating-the-Educators' on the concepts, values, tools and procedures of SD (Huisingh and Mebratu, 2000)
- Utilizing multiplier effects (Elton, 2003; Rogers, 1995)
- Working to ensure the engagement of the institutional leaders in promoting SD (Ferrer et al., 2010)

MOVING TOWARDS MORE SUSTAINABILITY ORIENTED UNIVERSITIES

Even though SD came to prominence in 1987 with the publication of *Our common Future* (WCED, 1987), many higher education institutions in the world have not yet attempted to introduce it to their systems. The concept of SD contrasts with the existing Newtonian and Cartesian teaching methods in universities, mainly focused on resource depletion. Worldwide, university leaders must recognize that it is not possible to continue on such a path and that it is necessary to integrate the environmental and social aspects into the economic ones. This can be achieved by incorporating SD into their university's:

- Curricula
- Research
- Campus operations
- Community outreach
- Assessment and reporting

- Universities' collaboration
- Transdisciplinarity

and also through:

- Implementing SD through campus experiences, by incorporating SD into the day-to-day activities in the university life experience
- 'Educating-the-Educators' on how to educate their students in SD and help foster multiplier effects, and
- Including SD in the institutional framework, where SD should evolve as the 'Golden Thread' integrating all of these.

It should be noted that if any university in the world were looked at in detail, it would be discovered that it is already engaged with at least one SD issue. The questions that need to be asked are: to what extent and how can this be improved? How can SD be better incorporated into the system? And how can universities better contribute to SD?

To answer this, university leaders need to become more proactive, so that they can retake their forefront position in creating and breaking paradigms, and reintegrate sciences, arts, and the different disciplines to help societies become more sustainable. University leaders and SD champions must be aware of and understand individual needs; and also the change barriers and conflicts that could arise, in order to take the necessary steps to overcome the first and avoid and solve the last.

The declarations, charters, partnerships and conferences developed to foster SD can provide a framework or guidelines on how to better embed sustainability into universities' systems. The different initiatives emphasize that universities have a moral obligation to work towards sustainable societies, focusing on environmental degradation, threats to society, and sustainable production and consumption for this and future generations. The recognized university system needs to be complemented with the following elements: collaboration with other universities; making SD an integral part of the institutional framework; on-campus life experiences; and 'Educate-the-Educators' programmes. These key elements must be

integrated systemically into HEIs in order to provide learning and career value to those participating in the SD transition.

The evolution of HEIs' initiatives for SD suggests that universities are following society and the business world when it comes to integrating sustainability into their systems and better contributing to making societies more sustainable. Some HEIs tend to respond slowly to society's needs, although nowadays, through public policy or societal pressure, the HEIs with foresight and leadership are beginning to adopt and weave SD into their curricula, research, outreach, and campus operations.

In this perspective, university leaders need to review the SD declarations and charters and see how they could be used as means to: foster sustainability in the university and its relations to the community; introduce SD to the university's mission, policy and strategic planning; and select and empower an SD champion and help in the development and transformation of courses to be more transdisciplinary.

University leaders also need to recognize the many individual, group, organizational, and systemic barriers that are slowing down the incorporation and institutionalization of SD in universities (such as lack of awareness, funding, support, lack of relevance, and conservatism). They could, thus, better overcome these barriers by:

1. Recognizing that SD is a necessity in the current world.
2. Providing the necessary information and skills to all stakeholders.
3. Detecting and involving individuals interested in SD.
4. Educating and make champions of these individuals.
5. Providing the necessary institutional framework for the SD efforts to have continuity.
6. Embedding SD in the curricula.
7. Striving to incorporate SD into the entire system.

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NOTE

- 1 The Sustainability Tool for Assessing UNiversities Curricula Holistically (STAUNCH®) 2010 can help to map how courses, programmes, faculties, and the entire university is contributing to sustainability. For details on STAUNCH, please visit <http://www.org-sustainability.com/orgsust.php?str=staunch>.