Conclusions and Ideas for the Future

We believe that the module is a useful vehicle for showing how research works in practice. Students, on the whole, seemed to enjoy it although initially they were uncertain about how the material would be examined. In general, however, there was a feeling that the delivery was perhaps too novel for their final year, final semester. Thus, we strongly suggest that students are exposed to both team-working (as opposed to working in groups) at Stage 2 so that they can understand and experience the advantages without final year pressure. Further, there was a reluctance to ‘let go’ from the traditional lecture format despite the support we provided. We suggest that independent learning methods be introduced at Stage 1 and continued thereafter. Perhaps not all modules need an out-and-out allegiance to independent learning but at least providing some experience for students of non-lecture teaching methods would be beneficial. In this, the overall pedagogic aim of the module, showing ways of tackling research problems, was successful.

We think too that students will see that results of the module (now that we have them) are quite reasonable and that most will not suffer from any novelty of approach.

We, and the students, liked the idea of a photographic interpretation examination question, although this does ask more of the students. Importantly, it places examination questions in an independent framework and also shows the sort of things a field examination by a research worker might have to deal with. In short, we have found this exercise useful in linking teaching and research.

References


Anita Shah and Emma Treby, School of Conservation Sciences, Bournemouth University

Abstract

The Bourne Stream Partnership is a consortium of stakeholders, which includes local authorities, the Environment Agency, water companies, English Nature, NGOs and private businesses. Its aim is to enhance the environmental quality and amenity value of Bourne stream through sustainable development. Bourne Stream provides a local fieldwork site for undergraduate and postgraduate Environmental & Geographical Science students within the school of Conservation Sciences at Bournemouth University. Consortium members have provided opportunities for student placements and research projects (up to and including PhD level) based on various aspect of Bourne Stream (i.e. water quality, ecological assessment, community partnership). This in turn has provided useful information for the partnership, demonstrating the benefits of linking teaching with research and with organisations consultancy external to HE.

Introduction

The link between teaching and research should be evident in our curriculum design (Jenkins, 2002; Jenkins & Zetter, 2003). At Bournemouth University, like many other HEIs, this is most easily achieved in core units/modules such as Research Methods and the final year project/dissertation. These units have specific learning outcomes and help students to develop a range of transferable skills in project and time management. The final year project/dissertation also offers students the opportunity to carry out an in-depth study into a topic of their choice.

In addition, many staff try to make the delivery of their subject more ‘interesting’ by introducing students to ‘live’ external projects and using these as a focus for assessment. Such work often involves a problem-based approach which has been found to increase independent student learning (Boud, 1988) and helps to develop a range of graduate skills (Blumhoff et al., 2001) including teamwork skills. It is also hoped these activities engage, excite, and motivate students and by ‘doing’ they learn through experimental learning (Kolb, 1984) which helps to further improve their understanding and knowledge.

Background - W here is Bourne Stream?

Bourne Stream is a typical urban stream in the south of England, which runs from Canford Heath/Ringwood Road in the Borough of Poole to the sea at Bournemouth Pier. It is approximately 8km long, with a drainage catchment of 12km².

The upper/middle catchment has various designations including a Site of Special Scientific Interest (SSSI), Dorset Heathlands Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar site and Site of Nature Conservation Interest (SN CI). The lower catchment has a high amenity value with public access to gardens (English Heritage Grade II listed) and Bournemouth Pier.

Bourne Stream is only a short walk from the main Bournemouth University campus and hence has been used as a fieldwork site to demonstrate water sampling strategies and methodologies for many years. Bournemouth University was involved with the Bourne Stream Partnership from the outset and hence opportunities for student involvement in this ‘live’ project were quickly recognised.

Brian Whalley and David Favis-Mortlock
School of Geography Queen’s University of Belfast
b.whalley@qub.ac.uk d.favis-mortlock@qub.ac.uk
What is the Bourne Stream Partnership?

“The Bourne Stream Partnership has been formed to improve, protect and enhance the green corridor.” (Bourne Stream Partnership, 2002)

The Partnership was formed in 2000, with the official launch by Barbara Young (Chief Executive of the Environment Agency) in March 2002. Members of the Partnership include various stakeholders, including the:

- Borough of Poole
- Environment Agency
- Wessex Water
- Greenlink
- Bournemouth University
- Dorset Coastal Forum
- SITA Environmental Trust.

The Bourne Stream’s Main Problem

Despite reductions in point source pollution, Bourne Stream continues to suffer from poor water quality. Diffuse pollution is a major problem and Bourne Stream is prone to periods of poor water quality especially following periods of rainfall. Surface drainage water and sewer misconnections (wastewater entering the stream rather than the sewers) are thought to have significant adverse effects. The resulting high faecal coliform counts from animal waste etc. have resulted in failure of Bathing Water Directive guideline standards at Bournemouth Pier and hence loss of EU Blue Flag status for 10 out of the last 12 years (Bourne Stream Partnership, 2003).

The partnership has incorporated the use of sustainable urban drainage systems (SUDS) within the catchment with the aim of improving overall water quality. This has included creation of wetland systems to treat surface waters, which has also resulted in an increase in wildlife that local residents have perceived as being an important improvement.

Linking the Partnership to Student Research Work

Since the creation of the Bourne Stream Partnership, the site and its catchment have continued to be used as a local fieldwork site for undergraduate and postgraduate Environmental & Geographical Science students. For example, it has been used as a site for assignment work for final year options in Ecological Evaluation (e.g. habitat surveys including river corridor survey) and also Water Resources (e.g. monitoring biological and chemical parameters of water quality). Consortium members have provided opportunities for student placements and research projects (up to and including PhD level) based on various aspects of Bourne Stream and its catchment (i.e. water quality - particularly with regard to urban diffused pollution, ecological assessment, environmental perceptions, community partnership). This in turn has provided useful information for the Partnership.

Current on-going projects include:

- ‘Action research inquiry to assess the multi-stakeholder (partnership) approach to environmental management’ - PhD student. This student is also the Project Officer for the Partnership and hence is ‘actively researching as she is doing’.
- ‘Effects of artificial modifications to the Bourne Stream as part of a SUDS initiative, upon habitat quality’ - MSc Environmental Quality student.
- ‘Evaluation of the capacity of the lagoons and wetlands to reduce pollutants, including oil and petrol from road runoff’ - BSc Environmental Protection student.
- ‘Education and awareness raising in the Bourne Stream Catchment through a schools drain stenciling project’ - BSc Environmental Protection student.
- ‘Community participation in the Use Water Wisely Campaign’ - BSc Applied Geography students. As part of this study, second year placement students supervised first year Applied Geography students to construct and undertake questionnaires for them. This data will form part of their study, which will contribute to a report to be presented to Bournemouth & West Hampshire Water Plc.

From this last project, the value of peer-assisted learning (PAL) was also demonstrated. The first years felt that they “got a great deal from being involved in a real live project” and they also “found it enjoyable to be supported by other students of the same degree course”. In turn, the second year students got an insight into the difficulties of managing large numbers of people to undertake research, to keep them motivated and focused on the task in hand.

Research, Learning & Teaching Benefits

Through work experience, project and assignment work carried out in conjunction with the Bourne Stream Partnership students have developed a range of research and transferrable skills and at the same time produced results, reports etc. of wider interest and benefit to the community. An unforeseen benefit of this has been the raising of the University’s profile within the local community, including articles in the local newspaper.

Positive aspects of linking research and teaching through external projects include:

- provision for students to develop research skills within ‘live’ projects;
- opportunity for students to demonstrate their ability to apply theory to practice;
- integration of fieldwork, experimental and theoretical investigations;
- opportunity for students to gain contacts in their chosen field of interest;
- opportunity for students to meet the aims of the work experience placement;
- opportunity for students to meet the intended learning outcomes of the independent research project, which include:

  (i) an ability to formulate a research problem, translate this into a research design and a realistic programme of work and to carry out this programme of work;
  (ii) an ability to select and plan the execution of appropriate research methods;
  (iii) the effective integration of the discrete skills and techniques of various programmes in a research programme of their choice;
  (iv) develop and demonstrate their ability to work independently and with initiative within a research context;
  (v) an ability to evaluate data;
  (vi) develop and demonstrate their ability to produce an extensive written report of their research with some originality of perspective to standards expected in a professional context relevant to their degree (Bournemouth University, 2002).
positive student perceptions of the practical application of skills acquired on their course is improving their confidence and helping to prepare them for the workplace. In addition the placement complements the academic experience of the programme and aims to provide:

(i) wider experience in the appropriate academic and professional discipline;
(ii) an experience of working relationships, employment, hours and practical constraints of the working environment;
(iii) knowledge of an area of employment within which they seek employment;
(iv) experience of contributing to the design and/or implementation of a specific project within an organisation (Bournemouth University, 2002).

Lessons Learnt

Over the past few years a number of aspects have at times caused some difficulties with student projects or placements within the Bourne Stream Partnership. These are outlined below, with suggestions of how they could be better managed.

(1) If not carefully managed, students can be provided with different aims or objectives for the same project from the various organisations that make up Bourne Stream Partnership. Hence, it is useful for the partnership as a group first to decide what they want from the project and then nominate one member of their team who from the outset will be the student’s main point of contact. This should ensure the project is clearly focused and avoid unnecessary confusion for the student. It also ensures all members of the Partnership are themselves clearly aware of the focus of each project.

(2) The project outlined by the host organisation must provide the student with the appropriate assessment criteria required at Honours or Masters level.

(3) The time scale and actual timing of individual projects needs to be realistic. This is not always easy to achieve, since the project work needs to fit around the rest of the academic calendar including examinations. Another more recent and problematic issue is the increased financial pressure on students to work during the summer vacation, which often coincides with the main sampling season. Hence, a compromise may need to be made between sampling times and other important commitments.

(4) It can be difficult to ensure quality control of the work carried out by the student. Hence, this may need to be monitored closely, especially at the beginning of sampling. In addition, the research strategy must be approved by the University supervisor prior to the start of any fieldwork activity.

(5) Analysis of a large number of samples required for some of these projects can be expensive for the University. Some forms of analysis requested by the Partnership have been prohibited by cost, e.g. certain oils and hydrocarbons, where full analysis would have cost thousands of pounds.

(6) There is a need to ensure that appropriate support and supervision is given to the student during their placement by the host organisation. The host organisation needs to know, from the outset, the requirements placed on them by hosting a placement student. This usually involves time, space, equipment and transport. Even where students are not paid, there are usually economic implications of hosting a student.

(7) There is a limit on the number of students who can be involved with projects or placements (or both) with the Bourne Stream Partnership each year. However, to date this has not caused any problems with other students choosing to focus on different placements and projects.

To end on a positive note, one of the most encouraging lessons has been the interest of local organisations within the Bourne Stream Partnership to be involved with student activities, whether through placement opportunities, fieldwork assistance or the delivery of taught units. Their enthusiasm has far exceeded our expectations of such a community-based collaboration.

Conclusions and Recommendations

The future is likely to see a broadening involvement with the Partnership, beyond placements and into more taught units. Such collaboration is certainly mutually beneficial - not only are projects with the Partnership aiding the involved stakeholders’ understandings of the catchment, but also the students are realising the full scope and application of their skills and, in turn, are seeing opportunities for employment and further research.

We would highly recommend this type of involvement with local community projects. A number of environment partnership groups of this kind have been set up around the UK, who are keen to involve their local education establishments. Although most Universities are financially limited in the contribution they can make, a contribution ‘in kind’ is usually considered favourably. We hope this article illustrates many of the benefits which can be gained from linking teaching with research and consultancy using a collaborative partnership approach.

References


Anita Shah and Emma Treby
School of Conservation Sciences
Bournemouth University
ashah@bournemouth.ac.uk
etreby@bournemouth.ac.uk.