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Developing a university-wide course on sustainability: a critical evaluation of planning and implementation

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ABSTRACT

Sustainability is an issue of increasing importance in today's world. Institutions of higher education are undergoing change towards incorporating sustainable development principles within their teaching, research, service, and community outreach efforts. This article presents a case study of the development and implementation of one such initiative: a university-wide freshman course centered on the topic of sustainability. The objective of the course was to expose freshman students to important sustainability issues in a common course team-taught by faculty from various disciplines. The article presents experiences and recommendations as a guide to administrators, faculty and researchers at other institutions of higher education that plan to undertake similar endeavors. Based on experiences with the course, it is recommended that institutions that attempt a similar course should allocate significant time to develop the course, ideally a year in advance. The course concept was predicated on faculty members from widely differing disciplines coming together to teach a cluster topic. While this led to an interesting diversity in perspective, and introduced students to the multi-dimensional aspects of sustainability issues, it also resulted in divergent expectations among faculty and a lack of coherence in achieving the goals of the course initially set forth. A mechanism needs to be in place to coordinate faculty and their lectures within a cluster, and to prevent divergent expectations. An additional challenge that should be taken into consideration is the level of preparedness of freshman students to participate in a course that required high levels of critical thinking and analysis. In conclusion, the course has much potential to create a culture of caring for sustainability issues at an institution, as well as being a bonding experience for incoming freshmen. However, some restructuring is necessary to nurture the students to the point where they can engage in meaningful discussion of sustainability issues.

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1. Introduction

Institutions of higher education are undergoing rapid change due to the need to provide for a new generation of incoming students, to incorporate technological advances in teaching methods, and to focus on growing concerns over global sustainability issues (Cortese, 2003; Lozano, 2006; Lozano and Young, 2013; Lozano and Lozano, 2014; Velazquez et al., 2005). Institutions that fail to adapt quickly to change may experience declining demand for their programs and associated student enrollment. In addition, it is desirable that graduates leave the academic world and enter the

workforce with clear insight into the importance and future challenges of sustainable living. Many institutions of higher education have therefore included sustainability as a core part of their teaching goals and mission statements with the objective of creating a better foundation for students entering society and the 21st century marketplace (Rowe, 2007). However, any curricular change, including development and inclusion of mandatory sustainability studies, is not a simple undertaking and few have truly succeeded (de la Harpe and Thomas, 2009; Jones et al., 2008). This case study critically analyses the planning of and the challenges encountered during implementation of a university-wide common course on sustainability. Sustainability education is significantly different than traditionally established disciplines in terms of its broad-based and multi-disciplinary content. Teaching sustainability requires new approaches to and new formats for content

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delivery (Brundiers et al., 2010; Cortese, 2003; Kates et al., 2001). The initiative described here was a novel approach to deliver sustainability ideas and concepts to the broader student body.

This article critically analyses the development and implementation of a university-wide, team-taught course on sustainability entitled *Sustainability and the Ideas of the Future*. The goal of the initiative was to raise awareness of sustainability issues via a mandatory common course for incoming freshman students. The university-wide common course was also viewed as a way to distinguish the University of New Haven from its peer institutions by promoting a common educational experience among all incoming students thereby creating a common link of enhanced social consciousness.

The intent of this article is to present a case study of pedagogical and organizational issues that arose during planning and implementing a team-taught university-wide common course on sustainability, and to offer recommendations for colleges and faculty in other institutions that plan to undertake a similar endeavor. To this end, there are valuable lessons to be learned and taken into account before attempting a similar course.

2. Development of sustainability studies in higher education

Universities have historically been agents of societal change even though they have remained traditional institutions (Lozano et al., 2013a; Stephens and Graham, 2010). Still, most higher education institutions focus on producing graduates from single disciplinary perspectives (Elton, 2003; Lozano, 2010; Oksen et al., 2009). Sustainability became prominent after the United Nations Conference on Environment and Development Rio Summit that was held more than 20 years ago. Yet, it is debatable how much progress has truly been made towards incorporating sustainable development into higher education (Barth et al., 2014). A paradigm shift is unlikely until sustainable development is diffused and implemented throughout the entire university system (Lozano et al., 2013b).

There are numerous international initiatives (e.g. the United Nations declared 2005–2014 the Decade of Education for Sustainable Development) and national efforts to promote sustainability in higher education (e.g. the Higher Education Sustainability Act of 2007 that authorized a \$50 million grant program under the U.S. Department of Education to fund projects to educate future scientists and engineers in sustainability). Wals (2014) indicates that a gradual change in higher education institutions towards sustainable development took place in recent years. Nevertheless, the pace at which the principles of the three pillars of sustainability – environment, economy, and society – have been integrated across traditional disciplinary boundaries has been neither robust nor sufficient to create a fundamental global change in outlook and understanding about the issue (Arbuthnott, 2009; Hopkins, 2012; Stewart, 2010; Tilbury, 2012). Still, significant efforts have been made in achieving progress towards this goal. The number of higher education institutions that have incorporated sustainability into their curricula has risen in the last decade (Lozano, 2010), and others are exploring various means to integrate sustainability into their curricula (Rusinko, 2010). Various researchers have proposed a variety of methods to incorporate sustainability into the curricula of higher education at the course, program, or university level (Bremer and Lopez-Franco, 2006; Ceulemans and De Prins, 2010; Pappas et al., 2013; Rusinko, 2010; Savelyeva and McKenna, 2011; Stewart, 2010; Watson et al., 2013). Others have recommended a complete restructuring of universities to tackle the challenging and increasingly complex problems of the 21st century (Elton, 2003; van Weenen, 2000).

Desha et al. (2009), for example, discuss the need for engineering programs to include specific sustainability elements within

their curricula and state that failure to do so may expose programs to additional risk in a rapidly changing industry, regulatory, and accreditation environment. These problems certainly should not be seen as limited to engineering programs, but should be seen in the context of higher education institutions as a whole, which may also be affected by the degree and level of sustainability education that they incorporate.

Lozano et al. (2014) present the five main approaches commonly discussed in the literature to incorporate sustainability into the higher education curricula. These approaches range from coverage of some environmental issues in an existing course, to developing a specific sustainability course, to developing an undergraduate or a graduate program for sustainability. While several examples of such initiatives exist in published literature, the presented case is unique as the developed team-taught interdisciplinary course was offered to all incoming freshman students, and also provided a framework for faculty to share and disseminate their knowledge on sustainability to other faculty teaching the course.

Change in higher education towards sustainability is not an easy task. As Velazquez et al. (2005) point out, there are numerous factors that could obstruct the implementation of sustainability initiatives in higher education institutions. The study also indicate that academic literature on sustainability in higher education usually focuses on positive experiences and accomplishments while playing down problems and challenges observed as part of the implementation process. In relation to this, the goal of the article is to shed light on challenges encountered during developing and administering an interdisciplinary team-taught common course on sustainability so that other practitioners and educators can benefit from these experiences.

There has been an increasing focus on the concept of sustainability and the incorporation of sustainability education into the curriculum at the institution level before this course was developed. Several significant initiatives to increase sustainability teaching and research have been put forward at the University of New Haven, located in West Haven, Connecticut, USA. It has around 4800 undergraduate and 1700 graduate students (UNH, 2014a). A stand alone, interdisciplinary Sustainability Studies degree program was instituted in 2010 (UNH, 2014b). The following year, a research cluster on sustainability was formed as a focal point for faculty interested in sustainability issues, with the goal of fostering collaborative research among the faculty. The support and efforts of the University senior management, including the President, Provost, and Deans, led to a novel initiative of developing a common undergraduate course with a focus on sustainability for incoming freshman students. This article reports on the experience of a group of faculty in developing and implementing this course.

3. Course development and structure

In order to guide researchers elsewhere, detailed information on how the course was developed and structured, as well as course goals and learning outcomes are described in this section. Descriptions presented herein could provide starting points for faculty considering developing sustainability courses having similar aims.

3.1. Course origins and development

The original planning group for the course consisted of five faculty members, with each college of the university represented by at least one faculty member. The planning group met several times during Fall 2012 and Spring 2013 semesters to develop a framework for a 15-week semester-long common course. The course was developed with the intention that it would eventually become a mandatory course for all incoming freshman students. A

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