

## **Education for Sustainable Development: principles for curriculum development in business subject areas**

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### **Introduction: the Sustainable Development agenda**

The past three decades have seen a growing awareness of the need for what many call sustainable development. This was defined by the UN's 1987 Brundtland Report (also known as Our Common Future) as:

*"...development that meets the needs of the present without compromising the ability of future generations to meet their own needs"*.

So what is the sustainable development paradigm and what is it intended to replace? According to the United Nation's Development Programme (UNDP), the traditional development paradigm is economic in nature i.e. resources are at the heart of development. This model has dominated in various forms since the beginning of the industrial revolution and Huckle (1996) describes the dominant form of social organization during this period as 'modernity'. At the heart of modernity is the capitalist system. To date this has traditionally failed to account for any impact that production might have in the long-term. Huckle therefore argues that whilst the means of production are currently still available, the resources that make these processes possible are dwindling e.g. clean water, raw materials, stable political economies.

Over the past sixty years modernity has become increasingly global in its nature. Globalization has seen the breaking down of traditional nation states as business concerns and the movement of goods and services have transcended borders. However, the past 30 years have seen firstly an acknowledgement, and more recently, a global acceptance, that this model is one that is draining irreplaceable resources and contributing to divisions around the globe. The uneven distribution of resources and the traditional model of economic development have resulted in unequal levels of growth (and in some cases stagnation); high poverty levels; and environmental damage.

The Brundtland report acted as a catalyst for the United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit which took place in Rio de Janeiro in 1992. The outcome of the summit was Agenda 21, a blueprint for sustainable development. The UN created the Division for Sustainable Development to oversee the implementation of Agenda 21 at international, national and local levels. A follow up summit, the World Summit on Sustainable Development, was held in Johannesburg in 2002. This conference led to a fifteen year development plan aimed at continuing the work begun after Rio. At the core of the plan is a commitment to eradicate world poverty whilst ensuring that sustainable development is brought to the fore (WSSD, 2002).

Prior to the 2002 summit a 2000 gathering of the worlds major leaders saw the setting of eight long-term development goals (known as the Millenium Development Goals (MDG)). These are:

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development

The sustainable development [SD] paradigm can therefore be said to be made up of three core strands – environment, social and economic (Leal Filho 2000, Huckle and Sterling 1996). It is seen to be human-centred as opposed to resource-centred.

### **The role of Higher Education in Sustainable Development**

Education for Sustainable Development (ESD), Sustainability Education (SE), and Sustainability for Education (EfS) appear to be interchangeable terms used throughout literature on this subject. ESD is the term used by the United Nations and the majority of publications in this field (McKeown 2002). ESD was first outlined in Agenda 21 following the Earth Summit of 1992. The point most applicable to higher education [HE] was the need for the reorientation of existing education to take sustainable development principles into account. In addressing this point, McKeown (2002), makes the argument that countries should be careful not to confuse reorientation and increasing the amount of education. She makes the case that it is often the most highly educated states that live the least sustainable lifestyles. Sterling (1996) also pointed to this problem when quoting Milbrath (1992): “We are now training our children to live in a world that cannot be sustained”.

Education is therefore part of the problem and of the solution (*ibid.*). Orr (1992) emphasized that the influence that HE can have on ESD cannot be overstated:

*“The sector has access to and shapes the leaders of tomorrow, and in some cases, the leaders of today. It is widely respected, and capable of setting both and example, and the agenda to the wider society. In addition, through research it has a broad impact on policy and technology”.*

Despite numerous bodies arguing that economic, social and environmental issues need to be equally weighted it is often the environmental angle that comes to the fore. ‘Greening the university’ or ‘greening the curriculum’ have become commonly used phrases that tend to refer to the integration of environmental perspectives into university operations and teaching (Alabaster and Blair 1996). This has led to a protracted and unresolved debate over exactly what ESD actually is and in the process little action has been taken by universities as a whole. Leal Filho (2000) found that whilst “it is clear that universities are gradually adopting sustainability policies, these often pay more attention to day to day operations than learning and teaching”.

In recent years organizations such as University Leaders for a Sustainable Future [ULSF] (1999) and HEFCE (Higher Education Funding Council for England) have worked to emphasise the three-pronged approach of environmental, social and economic development. ULSF tries to promote the difference between a university being a sustainable organisation in its own right and actually developing students to play an active role in sustainable development once they leave the institution.

*“Sustainability” implies that the critical activities of a higher education institution are (at a minimum) ecologically sound, socially just and economically viable, and that they will continue to be so for future generations. A truly sustainable college or university would emphasize these concepts in its curriculum and research, preparing students to contribute as working citizens to an environmentally sound and socially just society.”* (ULSF 2005)

That point has been reiterated by HEFCE (2005 p. 14) in its recently published report arising from its consultation on the role that UK HE should play in meeting the global sustainable development agenda:

*“In our view the greatest contribution higher education has to make to sustainable development is by enabling students to develop new values, skills and knowledge. The main (although not the only) way to make this happen is through developments in curricula and pedagogy”.*

HEFCE’s first attempt at promoting sustainability was the funding of the Higher Education Partnership for Sustainability [HEPS] (2000-2003), a project that brought together 18 UK institutions in an effort to identify good practice and disseminate this to the rest of the HE community. A core theme in the project’s work was

clarifying the concept of sustainability literacy. This concept centres on the belief that only transformational change can bring about sustainable development as today's students are tomorrow's organisational leaders and will therefore be best placed to drive through such change. HEPS defines sustainability literate people as those who:

- understand the need for change to a sustainable way of doing things
- have sufficient knowledge and skills to decide and act in a way that favours sustainable development
- recognise and reward other people's decisions and actions that favour sustainable development.

*(Learning and Skills for Sustainable Development: HEPS, 2003)*

To date ESD has made slow progress in HE (as shown a report by the Select Committee on Environmental Audit, UK Parliament 2003). According to Leal Filho (2000), who has written in detail on this topic, there are recurring themes that come up when universities are asked why ESD has not made more headway:

- Sustainability is not a subject per se i.e. it is too abstract
- Sustainability is too theoretical
- Sustainability is too broad
- We have no personnel to look after it
- The resources needed do not justify it
- The theme has no scientific basis
- Sustainability is a fashion

Many, if not all of these arguments were mentioned in one form or another in the Universities UK response to HEFCE's 2005 consultation exercise.

Miller (1998) argues that the purposes of HE are often determined by the government and reflect traditions in that particular country. In recent years there has been a drive towards increasing work-based learning (Dearing Report: NCIHE 1997). This has often been instigated by employers concerns that graduates do not have the skills necessary for operating in the modern workplace. Whilst this work based learning fits well with current pedagogical theories, such as applied and situated learning, Sterling (1996) points towards the fact that this market-driven form of education merely maintains the status quo, i.e. HE is producing an increasing number of graduates that are trained to support a system that is unsustainable.

Given Miller's argument it is therefore essential that the UK government is seen to be giving it's full backing to sustainability if ESD is to become a reality in the UK. Recent developments suggest that this may finally be happening. In response to UN goals, the UK updated its own sustainable development plan in March 2005. Education was described as having a key role, with HE being highlighted as having a particular contribution to make in the promotion of lifelong learning. HEFCE's own

strategic plan (HEFCE, 2005) aims to make this a reality by supporting the HE sector through the creation of centralised resources intended to benefit all. That in itself can be seen as sustainable, as it will remove the danger of duplicated resources.

## **Implications for Curriculum Development in Business studies**

Proponents of ESD believe that a wholesale rethink of the university curriculum is required as many programmes are still entrenched in the traditional development paradigm (Huckle and Sterling 1996, Cortese 1999, Leal Filho 2000). They point towards single academic disciplines as one of the greatest barriers to advancing the sustainable development agenda. As head of Second Nature, a leading US think tank on ESD, Cortese proposes that:

*“The content of learning must embrace transdisciplinary, systems thinking to address environmentally sustainable action on local, regional and global scales over short, medium and inter-generational time periods. Education must have the same “lateral rigour” across the disciplines as the “vertical rigour” within the disciplines”.*

As an example of what Cortese would like to move away from, a typical business student studies a number of disciplines such as marketing, accounting, human resources and operations. They often choose to specialise in one of these options as the course reaches the final half. Holland (2004) describes how such courses have remained rigid in their format due to pressures on staff time and the need for many courses to demonstrate that they meet the criteria laid down by professional bodies such as the Institute of Chartered Accountants. Students therefore leave the university with a good understanding of organisational structure and functional processes but little idea of how to question whether these are the best way of doing things both in terms of the company and society as a whole.

Supporters of ESD stress the need for lifelong learning to be an accepted norm among all citizens. Sustainability therefore needs to be linked to an HE student’s pre- and post HE experience. The UK education system already has the foundations in place. Growing awareness of global development issues has seen the rapid development of Citizenship as a subject from Foundation to Key Stage 4. The Department for Education and Skills (DfES) now has a well developed scheme of work (DFES website 2006). Unit 12 of Key Stage 4 is particularly useful as it encourages students to investigate how Agenda 21 directly impacts upon their local community and what role they have to play.

One possible solution for building on the knowledge that students have constructed at school is the development of a core curriculum similar to that which has grown in popularity in the US over the past 25 years. Walker and Black (2004) advocate that business schools adopt a ‘Business Process Reengineering’ approach to core curriculum design to enable business education to keep abreast of contemporary business practices. They argue that whilst many programmes include an integrative

or capstone module, such as Strategic Management, this is too little, too late. The same principle could apply to ESD.

Core curricula usually constitute 25-33% of an overall degree, with modules covering topics such as general skills and citizenship. In a study of developments in the US HE system, Brock Macdonald (1998) looked at the motivations behind the development of such curricula. He suggested the starting point for any curriculum redesign was to consider:

1. What should graduating students know?
2. What skills should they have?
3. What values should they share?

In considering what to include, teaching staff might also consider the sustainability concepts published by the UK Government's Sustainable Development Education Panel (Dewberry and Fletcher 2002):

- An understanding of the interdependence of major systems
- An understanding of the needs and rights of future generations
- An understanding of the value of diversity
- An appreciation of the need for precaution
- Limits to growth

Such an approach paves the way to bring in subjects not traditionally associated with a business course whilst still maintaining the major role of business within the programme. An example is the Corporate Social Responsibility [CSR] module at De Montfort University. Instead of focusing solely on accounting processes the course looks at accountability. This makes it possible to bring in practitioners from other disciplines, for students are encouraged to consider concepts such as social justice and environmental impacts (Holland 2004).

A community-based approach to curriculum development could include involvement in local Agenda 21 initiatives. This might also foster the lifelong learning that ESD requires (Leal Filho 2000) as the local population will become increasingly involved in the work of the university. In Australia a comparable initiative has seen the development of 'Cities of Learning' (Howard et al. 2000). Charles Sturt University now works on collaborative provision with a number of local colleges in order to deliver a range of courses. This has been described as the 'whole institution' concept as it encourages local community participation whilst providing access to knowledge regarding the whole world. Henze (2000) found evidence of similar developments in some German universities.

At the post-HE level it will be necessary for professional bodies to look at their own criteria for qualification. If sustainability is not incorporated into their members

learning then it will be much harder for universities to convince their students of its importance.

An important curriculum development consideration for UK business schools is to ensure that the curriculum includes topics of relevance to overseas students. There has been a rapid increase in the number of overseas students that attend UK universities with students originating from both developing and developed countries. It is therefore vital that the curriculum addresses issues that are of importance on both a local and global scale.

### **Teaching, Learning and Assessment**

If we accept Orr's (1992) argument that HE is responsible for shaping the leaders that will progress the sustainability agenda, then teaching and learning practices will have to move on from the traditional view of the student as a passive receptor of knowledge (Biggs 1993). Howard et al. (2000) suggest that the teaching of ESD will ideally challenge students' attitudes and force them to re-evaluate their positions in the light of new information and stimuli. Such an approach is supported by Moore (2005), who recommends that any pedagogies used for ESD should have the aim of "injecting inquiry, experience and reflection into the undergraduate classroom".

Psychological studies have shown that humans can retain as much as 80% of what they do compared to only 10-20% of what they hear or read (Cortese 1999). This suggests that for ESD teaching to be successful, teachers should make use of approaches based around active and experiential learning where students are able to work on real-world problem solving (Jucker 2002) and deep learning can be fostered (Warburton 2003).

A number of writers (Kliucininkas 2001, Leroy and van der Bosch 2001, Holland 2004) have found such learning is best promoted through the use of case studies, projects and field trips (see Alvarez and Rogers 2006). These provide an effective way of communicating sustainability concepts to students whilst at the same time enabling them to establish links between disciplines, i.e. they are given the opportunity to critically interpret problems from a number of perspectives (e.g. social, economic, environmental and ethical). The teacher may act as a guide in this process, encouraging students to critically reflect on the knowledge that they construct. In practical terms, these teaching approaches also facilitate the use of collaborative group work and other skills essential for the future SD-orientated workplace (Cortese 1999).

Holland's (2004) study of the Corporate Social Responsibility (CSR) module at De Montfort, for example, shows how a number of new approaches can be used to present an alternative view of accounting. He suggests that traditional accounting teaching concentrates on providing students with a black box of tricks. At no point are students encouraged to critically question the realities of the world beyond the

immediate scope of the employer, i.e. a traditional approach only measures financial transactions and there is no mechanism to measure environmental damage (unless they are fined for an illegal emission). The CSR course encourages the student to consider new ideas such as alternative social capital measures to Gross National Product (GNP) and Gross Domestic Product (GDP) whilst cases studies such as “The cost of waste at Zeneca” (from Bennett and James 1998) demonstrate a business case for sustainability. Assessment for this module is 100% coursework based so that students have the time and space to engage more critically with the subject and develop a more personal response (Holland 2004).

A key issue in judging how successful teaching and learning processes have been is the assessment stage. Fien (1997) suggest that the only way of knowing whether ESD had been effective is if students can demonstrate they have reflected on their learning and subsequently altered their values, attitudes and behaviours. This is one area of ESD that appears to require a lot more work. A study by Davis et al. (2003) found that students at two US universities, celebrated as being promoters of sustainable development, continued to define SD from an ecological perspective. Whilst staff appeared to be increasing their delivery of sustainability related topics there was little evidence of systematic assessment being used capture and reinforce SD learning outcomes.

An example of how assessment can create a transdisciplinary approach is the architecture programme at Philadelphia University (Fleming 2002). It has developed a multi-faceted assessment based around the Survivor gameshow. Students compete in small teams and are set a number of design projects and presentation tasks. On the days that assessment takes place, staff from other faculties are brought in in order to provide students with more rounded feedback on their work. This means that students gain an understanding of how other disciplines view their work i.e. a building cannot just be beautiful, it also needs to be practical, energy efficient, and disability friendly. The gameshow format encouraged deeper learning as students found it to be a fun activity and therefore engaged more fully with the tasks.

## **Conclusion**

From this survey of educational initiatives in HE, it is evident that the ingredients for effectively incorporating ESD into teaching and learning practices include:

- Full integration of ESD into the curriculum (i.e. not a one-off or final-year option module, with continuity (i.e. not a three-year project that ends in a report)
- Student-centred activities and assessments that reward critical thinking and reflective learning, e.g. use of problem-based learning, projects, case studies, portfolios, field studies

- Transdisciplinary teaching, with modules that are taught by staff from a range of disciplines and encourage contact between students from different subject areas
- Teaching that emphasises that ESD is an ongoing process (Warburton 2003), i.e. part of a lifelong learning journey where answers are not hard and fast.

ESD is still in its infancy, and with increasing competition for students and ever reducing budgets, it is likely that HE institutions will continue to deliver market-driven courses that promise students a traditional business career in return for their fees. However, present UK Government policies and HEFCE's new strategy have now laid some of the foundations that might allow ESD to increase, and there are emerging areas of good practice to light the way ahead. That vision is expressed by Flogaitis (1998) as:

*'the education of responsible citizens who have the knowledge, the competence, the values, and the vision that will allow them to participate in the social dialogue, to design the social terms of sustainability depending on the culture of the society in which they belong, and shape the future based on the principles of social and ecological solidarity in place and space, of social justice and democracy'.*

## References

Alabaster, T. & Blair, D. (1996). Greening the University. In Huckle, J. & Sterling, S. (Eds.). *Education for Sustainability*. Oxford: Earthscan

Alvarez, A. and Rogers, J. (2006), "Going "out there": Learning about sustainability in place", *International Journal of Sustainability in Higher Education*, Vol. 7 No. 2, pp. 176-188.

Biggs, J. (1993) *Process of Learning*, Prentice Hall, Sydney

Brock Macdonald, W. (1998), *Trends In General Education And Core Curriculum: A Survey* [www] <http://www.utm.utoronto.ca/asc/trends.htm>

Cortese, A.D. (1999), *Education for sustainability: The university as a model of sustainability*, Second Nature

Davis, S.A. et al. (2003), "Educating sustainable societies for the twenty-first century", *International Journal of Sustainability in Higher Education*, Vol. 4 No. 2, pp. 169-179.

Department for Education and Skills, UK [DfES] [www] <http://www.dfes.gov.uk/citizenship/section.cfm?sectionId=5&hierachy=1.5> – Citizenship

Dewberry, E. and Fletcher, K. (2002), "Demi: A case study in design for sustainability", *International Journal of Sustainability in Higher Education*, Vol. 3 No. 1, pp. 38-47.

Fien, J. (1997), "Stand up, stand up and be counted: undermining the myths of environmental education", *Australian Journal of Environmental Education*, Vol. 13 pp. 26-31.

Flogaitis, E (1998) The Contribution of Environmental Education in Sustainability, *Online Colloquium*, October 19-30  
<http://www.ec.gc.ca/education/documents/colloquium/flogaitis.htm>

- Fleming, R. (2002), "Survivor studio @ Philadelphia University: Promoting sustainability in the design studio through collaborative game playing", *International Journal of Sustainability in Higher Education*, Vol. 3 No. 2, 146-154.
- HEFCE (2005), Sustainable development in higher education [www] [http://www.hefce.ac.uk/pubs/hefce/2005/05\\_28/](http://www.hefce.ac.uk/pubs/hefce/2005/05_28/)
- Henze, C. (2000), "Sustainability in teacher training courses in a sample of German universities", *International Journal of Sustainability in Higher Education*, Vol. 1 No. 3, pp. 280-289.
- HEPS (2003), Specialist Review and Evaluation of the Higher Education Partnership for Sustainability (HEPS) Programme [www] [http://www.hefce.ac.uk/pubs/rdreports/2006/rd08\\_06/rd08\\_06.doc](http://www.hefce.ac.uk/pubs/rdreports/2006/rd08_06/rd08_06.doc)
- Holland, L. (2004), "Experiences from a student programme designed to examine the role of the accountant in corporate social responsibility (CSR)", *International Journal of Sustainability in Higher Education*, Vol. 5 No. 4, 404-416.
- Howard, J. et al (2000), "Is today shaping tomorrow for tertiary education in Australia? A comparison of policy and practice: A comparison of policy and practice", *International Journal of Sustainability in Higher Education*, Vol. 1 No. 1, pp. 83-96.
- Huckle, J. (1996), Realizing Sustainability In Changing Times, In: J.Huckle & S. Sterling (eds) *Education For Sustainability*, Earthscan , London, pp 3-17.
- Huckle, J. and Sterling, S. (eds) (1996), *Education for Sustainability*, Earthscan, London
- Jucker, R. (2002), "Sustainability? Never heard of it!: Some basics we shouldn't ignore when engaging in education for sustainability", *International Journal of Sustainability in Higher Education*, Vol. 3 No. 1, pp. 8-18.
- Kliucininkas, L. (2001), "Assessment of sustainability: Studies at universities and colleges in Lithuania", *International Journal of Sustainability in Higher Education*, Vol. 2 No. 3, pp. 250-256.
- Leal Filho, W. (2000), "Dealing with misconceptions on the concept of sustainability, *International Journal of Sustainability in Higher Education*, Vol. 1 No. 1, pp. 9-19.
- Leroy, P. and van der Bosch, H. (2001), "The role of project based learning in the "Political and Social Sciences of the Environment" curriculum at Nijmegen University, *International Journal of Sustainability in Higher Education*, Vol. 2 No. 1, pp. 8-20.
- McKeown, R. (2002), Education for Sustainable Development Toolkit V2 [www] <http://www.esdtoolkit.org/default.htm>
- Miller, A.H. (1998), *Student Assessment in Higher Education*, London: Kogan Page
- Moore, J. (2005), "Seven recommendations for creating sustainability education at the university level: A guide for change agents", *International Journal of Sustainability in Higher Education*, Vol. 6 No. 4, pp. 326-339.
- National Committee of Inquiry into Higher Education [NCIHE] (1997), *Higher Education in the Learning Society*, (Chairman Sir Ron Dearing), NCIHE
- Orr, D.W. (1992), *Ecological Literacy: Education and the Transition to a Postmodern World*, State University of New York Press, Albany, NY.

Parliament of the United Kingdom (2003) Select Committee on Environmental Audit (2003), Sixth Special Report  
<http://www.publications.parliament.uk/pa/cm200203/cmselect/cmenvaud/1221/122105.htm>

Sterling, S. (1996), Education In Change, In: J. Huckle & S. Sterling (Eds) *Education For Sustainability*, Earthscan, London, Pp 18-39.

University Leaders for a Sustainable Future (2005) [www] <http://www.ulsf.org/about.html>

Walker, K.B. and Black, E.L., (2000), "Reengineering the undergraduate business core curriculum: aligning business schools with business for improved performance", *Business Process Management Journal*, Vol. 6 No. 3, 194-213.

Warburton, K. (2003), "Deep learning and education for sustainability", *International Journal of Sustainability in Higher Education*, Vol. 4 No. 1, 44-56.

World Summit on Sustainable Development (2002) [www]  
[http://www.un.org/esa/sustdev/documents/WSSD\\_POI\\_PD/English/POIChapterI.htm](http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POIChapterI.htm)

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