Sustainable development in higher education

Current practice and future developments

A progress report for Senior Managers in higher education

January 2006
Sustainability literacy

Sustainability literacy is about learning how human actions affect the immediate and long-term future of the economy and ecology of our communities. In short, how we must learn to live and work on a planet whose resources are finite.

“To maintain a more competitive economy, to compete internationally and build ourselves sustainable communities, we need to improve the knowledge and skills base of everyone, including professionals and others in the workplace. … the [sustainable development] strategy sets out how we are planning to upgrade public sector skills for sustainable development, help businesses with corporate social responsibility and develop a strategy for sustainable development within the work place, but we need to make ‘sustainability literacy’ a core competency for professional graduates.”

Introduction

The purpose of this report is to inform senior managers in higher education institutions about progress being made in embedding sustainable development into learning and teaching across the sector. It summarises the outcomes of the first year of a programme of support for such activity undertaken by the Academy’s Subject Centres.

Securing the Future, the UK Government’s sustainable development strategy published in 2005, set out the need for all education sectors to embrace sustainable development and promote the concept of sustainability literacy among their students. There have also been subsequent funding council consultations with the sector on how best to promote and embed good practice in Education for Sustainable Development (ESD).

It was in the context of this increased policy interest and sector debate that the Academy embarked upon a small-scale programme on ESD by investigating the extent to which ESD and sustainability literacy development already prevail across different academic disciplines in HE, and how the Academy’s Subject Centres can best build on this practice and support its wider application and development.

This summary report is the culmination of a six-month investigation by a research team commissioned by the Academy. The team, in conjunction with 17 of the Academy’s Subject Centres, examined how different subject disciplines are contributing to developing graduates who are sustainability literate. The research sought to identify good practice in approaches to teaching and curriculum development. It also considered potential barriers to the embedding of sustainable development in learning and teaching strategies and offers potential solutions for overcoming these.

The key findings are:

- there is significant evidence that sustainability literacy is a growing element in many academic disciplines in many institutions
- many of the skills and much of the knowledge required to develop a sustainability literate graduate are already embedded in many programmes, and can enhance the employability of the graduate
- the overall coverage of ESD in the curriculum is currently uneven both within and across disciplines
- Academy Subject Centres are well placed to identify, develop and share good practice within and across disciplines where this is required.
Higher education and ESD

Current practice

Seventeen of the Academy’s Subject Centres took part in the research by developing their own projects to determine the extent to which their disciplines are engaged with ESD, and to discover good practice in the curriculum:

- Art, Design and Media
- Bioscience
- Built Environment
- Dance, Drama and Music
- Economics
- Engineering
- English
- Geography, Earth and Environmental Sciences
- History, Classics and Archaeology
- Hospitality, Leisure, Sport and Tourism
- Information and Computer Sciences
- Languages, Linguistics and Area Studies
- Mathematics, Statistics and Operational Research
- Materials
- Philosophical and Religious Studies
- Psychology
- Sociology, Anthropology and Politics

Their investigations, together with those of the research team, suggest that most of the disciplines covered by these Subject Centres, and others not directly involved in the research, are already making a contribution to the sustainability literacy of their students. Many academic staff recognise ESD as an important component of the ongoing development of their respective subjects, and by inference of what is taught and how. In summary, there is substantial work in progress with a range of good practice within and across disciplines.

The research revealed three prevailing orientations in the teaching of sustainable development:

- Educators as role models and learners: this orientation places an emphasis on how the tutor can act as a role model for students in order to offer a credible and authoritative perspective on the realities of putting sustainability principles into practice

- Experiential learning by reconnecting to real-life situations: this focuses on real
and practical life issues and actual experiences as learning situations

- Holistic thinking: many of the skills and knowledge for sustainable development are associated with complex, multi-layered and interconnected systems such as interdisciplinarity and critical thinking.

Some examples of how disciplines, as represented by their Subject Centres, are responding include:

- The Engineering Subject Centre has worked collaboratively with the Royal Academy of Engineering (RAEng) and its Visiting Professors scheme in Sustainable Design, to evaluate the adoption of ESD in their HEIs and, through workshops and commissioned work, has produced learning and teaching resources for its teaching academics.

- The Hospitality, Leisure, Sport and Tourism Subject Centre reports that, for these disciplines, the most effective way of engaging students in SD issues is through field work and site visits, closely followed by case studies and projects. Other examples include investigative journalism and the use of video.

- ESD activity within Psychology is currently most likely to occur in the context of student projects and dissertations. Localised, real world, project-based work provides the main opportunity for students to engage with SD as part of their psychology education.

- Ecocriticism, part of the English discipline, is literary and cultural criticism from an environmentalist viewpoint. It asks students to apply their discussion of literary texts to other areas of their lives, such as their leisure activities, the forms of transport they use, their career intentions, indeed their whole pattern of consumption. In so doing it challenges the commonly held attitude among students that literature is there to provide an escape from serious problems, and that preferences are merely personal.

- Coventry University’s Economics Department has received funding from the Economics Network (Subject Centre) to embed sustainable development in the curriculum. Lecturers identified relevant concepts in sustainability and sustainable development and are assessing current practice of introducing them in Economics at Coventry. After evaluating current student experiences of these concepts through a structured questionnaire, lecturers will identify and develop a strategy for embedding concepts, for example by introducing concepts in optional modules or in all core modules.
Development of skills and knowledge

It is acknowledged that a wide range of skills, knowledge and attributes are required to create an action-orientated, sustainability-literate graduate. Some examples of these requirements are shown below.

**Sustainability literacy: skills and knowledge**

- An appreciation of the importance of environmental, social, political and economic contexts for each discipline
- A broad and balanced foundation knowledge of sustainable development, its key principles and the main debate within them, including its contested and expanding boundaries
- Problem-solving skills in a non-reductionist manner for highly complex real-life problems
- Ability to think creatively and holistically and to make critical judgements
- Ability to develop a high level of self-reflection (both personal and professional)
- Ability to identify, understand, evaluate and adopt values conducive to sustainability
- Ability to bridge the gap between theory and practice; in sustainable development, only transformational action counts
- Ability to participate creatively in inter-disciplinary teams
- Ability to initiate and manage change.

Many of these skills and attributes are not easy to teach in a traditional sense, but the number of examples of new ways of teaching that support the development of skills such as inter-disciplinary thinking, problem solving and team working is growing.
Curriculum responses

The research survey identified a wide range of curriculum linkages in response to the sustainability agenda. Several disciplines have introduced relevant themes such as climate change, biodiversity and environmental management systems. Some examples of this can be found in the following vignettes.

**Vignette 1: Master of Business Administration (MBA) (Sustainable Business Development)**

**Course outline:** This is a conventional MBA which has been re-framed to emphasise and incorporate sustainable development.

**Content/connections:** Very strong connections are made with: climate change and possible effects; intergenerational equity; linkages of sustainability to HEI institutional management (e.g. an EMS is being developed, currently, within ISDB); quantification and efficiency of products/processes (eco-efficiency); local distinctiveness and local sustainability; ‘industrial ecology’ (= companies interrelating to reduce resource use); financial and resource savings via sustainability; and movement from ‘built in obsolescence’ to green marketing, the latter to include looking specifically at extending product lifecycles. There are also strong connections to biodiversity; integration of social, economic and environmental factors; linkages of sustainability to research areas; systems thinking; bioregionalism and local stakeholder involvement; and finally, the meaning of ‘sustainability’: disputes over its ethics, political and commercial manipulation, and rhetoric (‘greenwashing’). The latter could be summed up in the phrase ‘managing ethically’.

**Vignette 2: Sustainability and the Built Environment (within MSc Construction Project Management)**

**Course outline:** The course is practical and applied, both by its very nature, and also by the fact that it recruits mature students who have already been practitioners in the building industry. It aims to provide such students with the key competences they need to operate to high professional standards, taking sustainability into account, within the area of the built environment.
Content/connections: Very strong connections are made with: integration of social, economic and environmental factors; how to measure and monitor sustainability; use of indicators; lifecycle assessment; and ‘footprints’. The latter is noted as being especially critical in built environment work. Other areas with strong connections include: climate change, because energy used by the built environment in society is a critical issue, and assessment of energy used in materials also impacts on sustainability; linkages of sustainability to research areas; and quantification and efficiency of products/processes (eco-efficiency). The latter has a particular significance and there is, for example, a specific session for students on assessment methods for materials and buildings which use methodologies developed by the Building Research Establishment. Further areas with strong connections are: the meaning of ‘sustainability’: disputes over its ethics, political and commercial manipulation, and rhetoric (‘greenwashing’). In the latter topic, the difference between environment and sustainability is explored, as well as the different interpretations given to the term by professional bodies, institutions, and companies. One other area of particular strength is historical investigations of adoptions and origins of sustainability policy nationally and internationally. This is of key importance, as governmental policy directly affects what building materials can be used. Linking resource use with financial savings or even increased costs is an issue that may well expand in the future.

Vignette 3: Representations of Spirit, Body and Beast (one-year course within BA Joint Honours Theology/Religion)

Course outline: The course is centred on concepts of the mind, spirituality and the soul, and therefore it is inherently a non-experiential type of approach. The tutors do not try to instil sustainability values in the students (in fact the word ‘sustainability’ is not used within the course), but aim to get them reflecting intelligently on the issues and their effects in society. Students will have critically examined some areas of significant theological and contemporary anthropological interest. They will have gained insight into the influence of Christianity on ways in which human beings have been defined and understood. In addition, they will have reflected on some of the ways in which traditional religious views have been challenged within a contemporary context. Students will have engaged critically with some key issues and thinkers and will have investigated a range of representations of human being, making connections between different media and disciplines.
Content/connections: Ethics and relationships with the environment, and environmental representation within the Western religious context, are currently a core concern both in theology and in this course. The course explores personal and collective stances on environmental destruction or preservation, and the prevailing religious ethic. It is grounded and reflected in the practical activities and outlooks of students, whether these be, for example, Christian, pagan or New Age. There is a strong emphasis on the history of conceptual attitudes to nature and ideas of progress. There is also an emphasis on biodiversity; integration of social, economic and environmental factors; links with religion, philosophy and history; systems thinking; globalisation and localisation, including global inequality and North-South trade; and urban versus rural sustainability. Because of the discussion-based and non-prescriptive style of learning on this course, there can be a strong or weak emphasis depending on whether students are stimulated to engage in debate on the various issues.

Vignette 4: Embedding education for global citizenship and sustainable development (EGCSD) in initial teacher education and training courses

Course outline: This is a sustainability and development-orientated teacher training course. The core areas of the course are interdependence and diversity, global and local dependencies, and values and perceptions. It was developed not as a modular solution, but as a replicable, cross-disciplinary course.

Content/connections: In sustainable development it is important not to miss the global aspects. In this course area, the ‘global’ is highlighted almost more than the sustainable development aspect. In England, it is notable that these two approaches are often separated. There are very strong connections with: biodiversity; climate change; integration of social, economic and environmental factors; bioregionalism and local stakeholder involvement; globalisation and localisation, including global inequality and North-South trade; historical investigations of adoptions and origins of sustainability policy nationally and internationally; sustainable tourism versus unsustainable; and finally, urban versus rural sustainability.
While these vignettes provide good examples of some of the excellent work in the curriculum, the overall picture is uneven with gaps in areas such as sustainable production and consumption, eco-efficiency and national and international sustainable development policy.

The survey of Subject Centres identified three broad levels of progress in the embedding of ESD by subject disciplines:

1. Those that have adopted a major process of embedding ESD into undergraduate and postgraduate programmes. Examples include Engineering and Materials Science, which are dealing with the day-to-day realities of industrial processes; English with its strong tradition of ‘eco-literacy’; and Geography, Earth and Environmental Sciences, whose Subject Centre is developing a workshop for delivery to staff who are interested in incorporating ESD in their programmes, focusing on problem-based and experiential learning.

2. Those that have made limited progress in embedding ESD into their curricula, while acknowledging that they have some significant curriculum opportunities to do so in future. Examples include subject disciplines covered by the Subject Centres for Bioscience; Economics; Hospitality, Leisure, Sport and Tourism; and Philosophical and Religious Studies.

3. Those that have an interest in ESD, but have found it more difficult to embed ESD widely or deeply into their curricula. Examples include subject disciplines covered by the Subject Centres for Information and Computer Sciences; Mathematics, Statistics and Operational Research; Dance, Drama and Music; and Psychology.
Barriers and solutions to embedding ESD

The research revealed four major barriers to the successful embedding of ESD into many of the subject disciplines:

1. An overcrowded curriculum
2. Perceived irrelevance by academic staff
3. Limited staff awareness and expertise
4. Limited institutional drive and commitment.

Solutions

Lecturers identified a number of solutions to these barriers.

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<th>Barrier</th>
<th>Solution</th>
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<tr>
<td>Overcrowded curriculum</td>
<td>● Create space through a rigorous review of existing curricula</td>
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<td>● Audit existing curricula to ascertain what is already there in terms of the development of identified ESD skills and knowledge</td>
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<td>Irrelevance</td>
<td>● Develop credible teaching materials which are fully contextualised and relevant to each subject area. This will help ensure that ESD is integral to the curriculum and not a ‘bolt on’ element</td>
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<tr>
<td>Limited staff awareness and expertise</td>
<td>● Invest significantly in staff development and capacity building through institutional staff development units and Academy Subject Centres</td>
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<td>Limited institutional commitment</td>
<td>● Develop a credible business case for HE institutions, setting out triple bottom-line benefits</td>
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<td>● Review and amend institutional mission and policy statements</td>
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Future developments

This report summarises the current state of progress in the embedding of ESD into many of the subject disciplines taught within HE. It also identifies some of the barriers and offers some potential solutions. The significance of this report is that it is a reflection of the views of practitioners. While progress might appear uneven and limited in some important disciplines, this research provides evidence of strong underlying need for more action in support of the embedding process. To this end the Academy and its Subject Centres intend to strengthen support for institutions and will seek to:

1. support the promotion of the development of ESD across all subject disciplines in HE and disseminate good practice

2. explore the connections between ESD and employability and how both career choices and opportunities for graduates are being influenced by the SD agenda

3. facilitate the debate between institutions and important stakeholder groups, including employers, professional bodies and graduate careers services, to identify creative ways of implementing and supporting the integration of ESD into learning, teaching and the curriculum.

Education for sustainable development is an emerging but important field of interest in HE. It requires a major shift in the way students are taught and how they learn within HE. This can be achieved through a broader and more flexible approach to the development and teaching of academic disciplines as well as long-term institutional commitment and support.

For more information on this project please contact us at enquiries@heacademy.ac.uk or telephone +44 (0)1904 717500.
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