

EMBEDDING SUSTAINABILITY INTO CROSS-DISCIPLINARY PRACTICE IN HIGHER EDUCATION: A CASE STUDY OF BUILT ENVIRONMENT AND BUSINESS

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ABSTRACT

Sustainability has been burgeoning as a worthy feature in contemporary higher education practices in different disciplines around the world. In parallel, there are pressures for internationalising the curriculum as well as crossing boundaries among disciplines to enhance learning. In response to such demands, a collaborative project was set to further explore the best way to integrate sustainability as a unifying theme involving the built environment, engineering and business studies among six higher education institutes in the UK/EU and Australia. The collaborative project involves staff and postgraduate student mobility that requires harmonisation of curriculum and action learning research among project participants to enable experiential learning journey in sustainability management. This paper reports on the initial synchronisation effort undertaken for this collaborative project between a UK based School of the Built Environment and Graduate School of Business in Australia. The main focus at this early stage is on the identification of a common ground in understanding sustainability between the two disciplines operating in two different countries. The origins of and drivers of sustainability on both disciplines in each country are explored, compared and contrasted to pave a platform for subsequent stages of synchronising practices.

KEYWORDS

Action learning, built environment, business studies, interdisciplinary, internationalisation, sustainability education.

1. INTRODUCTION

Motivated by the UN declaration (UN, 2002) for the Decade of Education for Sustainable Development (2005 to 2014), higher education institutions around the world have been striving to integrate sustainability into their curriculum and to feature sustainability in their practices. The Green Gown Awards, launched in the UK in 2004, provides recognition in sustainability best practice in universities and colleges across the UK and Australasia (<http://www.eauc.org.uk>). Different disciplines have been taking different pathways in doing so with different pace and varying results. The role of the education sector in ensuring the creation of a sustainable community is reinforced by the need for individuals and organisations to have the knowledge, skills, values, capacity and motivation to respond to the complex sustainability issues they encounter in their personal and working lives. Learning has been considered imperative in understanding and addressing pressing sustainability challenges (Dunphy, et al., 2007; Ballard, 2005) and higher education has been considered as holding a vital role to play in shaping the way which future generations learn to cope with complexities of sustainable development (UNESCO, 2005). Thus, the United Nation Decade of Education for Sustainable Development (UN DESD) aims to reorient traditional educational approaches towards interdisciplinary and holistic learning values-based learning, critically reflective thinking, multi-method approaches, participatory decision-making and locally relevant information. Embracing the potential of interdisciplinary and holistic learning, college and university programmes are working to create innovative teaching formats for interdisciplinary learning to foster student enthusiasm and inquiry (Letterman and Dugan, 2004). Driven mainly by its four possible rationales including economic, political, socio-cultural, and academic; internationalisation of higher education is becoming a worldwide phenomenon aiming to facilitate the integration of an internationalisation/intercultural dimension into the teaching, research and service functions of the institution (Knight and DeWit, 1997). There is, however, a potential barrier in combining

interdisciplinary learning with inter-nationalisation as previous studies suggested the existence of 'discipline allegiances' that may vary the degree of acceptance of the benefits of inter-nationalisation in different disciplines (Clifford, 2009; Becher and Trowler, 2001). Thus, a unifying theme, such as sustainability, can be considered a catalyst to bring them together.

In light of the ongoing discussion, a collaborative project has been set between six higher education institutes in the European Union and Australia involving academic staff and postgraduate taught students from Civil Engineering, Built Environment, Economics, Business, and Accounting disciplines. The project aims to develop best education practice in sustainable management and include aspects of interdisciplinary teaching and learning, using a variety of pedagogical techniques such as critical reflection and action learning that enhance critical thinking skills. The early part of the project reported in this paper depicts the initial synchronisation effort in this collaborative project between two partners: a UK based School of the Built Environment and a Graduate School of Business in Australia. This business school is one of the Australian universities that made it to the 'Beyond Grey Pinstripes 2010-2011 *Global 100*' ranking for social and environmental stewardship in MBA programs (Aspen CBE 2011).

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2. SUSTAINABILITY IN THE BUILT ENVIRONMENT IN THE UK

In the UK construction industry, various government and industry initiated reports exist. This can be tracked down as early as 1944. These reports were prepared with the view to evaluate practices and propose improvements. Following the defining Egan Report (1998) that unveiled deficiencies in the industry and set targets for improvement if the UK construction industry to retain its excellence in the world, Sir John Egan was leading another government initiative and produced another report championing the "Sustainable Communities" concept. The key features of sustainable communities described in the report includes the creation of flourishing local economy to provide jobs and wealth; effective engagement and participation by local people, groups and businesses and an active voluntary and community sector; good public transport and other transport infrastructure both within the community and linking it to urban, rural and regional centres; building – both individually and collectively – that can meet different needs over time, and that minimise the use of resources; good quality local public services, including education and training opportunities, healthcare and community facilities; a diverse, vibrant and creative local culture, encouraging pride in the community and cohesion within it; a "sense of place"; and the right links with the wider regional, national and international community. Thus, the report portrayed sustainability in a more holistic view to build the community rather than environmental alone and it was specifically emphasised the importance of skills of people in achieving sustainable communities (Egan, 2004).

Many of the aspects of the sustainable communities can be considered relevant to the built environment discipline. After all, the built environment has been defined as an abstract concept employed to describe the products of human building activity; it refers to the broadest sense to any physical alteration of the natural environment, from hearths to cities, through construction by humans (Lawrence and Low, 1990). However, many of the aspects are rather difficult to quantify and measuring their achievement may be subject to further discussion and even debates. Relevant events, including UK Government sign up to the Kyoto Protocol to reduce greenhouse gases emission (UN, 1998), has driven the UK construction industry into a low carbon emission focus. The UK based environmental assessment and certification system, BREEAM, has rapidly becoming the standard in the UK construction industry. Attempting to respond to various reports and articles depicting gaps between higher education academic practices and the needs in the construction industry (e.g. Langlands Report, 2005; Roberts Report, 2002; Gann, 2001) built environment higher educations in the UK have been trying hard to integrate sustainability in their curriculum. This is ranging from simply including add-on knowledge of relevant tools such as BREEAM into their modules to devising new modules explicitly labelled with the word sustainability in the titles. Most of these attempts are focused on environmental sustainability with the bigger agenda for sustainable communities quietly fading from the centre stage.

3. SUSTAINABILITY IN THE BUSINESS STUDIES IN AUSTRALIA

In Australia, several studies have revealed that Australian business schools are lagging behind leading practice and innovation in sustainability (Holdsworth et al., 2006; Tilbury et al., 2005). The recent development, however, has motivated integration between education about sustainability with education for sustainability in which, higher education not only empowers their graduates with the knowledge about sustainability issues but providing the skills to act sustainably in planning and managing organisation change towards sustainability (Rowe and Wehrmeyer, 2010; Tilbury et al., 2005). Education for sustainability intends to facilitate change by working in conjunction with and complementing other approaches, building capacity in individuals and organisations for transformational change, fostering new knowledge, fostering new behaviours, systems and practices, and emphasising creative, critical and innovative approach. The education in sustainability in Australia has evolved over the past 30 years shifting focus from knowledge of natural ecosystems (and threats posed to them by overuse and depletion of resources) to equipping all people with the knowledge, skills and understanding necessary to make decision based upon their full environmental, social and economic implications. Thus the role of education in creating a sustainable community has been made clear by requiring individuals and organisations to acquire the knowledge, skills, values, capacity and motivation to respond to the complex sustainability issues they encountered in their personal and working lives.

Even though the complex concept of sustainability has been perceived as essentially fostering the view that human activities need to be undertaken in ways that support long-term economic growth, environmental protection, and social progress; the meaning of sustainability is perceived differently to different people (Rowland, 2004). In business studies in particular, studies on sustainable business have been focusing on 'triple bottom line' outcomes (Elkington, 1997). The triple bottom line has been defined as an organisation's ability to achieve its business goals and increase long term shareholder value by integrating the three pillars of economic, environmental and social opportunities into its business strategies (Wirtenberg et al., 2007). Thus business studies need to build closer relationship with sustainability champions in organisations in order to provide opportunities for understanding the variety of business approaches, concepts and issues and contributing to education for sustainability within business curriculum offerings and their related pedagogy (Nowak et al., 2008). The latest study on this matter in Australia (ARIES, 2009) involving the Graduate School of Business has reported that education for sustainability is still in its infancy with successful projects and sectors but will need to see a more strategic and coordinated framework guiding the use of education and learning to embed systemic change within the community, institutions, government and industry. Thus the report concluded that there is a need to encompass consideration of the environment, society and the economy rather than focus on the environment alone. Subsequent steps will require large effort to develop the capacity of educators and change agents to adopt approaches that stimulate learning and debate in society, and develop trust and skills to work collaboratively. The Australian Government's National Action Plan for Education for Sustainability (DEWHA, 2009) provides a framework for a more co-ordinated national action to work towards this.

4. DISCUSSION AND THE WAY FORWARD

From the ongoing discussion, various similarities can be drawn from sustainability on both disciplines. The concept of understanding sustainability in its wider context through the creation of sustainable communities can certainly be identified as the original main driver. The key factor here is not to let this agenda slip into focusing on environmental sustainability alone. Whilst both sides acknowledge the importance of the role of education as the main agent for change, there appears to be a more coordinated approach in Australia to integrate sustainability into education practices. In the UK construction industry, sustainability is mainly driven by the need to reduce carbon foot prints in construction practices and many higher education institutions are setting up their own centre for sustainability studies and implement sustainability features into their curriculum in different ways at different levels. In this aspect, the built environment as a discipline can surely learn from the business studies. The built environment has long been perceived as a discipline that incorporates both hard and soft sciences. Thus, the pull from the more scientific side of it may somehow influence the tendency to focus more on the quantifiable side of sustainability. Many higher educations in the

built environment in the UK consider themselves embracing sustainability in their curriculum, whilst they are mainly busy teaching students in measuring carbon emission fixated to tools like BREEAM. What is needed is the embedding of sustainability into the students' mindset to really understand the whole philosophy of sustainability and embrace it in their practice rather than simply playing catch up with the construction industry.

This inter disciplinary undertaking is an opportunity for exploring and reflecting on innovative practices. As the basic concept of sustainability and the creation of sustainable communities can be considered similar, the next phase of this collaborative project involves reviewing and consolidating learning experiences through action research. Whilst the administrative tasks of credit transfers have been completed, the challenge has been the selection of modules/units that are sufficiently universal for both disciplines but relevant to the students' specific courses and have the potential to further integrate sustainability philosophy in them. At the moment of preparing this paper, this phase has already started and further progress will be reported in the subsequent publications. Table 1 depicts the characteristics of both courses in Salford and Curtin as the starting point of the synchronisation process. The essence of this joint mobility project is to create more opportunities for students and staff to collaborate and contribute to the experiential learning journey of sustainability management linking cross disciplinary and good practices across borders among six universities.

Table 1. Characteristics of the two courses to be synchronised

Name of Institution	University of Salford	Curtin University
Term start/end for the planned exchange	Semester 2 28/01/2013 – 10/05/2013 12 teaching weeks 2 exam weeks	14/01/13-19/04/13 (Trimester 1) 13 teaching weeks 1 week of exams
Subjects/credits per term	2 (30 credits)	4 subjects (100 credits)
Total credits in programme	180 credits	300 credits
Hours perweek and type of delivery	4 hours/module, mixed lecture/tutorials + additional general sessions (study skills, e-learning, etc.)	12 hours, lecture + tutorials
Modules forwarded for exchange	<ul style="list-style-type: none"> • Culture & People • Procurement in the Built Environment • Valuation & Investment appraisal • Buildings in Use • Procurement in Construction and Property • Finance & Risk Mngmt in the Built Environment • Lean integrated Design and Production • Project Mngmt in the Built Environment • Process & Project Systems • Planning & Development 	<ul style="list-style-type: none"> • Economics for Managers • Economics Analysis & Asian Economies • Financial Management • Oil & Gas Markets • Natural Resource Economics • Mineral Finance & Project Evaluation • Strategic Project Management • Legal Issues in Human Resources • Contemporary Issues in Human Resources • Organisational Change & Development • Business Process Improvement

ACKNOWLEDGEMENT

The authors wish to acknowledge the Education, Audiovisual and Culture Executive Agency (EACEA) of the European Union and the Australian Government Department of Industry, Innovation, Science, Research and Tertiary Education for funding this collaborative project.

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