



Re-thinking Bioscience and ESD

At a recent presentation to another university on embedding Education for Sustainable Development (ESD) into the curriculum the first author became aware of some slightly stiff and defensive body language among staff on the front row. It transpired they were from the life sciences faculty, had been instructed by their Dean to introduce ESD into their teaching, but didn't know where and how to start, and were feeling overwhelmed. Their stress and bewilderment took us back four years to a small project funded by the Higher Education Academy ESD Project at the University of Bradford to look at this very topic within our own life sciences academic community. Nigel Lindsey (2006) identified many barriers, including a perceived lack of interest or engagement by the professional bodies, inadequate time, competing priorities, limited incentives for staff to re-think their teaching, fuzzy understanding of what sustainable development is, and little information on what to do. The response to our presentation suggests that, despite the heightened emphasis on the topic by both HEFCE and the Higher Education Academy, these remain in place, and there has been less progress and development than might have been expected.

Fortunately, Nigel also made suggestions which we, along with innovators in other universities, have tried to put into practice as part of our HEFCE-funded Ecoversity initiative (www.brad.ac.uk/ecoversity). This is implementing strategic level curriculum engagement and culture change around sustainability across the University. Much of this has been focused on STEM disciplines, and biosciences in particular, as these form a very high proportion of our student FTEs.

The prerequisite for change – staff and student interest – is certainly there. Indeed no disciplines are more connected than biosciences to the many pressing ecological and social challenges of sustainable development. The recent UK Centre for Bioscience event, and accompanying report, has shown how discussions of the ethical issues surrounding sustainability can arouse the interest of students, and be integrated into existing bioscience curricula (UK Centre for Bioscience, 2009). Dylan Gwynn-Jones of Aberystwyth university has also provided interesting information on attitudes to sustainability among Bioscience academics (James and Hopkinson, 2009).

However, while inspiring, one-off course approaches need to be supplemented by broader institutional processes that create new drivers for change, stimulate more comprehensive faculty engagement, and identify additional creative opportunities to link ESD to the mainstream agendas and interests of both staff and students.

Bamber *et al* (2009) highlight the difficulty and complexity of this task, and the need for an overall framework and activity system to maximise the probability of the desired outcomes. Our own interpretation of this combines top-down and bottom-up approaches. The top-down includes a revision of our Course Approval and Review Processes to require all course teams to articulate how they will achieve ESD within their programme documentation. The bottom-up is enabled by internal academic champions who have been established in key areas – with some of their time (typically half a day

a week) paid for centrally. The champions have three main tasks. Firstly, talking to students about their understanding and interests around sustainable development. Secondly, conducting an international literature review to identify trends, professional developments and case studies in ESD. Thirdly, examining developments within the professional bodies and learned societies to identify drivers and themes which might be relevant to future curriculum activities. This has led to pump-priming pilot projects (again funded centrally) enabling course teams to innovate in areas such as biomedical sciences, chemistry, optometry and pharmacy. The latter has involved small group student projects to identify links between the discipline and sustainable development. A key outcome has been the realisation that the community importance of pharmacists – which the professional bodies are keen to strengthen – gives them a vital role in communicating information, for example, on the impact of higher temperatures on disease risks.

A final area of work is using everyday lab operations – which have a large environmental improvement – as a source of curriculum material. This involves a HEFCE-funded initiative on sustainable labs (which in turn works with LabRATS, a University of California initiative for lab environmental improvement which makes considerable use of student interns (James and Hopkinson 2009)).

These, and other, examples will be showcased at a series of free events, including ones on Greening STEM, Good Laboratory Housekeeping and Sustainable Laboratory Chemistry. See www.goodcampus.org for more details.

References

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