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Title	Dilemmas and debates in incorporating sustainability in teaching and curricula: can phenomenography cast light on the challenges involved?
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Paper:

Sustainability: The field of sustainability in higher education has attracted considerable interest during the last 25 years, as demonstrated in various areas of policy, practice, and research - particularly in European and American universities. There have been numerous conferences on sustainability; there are dedicated journals; and there is a growing higher education policy agenda addressing sustainability. Further, several studies suggest that many students are interested in seeing sustainability issues progressed in their institutions and addressed in their curricula (Drayson et al., 2013; Jones et al., 2010). However, whilst universities have been relatively successful in campus environmental issues, there remains debate in the literature about what sustainability encompasses, whether the higher education sector should have responsibility for promoting sustainability, and whether and how sustainability should be included in curricula. This last issue is particularly divisive with some commentators providing a convincing case in favour (Orr, 2002), others providing examples of how sustainability has been included innovatively in curricula (Johnston, 2012), and others still suggesting that there are barriers and disadvantages to integrating sustainability in curricula (Chase 2010; Reid & Petocz, 2006). Overall, whilst sustainability is widely associated with positive intentions and some success stories, it has also polarised stakeholders.

Phenomenography: An approach used primarily for researching higher education, with its origins also in higher education, phenomenography (not to be confused with phenomenology) seeks to identify *variation* in interpretations, views and experiences of a particular phenomenon amongst a sample population. It has been adopted for researching areas such as learning and teaching (Shreeve et al., 2010), curriculum (Fraser, 2006), academic development (Åkerlind, 2007), study support (Hallett, 2010) and academic leadership (Ramsden et al., 2007) as well as disciplinary-based studies (Ashwin et al., 2013). Phenomenography assumes that experiences may be captured in a finite number of qualitatively distinct categories of description (Marton, 1981), the researcher seeking to understand the meanings of these categories and their inter-relationships (Entwistle, 1997). Findings are mapped through the presentation of 'outcome spaces' and constituent 'categories of description'. It is usually undertaken using interviews, but other methods may also be used, such as questionnaires or focus groups.

Research focus: In this paper, I bring together the problematised area of sustainability with the research approach of phenomenography, and argue that the undertaking of further phenomenographic studies about sustainability, in more diverse higher education contexts, would be of genuine value to the sector. In particular, it could contribute to a better understanding of where divergent conceptions, experiences and expectations about sustainability lie, thereby enabling more meaningful teaching and policy formation about sustainability. The paper draws on a fuller research project being undertaken by the author and seeks to address the following questions:

(1). How and to what extent can phenomenography be used as a research approach to better understand the variation in understandings and accounts of sustainability in higher education, and contribute to more coherent and meaningful engagement with sustainability in the sector?

(2). What are the benefits and challenges of using phenomenography as an approach for researching sustainability in higher education?

Research approach: The paper draws on a three-part research strategy, comprising:

(1). A focused literature review of key, relevant studies on sustainability and phenomenography, including papers *about* phenomenography and which *evaluate* the strengths and weaknesses of phenomenography (Åkerlind, 2005; Collier-Reed *et al.*, 2009; Sin, 2010).

(2). The second part draws on the author's own published work about sustainability and using phenomenography, which include journal articles and book chapters.

(3). Finally, the project draws on documentary records of the author's involvement in several sustainability-based initiatives and innovations.

There have already been a small but illuminating range of phenomenographic studies on sustainability, usually undertaken within specific disciplines or fields (Carew & Mitchell, 2006; Reid et al., 2009; Cotton et al, 2012).

Provisional outcomes and conclusions: The paper will offer both outcomes and recommendations (specific findings and recommendations are being developed and synthesised at the time of writing this proposal). Based on the outcomes, it will be argued that there are several 'sustainability-specific' gains to be made from using phenomenography as an approach for researching this topic. These include: its depicting of a range of different interpretations of sustainability (which many sustainability based studies appear to miss); its emphasis on actual, diverse sustainability experiences; its tapping into reasons for why participants hold certain conceptions; its foregrounding of accounts about disputes and dilemmas in sustainability. Consequently, the undertaking of additional and broader-based phenomenographic research about sustainability, in different local and disciplinary contexts, drawing on both staff and student accounts, will provide new insights towards the development of more inclusive and meaningful policies, campus based initiatives, and teaching innovations about sustainability. It would provide a valuable knowledge base for informing future sustainability practices.

I will also comment on some of the challenges of using phenomenography, including the labour-intensive nature of the data analysis process and its concealing of emotion due to its focus on difference (Cousin, 2009).

In sum, in spite of certain limitations, phenomenography provides a revealing approach for addressing debates and 'road-blocks' in progressing sustainability in higher education.

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