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Title: Wildlife and Society, a case study of an Interdisciplinary Higher Education Conference

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Abstract:

This paper presents a case study of an interdisciplinary HE conference entitled Wildlife and Society: challenges for a shared future. The conference, held in March 2013, was planned to allow staff and students from a range of disciplines to meet and engage in discussion of wildlife and society interactions as a lens for a deep approach to teaching sustainability. It consisted of a series of presentations by speakers from the arts and media, literature and film, ecology and wildlife conservation, environmental education, primary education, anthropology, geography and religious studies followed by an extended plenary discussion on embedding biodiversity values into teaching practice. Feedback from participants and analysis based on sustainability pedagogies indicate that the conference was an effective tool for promoting education for sustainable futures (ESF) by fostering new connections and blurring disciplinary boundaries around one common theme, by promoting holistic thinking and consideration for the multifaceted nature of biodiversity issues. Although interdisciplinary research may be notoriously challenging, due to different disciplinary approaches and paradigms, it may also provide new opportunities and solutions when different disciplinary perspectives are directed towards a common goal. In this paper we will present qualitative data from discussions at the conference itself and also data from a subsequent survey of participants in order to explore (i) experiences and perspectives on interdisciplinarity in sustainability teaching and (ii) the potential impact of the conference itself on teaching practice.

Key words: interdisciplinarity; biodiversity; wildlife and society; ESF, ESD.

The Conference Rationale

Wide sustainability issues are grounded in environmental concerns and acknowledge cultural and social dimensions, as well as economics, ethics, politics, law, technology, enabling links with a comprehensive range of disciplines (Jones, Selby, & Sterling, 2010; Winter and Cotton, 2012). Hence, the interrelationships of sustainability call for interdisciplinary approaches. Such need has been acknowledged by the Higher Education Funding Council for England (HEFCE, 2009) regarding education for sustainable development (ESD) in HE.

Similarly, it can be said that the multidisciplinary nature of the Wildlife and Society Conference is a result of the intrinsically multidisciplinary and mission-oriented nature of the discipline Conservation Biology. Conservation Biology emerged in the 1980s as an attempt to target and arrest the global
decline in biodiversity (Newing, 2010a, 2011). Due to the nature and urgency of the problems faced by biodiversity, there has been a demand for collaboration between the natural sciences, social sciences, politics, economics, enlisting academic and practical competences and skills. Bridging the gap between different disciplines such as natural and social sciences may have been slow and not without obstacles (Newing, 2010b). However, there is a consensus amongst practitioners that multidisciplinary projects in Conservation Biology benefit from time spent in building personal relationships and in discussion.

The fact that academics are mostly used to working within defined disciplinary boundaries is often seen as an obstacle to the integration of sustainability connected issues in HE (Cotton and Winter, 2010, 2012). Within the context of ESF, the conference brought together experiences in formal and informal curriculum development and the use of diverse pedagogies to explore biodiversity issues.

The aims of this interdisciplinary conference were to enhance awareness about the different ways people relate to wildlife; enhance knowledge about the different values of biodiversity; bridge the gap between different disciplines regarding people’s relationships with wildlife; promote holistic thinking and consideration for biodiversity issues. In this paper we will present qualitative data from discussions at the conference itself and also data from a subsequent survey of participants in order to explore (i) experiences and perspectives on interdisciplinarity in biodiversity teaching in HE and (ii) the potential impact of the conference itself on teaching practice.

**Interdisciplinary cooperation and biodiversity**

Studies of the relationships between people and the environment are carried out within a great variety of disciplines spanning all three of the three major faculties: the natural sciences, the social sciences, and the humanities. However whilst there is a certain degree of information exchange between disciplines, successful cooperation in the form of integrated training programmes or research projects remains relatively uncommon (Newing, 2010b). Interdisciplinary cooperation is notoriously challenging, both because of theoretical differences in the way that different disciplines are framed, and also because of institutional barriers. In theoretical terms, different disciplines frame their research differently: they ask different kinds of questions, use different vocabularies, and value different kinds of ‘knowledge’, to such a degree that researchers may find each other’s work ‘opaque and impenetrable’ (Marzano et al, 2006). This is perhaps most problematic in communications between the quantitative natural sciences and qualitative social sciences or humanities, where there are fundamental differences in the underlying epistemological and ontological premises (Newing, 2011). In addition, in institutional terms, the academy is structured to reward disciplinary purity. The vast majority of universities, research councils, academic journals and professional bodies are structured to reward theoretical excellence according to each disciplinary tradition, and researchers who attempt to combine aspects of different disciplines frequently find themselves marginalised in
terms of funding and broader career opportunities (Newing, 2010b). Indeed, there are entrenched interests in maintaining disciplinary boundaries; thus Geertz has characterised academic disciplines as tribal in terms of their allegiances and territorial defences. Interdisciplinarity is a place where researchers, teachers and practitioners cross the ‘no man’s land’ between the disciplines, making their way across the ‘academic demilitarised zone’ (Klein 1990: 78).

On the other hand, interdisciplinary cooperation is essential in addressing real-world problems that don’t fit comfortably within the confines of any single discipline. The biodiversity crisis is one such set of problems, and much effort has been expended on the challenge of integrating natural and social science approaches to biodiversity conservation (Newing, 2010; 2011). The humanities are likely to play an increasing role as well as CBD’s characterisation of conservation as a matter of societal choice comes to the fore; conservation has an important moral and aesthetic component, and whilst it has been extensively critiqued from various disciplinary perspectives, there has as yet been little theoretical discussion of ethical issues from within the institutional structures that inform conservation professionals (though for some exceptions see Sagoff, 2007; van Houtan, 2006).

The limited progress in developing interdisciplinary approaches to conservation has in large part been attributed to the lack of a cohort of trained professionals with the skills to cross disciplinary boundaries. The introduction of interdisciplinarity into teaching about biodiversity is a key element in addressing this shortcoming. Conferences and events such as the one reported in this paper therefore have great potential value in raising awareness of interdisciplinarity in current teachers and practitioners. This could be an important step in building the necessary expertise to introduce interdisciplinary perspectives comprehensively into formal degree curricula.

**Biodiversity and sustainability**

Links between loss of biodiversity and other areas are well illustrated by Jones et al (2010:19) who state:

*As sustainability issues raise further up the national and international agendas (...) the systemic links between (say) energy consumption, climate change, loss of biodiversity and poverty become more evident and the need for multiple perspectives and integrative approaches to issues becomes more accepted.*

The *Wildlife and Society Conference* exposed an audience of staff and students to a range of approaches to addressing biodiversity issues, from diverse disciplines. The multifaceted nature of our relationship with wildlife results in a complexity that is suited to multidisciplinary approaches. Wild animals elicit a variety of sometimes conflicting responses in people, ranging from fear- due to conflicts arising from territorial proximity and competition for the same resources, threat to the well-being, or predation- to fascination (Gittleman et al, 2001; Fascione, Delach. and Smith, 2004; Woodroffe, Thirgood & Rabinowitz, 2005). Our relationships with wildlife are mediated by cultural
constructs as well as by urban/rural divides, people/state and people/people conflicts (Knight, 2000; Hill, 2004; Bath, 2009). Biological diversity refers to the variety of living organisms, their genes and habitats, and it is intrinsically connected with the functioning of ecosystems and their products and services our survival depends on (IUCN, 2013). The value of biodiversity is interpreted at many levels and encompasses many dimensions. However, biodiversity is more than the sum of its parts, as IUCN puts it:

we depend on it for our security and health; it strongly affects our social relations and gives us freedom and choice. (IUCN, 2013).

Links between biological diversity and cultural diversity have become clearer as studies in human ecology and ethnobiology have recognised the vital role traditional use has played in environmental conservation (Arruda, 2000; Newing et al, 2011). In 2010 this dimension has been acknowledge by the Convention on Biological Diversity- CBD (ICBCD, 2010), which included effectively integrating biological and cultural diversity into development cooperation strategies and programmes amongst its Global Objectives.

**Sustainability pedagogies and biodiversity**

Like other challenges faced by education for sustainable futures (ESF), the complexities of biodiversity issues can benefit from a pedagogy that fosters investigation of diverse viewpoints and critical thinking. Furthermore, the sometimes controversial nature of biodiversity issues is well suited for innovative pedagogies that favour interaction and discussion. There is a Cartesian tradition in sciences education to adhere to facts, rationality and neutrality. However some argue that when dealing with complex and potentially value laden problems a better approach in HE may involve encouraging critical awareness of bias, questioning, analysing opposing arguments, their routes and implications (Oulton, Dillon and Grace, 2004; Cotton and Winter, 2010).

Collaboration and dialogue applied to problem-solving are central to ESD (UNESCO, 2011:20) as innovative approaches that promote dialogue and community problem posing and problem solving, and critical thinking are at the heart of interdisciplinarity (Klein, 2006:115). The speakers from diverse research areas in the Wildlife and Society Conference provided the audience with a wide range of pedagogies that meet the sustainability criteria of facilitating investigative learning and providing new experiences inductive to discussion, as illustrated in table 1 (see Winter and Cotton review of sustainability pedagogies, 2010, 2012).
### Sustainability pedagogies presented during Conference:

<table>
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<tr>
<th>Pedagogy</th>
<th>Benefits</th>
<th>Conference speakers presenting this pedagogical tool</th>
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| **Fieldwork**                    | - Speakers introduced the audience to the possibilities of using such pedagogy when working with biodiversity issues  
- It offers opportunities for experimental learning through direct contact with biodiversity in a holistic set up, away from the classroom constraints.  
- It allows us to experience urban biodiversity as “campus-based” curriculum and creates “a unique identity and sense of place” (Peter Vujakovic, Wildlife and Society 2013:11; Jones, Selby and Sterling, 2010).  
- Experiential pedagogy that can affect emotion (Sivek, 2002; Cotton & Winter, 2010) as well as encouraging critical thinking  
- Connecting theory with a hands-on approach it allows students to experience the living world  | Denise Taylor, Education 4 Conservation; Bridget Somers, Senior Lecturer, Department of Childhood Studies, Faculty of Education, CCCU; Peter Vujakovic, Head of Geographical and Life Sciences, CCCU; Joe Burman, Ecology Research Group, Dept. of Geographical Life Science, CCCU |
| **Case studies**                 | - Case studies can be used to bring together students and the wider community  
- They encourage holistic thinking and working together towards finding solutions  
- They facilitate transformative activities such as reflection, research, participation and action (Junyent and de Ciurana, 2008; Winter and Cotton, 2012).  
- They enable students to experience varied and contrasting stakeholders’ perspectives on biodiversity issues  
- *in situ* (see Fieldwork) they provide a direct, multi-layered contact with the environment, affect all senses and provoke emotional responses, adding multiple dimensions to the understanding of biodiversity | Denise Taylor, Education 4 Conservation; Bridget Somers, Senior Lecturer, Department of Childhood Studies, Faculty of Education, CCCU; Peter Vujakovic, Head of Geographical and Life Sciences, CCCU; Nicola Triscott, Director, The Arts Catalyst |
| **Critical Reading and Writing** | - It offered and opportunity for reflection and exploration of the audience’s own experiences, which is akin with active, productive and discovery learning  | April Doyle, Community Arts and Education                                                                          |
### Stimulus Activities
Other talks illustrated and offered the opportunity to initiate reflection about biodiversity issues from challenging starting points - a statement, a film, art installations

- Common practice in the arts
- Encouraged the audience to make new connections through reflection
- Encouraged the audience to use them as a pedagogical tool across the curriculum

Jeremy Law, Dean of Chapel, Dept. Of Theological & Religious Studies, CCCU; Nicola Triscott, Director, The Arts Catalyst; Andrew Butler, Dept of Media, Art & Design, CCCU

### Critical thinking
Some of the talks explored a wide range of arguments and proposed discussion points that question the nature of knowledge, definitions of biodiversity, and how disciplines respond to these challenges

- Inviting the audience to think critically about the issues explored along the day.

Helen Newing, Durrell Institute of Conservation and Ecology (DICE), University of Kent; Jeremy Law, Dean of Chapel, Dept. Of Theological & Religious Studies, CCCU; Ian Bride, DICE, University of Kent

### Table 1. Sustainability pedagogies presented during Wildlife and Society Conference.

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Table 1. Sustainability pedagogies presented during Wildlife and Society Conference.
Evidence based on the Feedback from participants

The Plenary session was proposed as a way to gather some of the main issues raised during the Conference and to channel participants’ thoughts towards ways of embedding biodiversity values into their own disciplines and practices. Embedding biodiversity issues into diverse disciplines can be a practical way to introduce biodiversity values to students beyond the ecology related subject areas, broadening their reach across the university community. Using evidence from the plenary session and from two feedback questions we will explore experiences and perspectives on interdisciplinarity in sustainability teaching and the potential impact of the conference itself on teaching practice.

i. In what ways have the discussions and issues raised by the Wildlife and Society Conference contributed to your views about biodiversity?

AP (Primary Education)- “...I like the variety of inputs – philosophy, media studies, environmental science. It confirmed my belief in the importance of interdisciplinary work and yes it did “add to my thinking” in a number of ways …”

SK (outreach Education Officer)- “Biodiversity isn’t just a topic within Biology– it is an area which can be tackled by lots of different disciplines. It was really interesting to hear the subject tackled by researchers from different academic backgrounds – it would be great to have more collaboration by the different disciplines to move conservation forward.”

JBur (Life Sciences)- “It was nice to see some other aspects of how biodiversity supports community, arts and education, which I often wouldn’t consider. This helps to build a stronger argument (in my mind) for the protection of diverse ecosystems in general.”

The value of interdisciplinary cooperation was one of the main recurring themes during the conference and it was reflected in the plenary and by the feedback of participants (examples above). In the context of CCCU, the lack of familiarity and ease with interdisciplinary teaching may be the most influential inhibitor to the inclusion of ESD into practice. However, feedback also suggests that the Conference approach helped to challenge pre-conceptions of wide gaps between disciplines, and helped to inspire new connections and interdisciplinary cooperation, as well as the use of untapped pedagogies.

ii. Have the discussions and issues raised by the conference helped to encourage new ways to foster biodiversity discussions in your own practice/modules? If so, how (example)?

AP (Primary Education)- “I do not have any specific examples that I can offer but anything that enhances my own understanding will (one way or another) contribute to my teaching.”
JBar (Primary Education)- “The interdisciplinary nature of the debate made it richer, more rounded and more relevant. They also have implications for curriculum suggesting that genuine cross curricular collaborations between geography and science, science and art, science and geography and music.”

BS (Education)- “Yes – I am meeting up with colleagues in my department in the next few weeks to work on validation of a new course in outdoor learning. I shall now be including ideas about wildlife and society – we are going to call it ‘Nature and Society’.”

J.Bur (Life Sciences)- “I have been discussing with BS a plan for PGLT bringing both Ecology and Education together. As ecologists we tend to work in isolation with invisible things that no one cares about... There is scope for interacting with children to conduct experiments....”

Another recurring issue raised by the conference participants was the need for a new paradigm that can accommodate fundamental changes to the ways higher education approaches biodiversity and sustainability as a whole. The need for a more whole state implied by a systemic view of sustainability (Sterling, 2004) became evident as discussions progressed towards the practicalities of implementing the pedagogies illustrated by different speakers across disciplines, both into existing modules and in reference to planning new ones. However, as suggested by Peter Blaze Corcoran (in Jones, Selby, & Sterling, 2010), if transformation is not in immediate reach, reformation is an attainable goal by the infusion of biodiversity concepts, issues and case studies into a multitude of subject areas, as illustrated by the feedback of the conference participants. Obstacles such as time and curriculum constraints were discussed in the plenary, as well as possible strategies to counteract them. Ensuring sufficient theoretical underpinning in ESF modules; a compulsory module for learning from our outside environment, combining health, education, ecology, arts, business...; extending experiences of engaging with the environment to other projects involving students; pitching ESF modules at the right time when students are ready to engage with them; using creativity to open opportunities for critical thinking within disciplines were all ideas raised during the plenary discussion in response to the challenge. Some of the participants were able to identify new ways to embed biodiversity issues into modules as a result of the conference, as illustrated by their feedback (examples above). The feedback (examples above) also shows that it helped participants to consider biodiversity in its wider implications, and the many ways it relates to their practice.

Conclusions

It has been said that the skills developed through ESF pedagogies are also useful skills for a sustainable work market and are considered a vital national asset (DfES, 2003:8). Overall, talks exposed the HE audience to a rich array of ways in which biodiversity issues have been incorporated into varied disciplines. As feedback suggests, both the talks and the discussions initiated by them
instigated new connections and undermined pre-dispositions towards multidisciplinary approaches to biodiversity issues and towards interdisciplinarity. Furthermore, as suggested by Winter and Cotton (2012), evidence from the plenary session and feedback indicate that such exposure have helped teaching staff to engage with such issues and to consider embedding them into their own practice.

While participants may have been inspired by the ideas and approaches debated during the W&S Conference, they may still face obstructions to take them into their practice. Funding, time allocation, need for planning and preparation, group sizes are common constraints to the HE system and must be circumnavigated through innovative thinking. While embedding sustainability related issues in the formal curriculum has been hindered by many difficulties, there are suggestions that informal learning may be an important tool in empowering individuals to challenge their perspectives and engage in critical thinking about biodiversity (Winter et al, 2012). Sustainability focused events, such as the Wildlife and Society Conference, are an integral part of informal learning for sustainability. Though formal and informal learning are inter-dependent in the HE context, lecturers may struggle to create the links between focus events and disciplinary content.

A further outcome of the conference is a website, which offers conference related resources and a discussion forum to allow participants and newcomers to communicate their ideas and to interact across disciplines within a neutral space (Cotton and Winter, 2010:51). The website, like the conference, contributes to the formation of a community of practice, promoting links between different organizations around a common interest.

The conference met its aims to make connections between different disciplines regarding people relationships with wildlife and to promote holistic thinking and consideration for biodiversity issues. Moreover, feedback from participants suggests that paradigms have been challenged as they observed new relationships between fields. Rather than experiencing a one person multidisciplinary overview of biodiversity, participants benefited from the different perspectives of each discipline, which inevitably provokes creative responses creating an opportunity for creative thinking and imagination (JBa feedback). Even with the existing HE constraints, it functions as a space where interdisciplinary, reflective, transformative learning has been encouraged and new links have been forged.

References and Bibliography


