

Perspective preferences within the EESD community

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Abstract

The purpose of this paper is to introduce an upcoming study on perspective preferences among practitioners in engineering education for sustainable development (EESD). The study will serve as a pilot survey for a larger national or international study that aims to analyze the choices engineering educators make as they decide on the content and format of educational activities related to a specific sustainability issue. The pilot survey itself will generate results and conclusions specific for the context of EESD, while the main survey will have a broader focus on engineering education.

The pilot survey will be administered to prospective participants of the EESD'13 conference in Cambridge about five weeks prior to the conference. The results will be analyzed, and tentative conclusions will be presented at the conference. The objective of the presentation is to create awareness about perspective preferences, and discuss possible implications for different kinds of EESD practices.

1 Introduction

A general agreement prevails in the education for sustainable development (ESD) research and policy community that ESD practice needs to prepare students to deal with the complexity of sustainability issues in constructive ways. Previous studies in the field of EESD have focused on students' and educators' general understandings of, for example, sustainable development as a concept (Segalas *et al*, 2010), or descriptions of general EESD competences such as systems thinking (Wiek *et al*, 2011) or perspective shift (Lönngren & Svanström, unpublished; Wals & Blaze Corcoran, 2006). These studies provide important conceptual frameworks for discussions about the purpose and nature of EESD in general. They do not, however, provide specific conclusions or concrete implications for EESD practices that can serve as guidelines for inexperienced EESD practitioners.

On the other end of the general to specific spectrum, a number of studies have focused on specific classroom (e.g. Svanström *et al*, 2008) or institutional (e.g. Peet *et al*, 2004) interventions, and the experiences that educators and administrators have gained during those interventions. The authors draw conclusions about what factors have contributed to the outcome of their initiatives. These studies provide an important source of inspiration and collective reflection among EESD practitioners. However, since these studies are so firmly rooted in their specific educational situations, and the practitioner-researchers' personal experiences, direct transfer of conclusions to other EESD contexts tends to be problematic.

In this paper, we describe an on-going study that aims at identifying EESD practitioners' perspective preferences in relation to a specific sustainability issue as an attempt to combine specific (participants relate their answers to a specific case that is given to all participants) and general (participants have

different backgrounds and work with EESD in very different forms and educational contexts) aspects of EESD. Thus, we expect to be able to make distinct didactical recommendations for a variety of contexts. This study will also serve as a pilot study for a larger national or international study in the context of engineering education, in which the results and conclusions from this study will be tested, expanded, and elaborated on.

In the context of the pilot study, we also aim to create awareness among EESD practitioners towards their own preferred ways of approaching (i.e. their perspective preferences towards) sustainability issues in their educational practices. The preference patterns that we will describe in this study, are in turn based on a framework of thematic perspective dimensions that is developed for, and tested in this pilot study, and that is expected to be valuable for EESD practitioners in its own right. We also aim to discuss possible implications of identified perspective preference patterns on the nature and quality of EESD practice.

2 Perspectives for Sustainable Development

Lönngren et al. (unpublished) provide a conceptual framework for understanding and discussing perspectives for sustainable development. Perspectives are described as having static and dynamic characteristics. The static characteristics refer to the depth and breadth of a perspective, while the dynamic characteristics are used to describe how students can use perspectives in various ways as they tackle a specific sustainability issue. In our discussions with engineering educators, we have realized that the framework, while useful for researchers, is too abstract for being useful to practitioners. Thus, for obtaining a more complete and practically applicable description of perspectives for SD, this work needs to be complemented with a less abstract, thematic framework that is easily applicable to specific EESD challenges in different educational contexts.

Other studies have addressed the thematic aspects of perspectives and sustainability, albeit on a rather general and unspecific level. Wals & Blaze Corcoran (2006) describe four dimensions of perspectives that are relevant in ESD: transcultural, transgenerational, transdisciplinary, and transnational dimensions. Unfortunately, those dimensions are not described in detail, and the reader is left wondering whether they are all-embracing in regard to relevant perspectives for sustainable development. How do for example the conventional dimensions of ecological, economic, and social perspectives fit into this framework?

Segalas et al (2010) use concept maps to analyze EESD practitioners' understandings of sustainability. They provide a structure of four categories (ecological, economic, social, and institutional) and ten subcategories. While the three widely accepted dimensions of ecological, economic, and social sustainability are explicitly included in their framework, other valuable aspects, such as temporal and spatial dimensions (as emphasized by Wals & Blaze Corcoran, 2006), take a backseat. We advocate a framework that can illustrate and combine all relevant dimensions.

Therefore, one of the aims of this pilot study is to use the understandings offered in the ESD and EESD literature, in combination with our own practical experiences from both research and teaching in EESD, to create a thematic framework of perspectives for sustainable development, which is both more specific and more exhaustive than those found in the literature. We focus on identifying a number of intersecting dimensions of perspectives, rather than distinctly demarcated categories. On the basis of these dimensions, we hope to be able to identify perspective preference patterns in relation to a specific case. Both the thematic perspective dimensions, and the perspective preference patterns that we aim to identify in this study, have a potential to be used to develop more relevant and powerful

EESD research and practices, with the presumption that the inclusion of diverse perspectives is important in building the desired competences.

3 The survey

The upcoming study consists of an online survey that is administered to prospective participants of the EESD'13 conference in Cambridge about five weeks prior to the conference. In the survey, participants are presented with a specific sustainability issue, which they are asked to consider, hypothetically, as a case study in their EESD practice. The case is introduced with the aim to create a common context for the participants, who are expected to come from a large variety of institutional contexts with a wide span of personal and professional experiences and values. We use this common context as a basis for comparing and contrasting participants' answers, and thus identify distinguishing factors in their approaches to the given case.

After reading the case description in the survey, participants will be asked to consider a number of pre-formulated thematic alternatives, and to indicate which one(s) they would prefer to include in their educational activities if they were to work with the given case. The alternatives are designed to represent different approaches towards the case, thus allowing us to identify different perspective preference patterns through both quantitative and interpretive analysis of the material.

Participants will also be asked to briefly motivate their choices with the help of open-ended questions. These questions are included in the survey in order to probe which kinds of values may be underlying certain choices. They also provide a means of gaining crucial feedback on the suitability of the individual survey items, which thus can be revised for inclusion in a larger national or international study on perspective preferences among engineering educators.

4 The presentation at EESD'13

At EESD'13, we will present the preliminary results of the pilot survey. We will discuss both quantitative and qualitative aspects, with the aim to stimulate awareness about perspective preferences, and discuss possible implications for different kinds of EESD practices. We will also present the thematic dimensions that underlie the survey questions, and discuss possible ways of utilizing this framework as a tool for educators in designing EESD activities. In addition, we hope to receive constructive feedback both on the thematic dimensions and the survey design, as a necessary step towards a more extensive national or international study.

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