

**A2. Education for sustainable development  
for taught postgraduates:  
Designing effective active co-learning  
environments for on-site and distance  
learning students  
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Education for sustainable development (ESD) can now be considered core curriculum for postgraduate students in taught environmental courses. Such education is interdisciplinary, encourages critical thinking, sets learning in context of the five capitals (Porritt 2005), and promotes values and both local and global citizenship. In addition, critical evaluation of the knowledge and skills required for ESD represents an essential element of Master's-level engagement for the aspiring or practising professional in geography, environmental management and tourism. However, appropriate learning design for this ESD engagement needs to be set in the broader context of changes in the character of postgraduate cohorts in Higher Education Institutes in the UK and beyond.

Postgraduate taught provision in geography, earth and environmental sciences in the UK and internationally has undergone a number of developments (see Eastwood 2005). These include: the internationalisation of both postgraduate recruitment and course focus (see McEwen 2005); increased workplace and CPD links; as well as a widening of access in a more 'inclusive' higher education. All these factors result in an increasingly diverse taught postgraduate layer in terms of prior academic, vocational, cultural and life experiences and associated specialist knowledge and skills (specialist, generic and personal). At the same time, both the nature of research and practice (underpinning and informing teaching) and the actual focus of many taught Master's courses have become increasingly interdisciplinary.

Although this situation presents many challenges for the design of appropriate learning environments, there are also significant benefits that, if effectively harnessed, can be capitalised upon to the advantage of all

stakeholders. A major opportunity is for the development of vibrant co-learning communities of inquiry that can engage effectively and innovatively with core themes such as sustainability, sustainable development and evaluating ESD provision and drawing on personal experiences. Such models of the learning environment can lead to a healthy abandonment of the more traditional student-tutor relationship<sup>1</sup> for alternative learning design options that engage students more actively in peer-supported learning. It is helpful as a starting point to define co-learning as:

*A co-ordinated and targeted approach to maximising the synergetic relationships between research and teaching such that their symbiotic development capitalises on prior learning and experiences of all involved and feeds back positively on the quality of both research and teaching environments.*

(Le Heron, Baker and McEwen 2006: 77)

The module *Perspectives and Investigative Methods in Research and Consultancy*, in the University of Gloucestershire's postgraduate taught environmental provision, provides the theoretical underpinning in sustainability and sustainable development for postgraduate taught students in geography, environment and tourism. This case study outlines the learning context in terms of the need to ensure that all students have effective advanced engagement with the sustainable development debate as a core component of the curriculum. This includes engagement with both the diverse nature of the paradigm (indeed whether sustainable development can be considered a paradigm) and the appropriateness of sustainable development principles for implementation in developed and developing world contexts.

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<sup>1</sup> In setting up productive co-learning environments, the relationship and interaction between tutor and student changes to embrace extended learning communities that potentially involve student, tutor, alumni, practitioner, employer and the broader regional community. Under this model, the tutor is also a learner, with important feedback to develop research-informed teaching and teaching-informed research. The student already in the workplace can have a dual role and an important linking function. There is, however, a difference between '*local or ad hoc examples and experimentation with the serendipity of those brought together in the learning environment and system-wide and systematic re-organisation to explore co-learning as an educational strategy*' (Le Heron, Baker and McEwen, 2006 p78).

This case study reflects critically on the challenge of capitalising on student diversity in the design of exciting and innovative, active co-learning environments. It mirrors some of the issues associated with dealing with diversity in a sustainable development context. Here differences in the mode of delivery are also part of the 'diversity package'. These include: on-site or distance learners (flexible distributed learners, FDL) often in the workplace, with a blurred transition as many on-site students have relevant work commitments and experience. This new learning design aims to integrate learning experiences for on-site and distance learners so that the whole is greater than if these two groups were engaged separately.

Although the module also deals with research methods training, this paper reflects mainly on delivery of the student engagement with the sustainable development debate and reflects on the imperatives of ESD as major theoretical and conceptual strands. Training in sustainable development principles and practice is currently compulsory for all Postgraduate Diploma and full Master's provision in environmental disciplines in the University of Gloucestershire.

### **Aims**

The educational challenge for the delivery of training in the knowledge and skills to deliver sustainable development is to develop active flexible co-learning learning that:

- Capitalises on the strengths, prior academic, cultural and personal experiences and modes of engagement of an increasingly diverse student group that combines on-site and off-site students;
- Facilitates effective engagement between sustainability practitioners with students in real and virtual learning environments (the distinction between students and practitioners is itself increasingly blurred);
- Allows informed group and individual reflection on the strengths and limitations of 'sustainability' as target, 'sustainable development' as process and 'education for sustainable development' as core curriculum.

### **Rationale**

Education for sustainable development is high on regional, national and international training, capacity building and awareness raising agendas. For example:

- The UNESCO *Education for Sustainable Development* UN Decade runs from 2005-2014;
- In parallel in the UK, the Geography, Earth and Environmental Sciences Subject Centre is focussing on disseminating good practice in *Education for Sustainable Development* (ESD) as one of its key staff development themes; and
- Professional Practice for Sustainable Development or PP4SD; a multi-organisational group co-ordinated by the Institution of Environmental Sciences that has developed materials for delivering sustainable development training in the workplace.

*PP4SD is a project dedicated to promoting sustainable practice among professionals, through developing and disseminating continuing professional development material and events that encourage cross-professional dialogue*

(Environment Agency *et al.* 2006)

## **Implementation**

The design of effective learning environments involves the following steps:

### *(a) Setting up effective co-learning communities*

There are a number of generic principles that can help in the development of effective co-learning communities in the context of sustainable development debates and ESD:

- The potential stakeholders in the learning community – students, tutors and practitioner (as role model?) - discuss the terms of learning engagement. Each is encouraged to reflect on and articulate what they bring to the co-learning table.
- All individuals in the student group are profiled at the start of the module. Potential heterogeneities include:
  - The academic subject mix of their first degrees (e.g. in construction, politics, geology, environmental science, media and more);

- Past academic experience (e.g. teaching modes and institutional settings)
- Past and present work experience (e.g. UNESCO, Waste Industry, Ministry of Defence, Environment Agency, secondary school teaching);
- Cultural mix (e.g. developed/ developing world; religious beliefs); learning mode (e.g. on-site, flexible, distance learners);
- Personal characteristics (e.g. gender, age) and personal skills (e.g. confidence in group work; presentation skills; advanced problem-solving skills; information and communication skills); and
- Prior engagement with sustainable development principles and practice.

(b) *Setting up the teaching resources and developing the learning strategy*

Before redesign, the module involved the student by setting prior reading, followed by group seminar discussion. The student then wrote a critical essay focused on sustainable development principles and practice linked to a particular domain.

The revised design comprises the following stages.

*Knowledge and skills audit:* All students reflect individually (through skills audit) and as a group (through discussion boards in the virtual learning environment WebCT) on what they bring to the co-learning table.

*Prior reading and preparation:*

All students are asked to engage with thought-provoking and contextual preparatory reading (on paradigms for understanding human-environment relations; conceptual frameworks e.g. Hardin's, 1968 *Tragedy of the Commons* and subsequent debates or context setting e.g. O'Riordan, 2002). More introductory or accessible sources (e.g. Roberts, 2004) are also recommended as a starting point for students who have not engaged in this area before. Students also engage with the literature on embedding ESD into Higher Education (e.g. Martin *et al.* 2003) and the different techniques involved. Dawe *et al.* (2005) articulate these as:

*The Personal:*

- Educators as role models
- Learners as teachers, teachers as learners
- Lifelong learning

*Reconnecting to reality:*

- Relationships to the local community
- Real life problems and experiences
- Re-connecting people to people and nature
- Developing capacity for (non-prescribed) change
- Links with University EMS/SMS

*Holistic thinking:*

- Interdisciplinarity and critical thinking
- Systems thinking
- Respect/ sensitivity for all subject areas

*Setting up of co-learning groups.* At the outset and on the basis of the personal knowledge and skills audit, students are divided into work groups or 'learning sets' that combine on site and flexible distributed learning students. These groups have a life before, during and after the class room engagement (for those students who are on-site).

Brown (1994/1995) has two guiding principles for forming learning sets:

*... go for diverse sets. Sets drawn from within a discipline tend to ... not ask the 'dumb' questions that outsiders sometimes ask ... which can ... lead to important insights.*

*... the ideal set size is five to allow a range of divergent views and that the set should not be too big to allow everyone time to speak.*

Preparation of the core debate session includes individual and group evaluation of materials provided in advance by the practitioner (in this case from the Strategic Advisor to *Forum for the Future*, the leading UK Sustainable Development charity based in Cheltenham, that works in partnerships with business) and to set the agenda as a group for a discussion meeting with the practitioner. Students in their groups are required to think critically and holistically and to identify questions and set

the agenda for real and virtual discussions with the practitioner (both face-to-face and outside the classroom) through WebCT.

#### *On-site and off-site group discussions*

Group discussions are designed to be wide-ranging, allowing comparison between sustainable development applications in different domains (for example, waste, water, tourism) and in contrasting developed and developing world contexts. The relationship and timing and modes of exchange for on-site and off-site discussions need careful structuring. *Smartpad* or another means for visualising and capturing the essence of discussions can be used to share the discussion process between off-site and on-site members of groups. Students submit essay proposals for critique from other community members (peers) in their learning set and revise their essays in the light of this feedback. All students reflect on the quality of their learning experience in sustainable development including their experience of activities that capitalise on the diversity of their group and expertise of the larger class.

### **Sustainability focus**

Students all engage with the three pillars of sustainable development (and the *Forum for the Future's* five capitals) but in different measure or balance depending on their interests and vocational aspirations. A student undertaking the *MA Tourism and Sustainable Development* will have a different but overlapping experience from a student studying the *MSc Environmental Policy and Management*. In addition to engagement with the specialist knowledge and skills underpinning the sustainable development debate, the learning design aims to build capacity for group learning within the student community of inquiry and to provide opportunity for students to reflect on the strengths of diversity in educational and broader contexts.

Diversity (and how to harness its strengths) is a key concept within ESD at all educational levels. One objective of this exercise is to establish sustainable learning communities at taught postgraduate level in ways that might mirror the diversity of workplace whilst engaging students positively in sustainable development and ESD principles and practice. Students are encouraged to exercise their responsibilities for individual and group learning within the learning environment. The practitioner links discussion around sustainability principles and assessment methodologies to real life examples from *Forum for the Future's* work programme.

## **Active learning**

The development of the learning programme has prioritised active approaches to student engagement. There are links with a key external practitioner in a sustainable development charity that will be extended and developed into the future such that the practitioner also develops further ESD communication expertise in the process. The interactive feedback means that all stakeholders (including tutors and practitioners) are also learning and reflecting on their perspectives on ESD and their research-teaching-practice links.

## **Feedback**

Feedback from current on-site students is that they enjoy the learning experience as a way of bringing the outcomes of their own inquiry to the learning table, exploring the issues in sustainable development theory and practice with a mixed group of peers, as well as getting to know their student peers better.

An initial review of the group-work experience from on-site students indicated the following benefits and challenges.

### *Benefits*

- It was helpful working in groups as everyone brings forward different ideas and concepts; good to have views of people from different backgrounds (e.g. different university degrees, age, nationality)
- Sharing different opinions and experiences of how sustainable development works within different academic, vocational and particularly cultural contexts
- Acquire views/ information from different aspects of life and work relating to SD.
- 'Teaching is the best way to learn'
- Get to voice ideas and debate them in a comfortable environment.

### *Challenges*

- Looking at the idea from someone else's point of view and seeing where their ideas come from with the benefit of then broadening your ideas
- Ability to cooperate and communicate effectively with different group members
- Dealing with conflict.

Feedback from the students in the workplace is that this interactive debate is extremely useful preparation for sustainable development in the workplace.

*I have been with Hyder Consulting for 6 months now and I am very involved with the sustainability work they are doing. Thanks for all your help while at Cheltenham. The course appears to have put me in a great position in terms of sustainable development theory.*

(Current part-time student - just embarking on Master's dissertation)

### **Strengths and weaknesses**

The challenges are as follows:

- Setting up an appropriate learning design for a diverse student group and evaluation of the overall learning strategy
- Setting up effective co-learning communities to debate sustainable development principles and practice
- Securing effective engagement of all students
- Getting different stakeholders in the learning communities to reflect iteratively on these engagements and their contribution to group activities.

The sustainable development focus provides an ideal opportunity to develop co-learning sets in an explicit context that capitalises on diversity and encourages 'holistic thinking'. To develop co-learning environments effectively, all stakeholders (including students) need to be self-aware of what they bring to the learning table. Tutors also need to be aware of potential friction in group dynamics, perhaps due to cultural differences and perceptions, and the heated nature of some discussions. Each year, there is a different group dynamic due to the serendipity of the expertise and experience encompassed within the student cohort but this brings freshness to the learning experience for all stakeholders. The critical learning experiences obtained within the 'Sustainability Debate' can then be positively cascaded to other postgraduate taught modules. Critical reflection on ESD and an articulation of personal standpoints integrated with the experience of capitalising on group diversity in active co-learning

represent important underpinnings to successful postgraduate learning for sustainability professionals.

### **Programmes**

The integrated programme of postgraduate taught environmental courses involves:

*MSc Environmental Policy and Management* as the core course with the opportunity to specialise in specific domains (water, waste, environmental impact assessment, tourism, business). In addition the *MA European Rural Development* (distance learning only) uses the same module.

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### **Key words:**

Active learning; co-learning; education for sustainable development; postgraduate; vocational

### **References**

Brown, R. (1994/1995) *Write Right First Time Special Issue for Authors and Editors*, [online], MCB University Press Limited Literati Club. Available from: <<http://www.mdx.ac.uk/WWW/STUDY>> [Accessed 10/03/07].

Eastwood, D. (2005) A growth market: the increase in taught postgraduate numbers in the Environmental Sciences, *Planet*, 14, p7.

Environment Agency, Institution of Environmental Sciences, The Natural Step and the Royal Society for the Protection of Birds (1999) *Professional Practice for Sustainable Development (PP4SD)*, [online], Available from: <<http://www.pp4sd.org.uk/>> [Accessed 13/10/06].

Forum for the Future, [online], Available from: <<http://www.forumforthefuture.org.uk>> [Accessed 10/03/07].

Hardin, G. (1968) The Tragedy of the Commons, *Science*, 162, pp1243-1248.

Dawe, G., Jucker, R. and Martin, S. (2005) *Sustainable development in Higher Education: Current practice and future developments*, York: Higher Education Academy.

Le Heron, R., Baker, R. and McEwen, L. J., with Bradbeer, J. and Jenkins, A. (2006) Co-learning: Re-linking research and teaching in geography. *Journal of Geography in Higher Education* 30 (1), pp77-87.

McEwen, L.J. (2005) Postgraduate taught course developments in geography, earth sciences and environment in the UK: an initial assessment of drivers, *Planet*, 10(6).

Martin, S., Brannigan, J. and Hall, A. (2003) Sustainability, Systems Thinking and Professional Practice, *Journal of Geography in Higher Education*, 29(1), pp79-90.

O'Riordan, T. (2000) *Environmental Science for Environmental Managers*, Harlow: Prentice Hall.

Porritt, J. (2005) *Capitalism as if the world matters*, London: Earthscan.

Roberts, J. (2004) *Environmental Policy*, London: Routledge.

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