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## **Embedding Sustainability Into the Higher Education Curriculum: Lessons from the UK's Green Academy Change Programme**

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**Abstract:** Universities are facing increasing pressures to change the educational programmes they offer in order to make graduates fit for future citizenship and employment in the 21st Century. These demands come from a complex array of contemporary issues including societal, economic and environmental challenges as well as national and international policy change. Curriculum reform and innovation are beginning to take place in many universities in the UK and elsewhere in the world in response to such pressures and policy developments.

This paper summarizes the effects of an institutional change programme -Green Academy - initiated in 2011 by the UK's Higher Education Academy. It reports on progress in the first year from seven of the participating universities, and focuses on the impact of the change programme on whole institutional reform in the way universities approach education for sustainable development (ESD). It offers an overview of how the universities set about changing policy and practice in ESD in order to scale up existing activities, and how they have extended the reach of learning for sustainability into areas of the curriculum in which little or no development had hitherto taken place.

**Keywords:** Sustainability; Curriculum Reform; Higher Education.

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## 1. Introduction

Universities are facing increasing pressures to change the educational programmes they offer in order to make graduates fit for future citizenship and employment in the 21st Century (Martin and Jucker, 2009). These demands come from a complex array of contemporary issues including societal, economic and environmental challenges as well as national and international policy change (Martin et al, 2013). Recent UK policy pronouncements on the green economy are an important example of such policy change (BIS and DECC, 2010 and Luna et al., 2012). Curriculum reform and innovation are beginning to take place in many universities in the UK and elsewhere in the world in response to such pressures and policy developments. Examples include the universities of Aberdeen, Southampton and Keele in the UK, Melbourne in Australia and British Columbia in Canada.

The volume and intensity of such contemporary change requires a system-wide approach to institutional curriculum reform and innovation, because the majority of the change in higher education arises from systemic external and internal sources which have varied and contested policy dimensions (Wals and Corcoran, 2012). Adopting a ‘whole institution’ approach in itself raises a number of questions. Change on this scale cannot occur organically. It requires explicit and skilful management along with a strategic emphasis on institution-wide communication to raise awareness of the need for change, and then to gain commitment to the widespread embedding of the curriculum change process. This needs to be integrated along with appropriate monitoring and evaluation to measure progress (Scott and Gough, 2003; Trowler, 2010).

In response to these policy changes, the UK’s Higher Education Academy (HEA) Education for Sustainable Development (ESD) team announced a new institutional change programme in 2010/ 2011 based on the idea that several institutions were beginning to take a holistic approach to sustainability, linking together campus, curriculum, community and in some instances culture too.

Examples of such institutional developments include inter alia the universities of Bradford, Gloucestershire, Plymouth and Kingston. The HEA team saw this new change programme as a significant development and different from the more generic change programmes offered by the HEA (HEA Change Academy, 2013). It was also unique to the UK since desk-based research indicated that, unlike the USA, there were no whole institutional ESD development programmes on offer in the UK for higher education (*Green Academy-a curriculum for tomorrow*, HEA, 2011).

Within institutions, the sustainability agenda is not, of course, evenly spread across disciplines. There is a widespread recognition of the potentially strong affiliation between the geography discipline in particular and ESD (Higgett, 2009). It is difficult not to agree with the broad premise that the geography discipline lends itself to a credible and ready engagement with global un-sustainability and hence should be a major player in adapting and transforming the broader HE curriculum. Indeed, many universities, albeit regrettably, see sustainability as the property of a select “few” disciplines like geography and environmental sciences. The downside of this is that if geographers as an “academic tribe” do not adopt ESD as a critical component of their pedagogy it has much wider academic implications for the quality and relevance of what is taught (and how) in higher education. There is also the important issue to address of whether the geography discipline should be the catalyst/facilitator of change or the champion/leader.

Under the ‘Green Academy’ change programme each participating institution was required to submit details of their current engagement with ESD and what they hoped to achieve in taking part in

the programme. An open call was made by the HEA to the sector and invited interested institutions to put together a participating team of five people consisting of: a senior manager with strategic responsibility for learning and teaching; a student representative; an academic champion as programme leader; and two other people interested in participating such as a finance director or head of estates. The structure of the programme involved a programme leader meeting followed by a two day residential at which each participating team developed a business case for embedding ESD in the university and produced inter alia an action plan for a change initiative.

The programme was based on a number of current issues facing the higher education sector:

- How can ESD be connected to, and support wider challenges in higher education, e.g., e-Learning, student engagement, graduate attributes, research and knowledge transfer?
- How can the barriers to interdisciplinary teaching, learning and research be overcome?
- How do we market sustainability? Should a higher education institute (HEI) wish to be branded as 'green'?
- Student engagement in campus and community sustainability issues is relatively well developed but how do we engage students in education for sustainable development agenda (i.e. curriculum issues)?
- How do we address the skills and knowledge of staff with regard to sustainability literacy to deliver institutions' vision and strategic plans?
- How do we address the issue of academic freedom and autonomy?
- What is the relationship between local and global engagement?
- How can we most effectively foster and strengthen partnerships between HEIs, with communities and with employers?
- How do we map expertise across the HEI?
- How do we ensure effective post-change monitoring, evaluation, dissemination and momentum?

## **2. Evaluation of the Green Academy**

The evaluation of the Green Academy built on an initial but unpublished process evaluation of the Green Academy residential workshops and expert presentations which began in February 2011 and was completed in July 2011. The process began in January 2012 and focused on assessing the impact of the change programme on curriculum reform/change, and consequent changes to institutional teaching and learning strategies. It sought to assess how other environmental activities such as those involving greening the campus had contributed towards integration of education for sustainable development into the wider undergraduate and postgraduate curriculum. It involved a series of institutional visits to conduct in-depth interviews with project team members, as well as other contributors to the implementation programme. This included students and non-academic staff as well as senior managers in the institution. All of the interviews were based on a systematic series of questions based on an ESD framework derived in part from Stephen Sterling's *Future Fit Framework* (Sterling, 2012 and table 1).

The objectives of the evaluation were to:

- Assess the impact of the pilot Green Academy change process on institutional practice in teaching and learning and curriculum review and development;
- Evaluate the impact of the Green Academy programme on wider institutional policy and practice,(e.g. quality audit; graduate employment and careers advice);
- Evaluate the effectiveness of the Green Academy programme in contributing to wider staff participation in the change programme.

**Table 1.** Green Academy Evaluation Themes.

- **Management** – focusing on the university’s mission statement; ESD policy statement/and or institutional teaching and learning strategy; senior management involvement and support; references in the university development plan; allocation of resources; role of the governing body/senate; guidance on implementation into the curriculum; links if any with institutional quality audit; relevant professional development; ESD audit; monitoring of ESD; the sustainability of ESD projects
- **Curriculum** – focusing on planning; inclusion and identification within current undergraduate and post graduate programmes and examples of teaching and learning styles which support ESD. Evidence of interdisciplinary curriculum mapping and planning.
- **Teaching** – focusing on positive role models; use of local case studies; engaging local issues; links with business and community groups, and use of, ESD associations; use of topicality; active learning; exploring issues leading to action on behalf of students; evidence in project or dissertations, for example, international links; field visits
- **Learning** – focusing on independent styles of learning; students developing their own reasoned points of view; students as active citizens within the university and in the community; active participation in reducing waste; active decision-making
- **Decision-making** – focusing on active involvement of students in institutional decision making; examples of participation and co-operation in campus environmental committees; active environmental groups; networking and community involvement; fundraising; feedback mechanisms for students to talk about university issues; careers advisory groups.
- **Employment and Careers Advice**-focusing on any impact on careers advice and employment opportunities in the green economy.
- **Specific projects** – focusing on details of specific initiatives including research that the university may be involved in; links with NGOs or other areas of funding/support; details of each project context, funding, success indicators

### 3. Key issues shaping the evaluation

A number of issues were taken into account in shaping the approach to the evaluation. First, the focus of the evaluation was on institutional practice, and the effects of the Green Academy change programme upon it. Each of the seven institutions provided a specific context into which the change

process was embedded. Indeed it was recognized that each institution had started from a different point. The method used aimed to capture these differences as they would have a significant role in explaining the effectiveness of the change process.

Secondly, the Green Academy change process is a relatively small scale intervention intended to have a large amount of leverage by creating change agents and building capacity in institutions for effecting institutional change i.e. to have a catalytic effect within each university. An important consideration was not just to focus on these agents, who will likely be enthusiasts in the process, but to engage with a wider sample of senior university managers (Pro Vice Chancellors or equivalent), staff and students.

Finally, the evaluation had both formative and summative aspects. In summative terms, the evaluation aimed to provide an objective view of the Green Academy's effectiveness. At the same time, it provided an opportunity to inform development of the Green Academy approach through the drafting of case studies, but also by providing a report which provided feedback to the institutions that were involved (McCoshan and Martin, 2012). The seven universities which participated were: Nottingham, Keele, Worcester, Canterbury, Bristol, Southampton and Trinity Saint David Wales.

#### **4. Results**

The evaluation found that participant teams focused on the five key areas summarized below:

##### *4.1. Changing the Institutional Strategy*

All Green Academy teams addressed how to make sustainability part of institutional strategy and initially institutions shared two features. Firstly, the articulation and knowledge of sustainability curricula had previously been extremely scattered. Further, whilst academic disciplines traditionally interested in the subject, such as geography and environmental sciences, had tended to be the loci of sustainability,, approaches to embedding ESD in the curriculum had not generally been based on these traditional disciplines nor in general had academics from such disciplines been champions or leaders in the change process. Secondly, sustainability-related activity had often been estates-led and environmentally focused.

The Green Academy teams therefore concentrated on widening approaches to include economic and social aspects as one way to engage disciplines which had not placed sustainability high on their agenda. They analysed current provision patterns and identified opportunities for engaging with staff in academic disciplines beyond the “usual suspects”. Some teams conducted surveys, some audits, although systematic approaches were the exception rather than the rule.

In all cases the programme, in the words of one participant, gave “a boost to be more explicit about education for sustainable development in the strategic plan”. In one institution, the initiative developed around sustainability was seen by senior management as being “incredibly valuable to delivering the strategic plan as a whole”, including, for example, the development of local community partnerships. A few institutions in particular identified sustainability as a unique selling point. Where wider institutional changes were taking place, sustainability was used as a “glue” to bind new structures. Some identified profound institutional changes: “in mid-2010, I wouldn’t have dreamt a chapter [on sustainability] in the strategic plan was possible” (Green Academy Team Leader).

#### 4.2. *Embedding Sustainability in the Curriculum*

The teams adopted varied approaches, tailored to their particular contexts, with different degrees of compulsion and encouragement. Sustainability was regarded as so important to one institution's future that each faculty was required to offer one new undergraduate and one new postgraduate sustainability-related programme for the 2013 student intake, and to embed sustainability into 15% of all student experiences. Another sought an elective in sustainability which would "at a stroke ... put sustainability at the heart of the undergraduate curriculum" since it would be only one of a handful of electives available in the whole undergraduate curriculum.

Other institutions rejected compulsion as it would not lead to genuine buy-in by staff. One institution's previous system of optional modules contained no incentive for departments/faculties to encourage students to take cross-disciplinary subjects like sustainability. A module might be compulsory to students, but would not be compulsory for staff to deliver and so would remain unembedded. This institution's Green Academy team preferred to work with departments, demonstrating sustainability's relevance to each discipline and establishing its fit within departmental cycles of course (re)validation. In one institution funds were allocated within a planned initiative supporting staff time to develop new curricula, teaching and learning. This institution found sustainability was "a wonderful catalyst for reframing the curriculum".

Where sustainability developments had been strongly estates-led, the programme in one university fostered connections between informal and formal curricula. This approach was advantageous where academic autonomy was particularly strong. Accreditation of sustainability elements was important for stimulating take-up here, especially amongst mature students with domestic and employment commitments and limited time for informal curriculum activities.

Teams emphasised that their institutions had often been delivering ESD without realising it. All participants worked closely with their students and staff to link sustainability with their disciplines. Activity was brought to the surface, labelled and made more coherent by removing overlaps and filling gaps. For example, one business school agreed to move its business ethics module into a new sustainability elective.

#### 4.3. *Developing the Institutional Narrative*

All teams sought to raise sustainability's profile. Some sustainability activity within institutions was already visible through recycling schemes and high profile "green" capital building programmes. But even these recognised the need to develop an institutional narrative around the wider definition of sustainability. The Green Academy was widely publicized within every institution as part of the profile-raising process. In the words of one participant, the Green Academy had been used to "move ESD above the radar". Sustainability's profile institutionally was a key reason for some doing the programme; sometimes, whilst the team participating in the Green Academy knew that their institution was doing well, the institution itself did not.

Developing the institutional narrative involved tackling perceived disciplinary stereotypes. For example, sustainability was often identified with particular subjects rather than being seen as relevant to all disciplines. Some staff also attached negative perceptions to the word 'green', adopting other descriptors including 'sustainability' and/or 'education for sustainable development' in

communications. Some university teams offered presentations/seminars to faculty boards or groups throughout the university to explore the language of sustainability and offer ways forward.

Teams discovered that how the sustainability message is communicated is as important as the message itself. Their methods included: discussions with key committees; profile-raising events; presentations and discussions with faculties; and the generation of case studies, often in subject areas not normally associated with sustainability. Teams reported the need for the institution to demonstrate its commitment to sustainability visibly on campus, as well as in curricula.

#### *4.4. Engaging Management*

Teams' presentation of a systematic and formally organised message to faculty and departmental heads was perceived as vital to strategy implementation, narrative development and curricular integration. The key challenge was to convince those not traditionally focused on sustainability that it is as important for them and their students to engage as anyone else. Some Green Academy teams launched their own sustainability programmes, others charged faculty heads with ensuring that each department identified the role it could play in respect of sustainability. Good practice examples helped both approaches. As one informant commented, "once people saw they could do it within the discipline, it took off."

#### *4.5. Engaging Students*

Including students in Green Academy teams emphasized their importance in developing sustainability activities and supporting change. Participation enabled students to develop their own perspectives and empowered them to play significant roles. In one institution, the fact that students themselves articulated demand for a sustainability curriculum enhanced the impact on their academic audience.

The important role of students in stimulating demand for sustainability was harnessed by some institutions. In one, the student union gathered student views on ten possible elective pathways: three were popular, including those that emphasised sustainability.

Students had sometimes been key contributors to developing the informal curriculum on campus, often led or facilitated by university sustainability teams based in estates departments. This demand was now extended beyond seeing sustainability as a subject matter to seeing sustainability as an opening up of new teaching and learning methods. Students were reported as wanting sustainability to be discovery-based rather than fact-based, with learning through activity. This resonates with higher education increasingly recognising students as dynamic "co-producers" of curriculum and learning.

### **5. Conclusions**

As a consequence of the Green Academy, institutions progressed sustainability agendas more quickly, in different ways, across a broader front, and/or on a bigger scale than would otherwise have been possible. The process enabled participants to engage strategically with their institutions, embedding sustainability within strategic planning where before it had either been absent or confined to a narrower environmental definition. Individuals in the teams gained confidence to engage with

senior managers, and implement action plans to stimulate curriculum developments. The programme heightened awareness of students' role and raised awareness of sustainability, in some cases supporting the development of a comprehensive sustainability narrative involving presentations, institutional newsletters and high profile celebration events within institutions.

The evidence also suggests that systematic mapping of sustainability in the curriculum had not yet become widespread, and, related to this, targets for embedding sustainability remained underdeveloped. With respect to mapping, this situation meant that a number of institutions had relied on informal intelligence about what was going on to identify opportunities. This approach was quite understandable since the focus had been up until now on getting activity started. Clearly, however, moving the change process forwards would require more systematic approaches to support the integration of sustainability into institutional strategic plans, e.g. by setting targets and monitoring progress, especially where embedding sustainability in the curriculum had not taken the form of electives and might therefore be hard to make 'visible'. Where a more bottom-up approach has been adopted, mapping and targeting arguably has a more important role to play in understanding what local ESD activity is taking place. As one informant put it, "clear targets and deliverables are key to mature engagement".

An important question for the seven institutions involved is: where next? How can the momentum that has been built-up be maintained? How can the achievements be rolled out more widely and in greater depth, really ensuring that sustainability becomes a part of everyday teaching and learning? How can progress in the areas identified in Table 1 be made? Helping institutions to address these questions could be a useful function for the Higher Education Academy itself.

Only so much could be achieved in the year following the residential meeting in 2011. Familiar obstacles remain: lack of time and resources, and discipline silos (Martin, Dawe and Jucker, 2006). Action in some areas has yet to take place in many institutions, notably, in the areas of leadership, mapping, target setting and monitoring (with notable exceptions). And yet foundations have been built, and the Green Academy teams have shown what can be achieved with small scale resources in a context of financial constraint. Solid bases have been established on which significant further progress could be made.

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