Contents

What is *Planet*?

Planet is the biannual publication of the Higher Education Academy Subject Centre for Geography, Earth and Environmental Sciences.

Its aims are to:

- Identify and disseminate good practice in learning and teaching across the three disciplines of Geography, Earth and Environmental Sciences.
- Provide a forum for the discussion of ideas about learning and teaching in the three discipline communities.
- Provide information for readers on Subject Centre activities and on related resources, conferences and educational developments.

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Tree-planting by students on the Gaia Module at Oxford Brookes University. © Martin Haigh

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EDITORIAL

Improving the teaching and learning experience

This issue of *Planet* covers several key themes, with articles that describe ways to improve the teaching and learning experience within Geography, Earth and Environmental Sciences.

Fieldwork is an important aspect of GEES subjects; Jenny Hill and colleagues describe how linking research into fieldwork teaching provides students with an opportunity for deep learning. Dave Simm and Mark McGuinness explain how student projects heading for trouble can be rescued with the right approach and guidance. Roddy Fox and Kate Rowntree also explore opportunities for deep learning through the African Catchment Game which they have developed at Rhodes University. Through drawing on concept maps and role playing, students gain experiences which can challenge previously held assumptions and provide new insights.

Employability is a topical policy issue in higher education, and several articles address this theme. Chris Ribchester and Helen Mitchell describe their findings on how greater provision during Level 1 of career guidance and information about job opportunities could help students. Krystyna Brown explores the findings of a study showing how GIS-related skills have helped graduates to find employment. Pauline Kneale describes the successes of the Personal Development Planning project at the University of Leeds. This draws on material provided by companies and other organisations, helping students to see that there is a purpose in PDP which will help them after graduation.

Grounding student learning in practical experience is a major theme of Martin Haigh's article. Through planting trees and expressing hopes for the future, a link can be made for those who have grown up in an urban environment, between themselves and the natural world.

Another major policy theme is continuing professional development (CPD) for academics. An exploration of attitudes towards CPD amongst Earth Science academics in the UK by Helen King finds that a wide variety of approaches, beyond formal courses, need to be seen as valid, and to be integrated within the institutional context. An analysis of the attitudes and aspirations of external examiners by Derek France and Steve Fletcher helps to identify the support needed to improve the system that maintains academic standards in the UK.

Along with the update on GEES Subject Centre activities, there is much amongst these pages to inform the practice of the GEES community.

Changes in this issue of *Planet* are due, first, to the GEES Subject Centre now being part of the new Higher Education Academy; we have a new name, new 'corporate' colours and of course, a new logo. Second, *Planet* has a new editor. After four years, Steve Gaskin has moved on to the University of Exeter. The new editor, Wendy Miller, is an environmental scientist, and is enthusiastic about *Planet* as an informative, interesting and enjoyable means of communicating and networking for all those working in GEES disciplines in higher education. The content will continue to be the result of the wider GEES community, to whom thanks are due for continued support and interest. Please contact the editor with suggestions for articles or special features, or comments. Tel: 01752 233535. Email: planet@gees.ac.uk

LTSN-GEES becomes the Higher Education Academy Subject Centre for GEES

The Higher Education Academy was formally launched in October 2004, as the new UK-wide organisation to support quality enhancement in learning and teaching in higher education. It has been created from a merger of the Institute for Learning and Teaching in Higher Education (ILTHE), the Learning and Teaching Support Network (LTSN) and the Teaching Quality Enhancement Fund National Coordination Team (TQEF NCT).

As from now, the official name for what was previously LTSN-GEES is the Higher Education Academy Subject Centre for GEES - or the GEES Subject Centre for short. (All involved are being strongly discouraged against use of the abbreviation, HEA, to avoid confusion with the Health Education Authority.) The structure of the Academy will continue to be a national network of 24 subject centres, with the headquarters based in York.

The new Chief Executive of the Academy is Professor Paul Ramsden, author of the classic text, *Learning to Teach in Higher Education*, and former Pro-Vice-Chancellor for Learning and Teaching at Sydney University in Australia. In outlining the aims of the organisation, he highlights the need to respond to students as 'customers' in an increasingly competitive higher education system. The focus of the Academy's work is to improve the 'whole student experience.' The remit includes addressing the wider needs of students and institutions 'to provide the best possible educational experience', in the context of increasing numbers of international students, e-learning, closer ties to the business world and the employability and widening participation agendas. The Academy aims to work with all levels of staff – for example, academics, researchers, librarians and counsellors, as well as quality assurance officers and Pro-Vice Chancellors.

One of the first tasks of the Academy has been to set up a register of higher education practitioners, for everyone who is involved in supporting student learning.[1] It is also working to establish a coherent UK-wide approach to professional development, with a view to acknowledging and rewarding good practice. Other aspects of its work include a Supporting New Academic Staff (SNAS) database, providing support for the external examining system, as well as carrying out research into, and evaluation of, good practice. The Higher Education Academy literature states firmly that it will "not seek to duplicate existing activities in universities or colleges, nor seek to regulate them or in any way diminish their independence." In an inaugural speech, Paul Ramsden explained the Academy's role in higher education:

> "It will provide coherence, added value, inclusivity, and a powerful emphasis on the needs of stakeholders... It will recognise that the needs of different institutions vary depending on their missions, avoiding a one-size-fits-all approach to professional development and the enhancement of teaching. It will support institutions in managing teaching and services in ways that maximise the quality of outcomes for their students."

The launch of the Academy has been widely welcomed – its creation is congruent with the vision expressed in the Dearing Report, and the GEES Subject Centre is amongst those seeking to contribute to its success.

Wendy Miller

(1) www.heacademy.ac.uk/103.htm

CETLs - Centre for Excellent in Teaching and Learning

One of the main changes soon to affect higher education is the establishment of some seventy or more Centres for Excellence in Teaching and Learning (CETLs). This initiative was first announced in the 2003 Government White Paper on *The Future of Higher Education*. With more than £300 million available to fund the CETL programme over the five year period from 2004/5 to 2008/9, the new CETLs will have the potential to make a significant difference to the national profile of learning and teaching in HE and to the quality of the student experience. However, the CETL programme is confined to England, with a rather different scheme in Northern Ireland and no CETLs at all in Scotland or Wales; this is essentially a product of political devolution and the Funding Councils' different views and priorities.

The White Paper's announcement of the CETL initiative can be seen as a measure of the government's commitment to raising the profile and quality of learning and teaching, and to achieving a better balance in the relative status of teaching and research. However, another interpretation of the origin of CETLs is the government's concern to 'compensate' many Universities for the loss of research income which will follow from the White Paper's proposal to concentrate research funding in a smaller number of 'elite' institutions. In some quarters the CETL programme was, therefore, seen as a political 'sop' to HEIs whose future will lie more in teaching than research.

Whatever the underlying political or strategic rationale, in July 2003 the Higher Education Funding Council for England (HEFCE) set out its CETL proposals and initiated a formal consultation process (HEFCE 2003/36). Over 140 responses were received: most were broadly favourable and so only relatively minor changes were made. In January 2004 HEFCE, therefore, invited bids for funding. Bids were welcomed from all HEFCE-funded HEIs and from Further Education Colleges with at least 500 HEFCE-funded full-time equivalent higher education students.

The document inviting bids (HEFCE 2004/05) provided information on the objectives of the programme, the funding arrangements, the two-stage selection process and the criteria to be used. It made clear that the primary objectives of CETLs will be to reward existing excellence in a particular area of teaching, and, through innovation and dissemination, to share best practice both within the CETL's institution and more widely. It was for HEIs to define their area(s) of existing excellence: it might, for example, be a form of teaching (e.g. on-line learning), an approach to curriculum design (e.g. interdisciplinarity) or an approach to major HE themes (e.g. widening participation or employability). Institutions, depending on their student numbers, could make up to four bids, which could be in collaboration with another HEI. Bids could be for up to £500,000 per year for each of the five years, plus a single capital allocation of up to £2 million.

Over 250 bids were received by the April 23rd 2004 deadline. They were judged against criteria such as the strength of the case for excellence and the potential for further impact and dissemination. Some 106 bids were selected to go through to the second round. Examples of their titles include excellence in: employability through the Humanities, full-time learning via part-time study, blended learning, motivating the distance learner, assessment for learning, clinical legal education, career management skills, work-based learning, innovative physics teaching, health professional education, undergraduate research skills and inquiry-based learning in the arts and social sciences. The full list of topics and institutions is available on the HEFCE website (www.hefce.ac.uk).

The second round bids were submitted on 29th October and were required to present a more detailed case, with greater emphasis on the CETL's proposed business plan. About 70 or 75 CETLs are expected to be selected for funding and final decisions are to be announced in January 2005. Although the overriding criteria will be the quality of the bids, HEFCE have made clear that, at the margins, they may also take into account considerations such as geographical distribution and the balance of themes, disciplines and pedagogical focus.

So, coming soon to your institution, or to one nearby, could be a CETL with a large budget and a commitment to innovation and sharing best practice in teaching. Some *Planet* readers may, of course, have already been involved in preparing a bid, but even for those who have so far had no role in CETL design, there may be opportunities to become involved. This is particularly the case where generic developments (perhaps in areas such as assessment, independent learning and work placements) are being 'rolled out' across the institution.

In addition, there are a small number of round two CETL bids which have direct subject-based relevance to the GEES disciplines. These proposed Centres include: spatial literacy in teaching; active learning in geography, environment and related disciplines; care for sustainable communities; experiential learning in the environmental and natural sciences; and education for sustainable development.

The CETLs' national dissemination work will be undertaken in collaboration with the new Higher Education Academy and its network of 24 Subject Centres. So, if any of the above GEES-related bids are successful, the GEES Subject Centre will be working with them on activities such as preparing conferences, workshops, staff guides and other forms of dissemination and embedding. Working with these and other possible CETLs will be a new role for the GEES Subject Centre and it is one to which we are very much looking forward.

Brian Chalkley

GEES Subject Centre

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Birmingham

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A special issue of Planet is to be published in Spring 2005 on

Learning and Teaching on Masters Programmes in Geography, Earth and Environmental Sciences

Articles of between 1000 and 2000 words on the above are welcomed. Deadline for contributions:

Friday 28 January 2005

See inside back cover for further details

FEATURE ARTICLE

Linking Teaching and Research in an Undergraduate Fieldwork Module: a case study

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Abstract

This article provides an example of linking teaching and research within an undergraduate fieldwork module. It highlights student perceptions of the learning and assessment experience and it examines quantitatively the extent to which students were successful in deep learning. Empirical results showed that students generally rose to the challenge of predictive-analytical learning to produce grades congruent with their Level 2 results. Whilst some students began to question the acquisition of knowledge and came to realise its provisional nature, others met with considerable difficulty in achieving deeper understanding through research-based, problem-solving activity. Learning and assessing through active student involvement in the research process at Level 2 seems to be an appropriate method of preparing students for their independent dissertation at Level 3.

Background

Teaching on undergraduate programmes in the School of Geography and Environmental Management at the University of the West of England (UWE), Bristol, is underpinned by the practice of linking student learning and assessment to the research process. This concept is based on the premise that, if the relationship between teaching and research is managed positively, students will benefit, particularly through their interaction with deep learning. The importance of linking teaching and research is articulated by many practitioners in Geography, Earth and Environmental Sciences (see, for example, Jenkins, 2000, 2003; Healey *et al*., 2003; Jenkins *et al*., 2003).

Undergraduate programmes at UWE adopt many of the links between teaching and research. Links are both concentrated within a compulsory skills spine that runs through Levels 1 to 3, and diffused throughout optional modules at Levels 2 and 3. A complete description of the links will not be given here, but they include: bringing findings of staff research into the curriculum; explaining the importance of research to the development of the discipline; developing student research skills; giving students the opportunity to work on staff research projects as consultants; and assessing students using the research process (Healey *et al*., 2003) (Table 1).

Fieldwork is a significant medium through which to link teaching and research (James *et al*., 2003) and, as such, this article provides an example of the link within an undergraduate fieldwork module. It highlights student perceptions of the learning and assessment experience and it examines quantitatively the extent to which students are successful in deep learning. Deep learning is defined as the acquisition of higher order skills such as analysing and evaluating information rather than simply amassing and describing it (Marton *et al*., 1984; Ramsden, 1988). For a more comprehensive discussion of the nature and attainment of deep learning within the UWE fieldwork module, see Hill and Woodland (2002).

The field study module and Tunisia field trip

The UWE Field Study module is a Level 2 course that recruits approximately 150 students from four geographically and environmentally orientated degree programmes. The module is integrated into the academic programmes as part of the skills spine. It involves lectures and seminars and it culminates for the students in a residential visit to one of three field destinations: usually Andalucia (Spain), Brittany (France) and Tunisia. Keynote lectures outline the nature of the research process. The opening lecture focuses on the hypothetico-deductive method of knowledge acquisition, whilst the last keynote lecture refers to humanist approaches and makes students aware that there is no universally accepted method of knowledge production. Subsequently, lecture/seminar sessions familiarise students with specific field locations and develop their research skills and field techniques.

The aims and learning outcomes of the module are shown in Table 2. The module is assessed via submission of an individually prepared 3,000 word research proposal, which follows a pro-forma (see Hill and Woodland, 2002). The proposal adopts a problem-solving format within which students must state their

Table 1. Examples of linking teaching and research in UWE undergraduate modules

Level 1 (core module activity)

We teach students the importance of recognising and utilising peer-reviewed journals as a key element of their scholarly development, and assess their capability to write summaries for articles from which the abstracts have been removed. Recent practice has involved using papers published by ex-students from the School of Geography and Environmental Management. Our intention in 2004-05 is to use papers published by colleagues teaching within the School. The notion here is that students can aspire to and achieve successful outcomes from their own specialist research and that this should be one of their aims in developing their own writing.

Level 2 (optional module activity)

We teach modular content related directly to the research agendas of staff. We currently involve students acting as consultants for a proposed project to find an end-use for a Medieval agricultural building in a location close to the institution. This fits into the UWE Community Initiative in Higher Education, which exhorts us to look for ways in which students might become involved in 'real' projects in the region. This initiative seeks to build a 'community engagement' portfolio from our undergraduates as part of their social and academic development.

Level 3 (core module activity)

We teach Interdisciplinary Issues to students of geography, environmental management and built environment disciplines. This provides students with experience of researching and working with specialists across a wide range of disciplines in order to prepare them for a working environment. Assessment is via internal Faculty presentations and an external Dean's Conference. The assessment allows students to disseminate research findings and demonstrate personal transferable skills (such as teamwork, collaborative learning, time-management and oral presentation) to an audience of students, staff and external agencies.

Overall, a combination of research-led, research-oriented, research-based and research-informed teaching is undertaken (Griffiths, in press).

Table 2. The UWE field study module aims and learning outcomes

The general aim of the Field Study module is to deepen geographical and environmental understanding, whilst the more specific aim is to teach a range of field methods, skills and techniques that will allow students to carry out empirical research.

The intended learning outcomes of the module are that students will be able to:

- demonstrate an understanding of the environmental, social, economic and political contexts of the field location
- demonstrate an ability to undertake empirical research in a variety of field sites
- demonstrate a critical understanding of the different ways by which knowledge is constructed
- articulate the research process in the form of an individual research proposal.

overall aim, establish the literature context, clarify their specific research questions and proposed methodology, highlight preliminary ideas for data analysis, outline the wider relevance of their work, and critically appraise their selected approach. It is not feasible for students to carry their projects through to completion. They propose and outline work that could be completed individually within a year, hence mirroring the requirements of an undergraduate dissertation. Assessment criteria are based upon project feasibility and clarity of design, analytical depth and critical awareness. Titles of submitted work include 'Estimating the age of different areas of El Faouar Village using a model of courtyard construction' and 'A study of sand dune movement on the desert fringe at El Faouar, southern Tunisia'. Key elements of the latter proposal can be seen in Table 3 (overleaf).

Fifty students undertook the Tunisia field trip in 2000-2001, supervised by four staff. A total of nine half-day group research exercises were offered. Students undertook six of these, following a progressive four-tier pathway through the research process. Three exercises were core exercises undertaken by all, and three were chosen from a series of options. The first core Tier 1 exercise included basic empirical measurements supported by landscape observation. Follow-up discussion included a limited amount of interpretation and hypothesis formulation. The core Tier 4 study, that culminated the field activity, encouraged students to consider the research process in its entirety. Students were given a research question that they investigated with minimal direction. It was their responsibility to collect appropriate data and to interpret results. Exercises and their associated debrief sessions aided the production of active and discursive knowledge rather than its passive acquisition.

Student perceptions of the learning and assessment experience

Student responses to the field study module as a whole and the Tunisia field programme in particular were elicited by a written questionnaire at the end of the field week. Only the students who attended the Tunisian field trip completed the questionnaire, stating their name and degree programme (n=50). The questionnaire examined four broad areas: preparatory lectures/seminars, field exercises, module assessment, and dissertation applicability. The majority of questions were structured as semantic differentials requiring responses to be placed along a scale graduated to four possibilities. Some questions were directed 'yes'/'no' answers and a limited number were open-ended. All responses were justified with short explanations. In addition to the questionnaires, in-depth interviews were undertaken with 10 students across the Level 2 grade profile. In the following discussions students are categorised as 'weak' if their Level 2 mean grade is third class or lower; 'average' if their mean grade is lower second class; and 'strong' if their grade is upper second class or first class.

Preparatory lectures/seminars

Almost 80% of students rated the keynote research lectures as useful or fundamental in preparing them for the field research exercises. They commented that the lectures 'introduced and brought ... problems to light' and helped prepare them for 'analysing what was encountered' in the field. The majority, therefore, appreciated the problem-solving orientation of research. A fifth of students, however, felt that the lectures had only limited relevance to work undertaken in the field. Some of these students failed to make the connection between epistemology and knowledge acquisition, stating that only the capture of facts was important to their learning: 'the lectures on theory did not seem particularly relevant. We should have spent longer looking at information about Tunisia'.

Field exercises

Students were asked to rate the value of the learning experience obtained from the field research exercises. Over 90% of respondents rated most exercises as valuable or of high value. Students substantiated in a short statement why they rated the exercises as they did. Their answers were not guided and they were allowed to provide as many or as few reasons as they wished. The five most popular responses are discussed here.

Over half the cohort (57%) used the words 'enjoyable' or 'interesting' as justification for highly rated exercises. They stated that an enjoyable exercise maintained interest throughout the research process, from taking field measurements to analysing them in debrief sessions. Providing a stimulating programme of work is thereby important to fostering higher order skills of analysis and interpretation.

A fifth of students rated exercises highly only when they were of direct relevance to their research proposal. Thus, economy of effort with learning and assessment-driven interest is isolated as an important variable even within an exotic location. Notably, these students were classified largely as 'weak'.

Cultural immersion was mentioned by 16% of respondents. Encountering culture was necessary for students to realise that understanding is refracted through their own perspective. An average student noted that the exercises 'opened your eyes to try and understand local viewpoints'.

Eleven percent of students rated exercises highly when they included hands-on experience, saying this improved factual retention. The process of actively engaging with the research process was more memorable to them than textbook facts. In debrief sessions, students did not recall facts that had been passively fed to them in lectures as efficiently as facts that they had derived empirically. A strong student stated that 'text books … introduce principles but hands-on experience is essential to remembering, understanding and applying'.

A small proportion of students (9%) cited the ability to apply independent thought as a reason for rating exercises as valuable. Commenting on one exercise, a first class student said 'we as a group could formulate a research method and evaluate a question. We were free to make our own mistakes and learn from them'. Thus, actively engaging students with the research process seemed to empower them in their learning environment.

Table 3. Outline of the key elements of a student research proposal.
(The student's expression has been maintained as far as the summary will allow.)

A study of sand dune movement on the desert fringe at El Faouar, southern Tunisia

Aims

To examine the direction and speed of sand dune movement, in order to indicate whether the village of El Faouar is at risk from desertification and, if it is, to estimate how long it may be before the sand dunes reach the village.

Specific research questions

i) In which direction are the sand dunes moving? Does the direction of movement change seasonally and are the dunes moving towards or away from the village?
ii) How fast are the sand dunes moving? Does speed of movement change seasonally and how does dune size affect speed of movement?
iii) How strong is the correlation between wind speed and sand dune movement?

Proposed methodology

Field measurements will be taken from 25 small and 25 large dunes on the desert edge, south west of El Faouar. This should give representative figures for dune mobility of different sized dunes. Measurements will be taken during three months in the summer and winter so that seasonal variations in movement can be established. Direction of dune movement will be measured by taking a weekly compass reading of the bearing of each dune. Speed of movement will be measured by the weekly placing of six stakes around the edge of each dune so that the amount of movement can be measured. Wind speeds will be recorded daily so that an average weekly wind speed can be worked out. A weekly average is required for comparison of wind speed with the amount of weekly dune movement.

Preliminary ideas for data analysis

Direction of dune movement will be depicted by the use of bar graphs to show the number of dunes facing in each direction for all weekly measurements. A graph will be drawn for each three-month study and the graphs will be compared to identify seasonal differences. Speed of dune movement will be depicted by line graphs, showing average weekly movement of the sample dunes in each three-month study period and the average weekly movement of small and large dunes. The observations will be supported by t-tests to examine whether any observed differences in summer and winter dune movements and small and large dune movements are significant. Correlation coefficients will be calculated to check for an association between wind speeds and dune movements.

Problems and limitations inherent in fieldwork

The accuracy of results concerning the effect of wind speed on dune movement may be affected by other factors such as rainfall and wetness of sand, which may also be influencing speed of movement. The results could be affected by extreme climatic conditions at the time of fieldwork. Climatic records should be consulted to identify such possibilities.

Overall, some students developed the ability to question their knowledge acquisition. This was exemplified in the in-depth interviews when students were asked how they gained understanding on the field trip. A weak candidate noted the importance of 'seeing and remembering', whilst a strong candidate noted that he had developed the ability to 'analyse critically' the landscape in which he immersed himself. He commented that 'you need to ask yourself questions and revisit what you have observed and concluded' and described knowledge as a 'honeycomb with gaps to be plugged' by passing through the above process. Students also began to challenge received wisdom via their encounters with empirical phenomena. A clear articulation came from a first class student who noted that there was a need to 'question knowledge and the culture it is derived from'. Students were beginning to construct their own knowledge, with staff merely facilitating the process.

Module assessment

Seventy percent of students rated the research lectures as useful or fundamental in preparing them for their module assessment. There was a significant difference in rating according to average Level 2 grade (χ^2=5.51, p=0.1). Notably, more weak students than expected rated the lectures as slightly relevant whilst fewer than expected rated them as fundamental. Weak and average students substantiated their response with comments concerning direct assessment applicability. Unless the research process was clearly directed to the assessment throughout, students did not rate its relevance highly. Strong candidates, by contrast, noted the inherent requirement to question the observations they made and, in some cases, the need to 'revisit' and 'refine' them.

Despite the challenging nature of the research proposal, 98% of students said that it was an appropriate assessment for the module. The students recognised and acknowledged the emphasis on independent thought and welcomed the ability to apply their knowledge to a topic of personal interest.

Dissertation applicability

Sixty three percent of students rated the research lectures as useful or fundamental in preparing them for their dissertation. The module was summarised succinctly by one student as 'an excellent way of honing a student's mind prior to the dissertation'. A student who gained a first class pass on the research proposal stated 'I now understand the concept of deeper thinking and critical analysis, which I will try to apply to my dissertation'.

Almost all students said that the Field Study module and summative assessment helped them in their initial dissertation preparations. For many, the module marked the realisation that the dissertation is a problem-solving exercise rather than an extended essay. When asked to indicate how the module had aided them in their preparations, with no prompting, students isolated particular aspects of the research process. The necessity of establishing a broad context via reading was cited by 22% of students; defining a research question was mentioned by 30%; and practical application of field techniques was cited by just over a third. The need to remain critical throughout the research process was noted by a fifth of students with direct reference being made to the iterative nature of research and the lengthy time-frame that this requires.

Table 4. Results for the Tunisia research assessment 2000/01

Classification	% students
First	13
Upper second	24
Lower second	28
Third	28
Fail	7
Average grade	**54%**

Student achievement of deep learning

With respect to module results, a fair proportion of first class passes was followed by an even spread throughout the upper and lower classes (Table 4). Only 7% of students failed the exercise. The highest grade obtained was 80% and the lowest was 30%. Although 90% of students stated that the module had helped them to become independent, critical thinkers, only 37% of these gained a grade that reflected such ability. Less than half were performing as they believed they were or claimed to be - there was a tendency for students to overestimate their achievements. Crucially, applying the Mann-Whitney test, the marks for the assessment were not significantly different from the Level 2 average grades. This critical/analytical assessment resulted in performances that were consistent with other types of work.

The main reason for low marks/failure was the inability of some students to define a focused research topic and to detail specific research questions. Weak students tended to use the literature review as a book review and their preliminary ideas for data analysis were vague. By contrast, strong students used their aim as a general statement of intent, whilst their specific questions directly examined this aim. Their literature reviews summarised the issues relating to their topic, bridging the gap between aims and specific research questions. Preliminary ideas for data analysis were detailed and their critical reviews considered what would prevent them from answering their questions in a representative manner.

Conclusions

The field study module at UWE, Bristol has been crafted carefully to link teaching and research and to promote deep learning. Aims, learning objectives and assessment criteria are clearly stated at the outset so that students know what they are striving to achieve. Field exercises are planned to develop active student involvement in the research process and to promote consideration of epistemology.

Students generally rose to the challenge of a critical research assessment to produce grades congruent with their Level 2 results. This agrees with the work of Fuller *et al*. (2000), who found that students can progress successfully from descriptive-explanatory learning to predictive-analytical learning only after Level 1. Over a third of the Tunisia students gained a first class or upper second class pass. This represents a solid performance for an assessment involving applied problem-solving with its concomitant interpretation and evaluation. Those students who referred to the need for critical evaluation throughout the process of knowledge acquisition gained the highest marks. The spread of results, however, signifies that despite a structured programme of teaching, understanding is individually constructed (Entwistle and Ramsden, 1983). Perhaps of greater import was the fact that less than half of the students who claimed to be critically aware gained the assessment grades to support their assertions. This module is pivotal, therefore, in flagging up the incommensurability between perception and performance before students pass into the final year and undertake their dissertation.

Students more readily adopted a deep approach to learning when they were rewarded for their efforts via assessment. Course assessment criteria must, therefore, ensure progression from superficial to deep learning throughout the student learning experience. Students who economise on effort towards deep learning tend to fail or secure third class marks. The results of such selectivity need to be highlighted to the students before they begin their crucial final year.

Many students began the field study module holding the 'common sense' view of science (Chalmers, 1988). They viewed facts as descriptive and conclusive, not comprehending the applied empirical investigation that produced them, nor the range of methods by which possibly contradictory facts may be generated. Most of those interviewed completed the module realising to varying degrees that knowledge is purely methodologically and spatially specific. Learning and assessing through active student involvement in the research process at Level 2 seems to be an appropriate method for both preparing students for their independent dissertation at Level 3 and for making them realise the contested and provisional nature of geographical knowledge.

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FEATURE ARTICLE

Crisis Resolution of Student-led Research Projects at Distant Localities

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Abstract

Student-centred undergraduate research projects, particularly if group and overseas fieldwork are involved, are pedagogically a potentially high-risk endeavour. A delicate balance exists between student autonomy and tutor intervention. This article outlines strategies for redeeming failing projects, especially during fieldwork at a distant locality. This process involves the acknowledgement of the problem by students, support and reassurance by tutors, followed by motivation towards a renewed goal based on realistic targets. Self-reflection by students is a vital element. When designing student-led research, it is important to balance learning outcomes with the evidence of success - the process of research should be considered as important as the end product.

Introduction

During the spring of 2002 the subways and sidewalks of Boston, USA, carried adverts for the city's annual marathon. Each poster in the series showed a close-up image of a runner conveying one of the intense emotions taken from an accompanying list: (1) Ritual, (2) Shock, (3) Denial, (4) Isolation, (5) Despair, (6) Affirmation, (7) Renewal. This isn't too far removed from the experience of doing research, which often proves to be a roller-coaster ride of academic and personal challenges, but ultimately a rewarding achievement at any level.

All Geography undergraduate degree programmes contain some kind of student research projects whether as part of a research methods module, dissertation, group project work, or extra-curricular opportunities such as an expedition. More research-oriented skills, such as the design and planning of research, and especially teamwork, are integral to more advanced stages of undergraduate degrees. Problem-based experiential learning (PBL) is typically based on Kolb's learning cycle (Kolb, 1984; Henry, 1989), and the benefits and limitations of PBL (Savin-Baden, 2000) and group work (Higgitt, 1996; Kneale, 1996) are comprehensively covered elsewhere in the literature. In Geography, fieldwork is an integral part of most project work, providing a range of intellectual, technical and personal skills and experiences (Bradbeer, 1996; Higgitt, 1996; Pawson and Teather, 2002).

Students find group project and fieldwork to be the most challenging, but rewarding, elements of their degree (McGuinness and Simm, in press), often leaving a lasting impression for both academic and social reasons. Skills attained in these modules satisfy benchmarking criteria, enhance student employability and act as a bridge to postgraduate study. However, most pedagogic research focuses on the devising of effective learning and teaching strategies, and subsequent evaluation of their performance, or reflection by tutors and recommendations, in hindsight, for modifications to their teaching. With the exception, for instance, of dealing with 'free-riders' (*cf.* Levin, 2003) and the role of tutors as facilitators during student-led work (*cf.* Bradbeer, 1996), there is a paucity of pedagogic discussion on dealing with problematic situations.

This paper is directed towards devising effective strategies for retrieving failing situations, for instance where students are struggling to reach satisfactory academic thresholds in research and group work because of lack of commitment or insight,

Students explain panopticism to their peers

difficulties with colleagues or problems with access to resources or key contacts. It also considers the ways in which breakdowns in group dynamics and failings in research feasibility, design and preparation can be remedied prior to, or during, fieldwork. The experiences outlined here can be applied to a range of different teaching situations and formats, ranging from dissertations to directed fieldwork.

This article outlines the crisis resolution policies and procedures adopted by tutors of a final-year undergraduate module at the Department of Geography, Bath Spa University College. Working in groups of 3-4, students identify, propose and plan a research project, involving data collection, undertaken in an overseas study locality (presently Boston, USA) in mid-semester. Expectation is placed on the students to become effective independent and autonomous learners by group work (presenting at a public symposium and submitting a multi-authored, journal-style report) and encouraging active self-reflection (through entries in personal research diaries) of the research process and of their own and their group's performance (cf. McGuinness and Simm, 2003). Recent project titles have included:

- A God's Eye View: Panopticism, the 'Grid' and planning in Back Bay, Boston
- A Step Back in Time: Charlestown Navy Yard redevelopment
- Making Histories: The repackaging of Irish immigrant culture as portrayed through monuments on the Boston Irish Heritage Trail

Issues facing group research

Group project work (Kneale, 1996; Parsons and Drew, 1996; Livingstone and Lynch, 2003) and overseas fieldwork (Nash, 2000) are fraught with issues and pitfalls. The potential academic and logistical risk for things to go wrong is high, requiring careful supervision of project feasibility (Higgitt and Bullard, 1999). Supervision can range from low-risk total supervision (e.g. the staff-led, prescriptive format of the guided tour), partial supervision with student autonomy (e.g. a research-oriented module, cf. Plater *et al.*, 2003), or limited supervision (e.g. independent dissertation work). Supervisory issues are intensified when group work and/or overseas fieldwork are

involved, particularly with the trend towards an increased number of international trips (Nairn *et al*., 2000; McGuinness and Simm, in press). If a project at a distant locality turns out not to be feasible because of sampling difficulties, or if the data collected turns out to be inappropriate, then the trip proves a costly mistake both academically and financially.

The tutor plays a crucial role in acting as mentor, facilitator and monitor of the academic progress of the students and their projects. There is often a balance to be attained between student autonomy and prescriptive guidance by tutors. Whether projects are prescribed by tutors or proposed by students will depend on the pedagogic rationale, academic level and experience of the students, class size, and the availability of background resources (such as 'virtual fieldwork' provision). Offering pre-ordained projects is a low-risk option requiring prior reconnaissance by tutors to ensure their feasibility, but removes some of the responsibility of and initial creativity by the student. Alternatively, expecting students to devise their own topics is, academically and logistically, more challenging and daunting.

Group dynamics are often influential in whether a project succeeds or not. Although a self-selecting group of friends may feel comfortable, adopting a selection process based on psychological and skills-profiling (Parsons and Drew, 1996) is often more effective. Groups tend not to struggle because of weaker students within a group, but due to poor commitment and lack of a work ethic by members; the development of a group identity can help to avoid this problem (Savin-Baden, 2000).

The tutor needs to monitor group situations constantly for warning signs of projects stalling or non-participation by members. Disjunction manifests itself as retreat (lack of commitment and engagement with task), temporising (hesitation or putting off the task because of uncertainty), or avoidance (attempting to bypass the task) by students (Savin-Baden, 2000). These are often interspersed with short intervals of intense and productive thought and planning, often in response to firm prompts from tutors or looming deadlines. Such behaviour will determine the nature and timing of the tutor's response. If there is clear evidence that a student is not making a fair or equal contribution, it is often better for tutors, initially, to offer advice to the students to help them to deal with the situation, and to intervene only if the problem persists. Although not without issues, peer assessment and mark allocation could be adopted (Parsons and Drew, 1996; Levin, 2003). The more informed tutors are about a project's progress, the more likely it will be that potential risks can be addressed at an early stage. Regular 'surgery' meetings with a tutor are vital, for providing guidance and reassuring students. Student autonomy can be promoted by taking minutes of group meetings, participating in on-line discussion groups, and devising a well-defined decision-making policy. The sharing of experiences between groups through class discussions, together with incremental self-reflection of the research process and experience through regular entries into individual's diaries, are also valuable (*cf*. McGuinness and Simm, in press).

The role of the tutor as facilitator is key, enabling a balance between supporting and challenging students (Whitaker, 1995), and between student autonomy and tutor intervention. The level and timing of intervention by tutors needs to be carefully judged, but should be done in a constructive manner to prevent the students becoming over-reliant on such direction, disillusioned with the task, or being stubborn over adapting to criticism. Encouraging students to learn from their mistakes and motivating them to adapt or change their project is often a delicate skill. Sometimes it may be necessary to allow students to persist with their endeavour, especially if they have shown commitment to the task or where time-constraints mean that the development of a different project is impractical.

External influences include changing and volatile situations, reluctance over or rejection of permission to allow access to sites or use of equipment, political sensitivity over socio-economic or environmental issues, erratic networks preventing access to databases or e-mail contacts, or adverse weather conditions. These may have a compounding, or even crippling, effect on the feasibility of a project. Some of these problems may be unforeseeable and untimely, but a well-informed project set-up should include contingency planning. Local contacts are often invaluable in such instances for providing up-to-date information and advice.

Research projects involving group work tend to fail because of a breakdown in group dynamics, a flawed research premise and/or methodology, insufficient preparation, or external factors which can have a harmful effect on the feasibility of the project. Typically, the extent of such flaws tends to become exposed during fieldwork. Most unfeasible research projects can be identified, modified or changed before the fieldwork starts if risk assessments and contingency plans are implemented. But occasionally irretrievable breakdown of a research project can occur whilst on fieldwork.

Rescuing floundering projects

Boum and Walker's (1993) ideas on academic self-reflection can be applied to addressing problems with student projects because self-reflection and learning from experience are key elements of the research process. Identification that problems or issues exist with a project (recognition) is the first stage. If there are reservations or concerns about a project, tutors must monitor its progress more closely than usual through regular dialogue with the group. With the realisation that a project may be floundering irretrievably, a 'crisis meeting' should be called by tutors or by the students affected. Tutors must respond quickly to offer effective support. Before or at this meeting, students should acknowledge that these issues need to be dealt with and that they may need help on how to proceed (acknowledgement). The facts and significant events that have led to the current 'crisis' situation need to be established (return to experience).

Student-guided tour of Charlestown Navy Yard

The students should be encouraged to undertake some 'soul-searching' to identify and appraise the strengths, weaknesses, and causes of their failing project (evaluation), and to confront their 'fears' and concerns (attending to feelings). Tutors should be vigilant for signs of disjunction when students feel angered or frustrated at their situation, or desire 'right' answers (Savin-Baden, 2000). If not addressed, such feelings may hinder future progression. Students should be expected to acknowledge their mistakes and to carry some of that responsibility. Constructive criticism should be tempered by reassurance to prevent demoralising the students (reassurance). Importantly, the students should recognise that, although the situation may not be totally their own fault, they are a major contributory factor. External factors may have exposed and seriously compromised the students' limited preparation.

A refined or new project needs to be identified, building on previous experience and learning (integration). It is necessary to evaluate the scope for adapting the existing project into a new form by assessing the quantity and quality of data collected and contacts established to date. If the original project is totally unfeasible, all of the students should be encouraged to acknowledge that their project was irretrievable and that a new project needs to be devised. Such acknowledgements should be made freely by the students rather than being coerced by tutors into making a decision. So, it is important for tutors to provide further reassurance by acknowledging to the students that they have made a brave and correct decision. The students could be asked to single out one aspect of the locality which has interested them since their arrival (association). Without student interest, there won't be motivation, and thus useful progress is unlikely. Tutors may feel more comfortable steering the discussion towards fields in which they have knowledge and experience. The students should be encouraged to play to their academic strengths and existing success and progress. Other groups on the fieldtrip may also be able to provide advice and suggest contacts, particularly if they are using techniques or methodologies that can be adapted to the new project.

The feasibility of an alternative project needs to be assessed (validation), considering the limited time remaining for fieldwork, limited student knowledge of the locality, lack of background reading or preparation, and lack of specialist knowledge. Any new project requires careful guidance by tutors, data needs to be collected quickly in the field without much prior background research or planning, and most of the background research needs to be undertaken after the fieldtrip. Encouragement from tutors is important (motivation). Once they acquire a new direction, a collective sense of relief often pervades the students. The group should be sent away to brainstorm the planning of the project over the next few hours. Later in the day, the re-vitalised and motivated group should draft a new, concise research proposal. It is important to set realistic and manageable targets so that students are not overwhelmed. These targets should be based on the existing strengths of the research, the skills and experiences of the group members, the time remaining in the field for collecting new data and establishing contacts, and the available resources back at base. With tutor-support and motivation the group will, hopefully, re-establish a positive identity (appropriation). (See Box 1 for example.)

Finally, a self-reflective element (e.g. a personal research diary) is a vital component in the recovery and learning process. Such unsuccessful experiences can provide useful commentary in each student's record. Importantly, students should be reassured that their experiences need not necessarily be viewed as failure, but instead as a part of the learning process, and encouraged to believe that something good can come out of it. The research process should be viewed as important as the end-product (Kolb, 1984), and so it does not really matter when the 'hard-thought' is done.

Conclusions

Any skills-based module involving group project work demands high levels of commitment, competence and initiative from students to become autonomous and independent learners. Tutors act as facilitators, monitoring the feasibility and progression of projects, providing students with guidance and reassurance, and intervening when appropriate to deal with academic aspects and issues concerning group dynamics. Research projects involving group work tend to fail because of a breakdown of group dynamics, a flawed research premise or methodology, insufficient preparation, or external factors that can have a crippling effect on the feasibility of the project. If a project starts to flounder it is necessary for tutors to respond quickly and to offer effective support. Students should be expected to acknowledge their mistakes and to carry some of that responsibility.

Constructive criticism should be tempered by reassurance. If robust mechanisms for crisis resolution are in place, most situations are redeemable, thereby avoiding the students becoming demoralised and disillusioned, and so preventing failure or non-submission of the assignments. Motivation of the students is essential. The inclusion of a self-reflective element (e.g. a personal research diary) in the assessment scheme not only reveals the self-development of an individual student but serves as a record of the difficulties faced and how they were overcome. The experience of any serious logistical or academic problems can be critically evaluated by the student, enabling any credit lost due to flaws in the project to be redeemed through effective, critical self-reflection, and, if the problems were external, allowances can be made for in the final marking by tutors. Rather than being a negative experience, students often appreciate the challenge they have overcome, recognise their own personal development and academic achievement, and have an heightened awareness of their abilities and the employability of their skills. When designing student-led group project work, it is important, firstly, to separate out the expected learning outcomes from the actual evidence of success - the research process should be viewed as valuable as the end-product (Kolb, 1984). Secondly, it is important that assessment fairly reflects both group and individual contributions.

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Box 1: A tale of woe and redemption in Boston!

A group of 3 male students devised a project to study the environmental impacts of a major tunnelling project known locally as the 'Big Dig' in Boston, USA. The group planned to adopt several lines of investigation: air quality measurement of particulate matter and vehicular exhaust emissions, traffic flows and volumes surveys, and traffic survey data archives.

Their project began to flounder for a combination of reasons. The group's composition was self-selecting based on friendship, and quickly adopted an inappropriate mentality, viewing the work as a chore, and displayed a lack of independence and initiative. Consequently, the group failed to devise a robust sampling strategy, and there was insufficient research into and trials of field techniques and post-fieldwork analysis. Furthermore, despite tutor instructions, no prior access permissions or checking of the availability of archival data were obtained. Delays in the completion of the Big Dig project meant that the tunnels were only officially opened one week before our arrival. The group made tardy and uncertain progress, but periodically worked intensely in response to strong words from tutors.

In Boston, official permission was denied to visit the Big Dig's tunnels and ventilation plants (although tours were advertised), attributed to the heightened state of national security during the second Gulf War. There was also political sensitivity concerning the Big Dig's budget excesses and criticisms of air pollution. The post-9/11 caution also led to frequent refusals to permit the use of field equipment. The archival sources turned out to be piecemeal, unavailable or lost. In their disappointment and frustration, a stubbornness and inflexibility to adapt the available data became apparent. To compound their woes, adverse snowy weather affected their sampling of airborne pollutants.

The project had irretrievably broken down by Day Three of fieldwork, causing stress and consternation amongst the group. Crisis meetings were held between tutors and the group, and the procedure outlined in this article was employed.

Big Dig in Progress 2002

Following self-acknowledgement, soul-searching and brain-storming of new ideas, a new and manageable project (in the remaining time in Boston) was formulated, investigating the environmental management of Boston Common. Other groups offered advice on contacts and how to undertake an environmental impact assessment. With their new focus and motivation, the group worked hard to accumulate data to be supplemented by background reading back in the UK

The group's individual diary entries proved revealing, acknowledging that they "thought we were, but obviously not" prepared for the fieldwork, that they "could have made more of an effort to contact people", that "trying to sort it out when we got there" was ill-judged, but eventually they "really all pulled together". Each member of the group attained a creditable (in the circumstances) Lower-Second class grade for the module.

FEATURE ARTICLE

Linking the Doing to the Thinking: using criterion-based assessment in role-playing simulations

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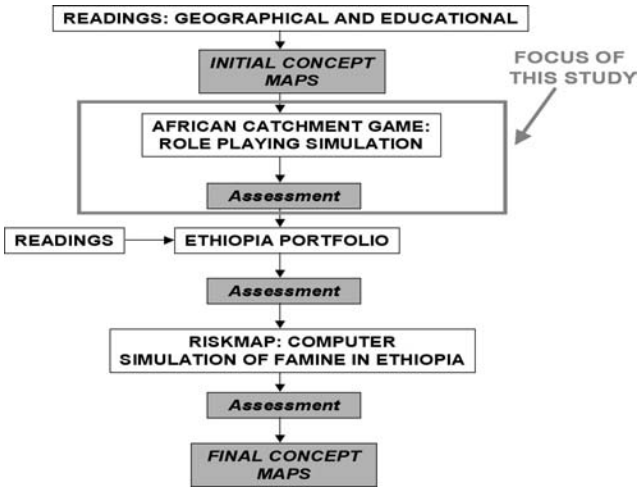
Abstract

This paper uses a case study to show how we developed a criterion-based assessment instrument in the context of a postgraduate level module in a South African University. The module's pedagogy is based on three inter-linked active learning strategies. The 'African Catchment Game' is a role-playing simulation game and is the focus of this article. The other activities were a portfolio and a computer simulation. The assessment was designed to promote conceptual understanding after each activity and so can be positioned within Kolb's experiential learning cycle. Evaluations from the learners in 2003 showed that the module had been successful in developing their ability to relate experiences from simulations to the theoretical literature.

Introduction

This paper examines the development and implementation of a criterion-based assessment tool for a shared postgraduate level module. The Rural Development and Land Degradation module[1] combines web-based and face-to-face methods in presenting three inter-linked active learning tasks: a role-playing simulation (the focus of this paper, shown in Figure 1); the preparation of a portfolio; and a computer-based simulation. Preliminary scaffolding for the learners consisted of theoretical educational and geographical readings before these activities took place, and creation of a concept map (see Box 1). Additional readings were introduced later in the module when appropriate. Figure 1 shows how the assessment instruments were positioned to link the learning activities.

Figure 1: Structure of activities on the Rural Development and Land Degradation Module



The criteria we developed ensured that understanding was consolidated after each activity, since the learners were required to describe and reflect on what they had experienced, connect their experiences to the theoretical literature and update the concept maps they had devised (Novak 1998). This type of assessment, therefore, was an integral part of the sequence of learning activities and of the process of understanding. Rapid feedback (within 48 hours) from the instructors to the learners was a consequence of using a web-based platform to hand-in

Box 1. Concept maps

The use of concept maps as a teaching strategy was first developed by J. D. Novak of Cornell University in the early 1980's, and was derived from the learning theory of David Ausubel: "the most important single factor influencing learning is what the learner already knows." Thus meaningful learning results when a person consciously and explicitly ties new knowledge to relevant concepts they already possess. Mind Mapping is a popular related technique, invented (and copyrighted) by Tony Buzan in the UK.

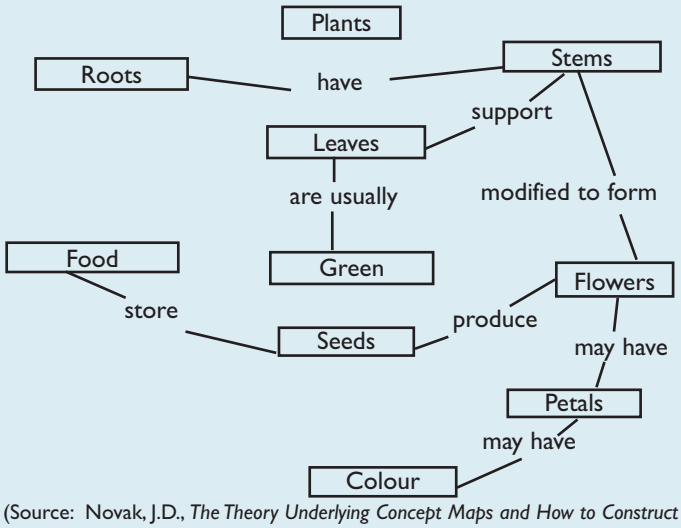
A concept map is a tool for organizing and representing knowledge, somewhat similar to an organization chart or a flow diagram. Concept mapping can be done in order to:

- generate ideas (brainstorming, etc.);
- design a complex structure (long texts, hypermedia, large web sites, etc.);
- communicate complex ideas;
- aid learning by integrating new and old knowledge;
- assess understanding or diagnose misunderstanding.

The technique is easily taught and has been shown to be a valid and reliable measure of what students understand. Concepts do not exist in isolation. Each concept depends on its relationships to many others for A concept map demands clarity of meaning and integration of crucial details. The construction process requires one to think in multiple directions and to switch back and forth between different levels of abstraction. In attempting to identify the key and associated concepts of a particular topic or sub-topic, one will usually acquire a deeper understanding of the topic and clarification of any prior misconceptions.

One big advantage of using concept maps is that it provides a visual image of the concepts under study in a tangible form which can be readily revised any time when necessary. During the formulation process it consolidates a concrete and precise understanding of the meanings and inter-relations of concepts. Thus it makes learning an active process, not a passive one. A wide range of computer software for concept mapping is now available for most of the popular computers used in education.

A concept map about a plant



(Source: Novak, J.D., *The Theory Underlying Concept Maps and How to Construct Them*. at http://cmap.coginst.uwf.edu/info/ accessed November 2004)

work. The timing of the assessments also ensured that the course instructors received feedback on how well the simulation activities were running in terms of the learning outcomes of the module. Modification to subsequent learning activities could therefore take place. Finally, the criteria against which we aligned the learners' work ensured an evolving appreciation of each learner's understanding.

The assessments were designed to ensure that the learners moved through Kolb's experiential learning cycle (Kolb 1984; Healey and Jenkins 2000). We wanted them to progress from their concrete experiences of the simulation game, the portfolio exercise and computer simulation, through reflective observations towards abstract conceptualization and active experimentation. In other words, we needed to design an assessment instrument that required them to think about what they had experienced in the simulation and relate that to their conceptual knowledge so that they could then progress to strategizing for the next activity.

The course schedule, supporting theoretical material and assessment instruments were available on the module's web-site before the activities were undertaken. In this way we wanted the learners to understand what we were looking for before undertaking any of the tasks. Completed tasks that had been evaluated were subsequently uploaded so they could learn from each others' experiences in the simulations and portfolios.

Criterion-based assessments have been developed for more conventional learning tasks such as essay writing and practical work (Neil *et al* 1999) and we have now attempted to develop a relatively simple method for active learning techniques such as role-playing or computer simulation. Our verbal descriptors for criteria were aligned with Rhodes University's degree classification and they were based on Biggs' (1999) Structure of Learning Outcomes taxonomy. Consequently, our assessment criteria focused on the cognitive domain (Bloom 1956) and the learner's abilities to synthesise, generalize, hypothesise and evaluate. Neil *et al*'s (1999) criteria were more sophisticated and examined a wider range of competencies incorporating content, skills and affective achievement. However, language skills and competence in the discipline's conventions were the only skills which we examined.

The African Catchment Game cycle

Role play is a type of active learning which depends on simulating actual experiences in an intensive game experience. The 'reality' of the simulation can then be used to promote deep learning through linkage to theoretical concepts. The game cycle started with a preparatory phase where learners were introduced through readings to role playing and game simulations in the generic sense (Stewart et al 2000). The game was played twice over a weekend at an isolated residential field centre and followed by the assessment exercise two days later.

The learners took on roles in a simulated southern African country. They could be smallholders or commercial farmers, traders, retailers and wholesalers, agro-industrialists, industrialists, urban labour, informal sector workers, refugees, bankers or government officials. The original model for this game was the Green Revolution Game/Exaction developed by geographer Graham Chapman in the late 1980s for south Asian conditions. Although it has been widely played in Asia, Africa and the USA (Chapman 2003) the game has received scant scholarly analysis, a rare exception being the paper produced by Park et al (1995). Staff at Rhodes University have modified and extended the game to incorporate current southern African environmental and developmental processes and renamed it the African Catchment Game.

The rural and urban sectors in the game each follow a sequence of annual activities, whether planting, weeding and growing crops, purchasing factory inputs locally and internationally, negotiating with labour, or producing goods for consumption or export. In order to survive in the game, sufficient food had to be grown or procured, and this was 'collected' by the game managers periodically. A wide range of interactions and strategies were possible within the structures built into the game, which was regulated by two managers (the two course instructors). Everything in the game was represented by a token, whether land, a factory, rice, sugar cane, tinned meat, money or a bicycle. Location in the game was also largely confined to either the rural or urban area with certain restrictions on widespread movement as that would be unrealistic.

The game followed a set pattern. The evening before play, learners (up to 35 of them) were shown the game venue and its spatial sub-divisions, their starting assets were described, the tokens handed around and roles selected. Our Honours modules have small numbers of 5-10 learners and so the game was played with Third Year undergraduate students taking the Development and Environment in Africa courses. The following day the group was slowly led through the mechanics of the game and then several continuous 'years' of the game were played. At the end of the day's play the learners wrote down their immediate impressions and had a short debriefing. On the second day the pattern was the same but with variations highlighting selected environmental or developmental themes. The weekend, therefore, takes the learners through two experiential learning cycles (shown in Figure 2) since their play depends on doing activities, observing the consequences, thinking and then strategizing what do next. Their two sets of immediate impressions formed the basis for the written assessment which was handed in two days later.

Figure 2: Experiential cycles in the African Catchment Game

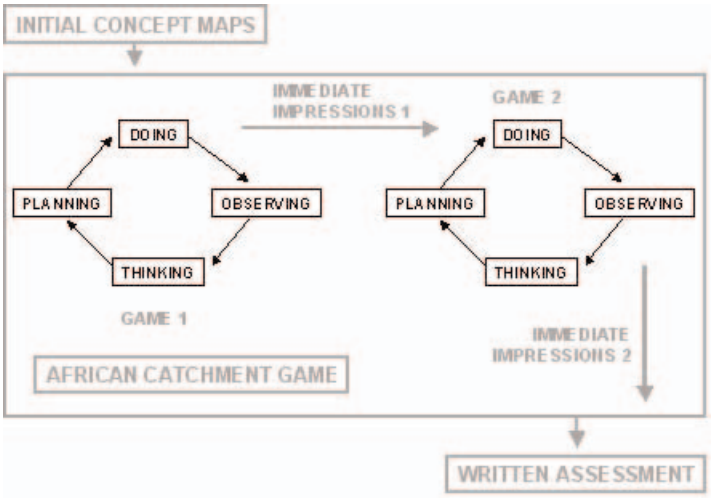


Figure 3 (overleaf) is a copy of the file they downloaded from the website with instructions for the written assignment. The preliminary sections involved getting descriptions and observations on their experiences. Assessment of their more abstract and conceptual understanding was facilitated through requiring them to relate their experiences to the readings and also to update their concept maps.

Figure 3: African Catchment Game assignment

Downloaded instructions for the assessment of the African Catchment Game

Section 1: Tell us your experience of playing the African Catchment Game on Saturday. You should describe your role in the game, your starting responsibilities and assets, outline what happened as the Game progressed and describe the feelings which you experienced (no more than two pages).

Section 2: Tell us your interpretation/understanding of the impact of developmental or environmental processes on your survival strategies in Saturday's game (no more than one page).

Section 3: Tell us your experience of playing the African Catchment Game on Sunday. You should describe your role in the game, your starting responsibilities and assets, outline what happened as the Game progressed and describe the feelings which you experienced (no more than two pages).

Section 4: Tell us your interpretation/understanding of the impact of developmental or environmental processes on your survival strategies in Sunday's game (no more than one page). Did you modify your survival strategy in response to what happened on Saturday and, if so, what happened?

Section 5: Refer back to the readings you have done for the course so far and describe how the concepts introduced through readings and your experience of playing the Game have, together, increased your understanding of rural development and land degradation issues in Africa (no more than two pages).

Section 6: Paste in your updated Concept Map here.

Box 2: Bigg's taxa and Rhodes degree categories

Criteria description	*SOLO Taxa*	*Rhodes Degree Class*
Very Good (75-100%)	Extended Abstract	(First Class)
Good (60-74%)	Relational	(Upper or Lower Second)
Competent (50-59%)	Multi-Structural	(Third Class)
Poor (40-49%)	Uni-Structural	(Fail, F1 or F2)
Very Poor (0-39%)	Non-Structural	(Bad Fail, F2 or F3)

The criterion-based assessment instrument

Figure 4 (opposite) is the instrument which we designed to assess the eight page assignments produced by the learners. We evaluated their written work through assigning grades and giving remarks on the table and using Word's 'comment' facility in their text. The resulting files were subsequently uploaded into the website.

Each of the three assessments in the module used a very similar structure, the rows in the table were the criteria and the five evaluation grades were bracketed by verbal descriptors for that criterion. Our taxonomy was based on Biggs' five levels of understanding (Biggs, 1999 see box 2). Non-structural understanding revealed unconnected information with no organization and little sense. Uni-structural had simple and obvious connections but their significance was not grasped. Multi-structural had a number of connections displayed but no meta-connections. Relational showed appreciation of the parts in relation to the whole. Finally, Extended Abstract generalized from, and transferred ideas and principles beyond, the specific study area or theme. The percentages shown at the top of Figure 4 were necessary for summative assessment and, as can be seen below, these were aligned with Biggs' SOLO taxa and Rhodes' degree categories. Rhodes University has not yet developed verbal descriptors for its degree classes and so we attempted to infer them from our understanding of the institutional culture.

Figure 4 shows that we were looking for qualitative appreciation and rewarded our learners for conceptualization at the Relational and Extended Abstract levels. These levels lay to the left hand side of the assessment schedule. When, for example, the interpretation was a perceptive and lucid account of their survival strategy, with processes identified and analysed appropriately, then a 'very good' would be allocated. The quotation below is an extract from work that was graded as 'very good' on the experience, interpretations and readings criteria.

> "Our situation was desperate, devoid of hope, without access even to resources that potentially could provide us with enough to exist. Taralyn raised the option of prostitution in all honesty. The message soon became clear that farming in Africa is about risk and survival, not profits or opportunities. In Africa's highly variable climate, slow and safe seems to be the only way to farm. The more one can afford to insure oneself against risks, the more successful one is likely to be. As we were refugees we could not afford to protect ourselves, we were completely at the mercy of a generally unfavourable environment. Thus the game progressed, with fewer mouths we were able to survive only because of reduced food demands; labour was not generally in demand so we continued to farm with limited success. Subsistence farming did not (from the game experience) appear to be a viable option. This game definitely illustrated the need for state assistance to alleviate rural poverty. Like Kirby (2001) reports, the chances of the market economy somehow lifting these people out of the poverty they find themselves faced with, appears almost impossible."

Conclusion

At the end of the module the learners reflected on each of the activities and told us how their understanding had developed. The following two quotes give a clear impression that we were achieving our objectives, since they reveal that our learners had made the connections between the active learning experience, the literature and the course activities (the portfolio and computer simulation) which followed.

> "Overall, it was interesting to see the theoretical knowledge gained from the literature played out before us in a memorable manner."

> "The lateral thinking that was required within the [portfolio] exercise in order to determine the causes and consequences of famine in Ethiopia integrated a lot of the concepts that had been learnt in the African Catchment Game, as well as built on them through the employment of further relevant readings."

Additionally, it was clear that the module promoted deep learning and changed the learners' critical appreciation of the 'real world'.

> "The first major activity of the course … was the most informative and insightful … previously, I feel that I had always had a very 'western' conception of development … I had always assumed that the challenge for a rural person was to uplift themselves and progress forwards. After playing the African Catchment Game I now understand that for many people the challenge is survival, successfully

Figure 4: The criterion-based assessment schedule for the African Catchment Game

Very Good 75-100%	**Good 60-74%**	**Competent 50-59%**	**Poor 40-49%**	**Very Poor 0-39%**

Experience of the Game:	
Clearly described, well organized and able to relate own experience to broader game dynamics.	Confusing, poorly structured, unable to relate own experience to broader game dynamics.
Interpretation:	
Perceptive and lucid account of survival strategy, processes identified and analysed appropriately.	Incomplete and partial identification, does not interpret adequately.
Readings:	
Consistent and logical connections made between readings and the Game. Well constructed, appropriate arguments.	Readings not really understood, poorly or incorrectly connected to the game.
Concept Map:	
Clearly portrayed, evidence of appropriate editing and/or addition of concepts and linkages, hierarchy/levels or groups developed meaningfully.	Poorly laid out, confused, no or few changes made, little or incorrect attempt to develop hierarchies/ levels or groups.
***Language*:**	
Appropriate academic discourse, grammar, spelling and punctuation of a high standard.	Sloppy use of incorrect or inappropriate terms, poor or incorrect grammar, spelling and punctuation.

Comments:

supporting oneself and family. I realize that this paradigm shift from upliftment to survival is one of the major stumbling blocks of aid policies."

"The Catchment Game in particular was more involving, and one really felt that she had to do something in order to survive. But basically it brought one to understand better what rural people are faced with on a day-to-day basis. Even though it is a model, it was able to give me an insight into rural livelihoods. Sometimes you claim that you know something about what is taking place in the rural areas, but this game gives you a better and clear perspective. After playing it you become a changed man/woman."

For the instructors the assessments were extremely informative as the criteria we used told us directly what our learners were or were not learning. Additionally, they showed us very quickly what was or was not working well in the active learning strategies. The assessments were, however, only one aspect of a multi-faceted strategy that also involved using a web-based platform and construction of concept maps. We are nevertheless confident that the assessments clearly linked the 'doing' in the active learning to 'thinking' and so enhanced the learners' understanding of the interconnected nature of rural development and land degradation.

1. The Rural Development and Land Degradation module is offered on the postgraduate Honours degree in Environmental Science at Rhodes University - roughly equivalent to a taught Masters degree in the UK.

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FEATURE ARTICLE

Level 1 Student Perceptions about Employability, Career Planning and Careers Guidance

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Abstract

At the start of the 2003-2004 academic year, students entering the Chester Geography Department completed a questionnaire which explored their attitudes towards the strength and nature of the links between employability and participation in Higher Education, the timing of personal career planning and the purpose, value and chronology of careers guidance. Themes raised from responses to this survey were then examined in more detail via semi-structured interviews with a smaller sample of students. This short paper summarises the results of this research. Although the findings focus on a specific cohort of students, many of the results are likely to be common to other HE institutions and therefore have implications for GEES tutors devising strategies for working on employability and career planning themes with their students.

Introduction

For a number of years, academic tutors and careers advisors have worked collaboratively to incorporate careers guidance and personal development planning into the three programmes offered by the University College Chester Geography Department (Single and Combined Honours Geography and International Development Studies). Whilst acknowledging the value of explicit careers and employability modules (e.g. Chalkley and Burns, 2001; Hawksworth and Kneale, 2001), the alternative approach taken at Chester has been to incorporate these themes within existing taught modules at all levels (for an early discussion of this work see Ribchester and Done, 2001). Student feedback suggests that this approach has been effective at regularly reinforcing key messages and encouraging student action throughout the three years of a degree programme, although it remains difficult to quantify precisely its impact on career and postgraduate course destinations.

Whilst reflecting on the careers and personal development activities that have been pursued, tutors have been increasingly aware that they are based on certain assumptions about 'where students are at', and therefore what they are likely to need and would benefit from. It is recognised that these assumptions may not be wholly accurate and that misjudgements about student requirements have the potential to undermine the effectiveness of these activities. Therefore, it was decided to explore student perceptions about employability, career planning and careers guidance, right at the start of their studies. On the first day of induction (September 2003), all students entering the Geography Department at Level 1 (n = 75) completed a questionnaire focused on these topics. Then, between December 2003 and April 2004, semi-structured interviews were completed with ten of the students who had completed the original survey, which allowed key issues emerging from the questionnaire findings to be examined in more depth.

The discussion below summarises the main results, divided into three themes. These results provide important contextual information for tutors working on careers-related issues in the Geography Department at Chester and, if similar findings are evident at other HE institutions, they have wider implications for GEES tutors who are reflecting on the best ways of exploring employability, careers and personal development themes with their students.

Theme 1: Employability and higher education

Almost every student answering the questionnaire at least 'agreed' that 'improving career opportunities was an important factor in deciding to enter Higher Education'. The semi-structured interviews revealed that enhanced employability was very commonly at, or near to, the top of the overall list of student priorities. However, when examined in greater detail, some interesting discrepancies become apparent. For example, the interview discussions indicated that an institution's graduate employability record was not an important search criterion when applying for entry into HE. More generally, there was limited awareness of high profile employability opportunities within the curriculum (for example, Work Based Learning modules in Chester's case). Perhaps more significantly, the responses indicated high levels of uncertainty about how precisely HE serves to bolster employability prospects. For example, around a fifth of the questionnaire respondents commented generally on the development of more skills and knowledge, another 16% made a vague reference to better qualifications, but only 7% of students were able to identify specific characteristics of their degree programme and how this linked to employability.

responses indicated high levels of uncertainty about how precisely HE serves to bolster employability prospects

Although drawing out the links between future HE experiences and, in many cases, not well-developed aspirations for the future is not necessarily a straight-forward task on the first day of induction, the uncertain responses to questions about this topic have important implications. For example, firstly they suggest the value of maximising opportunities for reflective activities (Harrison *et al*., 2003) in the curriculum, to enable students to monitor their own progression and development; a self-aware student will generally be one who can grapple with the challenges of career planning most effectively. Secondly, the current heavy emphasis on learning outcomes at programme and module level, although not without its critics (e.g. Hussey and Smith, 2002), would seem appropriate as a mechanism to help students 'break down' their experiences into the component parts of knowledge and skills and to potentially highlight learning achievements.

Theme 2: Planning ahead

The responses to a number of questions revealed some interesting indications about attitudes towards the timing of career planning and hence likely interest in employability-related activities. For example, only a little over half of the students (55%) intended to begin looking for post-HE career opportunities

before completing their studies and only 19% 'strongly agreed' that this was their intention. Furthermore, a quarter of students clearly indicated that career searching would be delayed until after the end of Level 3. These figures suggest that there is a sizeable cohort of students to be won over to the value of planning ahead and that there are long-term origins to the often-recognised problem of 'leaving things too late'. Encouraging the process of personal development planning from an early point in a degree programme, and linking this clearly to employability, has the potential to offset this danger and counter a seemingly strong inclination to delay. Indeed encouragingly, though perhaps a little contradictorily, there appears to be a general consensus about the benefits of 'talks and activities about careers and employability' and about the value of these from an early stage in a degree programme. The results indicate a particular preference for the inclusion of such activities within normal timetabled teaching sessions (85% at least 'agreed' with this). Within a context of growing, and sometimes competing, pressures on student time, this seems to be an increasingly appropriate strategy for tutors and curriculum planners to adopt.

Theme 3: Current plans

The new entrants were asked to express their level of interest in three possible destinations after completing their studies: entering full-time employment, starting a postgraduate course or taking 'time out' to do other things (such as travel). The percentage of students expressing an interest in each category was 61%, 41% and 34% respectively. These simple statistics are helpful in that they give an indication of the potential 'market' for different types of information and activities as well as how student interest in different careers-related activities may vary (for example, how difficult will it be to persuade a student in semester 1 of level 1 about the value of career planning if they are already thinking about taking time out after their studies).

careers and employability activities ... should ideally begin at an early point in a degree programme

The 75 students identified 23 different occupational areas as possible post-HE employment destinations. These results partly reflect the potential that a Geography degree offers for employment in a wide range of sectors, but are also due to the fact that about half of the respondents were Combined Honours students. Indeed, it was possible to identify quite a close relationship between career aspirations and the 'second' subject area in a number of cases. However, the aggregate figures mask a dominant focus on just two occupational areas. Sixteen per cent of students expressed an interest in some of form of development work, usually abroad, and it is easy to attribute this to the cohort of students on the new International Development Studies programme. Most strikingly, over half of the students (56%) expressed an interest in working in education (essentially teaching for the great majority). This was a surprisingly high figure and suggests limited 'imagination' (and perhaps confidence) as to what a Geography degree offers to a successful graduate. Very clearly it is incumbent on both tutors and careers advisers to stress the diversity of potential opportunities available to our students.

Finally, from the questionnaire responses, it was possible to categorise the students into three groups: those currently with a clear awareness of their aspirations after completing HE (41%); others who were uncertain about their specific plans but identified general ideas and possibilities (39%); and a smaller group who currently had no ideas or plans for the future (20%). Again, these figures are useful, so, for example, employability activities will need to be sensitive to the two-fifths of students who believe that their post-HE goals are already set.

A range of factors were analysed to see how they affected membership of each of the three categories (e.g. gender, age, taken a gap year or not, perceptions of previous careers guidance). Only degree programme proved to be statistically significant ($\chi^2 = 0.05$), with an above-expected number of Single Honours Geography students in the third category (no current ideas or plans). It is interesting to speculate on how student membership of the three categories changes during the three years of a degree programme and how the initial 2:2:1 balance shifts. Therefore, the possibility of a 'tracking' project is being explored, which will also aim to uncover the critical experiences that shape a student's aspirations during their studies.

Conclusion

The authors believe that this study of student perceptions has been a useful exercise and provides an empirical context for our ongoing attempts to encourage personal career planning and a reflective approach to learning. It has served to highlight the importance of including these topics in the curriculum but has also emphasised the particular challenges that need to be confronted if work of this nature is to be effective with students. The results show, firstly, that students do perceive there to be a close relationship between being successful in HE and greater employment opportunities. Secondly, they also show that awareness of the nature of these employment opportunities - and precisely how HE facilitates access to them - appears restricted. These findings demonstrate that these two issues should be a key focus for careers and employability activities, which should ideally begin at an early point in a degree programme in order to discourage the tendency to put off important decision-making processes.

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FEATURE ARTICLE

Employability of Geography Graduates in the GIS and GI-related Fields

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Abstract

Employability for all graduates is closely linked to the key skills, discipline-specific skills and knowledge which they take from their years at university. The White Paper on Higher Education released in 2003, refers to concerns about employment of graduates in general. Geography graduates in particular, with 'non-vocational' degrees can experience difficulties in obtaining employment which is commensurate with their qualifications. The preliminary study reported in this paper focused on former students of the School of Geography and Environmental Management of the University of the West of England (UWE) who had achieved jobs in Geographic Information Systems (GIS) and Geographic Information (GI) related fields of work. These graduates had all completed the 'Applications of GIS and Remote Sensing' module which incorporated GIS-specific skills, GIS theory and remote sensing techniques but also developed soft (transferable) skills such as team work and communication skills. This research aimed to discover if there are unique and highly developed characteristics of all or some Geography graduates which make them more likely to gain employment in these particular sectors. The views of employers in the GIS and GI-related fields were investigated via a questionnaire to discover what qualities they looked for in graduates. This was followed up by in-depth interviews with some of these employers.

Introduction

Wider participation in higher education (towards 50 percent of those students aged 18 to 30) as envisaged in the White Paper on Higher Education (HMSO, 2003), means that all institutions need to consider how to help students during their undergraduate studies. Most graduates will not go on to further study and hence need to be aware of the job market. This research looks at the employability of Geography graduates (physical or human geographers or those reading for joint honours degrees) in the specific fields of GIS and GI.

It is generally accepted that employability is closely linked to the key skills, discipline-specific skills and knowledge that graduates take from their years at university. Yorke (2004) defines employability as 'a set of achievements - skills, understanding and personal attributes - that make graduates more likely to gain employment …'. However Geography graduates reading for 'non-vocational' degrees, sometimes find difficulties in obtaining employment in line with their skills and qualifications. My research indicates that Geography graduates who are familiar with spatial data analysis and have a good skills base are likely to find employment in GIS and GI-related fields.

Background to this research

Over the past two years it was noted that a number of former students of the School of Geography and Environmental Management at the University of West England were asking for references for positions that required working with geographic data. These were all students who had completed the module on applications of GIS and remote sensing.

It is estimated that 80 per cent of all data has a spatial component (Royal Geographical Society, 2002, Cooke, 2001). The British National Grid coordinates in eastings and northings are an obvious example, but postcodes, street addresses and land line telephone numbers also have a locational component. Hence, Geographic Information can be defined as information about objects or phenomena that are associated with a location relative to the surface of the earth, and GIS is a technology used to collect, manage, analyze and report geographically referenced information in the form of maps or other output.

Owen (2001) states that almost all major companies now recognise that they have a requirement for geographical information; the GIS industry world-wide is valued at £1bn. There is thus a great opportunity for Geography graduates having spatial analysis skills and discipline-specific knowledge to be able to show the relevance of their degree in a wide variety of business situations. Boothby and Dummer (2003) point out that GIS is rapidly becoming a generic skill and a requirement for many jobs. It is a good indicator of the ability to use IT flexibly and most importantly, it is integral to problem-solving activities.

Methodology

The research methodology involved obtaining information from both former students and from potential employers. The first step was to contact all 65 former students of the past two years who had completed the applications of GIS and remote sensing module, drawn from the human geography, physical geography and joint honours programmes. This module was used as a discriminant for all Geography students to try to understand what these particular students had to offer to prospective employers.

The questionnaire was used firstly to identify these former students who had a job which required GIS skills or involved GI. If so, they were asked to reply to a series of open-ended questions about these positions. This group were asked for their job titles, and the qualities or discipline-specific knowledge they offered which they believe got them the job. Also requested were their views on a Personal Development Plan (PDP) and a portfolio of work being introduced during undergraduate studies.

A questionnaire was also sent to employers at management-level in the South West that were identified as being involved in the GIS and GI-related fields. Sixteen companies were contacted, initially by means of a questionnaire, and replies were received from twelve management-level staff. In-depth interviews were conducted with six of them. These employers represented companies in the commercial world, quangos, and central and local government. The aim was to investigate the views of employers on the qualities that Geography graduates brought to the company and which of these were most useful to them. Qualities were considered in the categories of discipline-specific knowledge and skills as well as generic skills.

Main findings

Employees

Twenty-six former students replied out of a total of 65. Of these 26 replies, twelve were not working in these areas. Fourteen replied that they had obtained employment in the GIS and GI fields. This is over 21 per cent (n=14) of the total of 65. The job titles given were interesting in that they showed a wide range of employment which could interest Geography graduates. Table 1 gives a selection of these.

All these employees had presented their undergraduate GIS projects (which were team projects) in their job interviews and some had also used their dissertations. The qualities that had got

Table 1: A selection of job titles given by employees

Cartographer
Planning Technician
Graduate Environmental Engineer
Environmental Health Technician
Transport and GIS officer
Environmental Adviser
Sales Recruitment Consultant
GIS Technician/ Analyst
GI Analyst
Data Quality and GIS Officer

them the job were mainly described as knowledge of GIS fundamentals, software and terminology, database management skills and the ability to produce maps. The GIS project was mentioned because it demonstrated that they had experience in using the software. No mention was made of generic skills in this context.

Varied views were expressed about a PDP and a portfolio of work. Most were enthusiastic about such developments in the undergraduate curriculum, because with hindsight they felt such career development strategies would have helped them. Typical comments were:

- These would stand as proof that I have done the work - it is evidence to prospective employers.
- It would describe how advanced I was in certain skills.
- This documentation would satisfy employers and they would not require retraining.
- It would be useful for a prospective employer to see the progression.

On the other hand, there was the more pragmatic comment: 'Just because you have a PDP does not mean you would get a job'.

Employers

For a graduate level post, a degree is the initial requirement, but it was of interest to discover what additional qualities could enhance job prospects. The following viewpoints were extracted from the questionnaires and the semi-structured interviews with managers. Six of the twelve highlighted knowledge of GIS and analytical skills as a definite enhancement, while four expressed an interest in software programming abilities. Also, four employers wanted people skilled in database management. Digital mapping experience and use of Ordnance Survey mapping products were mentioned by three employers. All the employers, however, referred to the need for a high level of computer literacy.

Transferable or generic skills were next investigated by focusing on transferable skills expected from new graduates. What were the most important qualities that the managers looked for in prospective employees? A list of eleven qualities, compiled by Brennan et al. (2001) was put to the employers and this is given in Table 2. The top three qualities selected were team work, oral communication and accuracy with the top votes for team work. This supports the contention by Yorke (2004) that a degree will get you an interview, but it is not an assurance of employability.

Table 2: What employers value in new graduates

Working under pressure
Oral communication skills
Accuracy
Attention to detail
Working in a team
Time management
Adaptability
Initiative
Working independently
Taking responsibility and decisions
Planning, coordinating and organising

Source: Brennan et al. (2001)

Implications for teaching and learning

Not only does there appear to be a need on the part of employers for skills and discipline-based theory related to geographic information, but many students are aware that GIS theory and skills are given too little attention. Gedye and Chalkley (2004) found in the GEES Graduate Employability survey that 41.3 percent of students surveyed felt that GIS topics were given too little attention in their degrees. Also, 53.8 per cent made the same comment about career planning.

This research at UWE has led to the acknowledgement that requirements relating to employability should be expressed more coherently in undergraduate studies. In particular, students should be encouraged to become 'knowing' students, in that they should become explicitly aware of their achievements so that they can represent themselves more appropriately in job interviews. Peter Knight (2002) points out that 'graduates do not often realise the richness and extent of their achievements'.

It has been concluded from interviews with employers and enthusiastic comments from employees in this research that a portfolio of work is a valuable resource in enhancing employability. In response to this the present group of students will be encouraged to keep and value a portfolio of work. A PDP requires an approach at faculty level which is being implemented in the School.

Future research

Further research will follow up the next group of graduates and the information will be added to the database of the past two years. Contacts with employers will continue and be widened to include guest lectures by employers in the GIS and GI fields of work. On-going communication with employers is seen as essential in understanding the dynamic nature of the GIS and GI sectors of employment. This knowledge will be used to inform and so enhance the employability of Geography students.

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FEATURE ARTICLE

Motivating Student Personal Development Planning by Making Links with Employability

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Abstract

The project described here is designed to enhance the use of personal development planning (PDP) amongst all Higher Education (HE) students through the use of current performance and review documentation from a range of companies and organisations. The overall aim is to help students from any and every discipline to make a connection between their own required portfolio planning and the performance development plans that are used in the workplace. The database of materials from organisations is growing. The objective is to have resources from a cross-section of charity and voluntary organisations, large to small companies, national and local government and professional bodies. The aim is to have a range of personal planning resources that will appeal to as broad a range of students as possible.

Introduction

This Personal Development Planning project, based in the Geography Department at the University of Leeds, aims to improve students' understanding of the role and value of planning and reflection:

- Showing that reflection and planning are serious workplace activities;
- Putting workplace practices in the student domain;
- Giving academic staff easily accessible materials to work with.

The objective is to collect a broad resource of personal planning materials from companies and other organisations and to make these accessible to all staff and students in Higher Education. We have obtained agreement from a pilot group of companies to use their planning and development documentation. From these materials we have created a website that allows HE teachers to draw on workplace PDP practices for use with undergraduate and postgraduate students. Examples of original documentation from the companies are used as the basis for activities that encourage students to understand workplace cultures and practices.

The materials can be found at http://www.geog.leeds.ac.uk/courses/other/performance/pdpindex.html

The PDP website

The website has four sections:

Section 1. Student Activities - Activities for use in individual, small or large group sessions working on reflection and personal development planning skills. These draw directly on the company materials. They follow a consistent *Tutor Notes* and *Student Materials* format. They are self-contained in Word documents. The intention is that tutors cut and paste the *Student Materials* section to their own handouts. The *Tutor Notes* give information on running a session. All activities are suitable for use in one-hour or shorter sessions, usually following student preparation. Some exercises can be used as follow up activities. Examples of activities are:

- What does a Development Plan look like? Comparing your current practice with company procedures at Woolworths or HBOS.
- Planning for the future using Somerfield's template.
- Setting longer-term goals using BAE Systems' planner.
- Reviewing performance against goals using Woolworths' criteria.

Section 2. Portfolio Pages - Examples of pages that could be used in departmental or institutional Personal Planning Portfolios, which incorporate the company materials.

Section 3. Company Performance Development Plans - Original documentation from the companies who have collaborated in the project. These materials, including a brief company description, are reproduced directly and presented in html and Word formats.

Section 4. Links - to PDP resources

In the next phase of the project the aim is to expand the materials, so students can see a considerable range of resources and teachers can select from companies and organisations that are familiar to their students. We are looking for examples from as wide as possible a range of organisations from public, private and voluntary sectors, and CPD materials from Professional Bodies to enrich the experience for the students.

The material on the website is available, nationally and internationally, free of charge, and all HE teachers and students can access it. The agreement is that anyone using the materials must acknowledge the organisation or company origins of the materials. In reproducing documentation for student use, the company titles or logos must be kept in place.

Organisations collaborating to date are Avanade; BAE Systems; BNFL; Bradford Metropolitan District Council; CRAC; Environment Agency; HBOS plc; Kirklees MDC; Save the Children Fund; Somerfield plc; The Chartered Institution of Water and Environmental Management; Woolworths; and Yorkshire Dales National Park.

This is more interesting than the university booklet thing, you can see the reason for doing it.

Evaluation

The materials only went online in January 2004 and so have not yet been used very widely. However, some of the materials have been used in student workshops with considerable success. Part of the final phase of the project will be to revisit student use of the resources and their longer term impact. Here are the comments and reflections from two events.

Comments from undergraduates. This was a class of 87 level 2 geography students who by their own admission were not for the most part engaging with their faculty PDP process. Their directly quoted reflections are in italics.

- *This is more interesting than the university booklet thing, you can see the reason for doing it.* This comment summed up a majority view from the class.

- *I am not sure that I really want to take time on this just at present. I know I should but for university study I can get enough done without. I will do it at work when it means something.*
- *I was really surprised that a company like HBOS takes this sort of time with staff. Planning for courses in the next two years seems a long way off.* This was the most common comment although balanced by the *Why are you surprised, this is what happens at work. I have been doing this for xxx for two years.* And from another *In my job this is how you get promotion. My manager has been really helpful about filling the thing in and it was OK because I got a promotion.* The best advocates for the process in this class were students who already engage with this style of reflection at work and do not see it as difficult or intrusive.
- *I could be doing more on this, I find reflecting difficult so it is good to see different ways to try.* This illustrates a general issue and also brought out some issues about the style of materials: *I like the open boxes, you can write what you want* contrasts with *The tick boxes are good, I don't know what to put mostly so it's better to have more boxes to help.*
- *It was really interesting talking about our plans and working out what you need to do to get ready for an interview. Having the Avenade template made it seem more relevant.* There is no doubt that running the session takes some effort and encouragement from the staff but because the forms are substantive and the task takes some time, the outputs can be made relevant and personal, and certainly on the day they were being taken seriously by most of the class.

A group of 14 taught postgraduate and PhD students attended a voluntary PDP session where we used examples of the organisational resources to discuss the reflection and planning process. The students then took time to discuss and decide which materials they would pick to create a template for their own personal use. In each case they chose a mix of materials because they wanted some general reflection opportunities and some project planning materials. Again their comments are in italics.

- *Companies really do this. And it is for real? Do they do this with all people working for them?* This group was also surprised that this is a serious workplace activity.
- *I like the Somerfield stuff. It is clear, lots of space, and the time scale bit is really good. It would make you do things rather than putting it off.*
- *The HBOS appeals to me cos I can see what they want. It is good to have someone looking after what you want. It would be good to get feedback at all the times and I like the bit about support required too.*
- *I could really use the ideas here - Deliverables and Actions required to achieve goals. My thesis has been going on so long and it is all a bit of a mix-up of bits. This would get you to break it into bits which would really help me, it's why I came today I suppose. Having Objective, Results and Method to do it columns might help.* (Woolworths).
- *The Project Planner one* (Avenade Project Contribution Form) *would be really good for my thesis. I like boxes to tick and this is a really brilliant idea. You can just change all the section heads to fit what you are doing in the lab. The idea of knowing if you have done each bit well, does it meet expectations or exceed them could be cool. You'd get more done if someone told you it was really good.* This led to a short discussion about how PhD supervisors let you get on with your project but don't really give much praise.
- *I like the way you get the same size space for business/MSc objectives and personal objectives. It can remind you that you can be doing other things not just uni work.*

At the end of the session these students were all very positive and were rewriting examples with headings to suit their own activities and projects. While some of the language is difficult and business oriented, the students, both UK and overseas, skipped over it and started re-writing in their own style.

I like boxes to tick and this is a really brilliant idea. ... You'd get more done if someone told you it was really good

Considerations for further development of PDP

Getting involved in collecting the materials from the organisations is a task that is taking a research officer with PR contacts some considerable time. So far the companies have all said yes, and it is likely that cold calling would not have anything like this degree of success.

Embedding the student activities within course programmes will require thought. Tutorial sessions in all years, as well as skills and careers modules, are obvious locations for the activities. The *Preparing for Interviews* activity was used in a careers module as was *What does a Development Plan Look Like*, with the aim of understanding something about the culture of the organisation as well as the planning process. The *Project Planning* materials would drop into dissertation preparation sessions, whilst the *Goal Setting and Planning* activities could be helpful in preparation for a year abroad or a work placement. The experience with the students suggests that these materials can be used to good effect with taught masters and research students, but that timing is important. The workshop was held in March when taught Masters students were well into the year and planning their project work, and thinking about what to do next was in their minds. The PhD students who attended were in their third and fourth years and had coping with their PhD, planning for and getting a career in mind. It can be argued that this group were also ready to use these materials, and that timing could be critical in developing engagement.

If you can think of new ways to use the resources then please let me know and help to build the site. If you know of organisations that would add their PDP materials to the site, please pass on the details.

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FEATURE ARTICLE

Planting Hope: supporting the greener curriculum.

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Abstract.

Major challenges in education for sustainable development and environmental education include finding teaching strategies that both demonstrate / foster good practice and that help reconnect learners with a natural world that lies outside their everyday experience. The 'Connecting with Hope' exercise involves participants in an end-of-term tree planting, conducted in the name of carbon mitigation. As part of the exercise, participants are asked to write their main hope for the future across three tree labels and attach these hopes to three trees that they have planted. Their wishes include the hopes that human actions will not destroy our world and that humans should treat their fellows with greater consideration and respect. When asked to reflect upon the reasons behind the exercise, the majority recognise that this includes helping them repay their debts to the environment and accept their personal responsibility for sustainability.

Introduction

The Secretary General of the United Nations, Kofi Annan, has summarised the main problem inherent in greening the curriculum and promoting education for sustainable development:

> "Our biggest challenge in this new century is to take an idea that sounds abstract - sustainable development - and turn it into reality for all the world's people" (Annan, 2001, p2).

So, how do you persuade a British undergraduate, who has been born and raised in an urban or suburban environment that the natural world, which they take for granted, is real and that it matters to them? When the main experience is that seen through the screen of television natural history programmes or occasional walks through manicured official 'nature trails' or gardens, usually imparting the message that it is a human responsibility to manage and conserve nature, how can you convince these learners that natural systems are the only systems that are truly self-sustaining? When everyday life is dominated by a built environment of city, tamed gardens, managed farmlands, artificial forests, and when the experience of self-controlled nature is restricted to occasional recreational visits to wild places on the edges of civilisation, how can such a learner be persuaded that the natural world provides the entirety of their everyday life-support system? The major challenge in any attempt to 'green the curriculum' is that of 'reconnecting' an urban alienate with the realities that sustain their world of asphalt, lawn and centrally-heated concrete.

The problem is compounded by our style of education. For the most part, even environmental education is conducted within the shell of the university classroom, promoted through a haze of textbooks, papers and flickering images on a VDU monitor or PowerPoint projector. Supplementing this abstraction, the real world is portrayed as an occasional posed illustration, a set of postulates or numbers, perhaps explored through the dream of a mathematical model. It matters not whether the subject to be learnt is the construction of a pipe drain, the ecology of a moorland, the physiology of a bacterium or global warming, the topic is tackled in a similar way. Its subject becomes the object of study, something external and distant, something to be examined dispassionately from a high plateau of intellectual discourse. David Orr, a prominent US Environmental Educator, is said to have remarked that our problem is not one of education but a problem in education, something intrinsic to our educational system.

The questions remain: is there a better way to reconnect learners with the natural world and can this be developed within the constraints of the increasingly regimented and inward-looking environment of a modern British university? The current ethos, with its insistence that the main goal of a university academic is the publication of subject-based research, is one that is not likely to encourage innovation in learning and teaching, despite support of the Subject Centres and university teaching fellowships. Of course, it is precisely these two agencies that fuel the work described in this report.

Context

This exercise, 'Connecting with Hope', was conceived as an attempt to help learners reconnect with nature (c.f. Macy and Brown, 1998). It builds upon an educational ethos that emphasises learning by doing - constructivist ideas from science education (Campbell, 1998) - and the Gandhian notion of 'bread labour' (Sethi, 1979). It was targeted at students on the Gaia module at Oxford Brookes University (OBU).

Gaia is a relatively new theory of the Earth, which conceives the environment system as something that is regulated and controlled by its biological components acting together (Lovelock, 1991). The Gaia module at OBU is an advanced level course aimed at students in their second and third years of undergraduate study. It is based in the Department of Geography but accepts participants from a wide range of other disciplinary areas including the Environmental Sciences, Planning and Fine Art. The module is heavily science-based and involves mathematical modelling, aspects of biogeochemistry, ecological dynamics, and complexity theory as well as a basic grounding in General System Theory (Skyttner, 2001, *cf.* Capra, 1996).

The Connecting with Hope exercise was undertaken on the trailing edge of the formal course curriculum, attached as a requirement for those students who opted to take a final essay examination for assessment, and as an option for those who had built their assessment through other modes of spoken and

Box 1. Instructions for the 'Connecting with Hope' exercise.

1. When you have completed your essay, collect THREE tree labels and then spend 5 minutes to think.
2. What is your most deeply held hope for the future and the world? Write this in a single sentence or phrase, at the end of your essay - try to use 18 words or better many less to express this hope.
3. Now write your message in 'indelible' (well, it isn't y'know) ink across the 3 labels so that the full message is visible only on the three when seen together.
4. Number your 3 labels.
5. Now, let's plant some trees...
6. Attach each of your labels to three different trees that you have planted yourself - silver birch and/ or oak - as most appropriate.
7. You will please note that we plant a ditch and a circular mound. So, plant your labels where they belong in this landscape - in the ditch, rising up the embankment, around the edge of the circle, in a line that leads to the heart of the circle - as a route or pathway or at random.
8. Only do this exercise if you believe in what you have written. If you are merely humouring the teacher, for example, write your answer and do nothing.
9. However, if you believe very strongly in what you have written and want to 'send' your message, then place your message on trees in the most appropriate location - maybe nearer the heart of the circle where the belief is strongest? Maybe around the edge where your message is all encompassing? You alone decide.
10. If another member of the class joins us, please explain what it is we are doing and help them do the same. Tell no-one else. In a year or so, our messages will be gone to the sun, wind and weather.
11. If you can, after your 18 words, please try and explain to me what you think we are doing and why your teacher might think you should do it.

written activities (*cf*. Haigh, 2001). It involved planting 250 trees on unused land on the University campus. The official explanation for the exercise is that it supports the Gaia module's claim to be our university's only 'carbon neutral' module, the only module that does not increase global warming and environmental pollution by adding carbon dioxide to the atmosphere, an important ethical stance given the subject matter. The instructions for the exercise (Box 1) were handed out and discussed as the essay tests were collected.

Results

Nineteen of the 44 students on the Gaia module participated in this (optional) pilot exercise. Twenty five joined the physical part of the tree planting. The list of hopes is instructive (Box 2). The most poignant is the hope that there will be a future, that our generation will not destroy our world, and that humanity becomes more considerate of its effect on the world. A second major theme is the hope for greater empathy and respect for fellow humans. One or two wish for a less materialistic society. The list ends with four echoes from the Gaia module itself, with participants 16-17 clearly second-guessing the thrust of the exercise. One student sends a heartfelt personal plea for meaning. In all, perhaps a third show ecocentric leanings, about half are anthropocentric, while perhaps two or three show direct personal, ego-centred priorities.

Box 2. Participants' hopes for the future

1. To have hope, a future and a world.
2. People live peacefully and in harmony with their natural environment.
3. Healthy, peaceful and enjoyable planet.
4. We do not destroy the planet for our great grandchildren.
5. My grand children may see the world as I have seen it.
6. Humans realise what we are doing to the Earth.
7. That there is more thinking about our actions and their effect on the world and other people.
8. That the world can find stability, environmental and political.
9. People living as one on one big earth.
10. An end to intolerance and ignorance.
11. An end to racist and religious persecution.
12. For the world to have an open mind.
13. For money and property to become less important to our culture.
14. Technology is a battle for the ego, not the planet.
15. Everything to make sense, everyone to be happy, me to be satisfied.
16. Many people take from Gaia, more should give back.
17. Humans to reconnect with Gaia.
18. Respect, honour and obey the bacteria.
19. Death comes to us all but life goes on...

Participants' evaluations

So, what did the participants make of this activity? Box 3 overleaf lists comments received from 16 respondents.

Several participants connected the exercise with the Gaia idea and with the welfare of the planet. Several statements contain the thought that through their actions they can make a difference to the future, and the sense of a 'responsibility to act' appears in some, including notions of repaying dues to Nature. Almost a third of the participants recognised that the exercise is an overt attempt to influence their thinking, and only one remained wholly baffled.

Discussion: planting with mindfulness

One of the advantages of teaching in a modular course is that modules can become part of many different subject degrees and that through this it becomes possible to interact, occasionally creatively, with academics from different disciplines. In this case, inspiration came from two sources, first the work of the Fine Arts participants on the Gaia module and, more particularly their tutor Shelley Sacks of the Social Sculpture Research Group,[1] and the work of a kindred spirit, the artist Diana Bell. Social sculpture arises from the ideas of Josef Beuys. For Beuys, sculpture is about the way we shape the world that we live in, an evolutionary process in which everyone is a sculptor (Bockley Gallery, 2003). In addition, Beuys (1991) argued

> " I think the tree is an element of regeneration which in itself is a concept of time. The oak is especially so because it is a slowly growing tree with a kind of really solid heartwood. It has always been a form of sculpture, a symbol for this planet... ".

Box 3. Participants' analysis on the purpose of this exercise

1. Maybe to get us to think, possibly for the last time, about our global responsibility.
2. Try to make us think about life in general.
3. To help see different modes of scientific thought.
4. To increase the depth of our thinking about the planet - growth in ecological understanding.
5. Tries to make you feel that you are working in cooperation with Gaia and give back what you have taken.
6. To see if attitudes change with knowledge of Gaia.
7. Teaches the importance of protecting the environment.
8. Trees are a vital regulator for the Gaia system. We should do our job in the regulatory cycle. In this module, we have used a vast amount of resources that might not even have been meant for us. This is one way of repaying a debt.
9. Replace trees that were chopped down to make paper.
10. Giving back to Gaia an offering - also by putting a hope on a tree it may get recycled into Gaia... and come true.
11. We can start accepting responsibility for our actions in the environment.
12. Putting our thoughts into practice.
13. I think that we are helping Gaia.
14. Helping us preserve the world.
15. Leaving a message for the people of the future.
16. Not sure what all this has been about.

In fact, social sculpture ideas have already been co-opted for community tree planting. For example, in 2000, the City of Baltimore, supported by the Fine Arts Gallery of the University of Maryland, planted 200 trees with the support of community volunteers. A ceremony at each site celebrated the hope of creating a greener, more liveable urban environment (Bockley Gallery, 2003). Subsequently, the media have reported on the Yoko Ono 'wish tree' installation at Portsmouth Cathedral, where visitors can write down their desires (JL. 2004). Of course, this exercise does not aspire to be 'Artistic'.

The second inspiration for this exercise comes from a sojourn during the 1970s in the Himalaya that placed the author on top of Flag Hill, Landour. Here, local Buddhist Tibetan refugees hang their prayer flags until they fade. An introduction to the writings of the Buddhist monk Thich Nhat Hanh (2002) came much later. He talks of walking meditation and walking mindfully, in order to overcome our tendency to rush through the world without seeing anything, without thinking about anything around us, lost in our own petty preoccupations. Thich Nhat Hanh is also known for his notion of 'interbeing' and the one-ness of existence, a Gaia-like notion (Daboo, 2002). Of course, this exercise does not aspire to be 'Religious'.

Indeed, also in the 1970/80s in the same Himalayan location, environmental work was being led by Gandhian Sarvodaya activists of the Chipko Andolan, the political and environmental movement that gave the world 'tree-hugging' as an extension of its village-based protests against forest destruction, tree theft and official corruption (Haigh, 1988). Gandhi was a proponent of the principle that learners should learn through practical action, symbolic bread-labour, and that teaching should involve the whole body rather than merely the fingers that hold the pen (Richards, 1982). He opposed the elitism that insists that educated folk should never get their hands dirtied by practical work - a feeling

that still permeates parts of our modern university system. Of course, this exercise does not aspire to be 'Political'.

However, it does aspire to be 'Environmental', to be applied physical geography, and to support 'Education for Sustainable Development' (Haigh, 2004). As such, it owes debts to Gandhian thought, screened through Arne Naess' concept of Deep Ecology. Deep Ecology education is constructed, not upon a theory of learning but, upon a theory of personal maturation. This process is conceived as three conceptual steps, each of which involves a redefinition of the personal self (Naess, 1987):

- ***Step 1***. Childhood, where emerges recognition of the 'Personal Self' - an individual with an individual will, including (as any parent of a 'terrible' two-year old will know) the will to express contradiction.
- ***Step 2.*** Adolescence, where emerges the realisation of the 'Social Self'. Here, the self becomes redefined in terms of a place in human society, first a small social group such as family, peer-group, tribe, and eventually, hopefully as part of the larger community of all humanity. Here, the 'I-Self' becomes subsumed within a 'we-Self ' (Coward, 2000). This intuition, which culminates in true eco-socialism, Naess and colleagues shrug away as 'shallow ecology'.
- ***Step 3.*** Maturity, where emerges recognition of the 'Ecological Self'. Here, the self becomes redefined in terms of a role and a place within the entirety of the living world, the community of all life.

Recognition of the Ecological Self is one of the logical necessities of accepting the possibility of Gaia and the argument of General System Theory. However, it is also an imperative for education for sustainable development, where even anthropocentric thinking needs to be mitigated by recognition of the need to conserve and, where necessary, reconstruct, the human habitat. In the Connecting with Hope exercise, around a third of the participants approach step three, whilst the majority remain fixedly anthropocentric. This pattern is confirmed in larger studies of student attitudes across the Gaia module (Haigh, 2001).

Deep ecologists often reject Gaia Theory because of its interventionist aspects. Carbon mitigation activities, such as tree planting designed to reduce the release of the 'greatest pollutant' - carbon dioxide, are seen as naked interventionism, and crude planetary engineering (e.g. Devall & Sessions, 1985, p6). On the other hand, Gaia people often lean toward engineering - planetary medicine (Lovelock, 1991), and direct action to help the planetary system. Applied physical geography - and the Connecting with Hope exercise - shares this position. It is about

changing the environment to remedy imbalances caused by human activities.

Perhaps this exercise, which tries to help learners to self-identify with the needs of their environment, is a form of social engineering. It aims to help learners connect with the non-human environment, to help them to connect with the welfare of their environment, to walk the steps towards ecological self-realisation. Many commentators now accept that achieving sustainable development demands a change in social values that involves both wider perspectives and longer timescales than those current in our society. As Kofi Annan comments "Sustainable development will not happen of its own accord. We need a break with the harmful practices of the past..." (Annan, 2001, p2). UNESCO calls Education for Sustainable Development "learning how to make decisions that consider the long-term future of the economy, ecology and equity of all communities" (UNESCO, 2003, p. 4). Education for sustainable development must play its part in helping learners to see the big picture and to connect with the realities of the global environment. Perhaps, in some small way, this exercise, planting hopes, planting trees with hopes attached, contributes? The participants' planted hopes divide between aspirations for humanity and aspirations for the environment, and they display consciousness of the needs of the future. Their reflections on this exercise show that they are aware of the exercise's intention to make them think about the world and their own roles and personal responsibilities within it.

Conclusion.

'Connecting with Hope' is a small practical exercise that aims to address several problems faced by those who teach sustainable development and promote environmental education by greening the curriculum. Its physical aspect is that it requires its participants to 'get their hands dirty' by planting trees and so become personally, physically, involved. The trees are planted in the name of carbon mitigation and with the objective, in this case, of eliminating the negative environmental impacts of a particular course of study. The work aspires to make Oxford Brookes University's Gaia module carbon-neutral and to negate the release of the pollutant judged most threatening by Gaia theorists, namely carbon dioxide (Lovelock, 1991). It also helps learners reflect upon their own personal responsibilities for their habitat and environmental pollution. The underlying message is that their own actions matter and that their personal decisions make a difference in the environment.

In addition, those involved were asked to write down their most sincere hope for the future and attach this message to three of the trees that they had planted. The messages were dominated by hopes for the survival of the world and for a more tolerant and humane society. After writing their message, participants were asked to reflect upon the purpose behind this activity. Many judged that it signified their repayment of a debt to the planet and that it attempted to make them think about their personal role in the world.

The central problem of education for sustainable development is that of making it real (Annan, 2001). Here, this means reconnecting people from mainly (sub)urban backgrounds with a natural world that they rarely experience or consider on a day to day basis. Experience elsewhere suggests that those who plant trees subsequently assume some connection with the welfare of those trees and their habitat (Haigh, 1998). Hopefully, this tree planting exercise not only solves some of the ethical problems of education for sustainable development by demonstrating good practice, but also helps its participants realise their role and contexts in the living world.

Footnotes

1. Oxford Brookes University's Social Sculpture Research Unit promotes interdisciplinary creativity and the relationship between the aesthetic, social process and sustainable development (Sacks, 2000). "Social Sculpture refers to a conception of art, framed in the 1970s by Beuys, as an interdisciplinary and participatory process in which thought, speech and discussion are core 'materials'. With this perception, all human beings are seen as 'artists' responsible for the shaping of a democratic, sustainable social order. Social Sculpture lifts the aesthetic from its confines within a specific sphere or media, relocating it within a collective, imaginative work-space in which we can see, re-think and reshape our lives in tune with our creative potential". 'Every human being is an artist, a freedom being, called to participate in transforming and reshaping the conditions, thinking and structures that shape and condition our lives' Joseph Beuys. From: http://www.brookes.ac.uk/schools/apm/social_sculpture/!

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FEATURE ARTICLE

Continuing Professional Development in Higher Education: what do academics do?

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Abstract

Continuing professional development is currently high on the agenda for UK Higher Education. A small number of studies have been undertaken with mixed disciplinary groups of academic and other HE staff to ascertain the different activities undertaken to develop teaching practice. The aim of this small-scale research was to complement these studies by looking at the experiences of academics from a single discipline, Earth Science, across 31 different institutions in the UK. Responses from 192 academics indicated that CPD takes a wide variety of forms; discussions with colleagues was the most frequently-cited form of CPD undertaken. The main barrier was perceived to be lack of time or the need to focus on research in most institutions. It is suggested that challenges for HEIs in integrating CPD include: the valuing and monitoring of both formal and informal CPD activities; exploring synergies between professional development for teaching and for research; and supporting collaboration and communication between educational developers and academic staff, between disciplines, and across institutions. CPD needs to be considered as a normal part of professional life for all academic staff; it needs to be self-directed and planned within the relevant context.

Introduction

Continuing professional development is currently high on the agenda for UK Higher Education. Further to proposals put forward in the Government's 2003 White Paper 'The Future of Higher Education', a consultation process is currently underway to support "the development of professional standards for academic practice and continuing professional development (CPD) that will support teaching and learning in higher education (HE)." (Universities UK *et al,* 2004). At the same time, institutions funded by HEFCE are being required to develop their Human Resource and Teaching & Learning strategies to include provision for rewarding excellent teaching and supporting CPD. In addition to these policy developments at Governmental and institutional level, changes are underway with respect to UK-wide support for academic practice. In May 2004, the Institute for Learning and Teaching in Higher Education (ILTHE) joined forces with the Learning and Teaching Support Network (LTSN) and National Co-ordination Team (NCT) to form the basis of the new Higher Education Academy (http://www.heacademy.ac.uk/).

It is timely, therefore, to reflect on the nature of professional development in higher education and to acquire a better understanding of what academics currently do to develop their teaching practice. This understanding of current attitudes and behaviours with respect to CPD will then provide a good basis on which to build support for the imminent changes in policy.

This article outlines a small-scale research project, funded through a Staff & Educational Development Association (SEDA) award, to look at the CPD activities of one discipline in UK HE: Earth Sciences. The results are summarised and collated with other similar research in order to develop some broad guidelines and recommendations for the future support of academic CPD.

What constitutes CPD in higher education?

For many higher education institutions (HEIs) in the UK, CPD is synonymous with formal courses or events that provide some form of 'training'. Such training is often provided as CPD for external professions such as law, business and finance, medicine and so on. However, there is some evidence to suggest that although HEIs have a "tendency to regard formal courses as the most appropriate mode of teaching provision,…practitioners in general take a different view" (Becher, 1996, p. 54). Becher's research into the CPD activities undertaken by practitioners in medicine, pharmacy, law, accountancy, architecture and structural engineering indicated that professional learning takes many forms. He identified seven categories or modes of learning:

- Courses and conferences
- Professional interactions
- Networking
- Consulting experts
- Personal research
- Learning by doing, and
- Learning by teaching

Becher suggested that

> "a clear awareness of the large part played by other forms of interaction [*beyond formal courses or events*] might perhaps encourage professional schools [in HEIs] to adjust their own priorities: for example in helping to set up professional interactions, to promote and underpin specialist networks and to support personal research." (*ibid*.)

As well as supporting the CPD of external practitioners, HEIs are of course also concerned with the development of their own staff and, in general, formal workshops and seminars again seem to be the dominant model. Interestingly, although many other forms of learning are recognised for initial HE lecturer training courses - e.g. action learning sets, projects, peer observation, reflection - these seem to be much less of a feature of CPD provision. There is, of course, an important place for formal 'off-the-peg' activities but these should be considered as part of a broader spectrum of learning opportunities.

What do academics actually do to develop their teaching practice?

A small number of studies have been undertaken with mixed disciplinary groups of academic and other HE staff (e.g. Ferman, 2002; Dunne; LTSN Generic Centre, 2002; Luedekke, 2003) to ascertain the different activities undertaken to develop teaching practice. The aim of the small-scale research project reported here was to complement these studies by looking at the experiences of a large number of academics from a single discipline (Earth Science) across 31 different institutions in the UK, and to draw together some common concepts and conclusions.

Earth Science was chosen for the study as it is my own discipline in which I have credibility as an educational developer. Although a well-established and 'traditional' discipline, the study of Earth Science involves many different learning environments that require innovative thinking in order to support learning. The discipline is relatively small in terms of number of institutions and hence it was possible to target named academics through a search of departmental web-sites.

A short questionnaire was posted to 475 named academics. The questionnaire listed a variety of different possible CPD

Table 1. Responses to CPD activities questionnaire

Type of CPD Activity *(in order of frequency of response)*	**No. of Responses**	
Discussions with colleagues in your department	180	(94%)
Supported colleagues to develop their teaching	88	(46%)
Networked with colleagues from other institutions	76	(40%)
Read books / articles on learning & teaching	72	(38%)
Read web-based information on learning & teaching	60	(31%)
Participated in a learning & teaching workshop	52	(27%)
Discussions with staff in your institutional EDU	47	(24%)
Studied for / hold a L&T qualification (inc ILT)	31	(16%)
Attended a learning & teaching conference	21	(11%)
Applied for teaching development funding	17	(9%)
Undertook research into learning & teaching	11	(6%)
Member of Earth Science Teachers' Association or National Association of Geoscience Teachers	8	(4%)

activities (see Table 1 above) and asked respondents to tick those they had done within the last 12 months. Respondents were also asked to state whether or not they had any formal obligations to undertake CPD for teaching, and to identify the main barriers to such professional development. Basic demographic data was also collected including gender and number of years teaching. 192 responses were received (40%) and knowledge of the Earth Science community in the UK suggests that the gender and age profiles of the sample were a reasonable representation of the population.

The distribution of participation in each activity grouped by number of years teaching was analysed using the χ^2 test for independent samples. Only two of the activities showed a statistically significant difference between the groups:

- ***L&T qualification:*** Groups 5-10yrs and 21+ yrs significantly less than expected on a random distribution ($p=0.003$)
- ***Participated in a workshop:*** Groups 1-4yrs and 5-10yrs significantly more, 11-20 and 21+ years significantly less than expected from a random distribution ($p=0.04$)

Respondents were also asked to note any other activity they had undertaken. These included responding to student feedback, reflecting on their experiences, peer review, external examining, achieving learning and teaching awards, looking at objects in other disciplines, and hosting a learning and teaching conference. In addition to enhancing teaching practice, 11 respondents indicated that their motivations for undertaking professional development for teaching were related to ensuring that the subject content of their courses was up-to-date.

Table 2. Barriers to undertaking CPD for teaching

Barrier (in order of frequency)	**No. of Responses**	
Time	161	(84%)
Emphasis on research	102	(53%)
Funding (e.g. to attend events)	41	(21%)
Lack of personal interest	23	(12%)
Lack of encouragement	23	(12%)
None	9	(5%)

The questionnaire asked respondents to select the main barriers to their undertaking CPD for teaching (table 2). Within each category, there was no significant difference between the spread of responses by age group.

For many academics, lack of time and pressures from other priorities (i.e. research) seem to be related to the culture of the department as exemplified by this comment from one respondent. "Academic promotion solely relies on one's international research reputation. Time spent on teaching and teaching-related activities (such as CPD) is applauded but it is weighted close to zero by promotion panels."

It can be inferred from additional comments provided by some respondents that the main other reason for not undertaking CPD was due to bad experiences of formal courses (or even personality clashes with educational developers and other colleagues!). These respondents had very strong views and assumed that 'educationalists' define CPD as only involving formal courses and events. For example, despite the fact that the questionnaire listed 'discussions with colleagues, networking and reading' as the first few possible CPD activities, the following types of comment were still made:

> "As usual, the educationalist view is that CPD requires a course or equivalent teaching us how to teach."
>
> "I value teaching quality very highly, and am constantly striving to do it better. I have just found the formal routes to CPD you emphasise here to be much less helpful than talking to others, emulating those I think are effective etc."

Finally, respondents were asked to indicate whether or not they were formally required to undertake CPD (e.g. either for membership of a professional body or by their institution). Respondents from 18 departments indicated that they were formally required by their institution to undertake CPD. Of these18 institutions:

> 9 require new staff to take a formal course
> 8 have some form of internal or peer review
> (2 have both of the above)
> 4 use peer observation
> 1 has CPD as school policy for both new staff and experienced staff.

Interestingly, there was virtually no reference to staff appraisal as a mechanism to support CPD, with only one person mentioning appraising colleagues as a means of professional development.

Discussion, conclusions and implications

If the results of this small-scale study can be taken to be representative, they suggest that, despite pressures of time and other priorities such as research, the vast majority of Earth Science academics do consider the development of their teaching practice to be important. Although only 16 out of the 192 respondents were members of the ILTHE[1] (and, therefore, had formal requirements to 'remain in good standing'), only 4 of the remaining 176 implied that they did not engage in any CPD for teaching. Additionally, the research indicates that professional development for teaching in higher education takes a wide variety of forms, including discussions with colleagues, responding to student feedback and peer review, as well as more formal activities such as qualifications, workshops and conferences. Such a variety is to be expected from a large sample of individuals in

1. Now part of the Higher Education Academy

which there are likely to be several different learning styles.

These findings echo those by previous researchers who have undertaken more in-depth studies of smaller samples of mixed disciplinary groups of academics. For example, Ferman (2002) identified a wide range of collaborative and individual activities including working with an educational designer, attending workshops, discussions with peers, presenting at conferences, being mentored and undertaking professional reading. Such variation of activities is also recognised by those offering guidelines and recommendations for professional development in higher education. Baume (1999) suggests that "choosing or making the right developmental opportunities involves first knowing something about the way you prefer to learn about teaching." She then details a range of such opportunities including 'off-the-peg' courses and workshops, conferences, mentoring, action learning sets, reading, discussions with colleagues, learning by doing and reflection, and development through committees, working groups, professional work, job shadowing and exchange.

My research has led me to consider that there are two ways of looking at CPD. Firstly, it might be considered as an explicit part of professional practice, linked to the requirements of membership of a professional body, whereby practitioners are required to demonstrate that they have engaged in CPD in order to 'remain in good standing'. In my experience, this seems to be the default definition of CPD in most professions (including HE). Secondly, the concept of ongoing development or learning is part of all our working lives, whether or not we are formally required to evidence it. This latter perspective is one that lies behind much of the work of educational development in HE to date (including that of institutional units and national organisations such as the Higher Education Academy Subject Centres): opportunities for developing or learning are provided to all those who teach or support learning not just those who are members of a professional body.

ongoing development or learning is part of all our working lives, whether or not we are formally required to evidence it.

Challenges

Higher Education in the UK has reached a pivotal time with respect to professional development. My research and my review of other's work in this area suggests four main challenges for HEIs:

- Ongoing development should be a key feature of all professionals' work, not just those who are formally required to evidence it. With the introduction of professional standards for teaching in higher education, the challenge for HEIs will be to ensure that their CPD support is fully inclusive and not just targeted at 'registered practitioners' (eg members of a professional body) who are required to 'remain in good standing'. This is linked to the need to develop a culture where CPD for teaching is valued and rewarded in the same way as CPD for research, and that ongoing professional learning is something that everyone should be engaged in (Johnston, 1998; Norris, 2003).
- Different people have different learning styles and evidence shows that academics learn about and develop their teaching in many different ways. The challenge for the Higher Education Academy as it develops a professional standards framework and for educational developers who are required to support it, is how to acknowledge, value, provide support for and enable the recording / monitoring of this multiplicity of formal and informal activities. As Sue Johnston (1998) noted in her overview of professional learning, "Formal courses and similar activities need to comprise part of an integrated and coherent program of professional learning undertaken by the academic and they need to take place in an environment in which such learning is expected and valued."
- As well as developing teaching practice, ensuring the subject content is up-to-date is also an important feature of CPD. In Earth Science, education sessions have been a feature of major international conferences for several years (including the Geological Society of America's annual conference and the quadrennial International Geological Congress) thus allowing participants to engage in professional development related to both their research (subject content) and teaching. One challenge for the Higher Education Academy's Subject Centres is to explore the synergies between professional development for teaching and for research.
- All the literature on professional development in higher education emphasises collaboration as a key component. Academics collaborate with their colleagues through curriculum development, peer review, formal and informal networking, research and so on. Collaboration may occur within a department, across different faculties and disciplines, between different institutions, regionally, nationally and internationally. Collaboration and communication should also be the key to the relationship between educational developers and academic staff (Wareing, 2004). This relationship is analogous to and as important as that between academics and their students (Cowan, 2001). Rather than using a transmission model of teaching, educational developers work with academic staff to support their curriculum and professional development - CPD should not be something that is 'done' to one group of HE staff by another. Perhaps part of the success of the Subject Centres is not just that they 'speak the same language' as the disciplinary communities but that they work with them to help them support themselves.

Recommendations: a possible framework for CPD

The above four 'challenges' are relevant to all those who support CPD in higher education, including institutional educational developers, national Subject Centres and professional bodies and associations. Recommendations for supporting CPD have also been made by other authors. Eraut (1994) suggested that support for professional development requires: a suitable combination of learning environments; appropriate time and space; availability of both learning resources and people able to offer support; and the capacity of the professional to learn and to make the most of available development opportunities. Similarly, Johnston (1998) identified four ways of thinking about professional learning such that: professional learning should be evidenced at all stages of every academic's career; professional learning should be related to institutional contexts, and supported by institutional structures and rewards; any programme of professional learning should be self-directed and related to the needs of the individual; and there needs to be opportunities for collaboration.

To conclude, comparison of these two sets of recommendations with the findings from the research reported here shows four common elements that might be highlighted in a framework for CPD in higher education:

(1) Professional development for all elements of the academic

role (including teaching and research) needs to be considered as a normal part of professional life for all academic staff. As such, professional development for teaching should be part of institutional structures and reward policies in parity with research;

(2) Professional development needs to be self-directed and planned within the relevant context (institutional, disciplinary and personal). Staff should be supported in enhancing their understanding of their own preferred learning styles and needs in order to make the most of available opportunities for developing their practice;

(3) There needs to be recognition of and support for the complex nature of professional development which occurs in a variety of learning settings involving many different formal and informal activities;

(4) The collaborative nature of professional development needs to be enhanced, allowing for and supporting interactions between academics within departments, between different disciplines, and across different institutions, and between all those who teach and support learning.

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FEATURE ARTICLE

Enhancing Support for External Examining

There is a shared belief in UK HE that external examining is an important, valued, skilled and useful peer review process. It provides impartial advice to institutions to ensure that students are treated fairly, to enable teaching teams to understand their standards better, and to improve the quality of the education which they provide. The process has been systematized in the UK as in few other countries. Over the last fifteen years, as higher education has been transformed, external examiners have been central to the management of academic risk and the quality assurance of standards in a world of profound and continuous change. External examiners have perhaps been key agents in enabling us to change.

In recognition of their important role and to encourage further development, the Teaching Quality Enhancement Committee (TQEC) argued that:

- institutions should improve the way they prepare their own staff for external examining, i.e. through an apprenticeship programme for internal examiners;
- there should be improved induction of external examiners by the institution employing their services; and
- a programme of activities should be created by the Higher Education Academy to support institutions and disciplinary communities.

These proposals were endorsed in the January 2003 White Paper[1] and incorporated into the HEFCE strategic plan. Universities UK (UUK) and the Standing Conference of Principals (SCoP) responded by developing an action plan, and invited the Higher Education Academy to lead a research and development project aimed at achieving these objectives. The collaborative project was undertaken between January and July 2004 and aimed to:

- develop an evidence base which would provide decision-makers with accurate and reliable information about external examining and how external examiners are currently supported by HE institutions;
- develop ideas for how the Higher Education Academy might support external examining and external examiners.

The project focused mainly on taught undergraduate programmes, and on academic external examiners. It aimed to advance understanding about:

A report commissioned by the GEES Subject Centre

The Motivations and Professional Development Needs of Aspiring and Serving External Examiners in the GEES Disciplines

Dr Derek France[1] & Dr Steve Fletcher[2]

Abstract

This article explores the results of a small-scale survey of serving and aspiring UK external examiners for research (PhD) and courses in the GEES disciplines. The research aimed to provide information for input into a strategy for further supporting and developing the external examining system. The findings included that the most frequent motivations for becoming an external examiner were the opportunity to learn from other institutions, and a sense of academic duty. Ensuring standards and safeguarding students' interests were perceived to be the most important aspects of the role of external examining. The informal nature of appointments and the lack of formal induction or training for the role were frequently perceived to be potential drawbacks of the current system. Two main recommendations arising from this research are, firstly, for the provision of opportunities to discuss current issues with other external examiners, and, secondly, the setting up of a database and communication channels to improve on the existing informal appointment system.

Introduction

The purpose of this research was to conduct a small-scale scoping survey of serving and aspiring UK external examiners in the GEES disciplines with a view to identifying:

- motivations for becoming an external examiner;
- methods through which external examiners are currently identified and recruited;
- current sources of professional development for external examiners;
- barriers experienced by those aspiring to become external examiners;
- opportunities for the GEES Subject Centre to support aspiring and existing external examiners;
- research priorities related to the role of external examiners in the GEES disciplines.

The survey was administered through two self-completion questionnaires, one targeted at serving external examiners, the other targeted at aspiring external examiners. The precise response rate of this survey is difficult to determine, as the total number of individuals on the discussion lists to which the invitation to participate was sent is unknown.[3] Furthermore, it was likely that numerous individuals received the invitation who were neither existing nor aspiring external examiners and so were not specifically targeted to participate in the survey.

Table 1. Employing institutions of survey respondents

Home Institution	Existing EEs	Aspiring EEs
Pre-1992 University	11	0
Post-1992 University	12	3
HE College	0	0
FE College	0	0
Other	0	0
Total	**23**	**3**

The 'home' institution is the institution in which the external examiner is substantively employed. For example, if an external examiner was employed at institution A and was an external examiner in institution B,

3. The invitation to participate was sent to three GEES-related jiscmail lists. This paper is an edited abstract of the full report which can be found at: http://www.gees.ac.uk/

- what external examiners do, and what they think their professional development needs are;
- how course/programme leaders support external examiners and external examining;
- what institutions do to induct and support their external examiners;
- how institutional frameworks for continuing professional development might be used to support external examining;
- the services and activities that the HE Academy might provide to different constituencies.

These aims were addressed through:

- four commissioned research studies;
- five regional discussion meetings in Edinburgh; Cardiff, Bristol, Hatfield and Manchester;
- a questionnaire survey completed by 48 HE institutions;
- discussions within three Working Groups, one of which was a group of external examiners.

Further information, including the findings, on this project can be found online at http://www.ltsn.ac.uk/genericcentre/index.asp?id=21232

(1) DfES, January 2003, The Future of Higher Education at: http://www.dfes.gov.uk/hegateway/strategy/hestrategy/pdfs/DfES-HigherEducation.pdf

External Examining in Geography, Earth and Environmental Sciences

In order to develop additional information to support the project, Subject Centres were each invited to discuss the issues with their discipline communities through focus groups or surveys. Due to the short timescale and limited funding available, the GEES Subject Centre commissioned a small scoping survey of current and aspiring external examiners. The findings from this survey are reported below.

Respondent profile

A total of 26 completed questionnaires were returned, of which 23 were from existing external examiners and 3 were from aspiring external examiners. The 'home' institutions of serving external examiners responding to the survey were divided almost equally between pre- and post-1992 institutions (Table 1). All three aspiring external examiners were employed in post-1992 institutions. There were no respondents from Higher Education (HE) or Further Education (FE) Colleges.

Collectively, the profile of respondents showed variations in both academic and external examining experience. The most experienced respondent had 37 years academic experience, whilst the minimum was 3 years. The mean academic experience of respondents was 23 years. The minimum experience as an external examiner was 2 years, with a maximum of 30 years, while the mean external examining experience was 9 years. Aspiring external examiners had, on average, less experience in academia, with a mean of 8 years. Twelve serving external examiners held multiple examinerships, as presented in Table 2.

Table 2. Examinerships held according to institutional type

	Number of examinerships held			
Home institution	**1**	**2**	**3**	**Total**
Pre-1992 University	7	2	1	14
Post-1992 University	3	8	1	22
HE College	0	0	0	0
FE college	0	0	0	0
Total		**10**	**10**	**2**

A total of 36 external examinerships were held between the 23 serving external examiners. A breakdown showing the home institution of external examiners and the institutional type in which their examinership is held is presented in Table 3. This shows that for the respondent group, post-1992 respondents had the majority of the examinerships, spread evenly between pre- and post-1992 institutions, with an additional 4 HE college and one FE college examinerships. In contrast, pre-1992 respondents exhibited a focus of their examinerships in pre-1992 institutions.

Table 3. Home and Examinership institution of respondents

Examinership Institution	Home Institution				
	Pre-1992 Uni	Post-1992 Uni	HE College	FE College	Total
Pre-1992 University	9	4	1	0	14
Post-1992 University	9	8	4	1	22
HE College	0	0	0	0	0
FE college	0	0	0	0	0
Total	**18**	**12**	**5**	**1**	**36**

Survey results

Motivations to become an external examiner

A summary of the motivations of serving external examiners is presented in Table 4 (overleaf). The most commonly cited motivation was the opportunity to observe and learn about practice in other institutions, particularly related to learning, teaching and assessment.

There was a strong sense of academic duty evident in the answers from nine respondents. This was summed up by one respondent who commented that "the system would break down if people were unwilling to take their turns". Career development and continuing professional development were also motivating factors for a small number of serving external examiners. For example, one respondent described their motivation as resulting from the "need to bulk up the CV for promotion". In another case, a respondent felt that becoming an external examiner would benefit their work at their home institution. Interestingly, only 3 respondents considered their

Table 4. Motivations to become an external examiner

Motivations cited	Frequency
To learn from other institutions	12
Academic duty	9
Career development and CPD	5
Develop personal network	3
Monitor and compare standards	3
See new research (PhD)	2
Total	**34**

Table 5. Relative importance of aspects of the role of external examiner

Rank	Aspect of role	Mean[1]	Count
1	Ensuring standards	1.28	26
2	Safeguarding students' interests	2.09	23
3	Exchange practice	2.81	22
4	Curriculum development	3.55	23

(1) Mean indicates the average of the ranks awarded by respondents. Count indicates the number of respondents who ranked that item (from a possible maximum of 26).

main motivation for taking the role as an external examiner to be the monitoring and maintenance of academic standards. The payment for external examining was not identified as a motivating factor, with several respondents specifically making comments to this effect. For example, one respondent commented that their motivation was "not the money!!".

Initial invitation to be an external examiner

The appointment of external examiners does not take place through open competition for an advertised post; instead, the process has a reputation as being somewhat informal. Respondents were asked to identify how they had initially been invited to become an external examiner.

Seventeen respondents (74%) were invited to become an external examiner either directly by a personal contact or through the recommendation of a personal contact. Two respondents were invited to act as an external examiner as a result of their research record. One was "approached by someone who had read an article I published in the *Journal for Geography in Higher Education*. We were working with similar students in similar institutions".

Perceived role of the external examiner

Existing and aspiring external examiners were asked to rank, in their view, the relative importance of different aspects of the role of external examiners, with a rank of 1 being most important, 2 next most important, and so on. Table 5 presents a summary of the results. This clearly shows that the primary role of external examiners is perceived to be to ensure standards at the institution in which the examinership is held. Safeguarding students' interests was perceived to be the second most important aspect of the role of external examiners, although this exhibited much less agreement amongst the sample.

Exchanging practice was perceived to be the third most important aspect of the role of the external examiner. Comments associated with this answer stressed that one of the key benefits of being an external examiner was the opportunity it provided for incumbents to learn and gain ideas to enhance their own teaching practice. One respondent considered the exchange of practice to be the most important aspect of the role of an external examiner. The lowest ranked aspect of the role was curriculum development. This is highlighted by comments from one respondent: "I don't think that curriculum development should be part of external's remit. The QAA code has been a bit ambiguous about this, giving externals responsibilities for structural issues that should have been determined at validation and confirmed at review". In addition to the answers presented in Table 6, eight respondents identified 'other' issues as important aspects of the external examiner role. The issues identified showed little pattern, but included a role in enhancing practice, providing a voice for staff concerns, and helping departments through periods of change.

Induction to External Examiner role

Serving external examiners were asked to comment upon any training or induction they received upon their appointment as an external examiner.

The nature and formality of the induction received by external examiners upon appointment was found to be very variable. The most frequent answer, given by 13 respondents (38%), indicated that they received no formal induction to the role of external examiner or the institution in which the examinership was held. In contrast, 9 respondents (27%) commented that they did receive formal induction from the 'new' institution. Opinions surrounding the usefulness of formal induction or training events varied. For example, one respondent commented that such events were "absolutely invaluable". However, another respondent was more sceptical, commenting that; "I'm not sure that the training was particularly valuable. It is more important to visit the actual Department where the degree is based and to meet the staff (and if possible students) before and during the period as external examiner".

A source of induction received by 3 respondents was from their home institution. Three respondents also identified learning from other externals as a key induction process. This is typified by the comment that "the most important aspect of training is to watch the conduct of external examiners that one has known and to compare and contrast how effectively they have performed their task". Other externals said that they relied upon the documents their 'new' institution provided as induction (such as course specifications and quality assurance procedures). One respondent reported having voluntarily attended a national meeting on external examining in order to seek some form of induction to their new role.

An underlying theme apparent amongst the responses, albeit not explicitly mentioned as primary sources of induction, was the prior experience of contact with external examiners, typically through having been a course leader or through holding a relevant role within their home institution (such as chair of a teaching quality committee). There was also a strong feeling evident that learning 'on the job' was typical once appointed as an external examiner. Indeed, for those examiners for whom no induction was provided, there was no choice in this matter.

Continuing professional development provided

A summary of the results of the continuing professional developmental opportunities provided by the institution employing the external examiners is presented in Table 6.

Table 6. Ongoing opportunities for personal development

Opportunity for personal development	Frequency
None	13
Annual meeting of external examiners at institution of examinership	4
Direct and indirect experience	3
Observation of conduct of other externals	2
External examiner staff development at 'home' institution	1
Total	**23**

A majority of respondents (57%) received no further support or opportunities for personal development in their role as an external examiner from the institution in which their examinership was held. One respondent described their experience as "nothing formal, but usually something happens informally in a particular visit that I have found useful".

Formal developmental activities for external examiners provided by the employing institution were reported by four respondents. These either took the form of specific staff development workshops (1 case) or an annual meeting to discuss relevant issues with other external examiners, often in different subject areas (3 cases). Such meetings were considered positively. For example, one respondent considered that they were invaluable "since practice changes nearly every year". One theme (noted by 3 respondents) was that external examining is an idiosyncratic activity that can only be 'learned' through practice. For example, another respondent commented, "the best personal development has come from gaining a wide experience of the actual practice of externalling and in seeing how different Departments work". Two respondents considered observing and discussing issues with more experienced external examiners to be a form of personal development. Finally, one respondent identified that their home institution provided ongoing development opportunities for external examiners.

Continuing professional development needs

As presented in Table 7, a total of 10 serving external examiners considered that they did not require any further professional support for their role as an external examiner. This was largely due to the respondents in question having developed practice through learning 'on the job'. For example, one respondent commented that they would require "none now as I have plenty of experience". However, several of these respondents did identify the need for support during the early stages of an appointment as an external examiner.

The remaining 12 serving external examiners who answered this question each identified specific areas of professional development they would find useful. The most commonly cited need (6 respondents) was to have opportunities for "exchange of practice aimed at enhancement". The format of such an event was described by a different respondent as a "live forum / discussion group for peer examiners in the subject to share issues. Support regarding how to handle plagiarism cases. Support regarding vivas - nature, role and practice". A potential role for the GEES Subject Centre was specifically identified by one respondent as follows, "in the realm of GEES, simply arranging training sessions within which prospective and experienced examiners can meet and exchange ideas would be excellent".

The second common area of development, identified by 4 serving externals, was in the area of policy, standards, and the role of external examiners. Specifically, respondents required professional development regarding government and HEFCE policy towards external examiners. Two further respondents stated that greater opportunities to simply observe more experienced externals would be welcome, as would a more formal induction to the role.

Table 7. Continuing professional development required by external examiners

Support required	Frequency
None	10
Practice exchange	6
Policy, role and standards	4
Observation of existing externals	1
More formal induction	1
Total	**22**

Aspiring external examiners

Motivations to become an external examiner

The motivations of the three aspiring external examiners matched closely those of serving external examiners, with the exchange of practice, comparison and enhancement of standards, and personal career development all receiving at least one specific mention. However, there was no comment amongst the answers of aspiring external examiners regarding the contribution of the role to the overall operation of the academic system.

Aspiring external examiners were asked to consider the barriers they faced to becoming appointed as an external examiner. Each respondent provided a different answer. One considered that "there are few institutional barriers to becoming an external examiner, so the main barrier is probably just one of opportunity". Another felt that they were "too young, too radical, too innovative, not connected in the hierarchical nepotism of auto-selection!"; whilst another considered their personal "time constraints" and availability the key barrier. Certainly, there is no current mechanism for aspiring external examiners to advertise their availability, nor for aspiring external examiners to find out about suitable vacancies outside their immediate network.

In order to begin to explore the professional developmental needs of aspiring external examiners, respondents were asked to consider what immediate concerns they would have if appointed as an external examiner. The answers to this question again showed little pattern. One respondent commented that "in the absence of any formal training, I feel that I would have to seek guidance from my peers (i.e. informal training) to how some specific aspects of the role needed to be undertaken. …".

The specific ongoing professional development activities each respondent would welcome reflected the concerns they expressed in the previous question. However, two respondents identified two similar developmental needs. These were: (1) that workshops are required to introduce institution-specific practices; and 2) that the GEES Subject Centre could provide opportunities to "link in with other external examiners to share experiences". This response reflected comments made by serving external examiners. The final respondent was more sceptical of the role of professional development in this context, considering it to be "arguably pointless because appointments are made on the basis of nepotism rather than ability in teaching and learning". This comment again reflects the view that networking rather than ability influences external examiner appointments.

Conclusion

The conclusions of this research report are somewhat tentative as they are based on a relatively small number of responses. For clarity, the conclusions are divided into specific sub-sections as presented below.

- There is an evident tendency amongst respondents to this survey for external examiners from pre-1992 universities to undertake the role of external examiner in pre-1992 universities. In contrast, external examiners from post-1992 universities undertake external examining at similar levels in both pre- and post-1992 universities.
- The main motivation to take a post as an external examiner is to learn from practice elsewhere. However, in reality, exchange of practice and curriculum development were the least important aspects of the role of the external.
- The primary role of an external examiner is perceived by respondents to be ensuring standards, yet this was the least common reason for undertaking the role.
- Serving external examiners considered it their duty to undertake the role to assist function of the overall academic system in the UK. However, in doing so, they obtained specific personal benefits, including learning from practice elsewhere, network building, career development, and exposure to new research.

The main motivation to take a post as an external examiner is to learn from practice elsewhere.

Appointment of external examiners

- External examiners are identified and appointed based on their standing within academic networks. As a result, informal invitations are made to the potential candidate to take the post.
- Aspiring external examiners highlighted that not being aware of external examinership opportunities was a significant barrier to their appointment. There was also some concern that the informal process of appointment served to disadvantage suitable candidates and favour those well-established in the academic hierarchy.

Professional development in the GEES disciplines

- Experienced external examiners would have welcomed training and induction at the start of their examinership.
- Annual meetings for external examiners, held by employing institutions, appear to be useful for both induction and continuing professional development of external examiners. They also provide a useful institution-specific opportunity to meet and discuss issues with other external examiners. However, it was also evident that not all external examiners in this survey have had such events offered to them.
- Observing and discussing issues with more experienced external examiners was considered to be a valuable form of professional development by both serving and aspiring external examiners.

Recommendations for the GEES Subject Centre

There are two main recommendations arising from this research for the Subject Centre. The first is related to the provision of opportunities for aspiring and serving external examiners to meet on a subject-specific basis to discuss concerns and to support the enhancement of their role. Specific recommended events are as follows, however, there is scope for delivery at a single event, which could provide opportunities to:

- Discuss the role, expectations, and policy context of external examining (for aspiring external examiners).
- Network and discuss current issues related to external examining, particularly enhancement opportunities (for both serving and aspiring external examiners).
- Network and discuss current issues related to external examining with experienced external examiners in order to identify and share good practice (for newly appointed external examiners).

A second recommendation, is for the GEES Subject Centre to maintain and promote a database of aspiring external examiners and to offer a communication service to institutions seeking external examiners.

Recommendations for further research

Given the low response rate from aspiring external examiners, further research is required to :

- investigate the barriers to appointment and the potential mechanisms to overcome those barriers. A revised methodology might be to undertake a series of personal interviews with appropriate individuals identified through a widely distributed questionnaire.
- Investigate the experience of course teams' engagement with external examiners in order to identify strategies to support and enhance their relationship.
- To determine from Heads of Departments (and/or course leaders) the appointment method of external examiners. Specific areas of investigation would include the characteristics they look for in external examiners, and whether they would be willing to openly advertise their external examiner vacancies.

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CONFERENCE REPORTS

Widening Participation and Employability: new opportunities for Geography, Earth and Environmental Sciences.

GEES Subject Centre Residential Conference, 5/6 July 2004, Warwick

> *"We are right to be proud of our universities and colleges. They produce some of the finest research in the world. They provide much excellent teaching, graduation rates are high, and students enjoy a good employability record. The sector is increasingly responsive to the needs of the wider community. But this is no time to rest on our laurels, because the challenges facing higher education are more wide-ranging and profound than ever before".* David Young, Foreword, HEFCE Strategic Plan 2003-2008.

In July of this year, a select group of 30 participants meet at the Royal Court Hotel, Warwickshire, for the GEES Subject Centre two day residential conference 2004. The theme for this year's Residential Conference covered two key agendas in higher education in the UK, namely Widening Participation (WP) and Employability. The GEES Subject Centre and the GEES community have been involved in exemplary work in the area of employability for a number of years, but political changes have now brought both of these agendas to the forefront of institutional development and by default, to the attention of academics across the sector.

The two days consisted of keynote speakers, workshops and paper presentations from participants highlighting the challenges and opportunities facing staff, the growing expectations of all stakeholders in higher education in the UK and the new demands that this places on the GEES community. As the first keynote speaker of the conference, Sue Hatt (South West Regional Manager for Aimhigher[1]) talked to the audience about the reality of the government WP agenda and what the implications are for the sector and for specific subjects. After describing the remit of the Aimhigher programme, Sue pointed participants in the direction of available funding for WP projects and programmes, leaving the audience to consider the practicalities of dealing with WP students.

Bill Chambers, Dean of Widening Participation at Liverpool Hope University College, provided an energetic and lively discussion on recruiting and retaining WP students in the GEES subject areas. He started by encouraging the audience to consider the benefits and opportunities of the WP agenda: the ethical issues; competitiveness within the international arena; and the social and cultural benefits afforded by such a pathway. The audience's attention was then drawn to the issues surrounding retention: the benefits of a sound retention policy; retention of WP students; and the constraints and opportunities facing the disciplines in this arena.

> *"The way into Higher Education should be an open, not a rotating door".* Bill Chambers, LTSN-GEES Residential Conference 2004.

Bill, coming from a Geography background, then challenged the audience to consider the state of Geography in higher education with these two questions: what is Geography?; what can Geography as a subject actually offer students? Finally, Bill encouraged the audience to see the WP agenda as an opportunity, not a threat. Working towards this agenda is good practice for all.

> *"We want everyone to benefit from Higher Education who has the potential to do so".* John Rushforth, HEFCE, LTSN GEES Residential Conference, 2004.

As the final keynote speaker of Day One, John Rushforth, Director of Widening Participation at HEFCE, provided the HEFCE perspective of the WP agenda. John presented the strong message that participation in higher education in the UK is relatively low in comparison to other countries. However, on a positive note, UK institutions are particularly good at retention of students, which is a key element of WP. John's final message for the GEES community was again one of opportunity. The White Paper calls for all new academic staff to gain a teaching qualification by 2006.[2] There is an opportunity here for staff in the HE sector to define the nature of this professional development: engaging with the Higher Education Academy will enable the sector to work together to ensure continuity and development in learning and teaching.

The second day saw a change of direction, moving towards the Employability agenda. The keynote speaker for this day was Paul Redmond, Head of Careers at Liverpool Hope University College, providing a colourful, thought-provoking presentation on the current landscape of graduate careers and the need for academics working on the Employability issue to understand the drivers for change in this area. The audience found his words of advice challenging on more than one level: that is, not just with respect to the future careers of their undergraduates, but also to their own. After Paul's presentation, one member of the audience summed up the feelings of many in the audience: 'I underestimated the difficulty of getting a job!'.

One of the major aims of this two day conference was to provide an opportunity for delegates to share good practice on these topics. This was achieved through a balance of paper presentations and practical sessions presenting tips and tools for enhancing employability. The practical sessions covered a range of methodologies for use with students including: 'Card Sort',[3] a hands-on technique for engaging students with a topic such as employability or preparation for work-based learning; and the soon-to-be launched GEES Employability Profiles (watch this space).

Subjects covered by participants' paper presentations ranged from the experiences of disabled GEES students, the development and use of resources for dealing with WP and Employability in the curriculum, to student recruitment and GIS and GI-related field employability rates. Sharon Gedye, Project Officer with the GEES Subject Centre, finished the second day of the conference by presenting preliminary findings from a country-wide survey of GEES graduate experience of employment. The majority of these presentations and those of the Keynote speakers are available for download as Powerpoint slides from the GEES Subject Centre website[3].

This two day conference provided an opportunity for delegates to discuss, consider and problem-solve on the issues of WP and employability. The over-all mood of the conference was, I think, summed up by a delegate who, when asked to note down one key point that he would like to remember, wrote "Conferences broaden the mind and inform knowledge". The GEES Subject Centre would like to thank all those who attended for their creative and enthusiastic input: we hope to see you again next year!

1. The Aimhigher Project website http://www.aimhigher.ac.uk/

2. DfES (2003), The Future of Higher Education, Government White Paper. http://www.dfes.gov.uk/hegateway/strategy/hestrategy/foreword.shtml

3. GEES Subject Centre Residential Conference webpage. Links to keynotes, participant presentations and information on 'card sort'. http://www.gees.ac.uk/ac04/ac04.htm

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CONFERENCE REPORTS

Supporting the Supporters: encouraging continuing professional development for support staff

GEES Subject Centre conference in association with the University of Gloucestershire, 8th June 2004, Cheltenham

It was perhaps appropriate that the first of the conferences following the absorption of LTSN-GEES into the HE Academy should have attracted the largest number of conference participants since the launch of the Centre, four years ago. Less obviously, the delegates who travelled to the University of Gloucestershire were mainly departmental 'support' or 'professional' staff, some of whom had never had an opportunity to attend an academic conference before. The origins of this conference lay in work being undertaken as part of a HEFCE project on 'The Inclusive Curriculum', where a section of the project involved production of materials to assist support staff in guiding disabled students. The subsequent realisation that only limited generic information was held about support staff numbers and roles led to discussions at a meeting of the Higher Education Study Group of the RGS-IBG, and involvement of the (then) LTSN-GEES Subject Centre. The event provided a unique opportunity for Departmental Administrators, Cartographers, Laboratory and Field Technicians, Librarians, Resource Centre Managers and ICT Technicians to share views and good practice. But most of all, there were opportunities to meet colleagues from other Universities and Colleges, and to explore the fulfilment and frustrations of working in the UK's HE sector in 2004.

The event was structured around keynote presentations, and workshops led by practitioners, but started with Carolyn Roberts (University of Gloucestershire) capturing the range of tasks and the crucial roles performed by these colleagues in GEES Departments. Her paper, entitled 'Someone in the lab can help you: student learning and the invisible army,' was based on a sample survey of UK Departments, and contained information about the numbers of staff employed in these various roles, their organisational structures, and their frequently 'unnoticed' status. Although the total number of support staff is substantial (perhaps 660 technicians and 540 administrators supporting GEES disciplines across the UK), many work as 'sole traders' within their Department. Moreover, some are not invited to participate in Departmental initiatives for enhancing support to students, surely a lost opportunity. Support staff were encouraged to be more vocal about their role in supporting students, and more assertive about their own professional development needs.

Jude Carroll (Oxford Brookes) developed the theme 'Reaching the parts: encouraging support staff development in HE' by inviting participants to reflect on their needs and aspirations, and the reasons why staff development would be personally valuable. She encouraged colleagues to identify and share perceptions on overcoming the barriers to participation (such as lack of time, mindsets, absence of appropriate opportunities), and provided information about sources of training and persuasive rationales for reluctant Heads of Department to consider.

A (net)working hothouse lunch was followed by Professor Sally Brown on 'Self Development, Professional Development: the balancing act'. After an entertaining quiz on impossible HE acronyms, Sally returned to the questions of encouragement and persuasion, and outlined the many national initiatives designed to improve student learning. She emphasised the increased focus on 'excellence' exemplified by the current HEFCE initiative on Centres for Excellence in Teaching and Learning, and stressed the key role of support staff in delivering excellence.

The afternoon continued with role-specific workshops for Departmental Administrators and Managers (led by Kathy Haig, University of Gloucestershire), Cartography, Mapping & Graphic staff (Steve Chilton, Middlesex University), Laboratory, Fieldwork & Equipment Technicians (Paul Kimber, University of Gloucestershire), Librarians, Map Curators & Resource Centre staff (David Sherren, University of Portsmouth) and ICT Technicians & Administrators (Pauline Framingham, University of Plymouth). Most workshops included short specialist presentations from other practitioners, and all proved very popular. Shortage of time probably precluded sufficient discussion.

Feedback from the workshops to a Plenary session led by Professor Brian Chalkley (Director, GEES Subject Centre) also raised a number of 'burning issues' which the Academy will try to address over the next few months. These include

- The key role of these staff in supporting student learning, and some current feelings of being undervalued and marginalised
- The urgent need for networking and more staff development opportunities (technical and generic), particularly for those colleagues who work in smaller departments
- The need for support staff to be not only fully informed about new pedagogic initiatives, but to have opportunities to input to both policy and practice.

Comments ranged across feelings of frustration, powerlessness and exclusion in their roles

For academic staff who (funds permitting) normally have opportunities to travel to conferences and discuss teaching and research in their disciplines with colleagues from other universities, some of the evaluative comments made by delegates to this meeting may be quite salutary. Comments ranged across feelings of frustration, powerlessness and exclusion in their roles. One person commented on their 'feelings of depression and hopelessness with the lack of career structure'. Many support staff also expressed their appreciation for this meeting, and their keenness to participate in another of similar form. One delegate commented 'the best thing about this conference is realising that all technicians suffer the same pressures and frustrations. The worst thing about this conference is knowing that all technicians suffer the same pressures and frustrations.' There was nevertheless a great deal of positive feedback about the potential of support staff to assist institutional missions, if given an opportunity. One said '(I will) look out for opportunities to stretch my abilities…apply to go on relevant courses…and look at our School's aims and objectives'. Another wrote 'I will value my position and know that I do make a difference. I feel so much more confident in my views, as sharing them has shown that I am not alone.' Heads of Department perhaps need to take more care in future that their support staff are properly valued, supported and encouraged to make a full contribution to enhancing students' learning.

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View from an ICT professional

This one day conference organised by the GEES Subject Centre was the first such event for support staff and attracted about 100 participants. This level of interest was reported to have come as something of a shock to the organisers who would normally expect about 30-50 people at their academic staff events.

The message of the first speaker, Carolyn Roberts, was not lost on the audience - that the role of support staff in supporting and enhancing student learning was largely undervalued in UK Universities. She noted that there were no official statistics on support staff levels and that they had undertaken their own pilot survey of 12 GEES Departments to get some idea of the range of support levels. Through this survey it was noted that there was an average student to technician ratio of 64:1 and that resource centre managers and ICT support staff were rapidly becoming more important. She suggested that a more appropriate term for many support staff might be 'Professional Service Staff' and predicted the merging of professional and academic services over the next few years. Carolyn ended her talk by looking at ways of identifying staff development and technical training needs and the organisations that might provide this.

After further presentations and lunch we broke up into in separate sessions. In the ICT group Dave Harden gave a presentation on the work of supporting on-line teaching and learning in the Learning Technology Centre at the University of Gloucestershire which I would like to cover in more detail. We should not be put off by their use of WebCT, as I think the problems and opportunities are similar whatever virtual learning environment (VLE) is chosen.

a more appropriate term for many support staff might be "Professional Service Staff"

Supporting on-line learning at the University of Gloucestershire Learning Technology Unit

The University of Gloucestershire Learning Technology Unit have been using the VLE, WebCT since 2000. Licences have been purchased only for students and courses in which WebCT is being used - currently 200 courses covering 50 tutors and designers and 900 students. This is not by any means all students at the university. The unit has written guides and support web pages including self-paced on-line tutorials and hand-outs in PDF format. They have also produced 'Viewlets' which are Flash animations produced to demonstrate the use of various software packages. To help do this they use a software package called 'Qarbon'. Despite all this support activity, Dave reported that the most effective use of their time is in one-to-one sessions with students when they need it.

For modules which make use of the WebCT facilities, a member of the Learning Technology Unit (LTU) will generally go to the first lecture and introduce him/herself and explain something about WebCT and the on-line learning which will be expected throughout the module.

The LTU has an email address, telephone helpdesk and FAQs available to both staff and students. For designers and developers, i.e. those tutors and other staff who want to customise their use of WebCT, the unit produces a WebCT Development Guide and staff also have one-to-one training sessions. PlanetWebCT is a package of educational materials for WebCT which has been bought by Gloucestershire. Materials in it may be adapted and rebranded. WebCT is also used for on-line assessment. There is a need to convince academics that it will work and will save them time. Gloucestershire uses a software package called 'Questionmark' to design on-line assessments.

The LTU is also involved in video production and has a room where lecturers may sit in front of the camera, press record and start to speak. The video can be edited 'on the go' and has proved to be simple to operate with very little training needed The result is often combined into a powerpoint presentation so that students can view a presentation which includes a video of the tutor talking about the topic in the corner of each slide. The unit runs a separate streaming media server to make it easy to deal with the large data volumes often associated with digital video.

On-line communications are also dealt with, including web conferencing over IP and Video conferencing over ISDN - this is done particularly to communicate with the London Urban Learning Foundation located in the London docklands. On top of this, the unit deals with general ICT skills development for both staff and students, including training for the ECDL.

Overall, Dave gave the impression of an effective one-stop shop which had brought together staff in sufficient numbers and with a sufficiently wide range of skills and with a single focussed objective to form a 'critical mass' to be effective in not only supporting on-line learning and teaching but also in developing and disseminating new techniques. To understand more about the results which the centre has helped to achieve you might like to read Elisabeth Skinner's article in *Planet* issue 12 entitled 'Using a Virtual Learning Environment to create a community of learners studying people and place'.[1]

The final part of the day was a report-back session from the groups. A lot of information was presented here in a short time and I believe this is to be written up by each group's 'reporter' and disseminated at a later date. It was interesting that the administrators group was the only one to use the provided flipchart in their session!

I think the level of interest generated by this conference demonstrated a need for support staff to meet and discuss topics of mutual interest which is not at present being met in UK Universities. It is interesting to note that one of the groups represented at this conference, the cartographers, do get the chance to meet every year through the Society of Cartographers annual summer school. This event has been going for many years and I have attended it myself in the past. It is, in all except name, an academic conference but is called a 'summer school' because universities generally resist sending support staff to a 'conference'. That was certainly true 15 years ago, but how much has changed since then? Are universities beginning to recognise their professional support staff as professionals?

(1) Available from the GEES website at: http://www.gees.ac.uk/planet/p7front.pdf (pp10-12)

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CONFERENCE REPORTS

Enhancing the Campus through Student Project Work

A HEEPI conference in association with the GEES, Engineering and CEBE Subject Centres, Bristol, 14 September

The event on 14 September, organised by the Higher Education Environmental Performance Improvement (HEEPI) initiative, with support from the GEES, Engineering and Built Environment Subject Centres, was well attended by a 50/50 mix of academics and University Estates officers. The morning plenary session consisted of 3 presentations - from an academic, an estates manager, and a student campaigner. It is clear that participation from all three groups of people at universities is needed for successful change towards 'greener campuses'.

Peter Hopkinson introduced the work of HEEPI, which is based on the premise that 'if you can measure it, you can manage it'. The aim of HEEPI is to identify what help and guidance would be most useful, give examples of good practice, and provide ways for rushed academics and students to work together constructively on these issues. In his own work with students over the years at Bradford, it had taken 7 years of gathering evidence and putting the business case to convince the management of the need for a full time environmental manager.

Brian Chalkley introduced the work of the GEES Subject Centre. He also recounted how, over the years of supervising more than 300 geography student projects at Plymouth University, only 2 or 3 of these had been on the university campus - more exotic locations were a far more usual topic, perhaps due to the global perspective of geographers. It is not clear how much has been achieved since the Toyne Report in the 90s, but HEFCE are currently working on a strategy for Education for Sustainable Development (ESD), and this will require estates managers to give a higher profile to sustainability issues. The outcome will be that more students will be doing work around sustainability.

it is easier for individuals to campaign to get others to change their actions, rather than to make changes in their own personal lifestyles.

Martin Haigh in his presentation referred to the concept of 'constructive alignment', or joined-up thinking. Students are generally taught according to the scientific ethic of objectivity, yet education for sustainability is something that needs to be taken personally. Oxford Brookes University (OBU) Environmental Forum has a combined staff and student membership of around 200, and has managed to achieve the status of fair-trade for the University - in other words, their project has had a real impact. On the Gaia module that Haigh teaches, each student plants trees, paid for by the Council.[1] The exercise is undertaken within the concepts of deep ecology, which Haigh believes should be the goal of all environmental education: we are each a member of the ecosystem, and what we do does matter. The intellectual value of the project is that it promotes reflective practice.

Lucy Pearce from People and Planet outlined how the organisation, which started as Third World First (the originators of the *Internationalist* magazine, later the *New Internationalist*), occupied a unique space between development (Oxfam etc.) and environment (Greenpeace etc.) Their campaigns are set by an annual meeting with their student networks, so achieving a sense of ownership by the students and helping their dual aim of achieving both impact and empowerment. The current campaigns are on climate change (of which the greening the campus is part), fair-trade and HIV/AIDS.

When People and Planet started their climate change campaign, only three universities were sourcing any green electricity. Now, ten years on, over 60 universities are buying green electricity, and the biggest switches have happened where there have been active People and Planet campaigns. They are making the links between a huge global issue and individual action. Even so, their 'eco-footprints' work was not particularly successful - implying that it is easier for individuals to campaign to get others to change their actions, rather than to make changes in their own personal lifestyles. Similarly, recycling projects may not be the most important issue, but they have visible results, and this makes students feel that they can achieve something.

Albert Young from Glasgow University (GU) gave an outline of the EU Carbon Trading Scheme. This will apply to all universities that have boilers over 20MW in size, and means that they have to meet certain carbon emission limits. At Glasgow, 50% of electricity used is 'green', at no extra premium. This has been achieved by a good relationship with, and 'gentle persuasion' of, their electricity supplier, Scottish Power - the company has also paid for the design and printing of 3,000 bookmarks advertising the University's energy conservation campaign for Freshers Week. Glasgow University's energy efficiency campaign began in the 90s with posters, evolving into a campaign day and then a campaign week. The greatest savings have come from scientific research departments. To help get the message across, he uses the illustration that one tonne of CO_2 takes up the space of a 10 metre diameter balloon. He had gone to the Marketing and Psychology Department for help in how to get the message across and many different posters had been produced. There is always something practical for student work to address related to energy and the environment.

GU have appointed monitors to parade buildings to check that everything is turned off. They were lucky to have the actor Richard Wilson (grumpy 'Victor Mildrew') as Rector, who produced an energy saving video which is shown to all new staff and students. This describes how the lighting bill alone at GU is £3,000 a day. There are many different grants available for energy efficiency, for example, GU have obtained one of £50k for heat pump technology, and another grant for a daylight light dimming system.

The plenary in the afternoon, led by Brian Chalkley, aimed to discover how the work covered during the meeting could be taken forward. Potential opportunities included supporting establishment of a dialogue between academics and estates officers, and then embedding mechanisms to take the ideas forward. Other priorities for HEIs were seen to be: reporting to VCs on the issues involved; incorporating the concepts into learning and teaching strategies; and to highlight employability benefits of this work for students. The forthcoming UN decade of Education for Sustainable Development is another opportunity to highlight the issues involved.

Amongst the perceived obstacles were: lack of commitment from VCs; the fact that there are no related targets, requirements or incentives; and the nature of capital/refurbishment accounting and funding structures. Estates officers will need academic support, and there is a need to move beyond the GEES disciplines. Further action that delegates wanted to see taken by HEEPI and the Subject Centres included more workshops, summarised guidelines, and student project ideas on websites.

1. See the article by Martin Haigh, page 22 this issue

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UK organisations working for 'greener' campuses

Higher Education Environmental Performance Improvement (HEEPI)
This project, financed by HEFCE, is managed by the University of Bradford, in collaboration with the Association of University Directors of Estates (AUDE), the Building Research Establishment , the Environmental Association for Universities and Colleges (EAUC), and the Standing Conference of Principals (SCoP). HEEPI aims to improve the environmental performance of universities and colleges by developing environmental benchmarking. It runs events to showcase best practice, and its website offers case studies and guidance documents on themes including environmental management systems, energy use, sustainable construction, water use and waste minimisation and management. The case studies cover the reduction in water consumption by 75%, and costs by 30%, achieved at Liverpool John Moores University.
http://www.heepi.org.uk

Environmental Association for Universities and Colleges (EAUC)
The EAUC has working groups on a number of key areas related to Environmental Management and Sustainability, designed to progress and share good practice in the FHE sector. Their Transport and Procurement groups are currently involved in projects funded by the Learning and Skills Council under the Good Practice in Sustainable Development Education fund. The Waste Management group have developed and published a 'Practical Guide to Waste Management'. Working in partnership with Nottingham Trent University, the EAUC is also developing a fully integrated environmental management system for the FHE sector, EcoCampus, aligned with the standards of ISO 14001 and EMAS. *http://www.eauc.org.uk/*

People and Planet
People & Planet's 'Go Green' campaign is calling on all universities to adopt four factors:

1. The active, public support of senior university management for a programme of environmental performance improvement. The support of the Vice-Chancellor or Principal is particularly important.
2. Full-time staff dedicated to environmental management - developing objectives, setting priorities and timebound targets to fulfil them.
3. A comprehensive review to investigate all the environmental impacts of the institution, so that potential improvements are identified and performance is monitored.
4. A written, publicly available environmental policy of intent regarding environmental performance improvement, and against which to compare practice.

People and Planet state: "... we will sustain this effort until high environmental performance is the norm, not the exception, in the sector." *http://www.peopleandplanet.org.uk*

Higher Education Partnership for Sustainability (HEPS)
The HEPS project, managed by Forum for the Future, involved collaboration between 18 universities and colleges across the UK to embed sustainability into their teaching, research, management and community relations. The final report is now available for download, and outlines policies and actions for implementing sustainability in higher education.
http://www.forumforthefuture.org.uk/aboutus/heps_page1509.aspx

Case studies presented at the HEEPI Conference

Glasgow University. *Albert Young*
A principal focus has been on energy procurement/management :

- Energy efficiency investment; cost reduction of £3.2m achieved to date from energy purchasing savings and reinvestment in energy efficiency
- Monitoring of bills and consumption: around £64k pa reclaimed from utility suppliers
- Raising energy awareness using various methods including inductions, fresher publicity, campaigns and videos
- Student representative on Energy Management Committee

Oxford Brookes University. *Dr Anne Miller*
Annual environment audits have been carried out by students on one MSc programme for the past 10 years. Students review different parts of the campus or halls of resident, focussing on either energy, water use, waste management or procurement. Their subsequent report and SWOT analysis is then fed back to the university to be taken up into management. One major benefit cited is a huge increase in student motivation for their project work by knowing their work will be of use.

University of Bristol. *Joanna Simpson*
A pilot in-room recycling scheme has been set up in one hall of residence. Each bedroom was provided with a recycling bin which the students were then encouraged to empty into a mini recycling centre (MRC) on site on their way out to lectures, dinner or a night out.

The scheme cost £2730 for provision of the bins and MRC, and was funded by the University's Energy and Environmental Management Unit. The scheme achieved an overall increase in recycling of 132% by weight over one year.

University of Leeds. *Dr Keith Pitcher*
A transport survey was carried out amongst all University staff and students, using the HEEPI online travel survey software, to analyse travel patterns. This involved one student on an MA in Transport Studies plus 50 more students monitoring University entrances on the survey data. The project resulted in data on 2004 travel patterns and allowed a comparison with the 1999 data. The aim is to run the survey annually to get data year on year to aid in planning and transport provision.

WEBBED FOOT

Two new databases in learning and teaching

SNAS online database: resources to support new academic staff

The Supporting New Academic Staff (SNAS) Online Database stems from a project initiated by the Higher Education Academy. The majority of UK institutions now offer PGCert (HE) courses to support new academic staff. The SNAS project arose from an expressed need amongst Course Tutors and Academy Subject Centres to share information about subject specific resources to support both new academic staff and PGCert (HE) Course Providers.

The SNAS database provides "short and snappy resource lists" of discipline-specific and generic resources to provide a starting point for new academic staff: all resources listed have been chosen and annotated by Academy Subject Centres and Course Tutors. The database can be searched by subject, learning and teaching topic or by author and/or title of a resource. In addition to the database proper, a number of case studies on how the SNAS database could be used by Course Providers and Academy Subject Centres have also been made available to users.

The SNAS project meetings themselves, held over the last few years, have provided much lively debate and discussion on the ways of blending generic and disciplinary approaches to supporting new staff. The ideas coming from these discussions, and background reading used by the project group are available for perusal. A self-audit questionnaire has also been included, providing an opportunity for Course Providers to reflect on the balance between 'generic' and 'the discipline' in their own work.

The SNAS database, attendant material and further information on the SNAS project can be found at:

http://www.heacademy.ac.uk/snas/

Connect

Connect is the first phase of the Learning and Teaching Portal project, jointly funded by the Higher Education Academy and the Joint Information Systems Committee (JISC). The aim of the Learning and Teaching Portal is "to provide a web-based gateway to information on many aspects of learning and teaching".

So how does Connect differ from any of the other learning and teaching portals that are around at the moment? Connect allows users to search a number of different databases, namely:

- **A funding opportunities database** that allows users to search for information on funding for projects and services related to learning and teaching.
- **An organisations database** which lists UK agencies involved in the quality enhancement of learning and teaching in further and higher education.
- **A resources search facility** which allows users to search for learning and teaching support materials and resources based on website URLs.
- **A projects database** which lists details of more than 1000 learning and teaching related national projects.

The material held in these databases includes both subject-specific and generic information and resources, aiming to provide a comprehensive coverage across the HE and FE sector. It is this wide coverage and access to project and organisational information that makes Connect worth a visit by academics, support staff and senior managers in the sector. In addition, the Connect website is host to a discussion forum, a facility which aims to provide a platform from which members can host online events and join discussion groups. Access to the forum requires free registration with Connect.

Access to the above databases and forum, further information on the Learning and Teaching Portal project and information on how to embed any of Connect's discrete services into your own portal or web site can be found at: *http://www.connect.ac.uk/*

Tactile graphics for blind students: new database for the visually impaired

The National Centre for Tactile Diagrams (NCTD) can help to provide full access to educational materials for blind students and to improve universities' expertise in supporting blind and visually impaired students.

Blind or visually impaired students miss out on much information presented in graphical form – textbooks, lecturers' overheads, maps, photographs, graphs and charts, etc.

The NCTD is a non-profit organisation, sited by HEFCE at the University of Hertfordshire in 1999 and is headed by Dr Sarah Morley Wilkins and Dave Gunn both highly regarded in the field. With current Strand Two HEFCE/DELNI funding, the NCTD designs and produces tactile diagrams, maps and pictures and provides a variety of training and consultancy services to improve university expertise in supporting blind and visually impaired students. With other funding, the NCTD provides similar services for blind individuals, businesses and organisations.

Tactile graphics are a translation of visual graphical information into a 'feelable' format, which blind people explore with their fingers. Most images need considerable re-design to be effective in tactile form, and the NCTD has a skilled team of staff who specialise in this process.

To help HEIs and Subject Centres understand how tactile graphics can be used effectively, the NCTD have compiled and sent out a Handbook Pack to every university disability office in England and Northern Ireland and to every Subject Centre.

This Handbook Pack includes sample tactile diagrams, guidelines for students on how to use these diagrams, guidelines for HE staff on how to select images for tactile production and how to support the student, and a selection of case studies. It also explains why graphics cannot always be produced in a tactile format.

If you need further assistance, the NCTD can help you choose which graphics to produce in tactile version and undertake the production. They also run a range of courses and presentations for HE staff. For further details, contact:

National Centre for Tactile Diagrams, University of Hertfordshire, Hatfield, Herts, AL10 9AB.
Tel: 01707 286 348 Fax: 01707 285 059
Email: info@nctd.org.uk Web: www.nctd.org.uk

The Higher Education Academy Geography, Earth and Environmental Sciences (GEES)

The GEES Subject Centre Resource Database

call for case studies on interesting teaching, learning and assessment practices in higher education

The GEES Subject Centre is currently funding the expansion of our collection of case studies of interesting teaching, learning and assessment practices in Higher Education. All case studies are catalogued as records in the GEES Subject Centre Resource Database. At present, the Resource Database contains records cataloguing over 200 case study summaries, mainly from the UK, North America and Australasia.

This new call for case studies aims:

- to include further examples from the Earth and Environmental Sciences
- to build on the collection of case studies in Geography
- to expand on current examples of practice

How can you contribute?

If you have an example of a teaching, learning or assessment practice which may be of interest to staff in other Geography, Earth and Environmental Science departments, then please consider submitting it as a case study to the GEES Subject Centre.

Further information on submission and examples of case studies can be found on the GEES Subject Centre website at: http://www.tellus.ac.uk/contribute.html

NEWS FROM THE GEES SUBJECT CENTRE

GEES Subject Centre-funded small-scale learning and teaching research and development projects 2004-2005

For 2004-05 the GEES Subject Centre is providing support and funding for ten small-scale learning & teaching projects, for one year, providing opportunities for staff to develop resources and undertake research in various aspects of learning and teaching. Summaries of the 10 projects can be found below. The overall aims of this funding programme are:

- To support curriculum developments, learning & teaching research, and other innovations which will enhance the quality of students' learning experience and/or enrich the learning and teaching research literature.
- To harness existing staff expertise, and identify and encourage fresh talent.
- To offer opportunities for continuing professional development of staff in the three disciplines.
- To disseminate good practice to the wider communities.
- To encourage collaboration and sharing of good practice between the three disciplines and/or between departments in different institutions.
- To encourage collaboration and sharing of good practice between departments and support services, e.g. educational development units, learning technology officers, within institutions.
- To widen participation in the GEES Subject Centres' work.

Reports from the three projects funded in 2003-2004 on the theme of taught postgraduate level learning and teaching will be published in a special edition of *Planet* due out in the Spring 2005.

The contribution of support staff to student learning in GEES disciplines

Carolyn Roberts, School of Environment, University of Gloucestershire

The role of support staff such as administrators, laboratory and field technicians, cartographers, subject librarians and ICT specialists in contributing to the quality of students' experiences of GEES disciplines is frequently unrecognised. Main difficulties which have been cited include weak understanding of the changing HE context, poor communications within Departments, lack of involvement with institutional policy agendas and teaching & learning initiatives, and limited staff development opportunities. This project develops previous work and, through structured telephone interviews and focus groups, is designed to clarify the issues further, to collect examples of good practice in supporting student learning from selected groups of support staff, and to publish these in a structured and accessible way.

Using real-world forms to focus undergraduate learning

Duncan Reavey, University College Chichester

Sometimes students find it difficult to focus on precisely what is required of them. One way to help achieve a precise focus and to increase students' motivation is to require them to complete forms that are in professional use. For example, Environmental Science undergraduates have completed NERC's Application for a Small Project Grant to propose their own innovative field projects by answering the questions that real-life applicants must address and having their proposals judged by the same criteria. Using such forms helps students focus their energies on providing only relevant information, addressing important aspects that might otherwise be forgotten, and occasionally processing information in a way that gives it new significance. This project will source, modify and trial forms through which students undertake risk assessment of field work, environmental impact assessment for specific activities in the environment, and risk assessment for those leading groups in environmental education activities. The forms will be made available for downloading by the wider GEES community.

Combining student independent learning and peer advice to improve the quality of undergraduate dissertations

Margaret Harrison, School of the Environment, University of Gloucestershire

The aim is to develop a student-centred learning website facility to assist students undertaking a dissertation in the GEES disciplines. There are guides about 'how to undertake / survive your dissertation', but many students are daunted by independent work. Consequently, they may not perform as well as they should. Yet students often prove good advisers of their peers and may be better suited to this than their tutors. Thus, we shall use students who have produced dissertations to provide advice for those about to undertake the task. We shall obtain information from former students about how they went about their dissertation. We hope they will give their advice on time allocation and scheduling etc. The overriding theme will be 'what worked well for you?', 'what advice would you give to students preparing a dissertation?' etc. Graduates will also be asked to give examples of how dissertation experience has helped them obtain employment or move on to the next phase of their studies/careers.

Enterprising Geography and Earth and Environmental Sciences students: turning skills into profitable businesses

Inge Struder, School of Earth Science and Geography, Kingston University

This project aims to develop an accredited module in workshop format for undergraduate GEES students that prepares them for setting up in business. The main objectives are to bring self-employment as a career option to students' attention and enhance students' business skills and thus their employability. The objectives of the course are to give students an understanding of the entrepreneurial process, to provide a framework in which they can practise some of the skills involved in creating new ventures and to promote self-employment as a career option. All material will be available for download from a webpage and will include audio/video material and interactive learning activities for lecturers in GEES subjects, including role plays and simulations.

Getting ahead with the hat – the Mexican Hat Approach in the GEES disciplines

Paul Wright, School of Maritime and Coastal Studies, Southampton Institute

The Mexican Hat approach, or MHA, is a systematic learning intervention that has been successfully developed within the Engineering and Computing disciplines. However, whilst the approach is claimed to be transportable into any classroom situation, its use has not been more widely investigated nor evaluated. This project aims to adopt the MHA in a number of environmental science and geography units, and evaluate the learning experience by a series of focus groups run for both students and teachers. The MHA intervention creates a learning experience where students prepare before class, complete an activity, and then reflect back on their

work. A 'learning conversation' is then struck up between teacher and student to address any mismatches in perception between the students and the tutor. Evaluation of these experiences will allow conclusions to be drawn about transportability of technique, and facilitate a wide discussion about the development of teachers as guides through the learning process rather than keepers of knowledge.

Developing undergraduate career management skills using employer job descriptions and person specifications

Nigel Richardson, Department of Natural, Geographical & Applied Sciences, Edge Hill College of Higher Education

Academic departments in HE institutions are having to consider the integration of careers education within the curriculum of degree programmes following the recommendations of the Dearing Report and the publication of the QAA Code of Practice on Careers Education, Information and Guidance. GEES graduates have a wide range of skills and attributes that graduate employers are generally looking for. However, students are often weak at articulating the skills and qualities they have to offer, especially through the graduate recruitment process. This project focuses on the development of a resource of job descriptions and person specifications from employers of Geography graduates, and associated learning activities for use with Geography students to enhance their career preparation skills.

Field safety training for staff in Geography, Earth and Environmental Sciences in HE: establishing a framework

Pauline Couper, College of St Mark & St John, Plymouth

Fieldwork is an integral part of GEES subjects in HE, often using potentially hazardous locations, but at present there is no available staff training in fieldwork safety tailored to the requirements of HE. Outdoor Adventure staff members undergo considerable training in leading students in comparable outdoor environments, through nationally recognised qualifications, and have experience of delivering such training. The long-term aim of the project is thus to combine the experience of the latter with the requirements of the former, to provide opportunities for continuing professional development in field safety & leadership tailored specifically to GEES subjects. A steering group will be set up to: identify the requirements of such staff development provision; agree essential curriculum elements necessary to meet these requirements; identify whether or not accreditation is necessary; and make recommendations regarding the practicalities of provision.

Skills at Master's level In Geography higher education: teaching, learning & applying

Jay Mistry, Royal Holloway University of London

The taught Masters programmes in Environment and Development within the Department of Geography, Royal Holloway and in the Systems Department, Open University, are in the process of restructuring, and skills development has been identified as a key element for improvement. This project will review 'skills' at the taught Masters level in the literature and through interviews with Masters programme coordinators within the Environment and Development domains across the UK. We will then compare perceptions of 'real world' skills between students, teachers, alumni and employers through interviews and focus groups. A detailed database of examples showing how particular skills have been taught, learnt and then applied, will be produced and made available on CD. Skills acquisition will be evaluated in the subsequent cohort of students to see whether there is an improvement in our skills teaching.

Student recruitment for GEES degrees in the 21st century: mobility, socioeconomic and geodemographic background of GEES undergraduates

Seraphim Alvanides, University of Newcastle, with **David Croot**, University of Plymouth

The new challenge for institutions delivering geography related courses is to meet the widening participation agenda. Personal experience confirms that BSc applicants come from different social backgrounds compared to BA applicants. In addition, although geography students are highly mobile, geography departments tend to recruit from their local region. The synergistic effect of these factors is a geographical and socioeconomic mismatch between applications and acceptances shaping the inequitable distribution of GEES degree provision. This project will expand on earlier research by looking at recent UCAS data for GEES courses and will conduct initial analysis on mobility of undergraduate applicants by type of degree and socioeconomic background at regional and sub-regional level. It will also develop a proposal for an ESRC small grant looking into mobility, socioeconomic background and geodemographic composition for all undergraduate applicants for all degrees in the UK.

Embedding 'disability and access' into the environmental sciences curriculum

Emma Treby, School of Conservation Sciences, University of Bournemouth

The emergence of inclusivity as a societal goal has led to many changes in the way we manage our environment and in turn, this has implications for HE environmental science curricula design and implementation. In responding to SENDA, Universities have made significant efforts to address inclusivity in terms of the way students are able to study. However, little attention has been given to ensure staff are well informed to incorporate issues of disability and access into the curriculum, which would in turn, raise students' awareness. The aim of this project is to provide staff training in order to disseminate good practice and appropriate advice to GEES staff on how they may effectively embed issues of disability and access into the curriculum. Whilst the primary focus of the project is environmental sciences, it is intended to be transferable to wider communities within and beyond GEES disciplines.

The call for proposals for the next round of GEES small project funding will be issued after Easter

NEWS FROM THE GEES SUBJECT CENTRE

Embedding entrepreneurial skills in the GEES curriculum

The Higher Education Academy is managing a programme of activity to encourage entrepreneurial skills amongst undergraduates, via curriculum development. A large amount of generic material has already been produced to support staff in embedding the development of such skills into the curriculum (all available on-line at www.heacademy.ac.uk/952.htm). In addition, ten Subject Centres have been awarded funding to develop discipline-specific resources.

The Higher Education Academy has a very holistic view of enterprise, entrepreneurship and 'intraprenuership' which is encompassed in this definition by Alison Price:

> *"Enterprise is an inclusive concept which provides both the context in which subject disciplines can be explored, as well as an approach, through skill development, which can be taken to the exploration and discovery of a discipline. In these respects, it can provide a challenging environment within which to explore a variety of teaching areas (the small business context) as well as provide a dimension to learning, that of developing the skills of "being enterprising", which provide students with an attitude towards learning, which rewards and supports innovation, change and development.*
>
> *Enterprise supports the recognition of new market opportunities as well as develops the opportunity to change and develop at the individual, business and industry/sector levels. This includes the exploration of new ideas and developments from a corporate perspective (as "intrapreneurship") as well as the creation of new ventures, social programmes and the exploration of new opportunities" (Price, 2004).*

For GEES graduates, entrepreneurship often involves setting up consultancies (e.g. environmental, geophysics, GIS) or working in a freelance capacity. Many such businesses are often set up several years after graduation, when the individual has had an opportunity to gain more experience either through further study or work in industry. (Do you agree with this view of GEES graduate entrepreneurship? If not, or if you have any other examples, please let us know in order to help us build up a clearer picture.)

The GEES Subject Centre's Entrepreneurship Project aims to develop resources to support the embedding of entrepreneurial skills in the curriculum. The emphasis of this curriculum development is very much on skills (such as creativity, team building, risk awareness) and subject-relevance rather than a narrow focus on setting up businesses. The main outcomes of the project will be:

- A set of case studies from GEES graduate entrepreneurs;
- A resource pack of examples of curriculum exercises (available from April 05);
- A departmental workshop framework for the GEES Subject Centre workshop programme (to run from Sept 05); and
- A pioneering two-day residential workshop for staff and students (January 05).

How can you benefit? If you are considering including elements of entrepreneurial skills development in your curriculum, the resource pack will provide lots of ideas and advice to help you. If you would like an opportunity to try out some of the resources firsthand, then come along to our residential workshop on 13th & 14th January in Leeds when you will be able to sample the exercises hands-on and have the chance to discuss the issues further with staff and students.

How can you contribute? We are on the look-out for examples of exercises which develop entrepreneurial skills. These might be anything from 5 minute lecture breaks or 1 hour tutorials to week long field projects or entire modules. Please get in touch if you would like to offer any examples (all, of course, will be duly acknowledged).

For further information on the project or to book for the January event see our web-site at http://www.gees.ac.uk/projects/entrep.htm or contact the project manager: Helen King, GEES Subject Centre, Tel 01752 233 532 Email h.king@plymouth.ac.uk

The Higher Education Academy generic project on entrepreneurship skills

The 'Supporting Entrepreneurial Skills' project of the Higher Education Academy provides generic teaching materials, to embed enterprise within existing university modules. A matrix is presented as a framework to contextualise the business start up process and outline the range of support required for curriculum development.

The Supporting Entrepreneurial Skills Matrix (SESM) shows the personal capacity (knowledge, skills, aptitude, and motivation) required to start, develop and run a small business. SESM draws on two models – one that outlines the phases of business start up, developed at Leeds Metropolitan University, and one that draws out the personal elements required by the aspirant entrepreneur, the MAIR model. (See box.)

The Higher Education Academy has also developed further Materials for Enterprise Learning and Teaching (MELT), which include a range of teaching slides, lecturer support and student activities which can be built into any award, drawing out entrepreneurial skills and examples from the core discipline to create an appreciation of the business start up process.

Phases of business start up	**MAIR model of personal qualities for entrepreneurs**
	1. Motivation and Confidence
A. Idea	2. Abilities & Skills Development
B. Proven Idea	3. Ideas
C. Planning & Development	4. Resources
D. Ready to Start-Up	5. Strategy
E. Business Growth	6. Planning & Operations
F. Maturity	

1. Business Start Up @ Leeds Met Model of Business Start Up developed by Roberton, M (2000) from Churchill N.C. & Lewis V.L. (1983), The Five Stages of Small Business Growth, *Harvard Business Review*, **63**, 3, May-June and Stevenson Six dimensions of entrepreneurship, in Birley and Muzyka (1997) *Mastering Enterprise*, FT Pitman
2. An enhanced version of the 'MAIR model' adapted by Hartshorn, C from Gibb, A & Ritchie, J (1982). Understanding the processes of starting small businesses, *International Small Business Journal*, **6**, 70-80.

See: www.heacademy.ac.uk/952.htm

Creativity in Earth & Environmental Sciences / Studies: call for interest

The GEES Subject Centre is looking at setting up an interest group to stimulate a discussion around the role of creativity in disciplinary learning and practice with particular reference to the 'Earth Science, Environmental Science & Environmental Studies' QAA Benchmarking statement. This discussion will be part of a pilot process initiated by the Higher Education Academy's 'Imaginative Curriculum' project. The purposes of this part of the project are to:

1) gain a deeper understanding of our own practice;
2) think of ways of inspiring students to come to university to study our disciplines;
3) influence the next generation of benchmarking statement.

The current Benchmarking statement (http://www.qaa.ac.uk/crntwork/benchmark/earth%20science.html) suggests that Earth & Environmental Scientists need to be creative thinkers for various reasons:

- working with incomplete data
- using different ways to visualise or represent the data (e.g. maps, diagrams, models)
- thinking about the Earth as a complex set of systems
- working in a variety of scales (nanometres to thousands of kilometres; seconds to millions of years)

If you would be interested in joining the interest group and / or would like to offer examples of teaching creativity from your practice, please contact Helen King, Tel 01752 233 532 Email h.king@plymouth.ac.uk

New GEES Teaching and Learning Guides

Three new guides on teaching and learning in Earth and Environmental Science / Studies will be shortly available from GEES on:

Fieldwork

Practical and Lab Work

Assessment

These are an extension and adaptation of the excellent Geography Discipline Network (GDN) Guides for Geography. The authors of the new guides are discipline specialists working in close collaboration with the original GDN authors.

These will be available for download from the GEES website.at: http://www.gees.ac.uk/pubs/guides/eesguides.htm

Printed copies will be sent to all Departmental Contacts. If you would like further copies sent to you, please email: wmmiller@plymouth.ac.uk

GEES Senior Adviser among the first Chartered Environmentalists in the UK

Congratulations to Jennifer Blumhof, GEES Subject Centre Adviser for Environmental Science on the award of the title of Chartered Environmentalist (CEnv). She is one of the first group of around 50 individuals to receive this new designation, recently granted the Royal Charter. Congratulations also to James Longhurst, Carolyn Roberts and Steve Martin who were amongst this group

Limited offer! FREE workshop and advisory service for GEES departments

The Inclusive Curriculum Project is now offering either a department-based workshop, or up to two days' advice and guidance on a wide range of topics on the theme 'Developing an Inclusive Curriculum'. Making reasonable adjustments for disabled students is now a legal requirement and one which will be monitored should the Disability Discrimination Bill come into force in 2006

This offer is open to all GEES staff who come into contact with students, including Heads of Departments, course leaders, lecturers, administrative staff, laboratory technicians, librarians and IT personnel. See our website at HYPERLINK "www.glos.ac.uk/gdn/icp/index.htm"www.glos.ac.uk/gdn/icp/index.htm for further details.

GEES events for 2004/05

GEES has planned a series of events over the academic year. Starting with the conference held jointly with HEEPI on 14 September, meetings for small project grant holders have been held in London and Birmingham. A CPD workshop for facilitators of GEES Departmental Workshops will also be held. Alongside the programme of Departmental Workshops held on request throughout the UK, other events planned for 2005 include:

- Entrepreneurship workshop in Leeds in January.
- Meeting in Edinburgh in April on the Quality Enhancement Initiative themes of Flexible Delivery and Employability.
- Meeting in Wales on Employability and Entrepreneurship on 7th February.
- Conference on GIS to be held in Leicester in spring.
- Residential Workshop on 23/24 May for newly-appointed and aspiring lecturers in GEES subjects.
- Annual Conference in June.

(See also Diary on pp.44/45 this issue.) Further details will be sent to all Departmental and other GEES Contacts by email, and advertised through JISCMAIL lists. Please contact GEES if you would like to receive details of any of these directly by emailing: wmmiller@plymouth.ac.uk

GEES Departmental Workshop programme

As in previous years, the GEES Subject Centre has been offering a programme of free workshops to all GEES departments in the UK for the 2004/5 academic year, on a first-come, first-served basis. To date, nearly 100 workshops have been coordinated and funded on subjects such as fieldwork, assessment, key skills, work-based learning, linking teaching and research, and e-learning. These are designed to be subject-specific and to complement any generic events offered within institutions. Comments from previous years have included:

'So interesting, we could do with more!'

'Provided a small, overstretched team with the luxury of sitting down and dealing with crucial issues'

'Practical and applicable ideas - inspiring!'

Although the deadline for requesting these has now passed for this year, the GEES Subject Centre can still offer to coordinate and deliver additional leaning and teaching workshops for a £350 fee, plus travel and accommodation for the facilitator, if necessary. It is expected that the free programme will be offered again next year, and the call for requests will be sent to Departmental Contacts at the beginning of the 2005/6 academic year. To find out more about this year's programme, see:

www.gees.ac.uk/events/workshops/workshops.htm

DIARY December 2004- October 2005

December 2004

14-16
Whose Higher Education?: Public and Private Values and the Knowledge Economy
Society for Research in Higher Education Conference (SRHE)
Venue: University of Bristol
http://www.srhe.ac.uk/

16
Teaching Ethics to Bioscience Students: Engaging with the Issues
The Higher Education Academy Centre for Bioscience
Venue: University of Leicester
http://bio.ltsn.ac.uk/events/registration/ethicsleicester.htm

January 2005

4-7
3rd Annual Hawaii International Conference on Education
Venue: Honolulu, Hawaii.
http://www.hiceducation.org/

13-14
Enterprise, Skills and Entrepreneurship in GEES
GEES Subject Centre Workshop
Venue: Leeds
http://www.gees.ac.uk/projtheme/entrep/entrep.htm

27-28
Enhancing Student Employability: Higher Education and Workforce Development
9th Quality in Higher Education International Seminar
Venue: Birmingham
http://www.qualityresearchinternational.com/ese/index.htm

February 2005

21-23
Web-based Education 2005
The 4th International Association of Science and Technology for Development (IASTED) International Conference on Web-based Education
Venue: Grindelwald, Switzerland.
http://www.iasted.org/conferences/2005/switzerland/wbe.htm

March 2005

17-18
The Committee of Heads of Environmental Sciences (CHES) Annual Conference
Venue: University of Ulster, Northern Ireland.
For further information, contact c.james@rgs.org

17-20
Courage, Imagination, Action: Rallying the Trendsetters in Higher Education
The American Association of Higher Education (AAHE) National Conference
Venue: Georgia, USA
http://www.aahe.org/National/2005.htm

31
The Transition from School to University
Joint GA and JGHE event at the GA Annual Conference (30 March – 1 April)
Venue: University of Derby
Further information: Paul.McDermott@northampton.ac.uk

April 2005

4-6
CAL '05 - Virtual Learning?
Venue: University of Bristol
http://www.cal-conference.elsevier.com

5-9
Annual Meeting of the Association of American Geographers (AAG)
Venue: Denver, Colorado, USA
http://www.aag.org/annualmeetings/index.cfm

11
Enhancing Student Success: the role of integrated support services Conference 2005
Venue: University of Newcastle, New South Wales, Australia
http://www.ccc.newcastle.edu.au/student-support/2005conference/index.htm

21
Inclusive Curriculum Conference.
Geography Discipline Network event, in collaboration with HERG and the GEES Subject Centre
Venue: Techno Centre, Coventry
mhills@glos.ac.uk

May 2005

23-24
Newly-Appointed and Aspiring Lecturers In GEES Disciplines
GEES Subject Centre Residential Workshop
Venue: Birmingham
http://gees.ac.uk.events/2005/newlect05/

30 - 4 June
CSCL Computer-supported Collaborative Learning 2005: The Next 10 Years!
Venue: Taipei, Taiwan
http://www.cscl2005.org

June 2005

12-14
Charting New Territory
AAHE Assessment Conference
Venue: Toronto, Canada.
http://www.aahe.org/convenings.htm

13-15
The 1st International Conference on Enhancing Teaching and Learning Through Assessment
Venue: Hong Kong, China.
http://www.polyu.edu.hk/assessment/

20-23
Eden: Annual Conference for the European Distance and E-learning Network
Venue: Helsinki, Finland.
http://www.eden-online.org/eden.php

23-26
What a Difference a Pedagogy Makes: Researching Lifelong Learning & Teaching
Centre for Research in Lifelong Learning (CRLL)
3rd International Conference
Venue: University of Stirling.
http://crll.gcal.ac.uk/conf.htm

July 2005

2-6
Higher Education in a Changing World
Higher Education Research and Development Society of Australasia (HERDSA) Conference 2005
Venue: University of Sydney, Australia
http://www.herdsa.org.au/2005/

10-13
Internationalising Entrepreneurship Education and Training Conference
15th IntEnt Conference
Venue: University of Surrey
http://intent05.som.surrey.ac.uk/

August 2005

31 Aug- 2nd September
Flows and Spaces in a Globalised World
Royal Geographical Society- Institute of British Geographers (RGS-IBG) Annual Conference
Venue: London
http://www.rgs.org/templ.php?page=3resann05int

September 2005

6-8 September
Exploring the frontiers of e-learning: borders, outposts and migration
The Association for Learning Technology, ALT-C 2005
Venue: Manchester
www.alt.ac.uk/altc2005

INFORMATION FOR THE OVERWHELMED

The world of learning and teaching in Higher Education is in a constant state of flux. This column is intended to provide a brief synopsis of the latest developments, initiatives and policies to help you stay up-to-date with the ever-changing landscape.

The Higher Education Academy

In May 2004, the Institute for Learning and Teaching in Higher Education (ILTHE), the Learning and Teaching Support Network (LTSN) and the Teaching Quality Enhancement Fund National Co-ordination Team (TQEF NCT) were merged to form the Higher Education Academy: a new UK-wide organisation set up to support quality enhancement in teaching and the student experience in higher education. (See page 2 of this issue for further details). *http://www.heacademy.ac.uk*

Centres for Excellence in Teaching and Learning (CETLs)

In January 2004, the Higher Education Funding Council for England (HEFCE) invited bids for recurrent and capital funds to establish Centres for Excellence in Teaching and Learning (CETLs). At stage one, 259 eligible bids were received from 126 different institutions. These spanned all the main subject areas and a wide range of thematic topics in learning and teaching. 106 bids were selected to proceed to stage two of the bidding process, and the list of successful CETLs will be announced in January 2005. (See page 3 of this issue for further details.)
http://www.heacademy.ac.uk/CETLs/

In Northern Ireland, the Department for Employment and Learning Northern Ireland (DELNI) invited applications from all higher education institutions for recurrent funds for Areas of Excellence in Teaching and Learning. The Northern Irish process is non-competitive and DELNI have announced 7 bids moving through to the next stage.

Widening Participation

For some HEIs 'widening participation (WP)', in the sense of providing appropriate opportunities for those who have not traditionally had the chance to develop their educational potential at this level, is nothing new. It has long been part of their mission, ethos and culture. For other HEIs, the challenges are new and ways forward disparate.

The Government has set targets for widening participation with a view to reaching 50% of all 18-30 year olds by 2010. The key groups with which the Government wishes to enhance participation are those that are currently under-represented, and include those from poorer socioeconomic backgrounds, those with disabilities, and certain ethnic minorities. Much of the recent expansion of opportunities within HE has come through the introduction of Foundation Degrees, which are vocational qualifications developed in partnership with employers.

The GEES Subject Centre is currently working with the Geography Discipline Network on an inclusive curriculum project designed to develop, disseminate and embed resources for supporting disabled students studying geography, earth and environmental sciences in higher education. In addition, two of our small-scale projects, being undertaken by Emma Treby at Bournemouth and Seraphim Alvanides at Newcastle, are also directly related to these issues (see pages 35/6 of this issue). See:

- Higher Education Academy Widening Participation pages. *http://www.heacademy.ac.uk/199.htm*
- GEES Inclusive Curriculum Project. *http://www.glos.ac.uk/gdn/*

INFORMATION FOR THE OVERWHELMED

- Foundation Degree Forward (provides support for the development of high quality Foundation Degrees). *http://www.fdf.ac.uk*
- Action on Access, the national co-ordination team to support WP strategies for England, and also for Northern Ireland (DELNI). *http://www.brad.ac.uk/admin/conted/action/*
- The National Disability Team (NDT), is committed to WP for disabled students in higher education institutions across England and Northern Ireland. *http://www.natdisteam.ac.uk/*

Employability

There are many definitions of what it is to be 'employable', and many views on the processes involved. The Higher Education Academy offers a wide range of perspectives on the employability of graduates, based on the premise that, in higher education, 'employability' is about good learning. GEES graduates go on to careers in an enormously wide range of areas including higher education.

Employability is a government concern for at least two reasons. First, it is important to the widening participation strategy - which, if it succeeds, will result in more graduates looking for jobs. Second, the government believes that a good supply of highly-skilled employable graduates is essential for national economic and social well-being.

Initiatives linked to the employability agenda include the introduction of Personal Development Planning for all students from September 2005; and the development of entrepreneurial skills within the curriculum (see p.44 this issue on the GEES Entrepreneurship project).

- GEES Subject Centre employability web pages. *http://www.gees.ac.uk/projects/employ.htm*
- Higher Education Academy employability pages. *http://www.heacademy.ac.uk/Employability%20.htm*

External examiners

The Higher Education Academy is leading a programme of research and development work aimed at engaging with the problem, 'how can we improve the support given to external examiners and the function of external examining?' The project is being brokered by Universities UK with the Standing Conference of Principals (SCoP) and is being funded by the Higher Education Funding Council for England (HEFCE). The work is being undertaken to address the recommendations made in the Teaching Quality Enhancement Report, but also to address the wider contexts associated with the changes in UK higher education. An important goal of the project is to scope the External Examiner support function within the new HE Academy. Information on the GEES Subject Centre's survey of external examiners can be found on page 30 of this issue. Higher Education Academy external examining pages *http://www.heacademy.ac.uk/externalexaminers.htm*

Professional standards

The 2003 White Paper on Higher Education stated that "from 2006 all new teaching staff should obtain a teaching qualification that incorporates agreed professional teaching standards". Universities UK, SCoP, and the UK HE Funding Councils have proposed that the Higher Education Academy take forward the development of national professional standards for academic practice and continuing professional development in teaching and learning in HE. The first phase of this has involved the Academy working collaboratively with these organisations to consult the UK HE sector and other representative bodies. Updates on the consultation will be available at the end of November 2004. *http://www.heacademy.ac.uk/119.htm*

Scotland and Wales

Many of the above initiatives are being promoted by the Government through HEFCE and DELNI. Hence, the main impact and support will be focused on England and Northern Ireland. However, Scotland and Wales are also committed to similar goals. For example, a unique Quality Enhancement model has been designed by a 4-way partnership of the Scottish Higher Education Funding Council (SHEFC), the Quality Assurance Agency in Scotland (QAA), Universities Scotland and the National Union of Students, Scotland. The *Enhancement Themes* initiative aims to enhance the student learning experience in Scottish higher education by identifying specific areas (themes) for development. The themes for 2004-05 are Employability and Flexible Learning. The GEES Subject Centre has been represented at each of the two annual events held at the beginning of the thematic years. *http://www.enhancementthemes.ac.uk/* and *http://www.shefc.ac.uk/*

In 2002, the Welsh National Assembly published its *Reaching Higher* strategy for higher education which included reconfiguration and widening access as key priorities for the short term. The GEES Subject Centre is keen to identify topics and themes in which departments in Wales would welcome support and, to this end, has undertaken visits to departments and is planning a regional meeting /seminar at the University of Glamorgan. See: Higher Education Funding Council for Wales (HEFCW) *http://www.hefcw.ac.uk*
and Welsh National Assembly training and education pages *http://www.learning.wales.gov.uk/index.asp*

Despite being located in the far south-west of England, the GEES Subject Centre is committed to supporting all parts of the UK: England, Scotland, Wales and Northern Ireland. In addition to our programme of departmental workshops that are available to all UK higher education institutions, our small-scale projects fund is open to all UK staff who teach or support learning, our publications are circulated to all UK GEES departments and our on-line Resource Database is available to everyone, this year we will be also be running regional events in Wales and Scotland.

... and ideas for the underwhelmed

Sitting at home? Watching TV? Turn it off and do something for GEES! Why don't you get in contact - we're always on the look-out for people to do reviews for the Resource Database, to undertake small-scale commissioned research or development work, or to offer examples of interesting practice. If you want to get more involved in working with and supporting your learning & teaching colleagues in geography, earth and environmental sciences throughout the UK then get in touch. Your Subject Centre needs you!

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