

### A Higher Education Academy ESD Resource

Title: Embedding ESD in Life Sciences Curriculum

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#### AUDIENCE

This information will be of interest to anyone wishing to audit Life Science courses and then embed sustainability into the curriculum.

#### SUMMARY

This project evaluated the potential for the integration of ESD within a Life Sciences curriculum and develop a tool for assessing this potential.

#### THE APPROACH

Sustainable development can mean many different things depending on the experience and outlook of the individual involved. For the purposes of this work, and to align with other ESD initiatives at the University of Bradford, we have chosen to adopt the UNESCO definition:

[http://portal.unesco.org/education/en/ev.php-URL\\_ID=23292&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/education/en/ev.php-URL_ID=23292&URL_DO=DO_TOPIC&URL_SECTION=201.html)

This definition is broad and so our first task was to review a curriculum against this definition to see if there were significant subject areas that could be identified as being suitable for the development of ESD within a programme. For this we looked at range programmes across the School of Life Sciences with strong external constraints on their curricula, in terms of the Professional Body accreditation and a strong focus on achieving the Professional Qualification that enables them to work within the profession. The programmes looked at were Pharmacy, Optometry and Biomedical Sciences.

In order to develop a tool for the assessment of the ESD potential of the curriculum, the potential blocks to the incorporation were identified. These were:

- 1) suitability of the curriculum,
- 2) the engagement of the accrediting body,
- 3) the willingness of the staff to engage with the process, and
- 4) the student perception of the relevance of the material.

Curricula were reviewed against the UNESCO definition and scored according to the degree of identifiable ESD material with the curriculum. The following series of questions were considered in reviewing material:

- Which interpretation(s) of SD are presented and endorsed?
- How might these interpretations be classified?
- What kind of epistemology underlies the presentation of SD?
  - Realist: Knowledge is seen as objective fact – albeit that it may be partial, uncertain and subject to addition/revision
  - Constructivist: All knowledge, including scientific knowledge, to some degree reflects the social context within which it is produced, and is therefore seen as subjective, value-laden and contestable
- To what extent are students enabled to engage critically with knowledge claims concerning SD, including the values that permeate those claims, and to develop their own ideas on the subject?

A single reviewer with no specific experience of the programme undertook the review of the programmes.

#### THE OUTCOMES

- A detailed ESD map for three programmes in the School of Life Sciences curriculum was produced for discussion, planning and benchmarking. It has revealed a varying extent and potential for the development of ESD within these programmes. The analysis of external drivers shows that there is little external pressure for the development of ESD despite high level policy statements that stress the need to develop awareness of the issues involved. The accrediting bodies have not addressed the issues in their requirement for accreditation and these are the main drivers for curriculum development in the courses review.
- Dialogue with both students and staff reveals that, whilst they are initially cautious about ESD, they support the ideas that underpin ESD and can see the relevance to their curriculum. However, the role of the accrediting bodies will be crucial to seeing this work developed in these curricula and there needs to be a greater dialogue with them.
- The development of teaching and learning action plans linked to the programmes reviewed is hampered by the lack of engagement of these issues by the professional bodies. Discussions have centred around the ability to develop this work in the light of these issues and how we can develop these plans in a manner acceptable to these external stakeholders.
- The major resource requirement for teaching and learning in relation to ESD with Life Sciences at Bradford is staff time to undertake the developmental

work. Given that the main drivers for curriculum development have not embraced ESD, there is little motivation amongst staff to prioritise work in this area. The development of appropriate educational materials is intensive in terms of staff time but does not require substantial capital investment. Routes by which time may be provided are being investigated.

- A tool has been created that enables an initial identification of areas that provide ESD and areas that have potential for the development ESD. The tool does not require specialised knowledge of the subject area. However, the use of independent review can miss areas with potential that are embedded within the curriculum, as noted elsewhere. Still, the tool is a useful starting point for discussions about the integration of ESD into curricula. A paper describing the tool is to be submitted for publication.

#### TAKING IT FURTHER: LESSONS AND SUGGESTIONS

- The audit appears, in certain areas, to have underestimated the extent of ESD suitable materials; for example, specific curriculum areas in Biomedical Science which have potential for ESD were not identified by the review process. This emphasizes the need for close consultation with the course team when undertaking such an analysis, as the documents used do not reveal the full extent of the subject material dealt with in a curriculum.
- Subject Centres could play a significant role in working with accrediting bodies on ESD; however, only one of the programmes has an exclusive Subject Centre which recognises the need to engage with ESD – and this Centre is aware of the difficulties in doing this.
- The tool will be applied to other curricula and is being used to develop ESD within current curricula in the School of Life Sciences. Funding (£14K) has been gained from the University of Bradford to develop teaching materials within the School of Life Sciences.

#### FURTHER INFORMATION

The full report is available:

[http://www.heacademy.ac.uk/assets/York/documents/ourwork/tla/sustainability/esd\\_lindsey.pdf](http://www.heacademy.ac.uk/assets/York/documents/ourwork/tla/sustainability/esd_lindsey.pdf) (PDF500KB)