

Pushing the Boundaries: the work of the Higher Education Academy's ESD Project

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Introduction

'May you live in interesting times'. This Chinese blessing seems, if anything, an understatement, when applied to the kind of world that today's graduates are entering. Such conditions as globalisation, terrorism, climate change, loss of biodiversity, inequity and the end of cheap energy present a picture of uncertainty, rapid change and intertwined issues which has given rise to renewed urgency in the debate about 'sustainable development' (SD): how to live well, into the future, without eroding the earth's ability to sustain present and future generations. Yet, at present, the UK is living unsustainably: it would require three planets to support the world's consumption if everybody used resources as the average UK resident does.

This pressing socio-economic-ecological challenge sets an overarching context for higher education as a whole, not least as regards the kind of skills that may be needed by our graduates. Yet there is a culture gap and time lag between where higher education is currently placed in terms of purposes, policies and provision, and where, arguably, it needs to be if it is to make the significant contribution towards achieving a more sustainable society that it is uniquely positioned to do.

We would argue that the 'post modern' conditions which we now experience require a shift in thinking which is commensurate to, i.e. appropriate to, the deeply systemic nature of the world which we have created.

The shape of the global future rests with the reflexivity of human consciousness – the capacity to think critically about why we think what we do – and then to think and act differently. (Raskin 2006)

It is questionable how far HE is enabling deeper learning at this level. Indeed, David Orr suggests in his 1994 essay "What is education for?" (*Earth in Mind*, Island Press, p7) that the destruction of the planet 'is not the work of ignorant people. Rather it is largely the result of work by people with BAs, BScs, LLBs, MBAs and PhDs.' Let's now juxtapose this claim against HEFCE's vision statement. In its 2005 publication, *Sustainable Development in Higher Education*, the Higher Education Funding Council of England (HEFCE) wrote: 'Our vision is

that within the next ten years, the higher education sector will be recognised as a major contributor to society's efforts to achieve sustainability.'

It seems then, that HE is simultaneously part of the answer and part of the problem. The real challenge lies in reorienting policy and provision in HE in a way which is both practicable and sufficient to realise HEFCE's vision. This inevitably goes beyond tinkering at the margins, and involves 'pushing the boundaries' of current policies, practices and perception. For example, a study of how the UK could achieve a more sustainable path suggests that:

'The biggest challenge for educationalists is the proposition that ESD cannot simply be added onto existing learning, but requires a *systemic change to the learning process and priorities* in education'. (Real World Coalition 2001)

It is against this background that the Higher Education Academy's Education for Sustainable Development Project was initiated in 2005.

Current status of ESD in HE

One of the first tasks of the Project was to research the status of ESD in within HE, in order to develop programme priorities. The resulting 'Dawe Report' suggested that several factors prevent academics from engaging with sustainable development (SD) in the curriculum:

- Crowded curriculum
- Perceived irrelevance
- Limited staff awareness and/or expertise
- Limited institutional commitment
- Limited commitment from external stakeholders
- Seen as too demanding

These indicate *types* of barriers:

- Paradigmatic/psychological
- Policy/purpose-related
- Structural (governance, compartmentalisation, etc)
- Resource/information deficiency

At the same time, and since the Dawe report was commissioned, it's possible to identify several key drivers moving the agenda forward:

- Rising public interest and concern
- Shifting views of employers
- Professional requirements (e.g., Engineering Council)
- Student demand
- Corporate Social Responsibility linked to SD
- Financial savings
- Marketing and recruitment advantage

Additionally, recent activity and many organizations in the sector give the impression of a significant groundswell with growing potential to change practice in the sector:

- HEFCE's SD Policy and Strategy (2005)
- HEFCE's Strategic Review of SD in HE
- Higher Education Academy's ESD Project (most Subject Centres are engaged in ESD)
- SD-oriented CETLs and other leading HEIs
- People and Planet's 'Green League 2007'
- Green Gown Awards
- Environmental Association for Universities and Colleges
- Universities UK's forthcoming green guide
- Higher Education Academy's recent conference at Bradford University
- Kingston conference and Bournemouth's 2nd international conference on ESD

Defining the role of the ESD Project

In January 2005, the Higher Education Academy initiated its Education for Sustainable Development (ESD) Project as a special theme within the Academy's overall programme. The first task was to examine the state of SD-related education in the HE curriculum, primarily at a discipline level. An audit of subject communities was carried out by a small research team working with 18 of the 24 Subject Centres, and this culminated in the 'Dawe Report', written by Gerald Dawe, Stephen Martin and Rolf Jucker, which was launched in November 2005. This report has been widely circulated and has been referenced in most subsequent policy documents on ESD in HE, as well as via a number of other media.

The purpose of the Project is, 'to help institutions and subject communities develop curricula and pedagogy that will give students the skills and knowledge to live and work sustainably.' Our key question has been how to best advance curriculum change towards ESD, given the barriers to change that were identified in the Dawe report, which are echoed in international experience, and were cited above. In response, the Project has initiated a wide range of projects to develop resources, fund new curriculum initiatives, build capacity and strengthen networks sustainably.

The Project has been working to three aims, to:

- research and support the development of ESD in the HE sector, particularly within subject communities
- build capacity amongst individuals, subject communities and institutions to embed ESD in curricula and pedagogy

- assist the coordination and dissemination of policy, research and practice relating to ESD in institutions, the Higher Education Academy and the wider field.

Research and support

Research into the UK policy context

In order to be effective in the support of ESD in the UK it is important to understand the different policy contexts in each of the constituent countries. The Academy ESD Project commissioned Forum for the Future to carry out research that enables the Project to maximize its activities in each of the four countries. The research describes the policy landscape and produced a 'roadmap' that helps us to negotiate barriers, take advantage of policy openings, and identify supportive individuals.

Research on labour market evidence for sustainable careers advice

Studentforce for Sustainability undertook this research which shows new ethical demands by both employers and students. There is both direct and indirect evidence that some employers consider the social/environmental ethics, values and experience of university students as part of their graduate recruitment. There is also some evidence that many students consider the social and environmental responsibility of the employer when making career choices. This is only one of several selection criteria, however; the most important being financial. Nevertheless, peers, the media and university culture seem to be significant and growing influences on their selection. In addition University careers staff have mentioned the recent growth in student demand for information and guidance on the social/environmental reputation and performance of employers.

Evidence was gathered through three student focus groups, employer interviews at career fairs, a workshop for university career staff and, most importantly, three online questionnaires – for students, employers and university staff.

There is also mounting secondary evidence from employer surveys, Sector Skills Councils, professional bodies as well as student surveys.

Studentforce found that:

- The trend to more responsible employers is affecting the graduate job market and the demand for more particular competencies from recent graduate recruits.
- The graduate employability agenda is now closely linked to the employer sustainability agenda.

- There is mounting evidence that, and media coverage about how, students want to work for ethical employers who are environmentally and socially responsible.
- Many HEIs are responding to the challenges of ESD through institutional changes in terms of 'Campus, Curriculum and Community', but not so much in terms of competencies or careers.

Studentforce made several recommendations to the Academy, including:

- Raising academic staff awareness about SD and CSR
- Relating student and staff volunteering to academic learning
- Linking universities and employers
- Linking SD and CSR on campus with teaching and learning
- Building on student behaviour

Small grant funding

Over the past year, the Academy has funded 15 projects, representing 11 HEIs and/or Subject Centres, and over 13 disciplines. Most of the projects have just finished and resources stemming from them will soon be disseminated through various "ESD in HE" networks and websites. Projects are described in Appendix 1.

Capacity building and networking

Solo HEI events

Dr. Colin Brooks, director of the HE Academy History, Classics and Archaeology Subject Centre, and Dr. Alex Ryan, freelance consultant, led a discussion day at the University of East Anglia (UEA) on 20th October 2006. The object was to encourage a 'whole institution' discussion of the past, current and future presence of ESD within the institution, and to encourage consideration of the various manifestations and understandings of ESD. The event was attended by the Vice Chancellor and the Chairman of the University Council, two Pro-Vice-Chancellors, the Head of Estates and Assistant Director of Facilities, the Student Union Environment officer and a further 20 members of faculty, administrative staff and students. These latter included the two Heads of School most closely involved in taught programmes touching ESD, a number of other academic disciplines, and staff responsible for the £5million venture fund UEA has acquired to generate a range of carbon reduction initiatives. In addition, representatives from HEFCE and the Leadership Foundation, plus a former UEA graduate now working at the sustainable communities CETL at Kingston University, attended the event.

The day provided an opportunity for staff to talk together in ways that are rarely achieved in HE today. There was considerable recognition of the difficulties involved (overloaded curriculum; RAE narrowness) but also of the opportunities to be grasped (links with local communities; student concern; research agendas).

Constructive discussions at faculty level, underwritten by the enthusiastic support of senior management will, doubtlessly, follow; it is clear that Estates and the Student Union will be involved.

Similar events are being planned for the University of Gloucestershire and Harper Adams College. A template will be created for other HEIs wishing to replicate the format.

A three-day interdisciplinary seminar series

A series of three meetings examining the challenges posed by the coincidence of two difficult topics – ESD and interdisciplinarity – was held at three different HEIs: the University of Leeds, University of York, and University of Birmingham. Co-organisers Colin Brooks and Alex Ryan have a core group of 12 who attended each meeting, plus an additional group of 16 who attended two of the three days. They were surprised and gratified by the extent of interest – they had to say no, with regret, to some who expressed an interest, in order to keep numbers manageable for a valuable dialogue. Participants were carefully selected to include a range of institutions and levels of seniority, as well as two PhD research students. A wide range of academic backgrounds were present: architecture, engineering, design, bioscience, environmental sciences, geography, development studies, anthropology, philosophy, politics, history, archaeology, psychology, education and religious studies. Every member of the group has an active teaching and/or research engagement with issues of sustainability, experience in more than one discipline and an orientation towards interdisciplinary working. The personal profiles of participants were circulated in advance to familiarize this group with one another. Participants were uniformly well prepared and showed an immediate willingness to engage constructively with each other. They shared a sense of purposefulness in forcing clarity of agenda and clarity of definition from the organisers.

Regional ESD in HE networking events

The Academy has organised three one-day events for all those involved (or who would like to be involved) in ESD at degree level in the particular regions/countries: the East Midlands, the South West and Scotland. These days were designed to enable exchange of activities, plans, ideas and case studies between those working on ESD within the area. The programme consisted of networking sessions or workshops, and plenaries. Participants were generally given plenty of opportunity for showcasing their work. Statutory agencies, local authorities, voluntary and community organisations, and those working within higher education participated. Even if interested parties were unable to attend, their details were submitted via a short questionnaire, as another of the goals was to begin "mapping" the ESD work in the region.

Community projects

The Project piloted a community project whereby university students were matched with local sustainability initiatives. The focus of this work was on Thornbury, a market town just north of Bristol. An economics student from the University of the West England, a Leeds University PhD student researching participatory methods of consultation, 30 Masters degree students in Planning and Architecture from Cardiff University, and 120 1st-year students in five disciplines from University of Gloucestershire all explored sustainability in Thornbury. Activities included stakeholder events with local residents, and presentations by students to the town. The work of the students is feeding into Thornbury Town Council's Market Town Healthcheck, while information collected by the Council is being used by students as primary data. Dr Arran Stibbe of University of Gloucestershire has drafted a course module, "Sustainable Cities", that would formalise this type of student/course activity.

National conference

In July 2007, we ran a major conference, hosted by University of Bradford's Ecoversity, in order to:

- showcase the work of the HE Academy's ESD project, including small grants
- bring together stakeholders from across the HE sector
- evidence and discuss holistic approaches to SD (curriculum/campus/community, themes, and disciplines)

The event included a number of parallel, interactive, participatory sessions and networking sessions utilising Open Space Technology. Notes and presentations from the event are becoming available on the conference wiki site: http://www.economicsnetwork.ac.uk/sust_curr. In addition, a special issue of the journal *Environmental Education Research* is currently being prepared which will carry papers by some of the workshop presenters.

As part of the assimilation process, we asked Glenn Strachan of London South Bank University to be our "roving reporter", periodically updating the plenary about the thinking and reflecting going on in parallel sessions. His report on the event is in Appendix 2.

Coordination and dissemination

Joined-up thinking

After spending some time working in the area of ESD in the HE Sector, we see that it is becoming increasingly obvious that there are a number of organisations working in isolation that could benefit from becoming better networked. In order to begin to address this issue the project team invited organisations such as the Environmental Association for Universities and Colleges (EAUC), Leadership

Foundation, Forum for the Future, Ecoversity (University of Bradford), Ecocampus (Nottingham Trent University), ESD CETLs (based at Kingston University and the University of Plymouth) and other interested HEIs to discuss more joined-up approaches to SD in the HE sector. The Project is also developing websites for stakeholders that set out SD activities in the UK HE sector. It is hoped that this will help to share practice across the sector, as well as provide valuable networking opportunities. See next section for more information on this.

Resource development

The Project will be developing its web presence, over the coming year, to reflect the breadth of its activities, and to disseminate information about others' activities. It is anticipated that as the Project develops the ESD web pages on the HE Academy site and on the EAUC's curriculum pages, these will become some of the principal sources of information for those in the HE sector wishing to embed E/SD.

Subject Centre activity

The following 16 Subject Centres have indicated that they are currently actively working on ESD issues:

- Art, Design and Media (ADM)
- Bioscience
- Built Environment (CEBE)
- Economics
- Education
- Engineering
- Geography, Earth and Environmental Science (GEES)
- History, Classics and Archaeology (HCA)
- Hospitality, Leisure, Sport and Tourism (HLST)
- Information and Computer Science (ICS)
- Law (UKCLE)
- Languages, Linguistics and Area Studies (LLAS)
- Materials (UKCME)
- Philosophical and Religious Studies (PRS)
- Psychology
- Sociology, Anthropology and Politics (C - S A P)

In addition, and as described above, there are two funded ESD small grants in the area of Physical Sciences and Law.

Examples of recent work by SCs include:

- Bioscience: survey of subject community on ESD issues, and ethics/sustainability curriculum audit tool
- Education: developing a subject-specific pedagogical strategy for ESD
- Engineering: working with the Massachusetts Institute of Technology on the development of ESD resources

- English: commissioning a volume on Ecocriticism in the new book series *Teaching the New English*
- Geography, Earth and Environmental Sciences (GEES): survey of employability skills for environmental scientists, and (with Hospitality, Leisure, Tourism and Sport & the Centre for Sociology, Anthropology, and Politics) Skills for Sustainable Futures event
- Law: project entitled “Developing global citizens through legal education”
- Materials: ESD-themed annual conference
- Philosophical and Religious Studies: (with GEES) workshop on religion and the environment

Generic module, and learning and teaching framework

Stephen Sterling is currently working on the development of a generic framework aimed at helping HEIs to embed ESD both into curricula and wider activities. Stephen is taking work being developed by the Centre for Sustainable Futures for the University of Plymouth to the HE Academy Project to disseminate on a UK-wide basis.

Sustainability policy

The Centre for Sustainable Futures at the University of Plymouth is also working on a whole institution sustainability policy covering the areas of Curriculum, Campus, Community, and Culture, and this will also be made available to the Project to disseminate as a possible model for institutions to use in their own development of policies.

What next?

The Academy’s ESD Project will be emphasising coordination and dissemination in 2007-2008, monitoring our own and the sector’s progress and attempting to develop potential. The questions we posed at our July 07 conference at Bradford are worth repeating here and bearing in mind as we go forward@

Progress and potential

- Where have we got to?
- Where are the good ideas and exemplars?
- How can we learn from each other?
- Are there common barriers and opportunities?
- How can we best respond to the sustainability agenda – as a sector/as institutions/as Subject Centres and disciplines?
- What should the HE Academy ESD Project do in 2007-8 to support this response?

We invite critical discussion and feedback on the work and effects of the Project. We would also like to discuss with others the prospects for curriculum change that 'push the boundaries' towards ESD, and on priorities for the Project's future work.

References

Raskin, Paul 2006, *World lines – pathways, pivots and the global future*, Tellus Institute, Boston.

Real World Coalition 2001, *From here to sustainability*, Earthscan, London.

Appendix 1: Small Grant Funding Projects

"Welcome to the Sahel"

Dr Paul Adderley
Dr Richard Oram
University of Stirling
History, Classics, Archaeology Subject Centre

This project will develop an interdisciplinary resource bank of sustainable development perspectives for English, environmental science, history, and religious studies undergraduates. These learning and teaching resources around sustainability issues arising from the Sahel region of Africa will include different cultural and religious perceptions of sustainable resource use, and histories of human responses to environmental change. Stimulating trans-disciplinary interaction between undergraduates from several subject areas, the resources will be electronic media-based including: podcasts of fieldwork, lectures and seminars; streaming-video of ethnographic film; and historical cartographic/documentary materials. Details of the resource will be disseminated through a symposium launch-event. This project is due in Spring 2008.

Science for sustainability

Dr Timothy Barker
University of Leicester
Physical Sciences Subject Centre

This project will address the question: can physics be made more attractive to potential students by engagement with the sustainable development (SD) agenda? This participative action research project will comprise: an attitude survey amongst potential physics degree applicants concerning the role of physics in SD; coordination of development of materials highlighting the relevance of physics to SD and relevant process training in collaboration with partners; trials, evaluations and modifications of undergraduate materials; formation of an outreach activity utilising physics in SD materials; dissemination of resulting 'open' materials and processes; and materials evaluation utilising degree entrant focus groups and research program evaluation.

Sustainable development in practice

Professor Jan Bebbington
Dr Rehema White
University of St Andrews Sustainability Institute
Centre for Bioscience (Subject Centre)

This project will identify and provide guidance on opportunities to study sustainable development (SD) in practice in Scotland. The outcome of the project will be a guide to selected initiatives that are applying sustainability principles, with several initiatives expanded into fieldtrip descriptions, including: how to get to sites (considering public transport accessibility); what aspects of SD are featured in the locations; details of how and at what times these locations may be visited; and pictures of the various locations.

The aim of compiling the guide is to promote good practice in SD education by focusing on experiential learning opportunities. This project is due in Spring 2008.

Teaching sustainable development innovation: the 'Market Place';

Colin Beard
Sheffield Hallam University
Hospitality, Leisure, Sport and Tourism Subject Centre

The 'Market Place' is an innovative experiential technique for the teaching of Education for Sustainable Development (ESD). The technique uses real products from around the world to teach several ESD principles. The grant supports the development of film and audio material for use in VLE/web-based support materials for use by higher education (HE) colleagues primarily, but not exclusively, in the UK. The film and audio material will be developed from an existing innovative teaching technique that currently receives very high ratings from teaching staff and students in HE and further education (FE). The product materials used in the 'Market Place' have been collected over many years and all have an interesting sustainable product design message that embraces industrial, environmental and materials innovation. The materials can be used interchangeably as 'learning objects', or collectively in varying sequences by students or staff.

How to make your teaching more sustainable

Katherine Clark and Julian Park
Centre for Bioscience (Subject Centre) based at University of Leeds

In a survey of higher education bioscience teaching staff conducted by the Centre for Bioscience in 2005 (<http://://www.bioscience.heacademy.ac.uk/esd/esdreport.pdf>), many said they would find it difficult to include or integrate SD into the curriculum due to a lack of teaching time. The planned outcome from this project is to develop a series of "How to Make Your Teaching More Sustainable" sheets. Intended as guidelines, they will provide information on how to make some aspects of teaching in the biosciences more sustainable and demonstrate how these changes in practice can then be raised as discussion points among students within the lecture, tutorial or lab group.

Experiencing sustainable development

Dr Jennifer A. Elliott
University of Brighton
Geography, Earth and Environmental Sciences Subject Centre

This project focuses on embedding SD in the undergraduate Geography and Environmental Sciences curricula at the University of Brighton through structured and supported opportunities for experiential learning. The project centres on the development, delivery and evaluation of a credited year-long module through which students will engage with an identified voluntary agency, business or community group that are undertaking actions in the field of SD. It builds directly on the insights of a recent GEES-funded project within the School of the Environment that focused on the existing, formal curricula in the ESD area and work of the Community University Partnership Programme (CUPP) team in building mutually beneficial relationships between the University and its local community. The outputs will include enhanced opportunities for students within the GEES disciplines at Brighton in the immediate term; capacity in

terms of a network of contacts between and within the community and the university of value beyond the project term; and a greater understanding of the impact of sustainability literacy on employability of interest to the wider HE community.

Making sustainability real: using a group-enquiry approach in Masters research

Geraint Ellis and Tony Weekes
Queen's University, Belfast
Centre for Education in the Built Environment (Subject Centre)

The project will evaluate, enhance and disseminate the benefits of drawing together groups of students engaged in Masters research to address the multi-dimensional nature of sustainable development in practice. The project will further develop an approach piloted at QUB Belfast during the 2005-06 academic year, which has focused thesis research of six students on the new fast track Planning M.Sc on identifying initiatives that will help deliver sustainable forms of regeneration for a failing Irish market Town, Clones, in Co. Monaghan. This appears to have generated a range of cognitive and vocation skills benefits for the students and has illuminated, for both students and the local community, the real benefits that can be derived from an integrated approach to SD.

Embedding ESD in a life science curriculum

Dr Nigel Lindsey, Dr Peter Hopkinson and Mr Peter Hughes
University of Bradford
Centre for Biosciences (Subject Centre)

In order to produce a coherent and meaningful embedding of ESD into a life sciences curriculum it is essential to know what is currently taught in relation to ESD; identify opportunities for curriculum development; identify how ESD is relevant to the professional education and create dialogue between academic teachers and students about ESD as part of the developmental and implementation process. This project will develop a tool and process which can be used to identify the extent and nature of SD-related content, as well as opportunities for enhancing ESD in life sciences. Our approach will go beyond knowledge, including skills, values, and ethics.

e-Learning case study for ESD and archaeology

Dr Armin Schmidt
University of Bradford
History, Classics, Archaeology Subject Centre

This action-research project will develop a problem-based e-learning module addressing the sustainable management of past environments, which will be used within undergraduate archaeological and geographical programmes. This project will deliver the relevant content in a replicable learning object to embed ESD in several existing modules. The project will be interdisciplinary, involving archaeologists, environmental scientists, geographers and ICT experts. The design phase will create a proto-type scenario from existing teaching material within archaeology related to sustainability of past land use (e.g. the Vikings and land management). In a workshop, students will be directed to make decisions on various settlement and farming choices and will be provided with feedback on the outcomes of those decisions. The results will be used in

the development phase to create an e-learning object that uses concepts from strategy gaming to model the parameters governing the sustainability of past land use.

A network for sustainable development education in the humanities

Anthony Sinclair and Karina Croucher
University of Liverpool
History, Classics and Archaeology Subject Centre

This is a capacity-building project, creating a network of specialists, both academic and professional, who are actively engaged in understanding and communicating issues of SD within a series of subject-specific disciplines (including archaeology, classics, anthropology and heritage studies). The purpose of the network is to (i) recognize successful instances of SD education in each discipline, (ii) identify common themes in sustainability education that cross-cut disciplinary boundaries and that stimulate critical thinking in sustainability education in the humanities, and (iii) develop a series of small projects to develop teaching and learning materials, both discipline-specific and interdisciplinary that can then seek funding in their own right and further embed the teaching of sustainability in the curricula of higher education institutions.

Cultural sounds and conservation texts: soundscapes of a lost Montserrat (British West Indies)

Dr Jonathan Skinner
Queen's University Belfast
Centre for Sociology, Anthropology, and Politics (Subject Centre)

This project is about salvaging a soundscape from the British colonies. It is an ethnographic teaching about cultural conservation which will involve researching academic materials and constructing an internet platform for students at QUB and the general public. It will be an opportunity to hear rare, and previously thought lost, examples of sounds and music streamed as an accompaniment to some important teaching texts in the fields of anthropology and ethnomusicology. Specifically, we will first pilot the digitization of recently-donated sound reels of the last known 'jumbie dances' to take place on Montserrat, a British colony in the Eastern Caribbean, which was destroyed by natural disaster in 1995. These will be combined with the visual and sound archive produced prior to the eruption of Mount Chance on Montserrat in 1995. Both digitized archives will be enhanced through additional interpretative texts researched from the Public Records Archives, London, and from visual pictures before, during and after the volcanic crisis. The project will then be opened up for students and the public to extend the soundscape and create their own.

Ecologo – working towards a visual language of sustainability

Jeremy Tridgell
University College Falmouth
Art, Design and Media Subject Centre

Ecologo is working towards a visual language of sustainability for graphic design students. If there is a contribution to a visual world that can reflect economic and societal priorities (as some suggest advertising does) then the study of how SD and design are

represented in visual media can inform this. A review of the design of sustainability-themed websites is undertaken through a single interactive website acting as both repository and learning space. Graphic design students will use the portal site to collate, evaluate and archive the other sites. Initially this will evolve from the interactive use of this development website. The project will develop a set of themes or tags for use in graphic design education to inform the interpretation of sustainability in the use of the Internet. As a collation of sustainability-themed bookmarks, the site will provide a resource for use beyond graphic design.

Developing global citizens through legal education

Tracey Varnava and Professor Hugh Brayne
UK Centre for Legal Education (Subject Centre) based at University of Warwick

Law graduates are well represented at senior levels in government, business and the legal profession. They are involved in determining rights and responsibilities, what is enforceable, and what is just. Those trained in the law influence and shape the development of all aspects of society – not least those which relate to the development of a sustainable future for all. This project will assess the extent to which the law curriculum is already making a contribution to sustainability literacy, and will identify opportunities for, and barriers to, the development of sustainability literacy in legal education. The project will also seek to raise awareness, encourage debate and generate the development of a shared understanding within the academy and the profession of the ways in which legal education can prepare students to be ‘global citizens’ (Oxfam, 1997).

Developing e-learning materials for sustainable construction management

Dr. Yangang Xing, Dr. Thomas Dyer, Dr Mohamed El-Haram
University of Dundee
Centre for Education in the Built Environment (Subject Centre)

Sustainable construction management is a complex subject cutting across many different disciplines. The teaching of sustainability issues in construction and civil engineering is currently being achieved fragmentally, and lacks broadness and depth in terms of the issues covered. In order to meet the needs of employers and professional bodies, the aim of the project is to develop e-learning materials to effectively equip learners with essential knowledge and skills in assessment of sustainability within the built environment. The interface of the e-materials will be a set of generic sustainable development indicators (SDIs), which is being developed in an EPSRC-funded SUE MOT project. Each of the SDIs link to corresponding international and UK framework sustainable development indicators, building assessment tools, UK regulation and guidance, and other well-being and sustainability assessment systems. This project is due in Spring 2008.

The Development of a Problem-Based Learning Tool to Design Micro-Generation Systems for an Eco-House
Dr Andy E Young
Sheffield Hallam University
Engineering Subject Centre

A problem-based learning tool will be developed to enable engineering students to design effective micro-generation systems capable of delivering a prescribed level of heating, lighting, and electrical power in a domestic building, while minimising the carbon footprint, given typical UK solar load and ambient conditions. The team which develops the most efficient systems will be rewarded by having their design made and installed in an eco-house (1:20 scale). This will be used in teaching to illustrate the operation of the various engineering systems, providing a benchmark and inspiration for future cohorts, with the challenge of improving last year's design.

Appendix 2: A personal perspective from Glenn Strachan on the Higher Education Academy's ESD Conference held at the University of Bradford on 10 and 11 July 2007

“**Progress and Potential**” was a good title for this conference. All the parallel sessions demonstrated the **progress** that is being made with regard to ESD in the higher education sector, but in many of the parallel sessions which I witnessed there was tangible excitement from some of the participants about the further *potential* of the ideas being discussed.

Tension and balance

Many of the debates that emerged in the plenary sessions and the parallel sessions were characterised by tensions that needed to be brought into balance or resolved by accommodating both aspects of the debate in order to achieve a significant shift towards ESD in HE.

The following paragraphs touch on some of the themes and debates that caught my attention while visiting several of the parallel sessions and, as with many of the sessions, the debates are identified but no attempt is made to resolve them here. They could be seen as proposals for the future work of the HEA-ESD Project. Reference is made to a number of the presenters that I managed to hear speaking but there were just as many that I was unable to attend as three sessions ran concurrently.

Subject context

An early debate emerged around the tensions between disciplinarity and inter-disciplinarity. How much disciplinarity do you have to have before you can have inter-disciplinarity? This question emerged in discussions in Jenneth Parker's session on “Sustainability as a dynamic research and development programme”. Andy Young's project on eco-design at Sheffield Hallam used the students to branch out and engage with other disciplines to achieve their aim of developing an eco-house design and bring an inter-disciplinary approach to the project.

Institutional context

How can curriculum development happen in respect of ESD if the institution does not “walk the talk” of sustainability? Mark Cleary illustrated the dilemmas and external pressures facing vice-chancellors who are committed to the ESD agenda.

The management framework and the policy context of every HEI is unique and hence the need for an approach to ESD that can accommodate that diversity.

Policy

The examples presented by Plymouth and Bradford illustrated the importance of both *ownership* and *leadership* in successful whole-institution policy development.

A journey towards a shared vision or an unknown destination?

Leadership and vision have roles to play in charting the development of an institution, but at the level of staff development Stephen Sterling and James Gray-Donald illustrated the potential benefits and the excitement of starting a conversation with a group of staff on the subject of ESD without knowing where that might lead.

Participation

Not surprisingly participation was one of the strongest themes to emerge throughout the conference. Where, when and how should we engage students in ESD? Are there different roles for the formal and informal curriculum? Bryan Lipscombe and Chris Rochester explored how extra-curricula activities contribute to ESD.

Is helping students to learn more effectively at the heart of the pedagogy of ESD? Participative learning and particularly experiential learning featured in several sessions, but Colin Beard from Sheffield University provided a critical review of what experiential learning might really mean.

While “chasing the lost folksonomy of sustainability” Jeremy Tridgell from Falmouth juxtaposed epistemology of ESD with the pedagogy of ESD.

Mark Cleary in his keynote presentation raised the question “Do we really understand our students?” As far as many of the session leaders at this conference were concerned the answer is, yes.

Real world

For many people at this conference (although not all) the real world equated to the corporate world. So what is the relationship between the corporate world and the HE curriculum? For Mark Cleary the skills agenda is a key part of this relationship, but as we debate the knowledge and skills associated with sustainable literacy how close are we to the skills identified by the graduate

employers? There were certainly examples of the corporate world getting involved with ESD projects such as the eco-design house at Sheffield Hallam.

Worldview

ESD challenges our worldview and this can be both disturbing and liberating. In Jenneth Parker's and Ros Wade's session one participant commented that he wanted to know "Who the hell he was?" - he used to know that he was an environmental scientist but engaging with sustainable development had left him uncertain about his identity. However, Geraint Ellis from Belfast showed how sustainable development could be used as an organising framework to bring together diverse ideas, staff and disciplines.

Contested understanding

The discussion around the multiple meanings and the contested understanding of sustainable development and ESD re-occurred throughout the conference. Mark Cleary raised it at the start and it was present in Amanda Lewis' session on teaching sustainability at Kingston towards the end of the conference.

"We all bring our own bit of understanding." "You cannot tell people about it, they have to come to their own understanding." "We need to help students to be comfortable with uncertainty and the lack of a simple answer." "How can we work across disciplines without a common understanding and language?" These were some of the comments heard during the course of the conference.

Timescale

In the first plenary session Carolyn Roberts from Gloucester raised the question of timescale and the urgency associated with the ESD agenda. This was an issue that concerned a number of participants given the difficulty of achieving anything approaching rapid change in the HE curriculum. No answers emerged, but in relation to the question of timescale I think it is always worth remembering the question posed by Primo Levi "If not now, when?"

So what was the overall mood of the conference? My personal perception was one of a group of professionals with a sense of purpose and a mission to achieve change in their institutions and the sector. I felt this to be the case because I witnessed the commitment to grapple with the tensions that I have identified above. Attending the conference was a very positive experience.

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