An Integrative Approach to Sustainable Development Within a University: A Step-Change to Extend Progress on Multiple Fronts

Chris Shiel and Neil Smith

Abstract This paper adopts a case-study approach describing how one institution has sought to maintain an integrative approach to sustainable development, in an institutional context that has served to fragment holistic ways of working. The paper sets out the institutional context before outlining the interventions, designed to achieve a step-change and to take engagement with sustainable development to a further level. It is suggested that achieving awards such as 'EcoCampus Platinum' are important to demonstrate environmental credentials however, securing the support of a university's senior educational committee is vital, if all students are to experience education for sustainable development (ESD). Working across the institution, particularly in partnership with academic groups and the Students Union is a further way to increase engagement and momentum. The paper argues for the importance of integrative approaches but suggests that maintaining integration poses challenges; initial successes should not be taken for-granted; maintaining momentum across all fronts requires substantial effort from academics and environmental managers. An evaluation will be provided of the strategies adopted to achieve both an award and the support of a broader group of academics engaging with ESD. A summary of the lessons learned from the experience will be of value to others.

Keywords Integrative approaches to sustainability · Eco-campus · Leading change

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1 Introduction

The need for integrative approaches to sustainability within higher education has been argued previously (Leal Filho et al. 2015; Sterling et al. 2013). Universities need to contribute to sustainable development through research, by ensuring that sustainable development is considered within the entire curriculum and in the extra-curricular sphere, and through working in the community to both educate and build capacity. Synergies will be created by working holistically. At the same time, institutions need to manage their estates in ways that exemplify best environmental practice and strive to achieve a culture such that sustainability is embedded in the fabric of every university activity—something that remains a challenge to achieve (Sterling et al. 2013). However, across the world, and particularly in the UK, it is quite evident that while many universities have exemplified 'campus-greening' and focused on environmental management, there are fewer examples of integrative approaches (Leal Filho et al. 2015). There is still, much further to go (Brennan et al. 2015; Amaral et al. 2015) if higher education is to make a full contribution to sustainable development.

It is in the context of a desire to work holistically and 'go further', that this paper has been developed. The case study considered represents the learning from a single university setting where historically, engagement with sustainable development has been ambitious and extended from the outset to encompass all aspects of university life. A single site case study obviously has limitations but as Sharpe (2002) suggests such learning is important to inform processes of systemic transformation across the higher education sector; therein, lies the value of this paper. Further, it sets out a number of actions that were taken to advance sustainable development across institutional domains exemplifying a collaborative endeavour between an academic and a practitioner, seeking to align an integrative agenda. The reflection on experience will be of relevance to those seeking to develop integrative approaches and cross-boundary relationships.

2 Integrative Approaches to Sustainability

A holistic and transformational approach to sustainable development within a university requires systemic change and new ways of working (Sterling et al. 2013; Wals and Corcoran 2006). Champions of change need to challenge silo mentalities and to develop processes which encourage synergies across university functions, striving to re-align systems and goals towards the common endeavour of sustainability (Shiel and Williams 2014). The aim is to move beyond one dimensional approaches, such as campus-greening (which is important but not enough on its own) and curriculum initiatives, where "integrating sustainability" merely results in the development of a single module as an "add-on", or "package of knowledge" (Haigh 2005) to approaches that synchronise the efforts applied in any one dimension to other dimensions. The ambition is to drive whole-institutional change,

systemic transformation, and to encourage others to engage in a radical re-thinking of the purpose of education.

In a sector that is "notoriously resistant to change" (Wals and Blewitt 2010, p57) achieving such a step-change is not an easy task. The evidence continues to suggest (at least within the UK) that while a few institutions exemplify such ways of working and are exploring institutional change (as Walls and Blewitt note, "third-wave sustainability"), there are far fewer examples of what might truly be described as 'the sustainable university' (Sterling et al. 2013). Most universities find it easier to focus on campus greening and environmental management (Shiel et al. 2015) as singular initiatives; curriculum change is sometimes opportunistic rather than part of a strategic and integrative endeavour, rarely linked to campus greening. Addressing sustainability across campus, curriculum and community (Jones et al. 2010) means pushing boundaries and overcoming challenges.

Finding new ways to align campus, education, and community is essential; combining academic and practitioner knowledge is important for sustainability research (White 2013) but will also be valuable for enhancing the learning experience of students and the institution. While there is no single way to achieve an integrative approach, if the aim is to develop a culture where sustainability is owned by all stakeholders and permeates the institution, the efforts of professional services/administrative staff and academics need to be aligned; maintaining collaborative relationships across boundaries is an essential element of working holistically (Shiel and Williams 2014).

A brief account of the institutional context follows before collaborative actions taken to address a step change are described.

3   The Context

Bournemouth University (BU) is a medium-sized UK university, inaugurated in 1992, with around 17,000 students, 650 academic staff and 800 professional and support staff. Environmental issues became a focus of attention at the end of the nineties with a concern for saving resources, particularly utilities. Engagement with the broader concept of sustainable development was not a significantly strategic issue until 2005, when a strategy was developed for the whole institution; from 2006 this strategy embraced both global citizenship and sustainability (Shiel 2007). The strategy outlined the importance of a holistic approach and emphasised integrative ways of working on over-lapping agendas (Shiel et al. 2005). Since then, a variety of initiatives have been pursued to enable the institution to progress towards being a sustainable university (in the sense used by Sterling et al. 2013). The success of the approach, which is not dissimilar to the "4C" model at Plymouth University (Jones et al. 2010, p7) has resulted in a number of institutional awards, a consistent placing in the top ten, of the People and Planet University League, and substantial journey of change. The current strategic vision for the university now makes clear commitment to sustainable development, with the aim of "inspiring our

students, graduates and staff to enrich the world", and the assurance that: "we will ensure our environmental credentials are held in high esteem" (BU 2018). Further, the 2012–2018 Strategic Plan refers explicitly to "a holistic approach to SD" (p30), the need to "ensure that graduates develop a global perspective and understand the need for sustainable development by seeking to embed sustainable development across the curriculum" (p19) and the need to "ensure BU operates an affordable, sustainable and secure estate" (p53).

An appraisal would suggest that the institution has done more than many universities, and moved much further than a campus-greening approach since 2005. However, maintaining momentum has not always been easy, as an evaluation of the challenges revealed in 2013 (Shiel and Williams 2014); those leading the agenda have to continually critique their approaches and instigate new initiatives if progress is to be maintained. Since 2014, a new appointment to the role of Environmental Manager has contributed to refocusing efforts: the job title was changed to Sustainability Manager; the Environment Strategy Committee became the Sustainability Strategy Committee as a consequence, with a smaller membership but with greater academic representation and a more strategic focus. At the same time, commitment to education for sustainable development (ESD) has been made more specific in policy documents with a goal of achieving more critical engagement. While there are undoubtedly several courses that exemplify sustainable development, for example, the MSc Green Economy (Newton et al. 2014), sustainability is less considered in some provision. In short, ESD needed a further push to extend engagement; further work was needed to raise the profile of the academic agenda and to seek alignment with campus greening efforts.

4 Interventions to Take Sustainable Development to a New Level—Greener Campus and 'ESD +'

In order to gain further traction and develop integration further, three particular courses of action were pursued to contribute to change.

- Reinvigorating the education agenda
- Achieving the highest credential to exemplify best practice in the environmental management of the Estates (EcoCampus Platinum and ISO 14001)
- Developing the culture and building capacity by working in the extra-curricular sphere—initiating Green Impact teams across the university.

The three actions will be commented upon in turn. They each contribute towards two further objectives:

- Exemplifying holistic ways of working by creating synergy between the academic endeavour and the professional services responsibility
- Communicating across the university the sustainability agenda.

5 Reinvigorating the Education Agenda

Although BU was one of the first institutions to implement institutional curriculum guidelines to ensure that all course teams consider how to incorporate ESD when developing new provision or at the re-validation of existing provision (see Bourn and Shiel 2009; 672), it has not necessarily resulted in full coverage across all programmes. The Sustainability Strategy group concluded that a further push was needed to engage all Faculties; the best way to achieve that goal was to raise ESD at the Education and Student Engagement Committee (ESEC) and to stimulate an academic debate. ESEC is chaired by the Deputy Pro Vice Chancellor (Education) and has members from across the institution, with all Faculties and those in Professional Services with educational responsibility. Students elected to the Students Union also participate. Achieving approval to schedule a debate item in what is always a very full committee agenda, was an objective that was not immediately achieved. Several approaches had to be made to the senior team, however, once agreed, the debate was scheduled as a substantive item with time allowed for a short-presentation followed by a formal debate to discuss further actions.

The authors prepared a presentation that highlighted the drivers for an integrative approach, the report from the National Union of Students (NUS 2015), an analysis of the current situation, opportunities for doing things differently i.e. going beyond the current position, and the potential for moving from addressing ESD, to an 'ESD+' approach. The latter would promote academic and practitioner collaboration, greater collaboration between campus and curriculum, and greater participation of students.

The debate was successful in raising awareness, securing engagement and developing actions. Formal actions agreed in the minutes note:

- The provision of sustainability staff development, through the "PG Cert in Education" module and/or provide lunchtime training sessions in order to introduce the change in staff culture which would be passed on to students;
- The Green Task Force providing workshops for staff and students to attend which in turn would have a good impact within the University;
- Strengthening guidance for programme development;
- Raising awareness of sustainability and how to promote the legacy messages on the hoardings which currently border the new "Fusion Building 1" (a new build where sustainability messages have been writ large);
- Consideration of brave and bold statements and initiatives for sustainability e.g. a bottle free campus (suggested by students as an action they would like made compulsory).

Further, the Chair hoped that the sustainability message could be driven forward effectively across the University community, and members were requested to disseminate this essence of the discussion across the institution.

It is too soon to comment on whether the approach will result in further inno-vation however, all Faculties are now required to respond to ESEC actions and report back. The presentation also served to introduce the Sustainability Manager to the Faculties, to reinforce success to date and projects in development, and to sow the seeds for extending collaborative learning opportunities for sustainability pro-jects (within the curriculum and in the extra-curricular sphere).

The approval of inclusion of a sustainability focus on the PG Cert in Education was an important step, as all new staff participate in the programme. Further invitations to deliver staff development have also resulted, plus an invite to write a blog for the Centre of Excellence in Education. Workshops for staff and students are being developed and the guidance for curriculum development will also benefit from being strengthened. As communication is key for success (Djordjevic and Cotton 2011) presenting at ESEC was a message in itself; the sanction to develop sustainability messages (effective messages are currently being used to screen building developments on campus) so that sustainability efforts are more visible in the future, was also an important outcome.

Students who were on the committee were active participants in the discussion. They reinforced for academic colleagues that students want to learn more and engage with change. They confirmed support for the outcomes of the National Union of Students Survey (NUS 2015) but also suggested that sometimes it would be better if top-management made decisions that are enforceable, i.e. "a ban" on unsustainable products/actions as a way forward.

6   EcoCampus

In parallel to efforts to enhance ESD an important goal was to validate the uni-versity's practice in relation to environmental management through "EcoCampus" accreditation. This would further reinforce that while the university advocates greener behaviour for students and staff, it is also striving to manage its business in ways that are sustainable.

EcoCampus was designed by the sector to help universities implement envi-ronmental management systems (EMS). An EMS is a risk management tool to minimise the impact on the environment whilst also promoting positive impacts, such as Education for Sustainable Development (ESD).

EcoCampus splits the international standard for EMSs (ISO 14001) into four bite sized pieces: Bronze (Planning); Silver (Implementation); Gold (Operating) and Platinum (Checking and Correcting), where the Platinum award is the equivalent of ISO 14001.

BU started implementing its EMS following the EcoCampus model in autumn 2008 and re-secured "Gold" in July 2014. Developments to take the university to the next level slowed in 2014, but further actions for progress were carried through in 2015. EcoCampus Platinum and ISO 14001 certification were awarded at the end

of the year, following an external audit. This was an important achievement as BU is now one of only 15 Universities to achieve the result of dual certification.

Adopting a more integrative approach means that BU's Sustainability Policy and EMS scope includes embedding sustainability in the curriculum. This is reflected in the aspects and objectives and targets' registers. These are now key elements of the EMS, where ESD sits alongside the more standard tasks of minimising the harmful impacts the University has on the environment, such as energy and water use.

BU's EMS now provides a structured approach, supported by senior management, to continual improvement with its ESD programme. The three year external audit cycle for retaining certification will also provide checks to ensure BU continues to innovate in its curriculum offer (further reinforcing integration).

7 Staff and Student Awareness and Engagement

The third intervention related to a number of actions to build capacity and encourage more sustainable behaviour. BU recognises that whilst implementing technological solutions will help reduce its environmental impact, it also needs its staff and students to do their bit by adopting more sustainable habits, such as switching off equipment and recycling. There are great opportunities to link the development of such behaviours through the curriculum, extra-curriculum and campus management.

BU has a calendar of events planned throughout the academic year to raise awareness of, and engage with, staff and students about sustainability. This year BU has signed up to the NUS's staff engagement programme, Green Impact to encourage and reward positive sustainability behaviour. Staff teams implement sustainability initiatives following criteria in a workbook which has been tailored to the institution and is split into bronze, silver and gold award levels.

BU students will be trained as auditors to check the evidence provided by staff to show how the teams have met the criteria. Staff involvement and their achievements are recognised and rewarded.

Many Universities have used this model to engage with their staff and it is hoped BU staff will deliver change at a local level and have some fun at the same time.

BU has also signed up to the NUS run Student Switch-off inter-halls energy competition. Students signed up at Freshers' Fair and take part in mini competitions to show off their energy saving behaviour using social media. The hall that saves the most amount of energy together with good evidence of student engagement through the year wins the competition and will be rewarded at the end of the year.

Again this model is based on encouraging individuals to adopt more sustainable habits whilst having some fun and winning prizes.

8   Discussion and Lessons Learned

The approach at BU, as might be expected in an institution that has sought a holistic approach from the outset, has exemplified each of the patterns that Barth and Rieckmann (2013) suggests are distinct ways that institutions engage with sustainability: top down institutional approaches, bottom up, and sustainability as the environmental management of estates. The approach followed hitherto, has also acknowledged the importance of those in middle management roles (Brinkhurst et al. 2011) and strategies to 'middle-out' initiatives. Such approaches are challenging to maintain (Shiel and Williams 2015) so those leading change need to continually find ways to ensure that momentum is not lost. The actions outlined in this paper have sought to make a step-change on multiple fronts. Top-management support has been visibly reinforced; further bottom-up initiatives will result from students; Faculty staff will engage further with the agenda across BU (middling out). Further, the interventions deployed during 2015 have enhanced communication about the university's commitment to sustainable development.

The importance of engaging senior management in taking forward sustainable development is critical in the early stages (Kemp et al. 2012) but it is also worth noting that commitment has to be reignited from time to time as leadership and strategy changes (Shiel and Williams 2014), or other agendas overshadow the focus on sustainability. In this case study the very act of seeking to get an item on the strategic committee for education, served to engage the Deputy Vice Chancellor Education. It also secured the attention of the Deputy Deans Education in the Faculties to revitalise the agenda. Achieving EcoCampus Platinum has also secured further acknowledgment and commitment from the senior team.

It is also important to remember, when working with Students' Unions that leadership of the Union also changes; commitment thus, also needs reinforcing. The presentation to ESEC together with participation in Green Impact with students auditing staff endeavours has served to create further synergies with the student body. This will facilitate further campaigns.

Staff development is vital for capacity building (Desha and Hargroves 2012) and for transforming the curriculum (Cebrián et al. 2012). Staff development has been a key feature of BU's efforts but the opportunity to contribute further and through a formal programme will extend reach.

In relation to EcoCampus, celebrating progress at each stage of the model with implementing the EMS was vital in maintaining momentum with the scheme. However, there needed to be greater involvement and engagement with staff on the implementation of the EMS to ensure staff are aware of their responsibilities for managing their activities. It is not the responsibility of one person or one team to do this and without that wider participation the full benefits of the EMS will not be realised.

Embedding an EMS into the culture of the organisation will take time. One of the paper's authors recognised it took five years after implementing an EMS in the National Oceanographic Centre, Southampton to see a change in the culture of that organisation.

With regard to Green Impact and building staff and students' capacity, the resources needed to support staff in signing up to the scheme and then for maintaining their participation should not be under-estimated. The Sustainability Team managed to recruit a further member of staff to support the scheme, just before launch, and so communication was not as well planned as it could have been. However, now the new team member is working well with the NUS to encourage more teams to sign up and to support those currently recruited.

The scheme has been taken up by teams in Professional Services but less so by academics. Having the time to complete the workbook has been cited as a reason for this lack of engagement. It has also been suggested that an engagement scheme that is more in tune with academics work may yield a more positive result.

While students have generally been enthusiastic about engaging with initiatives the "Student Switch-off" campaign has not been entirely positive. There were problems with the heating controls in student rooms in one of the participating halls, leading to the overheating of rooms. As a result students have questioned the value of them trying to save energy through the scheme when they see such wastage.

On the whole, the interventions taken to achieve a step-change have contributed to moving things forward and expanding engagement. They have undoubtedly extended communication about sustainable development and will in time, contribute to further organisational learning. They have exemplified partnership working across organisational boundaries, something that is at the heart of an integrative approach. Further developing the initiatives and reflecting on experience for this paper, has served to develop further the relationship between the academic lead for the agenda and the Sustainability Manager, a relationship which has been highlighted previously as essential to an integrative approach (Shiel and Williams 2014) and which continues to be important for progress. It will lead to further research and will result in co-creation of research projects with students.

9   Sustainable Development Research

While much could have been said in this paper about the substantial research at BU that is discipline based and addresses directly the various components of sustainability, for example, coastal conservation, sustainable design, engineering solutions, etc., the authors have omitted such inclusion in this paper. That is not to say that such research is not essential and valuable but to highlight that to achieve sustainable development, what is also needed is research that focuses on leadership and change management and particularly research to build capacity and holistic ways of working. As White (2013; 171) notes "Sustainability research is about much more

than merely knowledge domains": researchers themselves can participate in the change process; sustainability research needs to extend across disciplines and structural boundaries.

As befits an 'integrative approach', this paper has focused on the research and actions needed to take forward sustainable development across institutional domaines. The authors have contributed to the change process. Actions cannot be taken forward without researching change; actions themselves (with reflective processes embedded) lead to further change; evaluation reveals what does and does not work, leads to further research, and informs better approaches for collective action. The ongoing approach at BU seeks "to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities" (Reason and Bradbury 2001, p1). A critical inquiry methodology, participative action research and cooperative inquiry have supported the development of the approach (Shiel 2013) to mobilise change (Shiel and Williams 2014). Such research is not only valuable in that it contributes to an emerging dialogue on how we build capacity for sustainable development but has the potential to support the discipline based research. Discipline based research provides the scientific data and new technological solutions, but this may not be enough to achieve a sustainable future. 'Sustainability research' (in the sense used by White 2013) needs a combination of approaches and efforts. This paper has outlined a combined effort to contribute positively towards sustainability within a higher education setting.

10   Conclusion

This paper has demonstrated how one institution has sought to re-energise its efforts to exemplify a sustainable university. It has argued that integrative approaches to sustainable development are important however implementing an integrative approach to sustainability requires substantial efforts and on-going actions if momentum is to be maintained. Actions need to be addressed across multiple fronts and serve to visibly reinforce holistic ways of working by combining the efforts of academics and practitioners in professional services functions. Initial successes should not be taken for-granted. It is too easy to sit back once a sustainability policy has been endorsed and think that sufficient actions will flow as a consequence. Maintaining traction requires continual evaluation of progress and the development of new initiatives that encourage the entire academic community to participate. It is important to continually reinforce the message that the agenda is not just one person, or one team's responsibility.

Three initiatives have been described: one to take ESD to a further level, one to exemplify excellence in environmental management but which also combines ESD; a third to build capacity which in turn will impact on environmental behaviours

such as increasing recycling and reducing energy use. In totality, the interventions have extended communication and debate about sustainability issues.

The importance of working through committees that lead the educational agenda has been reinforced, as has the need to continually re-engage leaders. Every initiative needs the backing of those at the top; more initiatives are undoubtedly necessary to build capacity amongst staff and students. It is easier to strive for external certification of the environmental management of the campus, albeit that that requires considerable efforts, than it is to secure hearts and minds of all stakeholders across an institution. Gaining institutional certification lies within the control of a smaller team but still requires many stakeholders to take responsibility or continual improvements will fail. Any scheme or plan for sustainable development has to be embedded into the culture of the organisation to deliver real change; culture change is achieved more easily when it is supported by leadership from the academic and professional services areas working in partnership. Addressing sustainable development within higher education involves working in areas which yield the greatest traction but also seeking synergy by working in partnership across multiple fronts. It is also critical to engage with students to encourage a bottom-up approach to stimulate change if sustainability is to be addressed fully within the curriculum, extra-curricular and across the campus.

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