

Sustainable Development and Education: The impact of sustainable development on teaching and learning styles in Higher Education courses delivered in Further Education Colleges

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Abstract

This paper presents the findings of a survey of sustainable development and active learning styles in higher education courses delivered in further education colleges. It explores the link between sustainable development teaching and learning and institutional policy and practice. Higher education courses are a growing element of provision in further education and make a distinctive contribution in terms of working with employers and local and regional communities.

Introduction

This paper presents the results of a research survey on the impact of sustainable development on teaching and learning styles in higher education (HE) courses delivered in further education colleges (FECs). The objectives of the survey were:

- To explore whether sustainable development promotes active learning approaches in higher education courses provided in further education colleges
- To explore whether active learning contributes to institutional and learner capacity to engage with sustainable development.

Active Learning can be interpreted broadly, but for the purposes of this research it is taken as learning that generates student enquiry in any learning environment; classroom, field, studio, online, work or community based. Such an interpretation includes enquiry-based learning, work based learning and problem-based learning.

This project was sponsored by the Centre for Active Learning at the University of Gloucestershire (CeAL) [<http://resources.glos.ac.uk/ceal/index.cfm>] CeAL is a Higher Education Funding Council for England (HEFCE) funded Centre for Excellence in Teaching and Learning reviewing, developing, promoting and embedding inclusive and exemplary active learning for students.

Context

Higher education in FECs is a significant and growing component, currently equating to over 11% of total HE provision and comprising over 100,000 students. Also FE provides 44% of learners progressing to Higher Education Institutions (HEIs) and hence this is an important and strategic but often overlooked component of HE provision. This research sought to identify good practice and provide case studies in active learning and sustainable

development education, in line with national policy on the development of sustainability literacy in the workforce and professions (Martin, Dawe & Jucker 2006; Higher Education Academy, 2006; Cade, 2008).

HEFCE provides funding for HE courses in 287 colleges which is nearly 70% of the total FE colleges (HEFCE consultation, 2006). Students on HE courses work towards a range of qualifications: 44% take Higher National Certificates or Diplomas; 10% study for foundation degrees and 22% for degrees. Whilst 52% of students study part time, the majority of students studying degrees, foundation degrees and national diplomas are full-time students. The most popular subjects were: business and management studies, creative arts and design, computer science, education, architecture and building and planning.

A recent consultation report (Parry & Thompson, HEFCE, 2007) identified the distinctive contribution that HE in FECs can make. This included amongst others, a focus on:

- engaging employers closely and directly
- the needs of local and regional communities
- progression from the colleges' own further education programmes
- dynamic, flexible short cycle provision

Research Methodology

A survey questionnaire was sent by post to 150 colleges from a CeAL database which identified colleges which had HEFCE funded provision. In addition to the direct mail shot further tactics were used to elicit responses. The survey was circulated electronically to members of the 157 Group of Colleges; members of the Environmental Association of Universities and Colleges (EAUC) education for sustainable development group were invited to respond to the survey on-line.

A total of 33 surveys were returned, this equates to approximately 22% response rate. The responses made by individual colleges have been subject to a quantitative analysis which is supported by bar charts and tables.

26 of the respondents provided full time student numbers and 23 provided part time student numbers. Table 1 summarizes the range of student numbers by mode of attendance in the survey sample. The majority of respondents had fewer than 500 students in each mode.

Table 1 - Range of student numbers by mode of attendance

Range of Student Nos.	% of Colleges Full time students	% of Colleges Part time students
< 100	31	22
100 – 500	54	65
>500	15	13

The respondents provided a range of qualifications, set out in Table 2.

Table 2 - Range of Qualifications

Qualification	% of Respondents
Foundation Degree	100
Degree	60.6
HNC	72.7
HND	63.6
Post Graduate	27.3
Other (Initial Teacher Training)	3

The respondents offered a range of subjects, set out in Table 3.

Table 3 - Range of Subject Provision

Subject	% of Respondents
Business & Management	78.8
Education	78.8
ICT & Computer Science	66.7
Other (inc. Media, Leisure & Tourism, Health & Social Care, Sport, Public Services)	63.6
Art & Design	60.6
Engineering	60.6
Building & Planning	42.4
Science	27.3
Humanities	18.2

Responses to survey questions

Does your college have a sustainable development policy or strategy?

Nearly half of the colleges responding (48.5%) have a sustainable development policy or strategy in place, and one indicated that the policy is under development and will be in place by July 2008, which would lift the percentage with sustainable development policy or strategy to 51.5%

Does the policy include approaches to teaching and learning as a specific element?

59% of respondents who have a sustainable development policy include teaching and learning as part of the policy or strategy.

Some examples of the approaches to teaching and learning include:

- Part of the action plan is to embed into the curriculum and working practices of the college
- Inclusion of sustainable development in course delivery; and signpost to sustainable development materials and resources

- Programmes on climate change, sustainable living and related issues in FE provision and some HE modules e.g. learning about food miles in social science
- Work based learning is embedded throughout the programmes
- One college has based its sustainability policy for the whole college on LSC guidelines in the document 'From here to sustainability' (LSC, 2005) with key policy actions to 'promote and encourage acceptance and delivery within learning programmes of the Sustainable Development Education Panel's key concepts for education for sustainable development' and 'to adopt and use sustainable development learning materials and to develop appropriate sustainable development programmes and modules'.
- Course materials and resources need to reflect sustainability principles and teachers need to raise awareness
- Educate students to understand and participate in prevention, control and reduction of college's environmental impact and to raise environmental issues in the curriculum
- One college states that the sustainable development policy is still developmental, and that a set of 'Learning for Sustainability Guidelines' is in a draft stage.

Do your HE courses utilise active learning styles as described in the above definition?

Nearly 91% of respondents utilise active learning styles as defined in the Introduction to this report. A similar number of respondents who have a sustainable development policy or strategy (94%) utilise active learning styles.

Some examples include:

- Foundation degree entirely work based with extensive use of VLE
- Live case studies
- Work based consultancy projects
- Student projects integrated with college actions – e.g. producing travel plans; developing procurement policy
- Practical outdoor activities skills, coaching and training
- Field studies in environmental conservation
- Organisation and marketing of events
- Enquiry based learning in HNC Building and Foundation software development
- Role play
- Business start up
- Reflective practice based on work experience and teaching practice
- Peer assessment
- Following the key themes of 'Every Learner Matters' leads to use of active learning styles

Does active learning involve students participating in any of the following?

Table 4 indicates areas where active learning styles are utilised.

Table 4 Active Learning Opportunities

Context for Active Learning	% of Respondents
Community based work	56%
Business related work	91%
Volunteering activities	41%
Classroom based activities	94%
Other	19%

Some of the other opportunities identified for engaging students in active learning styles include:

- Exhibitions, shows and events
- Travel
- Placements and work based learning

In your opinion, has the college’s approach to sustainable development actually prompted active styles of learning?

A significant number of respondents (43%) think that their college’s approach to sustainable development has prompted active styles of learning, and another 3% think that it probably has; nevertheless just over half the respondents (53%) did not think that there is a link between the sustainable development approach and active learning styles. One college indicated that active learning styles were adopted prior to sustainable development policy development.

Table 5 shows the percentage of respondents identifying the issues which impact on the college approach to sustainable development.

Table 5 Issue influencing sustainable development

Issue	% of Respondents
Environmental considerations	69%
Social justice & community considerations	69%
Vocational & commercial considerations	94%
Other	nil

Have any of the active learning practices identified contributed directly to the implementation of the college’s sustainable development strategy?

15% of respondents believed that active learning practices contributed to the college sustainable development policy.

Some examples include:

- Consultancy projects and work based learning opportunities selected often have environmental and social justice considerations
- Student driven approach to learning with the college Estate Director and Health and Safety Manager
- Learning practices create interest in college’s sustainable development policy and practice

- College is developing HE strategies and when ready will include sustainable development

Have the active learning practices contributed in any of the following ways?

Table 6 indicates the percentage of respondents who recognise the contribution that active learning practices bring to a variety of learning contexts.

Table 6 Contribution of learning practices

Active Learning Practice	% of Respondents
Student projects	96%
Student representation & participation	62%
Community engagement	38.5%
Volunteering	35%
Other (inc work placements)	8%

Does staff development promote active learning styles in support of sustainable development?

57% of respondents report that staff development promotes active learning styles in support of sustainable development.

It is interesting to note that whilst 47% of respondents with an sustainable development policy or strategy, responded that staff development is used to promote active learning in support of sustainable development; 69% of those without an sustainable development policy state that staff development does promote active learning in support of sustainable development.

Some examples of how staff development activities promoted active learning in support of sustainable development include:

- Use of managed learning environment (MLE) and distance learning
- Social mobility & community development
- Emphasis on kinaesthetic and personalised learning strategies
- Teaching & learning support
- E-learning and blended learning
- CPD opportunities involve work experience with local business and local business contract for sustainable awareness raising
- CPD programme 'Promoting Active Teaching and Learning' for all college programmes
- sustainable development policy endeavours to embed sustainable development education into all curriculum areas
- Under development - sustainable development will be embedded in CPD for all staff. sustainable development programmes will be implemented and a college champion identified
- Promote community cohesion and internationalisation as well as community support/involvement in a range of projects

- Staff development supports awareness and understanding of sustainable development and makes recommendations and highlights good practice in integrating sustainable development principles through teaching and learning

Is the college expanding HE provision?

Almost all the respondents (97%) are expanding their HE provision.

Most intend to offer new foundation degrees in a wide range of subjects and in collaboration with local employers to meet their requirements, and a smaller number in partnership with local universities. A number of others intend to grow student numbers on both existing and new courses.

Will new courses include any focus on sustainable development?

Whilst a small percentage (15%) replied Yes, 61% of respondents replied that new provision would possibly include a focus on sustainable development.

Conclusion

The survey set out to explore whether sustainable development promotes active learning approaches to teaching and learning; and to what extent active learning styles contributed to the delivery of sustainable development policies or strategies.

50% of those respondents who have an institutional sustainable development policy or strategy, indicated that the college's approach to sustainable development did promote active learning styles. The other 50% promote active learning styles in their HE courses, but do not make a link to sustainable development.

Respondents provided a range of contexts utilising active learning opportunities. Two of the most significant contexts identified are classroom based activities and business related. The emphasis on business related contexts probably reflects the vocational strengths of the provision, in particular in this sample, business and management, ICT & computer science and engineering. This could also be attributed to the fact that all respondents offer foundation degrees in addition to other forms of provision. Foundation degrees aim to give people the intermediate technical and professional skills that are in demand from employers, and to provide more flexible and accessible ways of studying. Whilst this result might not be too surprising given the long history of FECs responding to local employers' technical and vocational needs, the pressure for all occupations to act more sustainably is a new and significant driver. (Martin, *et al*, 2008). The introduction of foundation degrees was identified as an opportunity for curriculum reform based on education for sustainable development principles. It was argued that many leading edge companies implementing the sustainability agenda could provide work experience placements and curriculum partnerships in the

design of relevant foundation degrees. (Martin et al, 2004). This survey indicates that some of these opportunities are beginning to be realised.

The survey response to the second objective, namely, to what extent does active learning contribute to institutional and learner capacity to deliver sustainable development is less clear. The response indicates that connections between active learning and institutional capacity are not being made. Whilst 91% of respondents utilise active learning styles, only 15% believe that it has contributed directly to the college's approach to sustainable development. This result probably reflects the priority given by colleges to the link between active learning and the vocational specialism; but the link between active learning and sustainable development is not explicit. This could be interpreted as the response of colleges to government policy directives in respect of skills, employers needs and workforce development, indicating a priority to economic drivers rather than the wider dimensions of education for sustainability. This is hardly surprising because most of the teaching staff and employers will be focussed on the skills currently in demand and are less likely to consider future skills needs.

“... occupational skills are largely task specific, and yet much of the sustainability agenda is interdisciplinary or cross-professional. Second, the sustainability agenda is both current and future orientated, whereas occupational skills training is normally about the present needs of the workforce (i.e. the notion of people being ‘work-ready’). This has led to the idea that skills for sustainability need to be ‘future-proofed’ to be of value. Third, the sustainability agenda is both local and global, yet skills are normally delivered within a narrowly local context, although they can influence global economies through supply and demand of such skills. Fourth, sustainability is about uncertainty and precaution whereas occupational skills training is likely to focus instead on the narrower realms of health and safety.” (Martin et al, 2008)

Active learning offers a way into learning about the complexity and uncertainty of sustainable development, as well as potentially changing attitudes and behaviour. There is a growing body of evidence which suggests that active learning approaches can help learners to understand what is happening in the sustainability arena; it can also assist them in exploring new avenues at their own pace as well as facilitating their participation and identifying their personal role and responsibilities.

Whilst a majority (57%) of respondents say that staff development promotes active learning styles in support of sustainable development, the disconnect between sustainable development and institutional capacity raises some questions about the respondents understanding of the wider context of sustainable development. This is reflected in the following response: “*Active learning styles are promoted (in staff development) in support of high quality teaching and learning. Addressing sustainable development is one part as is equality, diversity, self-development etc.*” This could be interpreted as an indication that sustainable development is not perceived as an integrating

strategic theme. Perhaps sustainable development is still considered an add-on rather than part of a systemic process.

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