The UN decade for sustainable development: What does it mean for higher education?

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Abstract: Involvement in Higher Education is seen by many people as a means of developing students’ critical abilities and is allied with the assumption that such learning will be beneficial to the world-wide community. This viewpoint was exemplified in the 2002 Johannesburg Earth Summit, where the role of Higher Education in preparing students to participate in an informed way with sustainable development was emphasised. The Summit’s ‘mandate’ was that sustainable development could, and should, be integrated into all academic subjects. Before this can become a reality, some important questions need to be answered: How do academics see the relationships between sustainable development and their discipline? Do they see sustainable development as a central issue to their discipline and student learning, or as an irrelevant ‘add on’? How can sustainable development be understood as a core generic capability? In this paper, we look at the outcomes from a recent research project in which we investigated academics’ experience of sustainable development in the context of teaching in their discipline area. We look at their range of views about sustainable development and its relationship to their discipline, and we examine some of the ways in which they have developed their teaching approaches to incorporate sustainable development from different disciplinary perspectives. Our aim is to use our research outcomes to critically investigate the role of Higher Education in the notion of sustainability and its contribution towards the UN Decade of Education for Sustainable Development.

Keywords: sustainable development, generic capabilities, conceptual variation.

Sustainable development as an issue for education

In late December 2004, an undersea earthquake generated a series of tsunami waves that resulted in the deaths of over 150,000 people who were in the coastal environments of the Indian Ocean. The immediate human consequence of this disaster was severe disruption and uncertainty for families and communities, exacerbated by a breakdown in communications (virtual and physical) and the destruction of utilities such as electricity and sanitation that are usually taken for granted. Following the initial shock, the aftermath demonstrated the extent to which aspects of sustainability – peace, justice, ecology, culture, humanity, economics – permeated each country’s response. It became apparent in this situation that
different cultural groups reacted differently to the disaster and required different sorts of assistance from the world-wide community. We saw in action how different groups positioned the notion of aid as it was applied to areas that had been in civil war or operating as tourist resorts. We saw how aid was provided in different measures for ‘locals’ or for ‘international visitors’. This event challenges those of us involved in Higher Education in several ways. How do we set up situations where academics and students can grapple with the political, social, environmental and human implications of world-wide events? To what extent can we ensure that each discipline (and subject unit within each discipline) provides opportunities for learners to see that discipline as contributing to a broader human system? How does each discipline contribute a unique view of human endeavour? These issues are at the core of the UN’s call for a decade focused on education for sustainable development.

There is an assumption, both academically and amongst the general community, that education for sustainable development is located within the domain of the environmental sciences. For instance, our own university has a group dedicated to the exploration of aspects of sustainability, the Graduate School of the Environment (2004). This group, and others like it (UNSW, 1999; UTS, 2004), prepare graduates with a specific focus on sustainable development. In addition, some disciplinary areas such as human geography, cultural studies and anthropology, also focus on the exploration and critique of human interactions in various contexts. However, the participants in the Johannesburg Earth Summit (also known as the World Summit on Sustainable Development – WSsustainable development) indicated that it was not enough for some specialist groups to be experts in sustainable development. They made it clear that sustainable development needs to be located in all educational and disciplinary domains. Some of the relevant recommendations published in the Summit’s report (United Nations, 2002) are:

1. We, the representatives of the peoples of the world, assembled at the World Summit on Sustainable Development in Johannesburg, South Africa, from 2 to 4 September 2002, reaffirm our commitment to sustainable development.
5. Accordingly, we assume a collective responsibility to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development – economic development, social development and environmental protection – at the local, national, regional and global levels.
11. We recognise that poverty eradication, changing consumption and production patterns and protecting and managing the natural resource base for economic and social development are overarching objectives of and essential requirements for sustainable development.
116. Education is critical for promoting sustainable development.
121. Integrate sustainable development into educational systems at all levels of education in order to promote education as a key agent for change.
124. Support the use of education to promote sustainable development.

The Summit indicated that sustainable development was a critical concern for the 21st century, that its focus was the improvement of the quality of life for all people, and that the most important vehicle for the propagation of sustainable development is education:

The outcomes of the Johannesburg Summit and the establishment of a Decade of Education for Sustainable Development affirm the need to integrate sustainable development into education systems at all levels in order for education to be a key agent for change. The Decade aims to promote education as the basis for sustainable human society and to strengthen international cooperation toward the development of innovative policies, programmes and practices of education for sustainable development (Pigozzi, 2003, p.1).
Pigozzi’s statement presumes that education is a ‘key agent for change’, that is, those who are educated are able to make change towards sustainable development. Previously, the focus has been on ‘environmental education’ but Pigozzi indicates that sustainability encompasses the far wider agenda of the sustainability of humans (and by inference the societies and cultures in which they reside). While the declaration indicated that education was essential for the promotion of sustainable development, it did not specify the disciplinary domains in which such education should occur. There was an implicit suggestion that education for sustainability should occur within all disciplines, as sustainability involves the development of attitudes and values that must be available for all people. A distinction has also been made between education ‘about’ or ‘for’ sustainable development. The former implies two things: firstly, that the amount of knowledge or information one has makes a difference and secondly, that the inclusion of appropriate examples makes a difference. The latter idea, education for sustainable development, implies instead an emphasis on critical thinking within a discipline:

It is not so much education about sustainable development but education for sustainable development, which makes the concept more participatory and comprehensive. The aim is not only for the educator and the learner to understand the issues of sustainable development but also to cope with and act upon the interdisciplinarity of the issue. Sustainable development becomes a more information-driven and participatory concept that encourages educators and learners to interact, debate and foster learning that emerges from experiences and creativity (Pigozzi, 2003, p.2, our emphases).

In a previous research study looking at young people’s understanding of the notion of ‘environment’ (Loughland et al., 2003), we found that the amount of knowledge students had about environmental issues actually had a negative relationship with their preparedness to take personal responsibility for the environment. That study, focusing on just the issue of environment (rather than more inclusive ideas of sustainable development), leads us to favour the second of Pigozzi’s postulations, that education for sustainable development may have more of an effect on change in thinking. Considered in this light, sustainable development has the possibility of becoming a focus for the development of the core generic capabilities of problem solving, analysis, creativity, communication, and critical thinking.

**Variation in university teachers’ experience of sustainable development**

In May 2004, a European-based conference on sustainable development was held at Gothenburg University. The aim of the meeting was to push forward the UN’s agenda for education for sustainable development and the result was a large document summarising the various working-parties’ discussions. Here, they identified that participants were overwhelmingly positive about promoting sustainable development (as one would expect from delegates at a conference about sustainable development!), but that there was confusion as to what sustainable development actually meant within any particular discipline:

Participants define or emphasise different aspects of sustainable development, though there seems to be a general understanding of what they perceive as the basis of the concept. What happens then if this group of knowledgeable, experienced individuals works ambitiously to achieve sustainable development, but they all have a different understanding of the concept? Can we put this challenge into practice when we view the problems and solutions differently? The answer is yes, according to the majority of participants (Ministry of Education and Finance, Sweden, 2004, p.17)

As part of a recent research study funded by Environment Australia (Tilbury et al., 2004), we too have found that academics in a range of subject areas understand the ideas of sustainability in the curriculum
higher education in a changing world

in a variety of different ways. In our study (Reid and Petocz, 2005a), we carried out interviews with 14 academics teaching at post-graduate level in a variety of discipline areas, including management, psychology, education, philosophy, music, geology and marine science. The interviews were focused on how each academic understood the notion of sustainability, and how their ideas of sustainability were related to their teaching. The key questions we asked were: What do you understand sustainability to be about? and How do you include the ideas of sustainability and creativity in your teaching? Since sustainable development can be considered as a means of engaging with generic skills, we decided that we would also ask participants about their views of creativity as that notion affords the capabilities of problem finding/solving and making unusual intersections (Cropley, 2001; Reid and Petocz, 2004). The key question here was How do you understand creativity within your discipline? These questions were followed by further probing questions depending on the responses that participants gave.

The interview transcripts (totalling just under 60,000 words) formed the raw data for the study, and were analysed using a phenomenographic approach (Marton and Booth, 1997; Bowden, 1996). Phenomenography is a qualitative research orientation that focuses on the critically different aspects of people’s views in a particular situation. It is these differences that make one way of seeing a phenomenon – in this case, sustainability – qualitatively different from another. The outcomes from a phenomenographic study are usually reported as an outcome space, a hierarchy of qualitatively distinct conceptions. We isolated two important dimensions in this outcome space.

Teaching (in the context of sustainability) describes the actions and aspects that the academics have control over. There are three qualitatively different conceptions, listed here from the narrowest to the broadest:

- **Disparate** – teaching and sustainability are seen as two completely unrelated ideas; teaching focuses on content of subject and “covering” a syllabus, sustainability is seen as keeping something going, or the “green” approach.
- **Overlapping** – the notion of sustainability overlaps to an extent with the activity of teaching; teaching is seen as ensuring that students understand the substantive content of the course; teachers see that specific ideas such as environmental or cultural sustainability can be incorporated in their teaching (as examples) but only to the extent that the situation allows.
- **Integrated** – sustainability in all its guises is an essential component of teaching; teaching is seen as encouraging students to make a personal commitment to the area represented by course content, incorporating the notion of sustainability.

Sustainability (in the context of teaching) describes the ideas or thinking (rather than actions) that academics could have. Again, there are three qualitatively different conceptions, listed from narrowest to broadest:

- **Distance** – sustainability is approached via a definition, maybe a dictionary definition of “keeping something going”, but essentially to keep the concept at a distance and avoid engagement with it.
- **Resources** – sustainability is approached by focusing on various resources, either material resources (minerals, water, soil), or biological (fish, crops), or human (minority languages, populations, economies).
- **Justice** – sustainability is approached by focusing on the notion of “fairness” from one generation to the following one, or even within one generation; the idea is that sustainability can essentially only happen under these conditions.

More detail about the project and the analysis, together with illustrative quotations for each of the conceptions, are provided in Reid and Petocz (2005a).
The identification of these different ways of thinking about sustainability is important if the notion of education for sustainable development is to make an impact in higher education. For instance, academics espousing the ‘disparate’ and ‘distance’ views will tend to focus on their personal teaching practice and on discipline-specific and practical issues. This means, for instance, that ‘sustainability’ can simply be described as ‘being interested enough in teaching to get up out of bed in the morning and do it again’ (an extreme example, but one that we were given by a participant). At the other extreme, the ‘integrated’ and ‘justice’ views would seem to support the tenets of the UN recommendations allowing academics to present ideas that may seem beyond the natural scope of their subject through an emphasis on criticality. Booth et al. (1999) suggest that learning is related to students’ ‘relevance structure’ – “the person’s sense of what the learning situation calls for, what it demands” (p.73). We can see in our own research that this relevance structure makes an important contribution to the ways in which academics position their subject, their discipline and themselves in relation to broader world issues. Obviously, to achieve the outcomes desired by the UN for education it would seem appropriate to emphasise development and change in thinking about sustainable development in the context of higher education towards the broadest conceptions. Ho et al. (2001) have shown that the definition of variation in understanding and experience of a situation can be used as the basis for a conceptual-change approach to teaching. In their study, awareness of variation in participants’ experience of the phenomenon of ‘teaching and learning’ led to changes in their conceptions of teaching and related learning approaches. Thus, rather than positioning education for sustainable development as a notion that interferes with the basic aims of teaching and learning, it can become a focus for the development of enhanced quality in teaching practice and an orientation for the preparation of students’ learning situations.

### Sustainable development as a generic capability

In the context of higher education, there are strong reasons for viewing sustainable development as a ‘generic capability’ and theoretical and practical benefits in doing so. Generic skills have been regarded as important and integral components of university curriculum for some time. Bowden et al. (2000) refocused the agenda towards ‘capability’ in recognition that what is favoured by the community is not the ability to act, but to consider and reflect before choosing an appropriate response. Barrie (2004) has engaged with the difficult issue of embedding generic capabilities (‘graduate attributes’) across a range of discipline areas. His research has exposed variation in academics’ engagement with generic attributes ranging from simple skills to “complex abilities that infuse learning and knowledge” at either course and/or university level (p.110). It is this final group of ‘enabling’ capabilities that affords the space for critically investigating the notion of sustainable development. In the categories described above, the ‘disparate’ and ‘distance’ views suggest the same sort of experience that Barrie found when academics consider generic attributes as simple skills best dealt with elsewhere. In the ‘overlapping’ and ‘resources’ framework there is the notion that generic attributes can be dealt with if the course content is appropriate, and that sustainable development is environmentally oriented (‘saving the whales’). It is in the ‘integrated’ and ‘justice’ views that we find the emancipatory and risky pairing where sustainable development is seen as a core value of the discipline leading towards the development of students’ notions of justice, peace and inter-cultural sensitivity and equity.

### Examples of different lecturers’ approaches to sustainable development

Having looked at the ways in which sustainable development may contribute as a focus for Barrie’s ‘enabling’ generic capabilities, we can consider philosophically and practically how it may actually be achieved. Firstly, if we take the philosophic approach, knowledge about specific disciplines and the manner in which people interact with those disciplines provides a means of progressing intellectual engagement with sustainable development. In the area of mathematics, for example, students can examine issues of sustainability of biological populations by looking at mathematical population models ranging...
from a model of exponential growth to complex models of interaction between predators and their prey. They can investigate topics such as the mathematics of the Greenhouse effect, or the reliability of official government statistics on AIDS, especially in a country where the disease is a significant problem. In the area of Art and Design, artists can create an artefact (for example, a ceramic mug) that encapsulates some aspect of the culture of an indigenous group, or discuss alternative portrayals of people’s reactions to a conflict or a natural disaster. Further examples are given in Petocz and Reid (2003) for mathematics and Reid and Petocz (2005b) for Arts. Such studies can be positioned to highlight the ‘integrated’ and ‘justice’ views of sustainability by making explicit connections with the experiences and values of the students.

Secondly, individual academics can engage specifically with ideas of sustainable development from a critical and reflective position by undertaking action research (McNiff, 2002). This approach was taken at Macquarie University, where nine academics were funded for action research projects that made explicit the connections between sustainable development and their discipline areas. These academics undertook projects on social responsibility in accounting; linking professionals’ ideas about graduate attributes for sustainability in chiropractic; incorporating sustainability into second-language teaching; exploring ethics and sustainability through student projects interviewing future employers; developing skills and knowledge in education for sustainability through teaching translation; sustainability in decision-making processes; and developing integrative frameworks for teaching and learning ecological design (Tilbury et al., 2004, pp. 4–5). In these cases, the academics benefited from the successful bid for research funding, support throughout the research process, focused reflection on their teaching, changes in their own curriculum and policy, and academic publications. The students in their classes benefited from an enriched learning situation where sustainable development became a vehicle for the exploration of other generic capabilities within their home discipline. Each of the academic participants had the opportunity to critique their own practice against the principles of sustainable development and the conceptual categories described above. Their individual projects demonstrated a prolonged creative engagement with the notion of sustainable development that impacted on their total approach to teaching and learning. In that sense, the participants experienced a form of research-focused professional development (Reid and Petocz, 2003).

Challenges

For the notion of sustainable development to become a core concept for Higher Education, it needs to move beyond the work of a few interested academics. We have argued that the most fertile approach is via the notion of generic capabilities. This framework has been used successfully to raise awareness of the importance of skills such as communication and groupwork across a whole range of academic disciplines. As well as signing declarations and developing ‘sustainability policies’, universities have a responsibility in leading the community in positioning sustainable development as an essential topic for intellectual debate and practical action. They must ensure that the notion of sustainable development is part of the professional development of lecturers, is integrated into the academic curriculum, actively discussed, promoted and assessed, supported by university-wide policy makers and enacted in all academic departments and individual units.

At the beginning of this UN Decade for Sustainable Development, we in Higher Education need to critically take stock of the present situation in terms of engagement with sustainable development. The research discussed in this paper suggests ways in which academics can incorporate the notion of sustainability into teaching and learning in their specific disciplines. Using these and other approaches, we look forward to making a significant contribution towards the UN Decade of Education for Sustainable Development.
References


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