
Editorial

Planet gets a 'revamp'...

You may have noticed that Planet has had a slight 'revamp'—I hope you like it. This is my second issue as Editor, and I am working hard to make this journal an easy-to-read, useful tool to support your learning and teaching in the GEES disciplines.

I have also standardised the contribution process to make it easier for you. Online at www.gees.ac.uk you will shortly find a simple Planet Contribution Style Guide. This will provide you with information about the word limit, formatting, referencing, graphic resolution etc. I have also set standard deadlines for contributions for both issues of Planet each year:

- 1. Special Issue**—copy deadline **30 September** (published in December/January)
- 2. General Issue**—copy deadline **31 March** (published in June/July)

Welcome to Issue 19 of Planet—a Special Issue themed on our 2007 residential conference, focused on recruitment and retention issues in the GEES disciplines.

In this Issue, a number of speakers from the 2007 conference have elaborated on their presentations. Unlike the conference, Planet 19 is not split into sections by topic (ie recruitment or retention issues), rather, it follows the 'lifecycle' of a student from secondary school (GCSE, AS and A-level) into higher education (undergraduate and postgraduate) and on to employment.

Many academics, industry professionals and teachers are recognising that the issue of student recruitment into GEES disciplines and retention of these students to the conclusion of their degrees is complex. It relates to more than 'just' Higher Education Institutions (HEIs) and involves everyone within the GEES community, including other educational institutions, industry, and government.

With the reforms in school education currently taking place, we could also see the nature of students entering higher education changing. There is recognition that, in addition to traditional responses to these issues, there could be real value in approaching issues from different perspectives (for example, from a marketing perspective).

Each of the papers in this issue has been written from a different perspective—and each is interesting and adds to the debate on how HEIs can move forward in recruitment and retention in the GEES disciplines.

I hope you enjoy reading Planet 19 and that you find the information it contains useful for improving your own programmes for recruitment and retention potential. I also hope you will want to engage with many of the articles—they all contain useful ideas and advice. But, if you do nothing else, please do read the synopsis at the end—60 suggestions on recruitment and retention in just two and a half pages!

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School students' perceptions of careers related to Geography, Earth and Environmental Science (GEES)

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Abstract

This paper discusses some of the findings of a 2005-07 GEES Subject Centre research project investigating school students' perceptions of the GEES disciplines. Perceived career opportunities and interest in the subject tend to be important factors influencing degree subject choice. The data suggests, however, that there is a mismatch between students' perceptions of career opportunities in the GEES disciplines and their own idea of getting a job, particularly at school years 7 and 10. The literature review conducted as part of this project noted that there is a cumulative process of evolving perception and achievement that influences degree subject choice and, for most people, this starts well before the age of 14 years. The challenge for the GEES community, therefore, is to find a way to market itself in order to make it highly relevant to children of all ages.

Introduction

Geography, Earth and Environmental Sciences are very much in the media at present. There is a wide variety of natural history television programmes and the news regularly contains references to natural disasters, climate change and so on. However, this coverage does not seem to translate into a demand for higher education courses in the disciplines, at least not in the same way that dramas such as *Silent Witness* have created a demand for forensic science courses (for example). So what are the perceptions of the disciplines? Developing an understanding of school students' attitudes to, and perceptions of, the GEES disciplines will help to inform HE departments' recruitment and retention strategies, as well as providing an opportunity to better promote the disciplines in schools, colleges and to the public.

From 2005 to 2007, the GEES Subject Centre conducted a pilot research project investigating school students' perceptions of the GEES disciplines. The project involved a number of colleagues in university GEES departments throughout the UK and obtained written questionnaire responses from over 900 students in 20 schools across England, Scotland, Wales and Northern Ireland. The purpose of the questionnaire was to gain an understanding (albeit fairly basic)

of young people's perceptions of what the GEES disciplines are about and what careers might be available. It was intended to act as a pilot in order to identify key areas for further, more in-depth research.

This paper will focus on the students' perceptions of the career opportunities afforded by Geography, Earth and Environmental Sciences. A full report on the research findings (including a comprehensive literature review conducted by Roger Trend, now at the Department of Educational Studies, University of Oxford) is available on the GEES Subject Centre website at <http://www.gees.ac.uk/projtheme/stuperc/stuperc.htm>.

Methodology

Further to a discussion meeting of the project team, a draft questionnaire was devised by Roger Trend and piloted with schools from south Wales. Ten schools were involved and the questionnaire was completed (under teacher supervision) by students from years 7, 10 and 12. As well as offering a chance to trial the questionnaire, this pilot study provided an opportunity to compare responses across a range of school years. Following this pilot, the questionnaire was revised slightly and then circulated to a further ten schools in England, Scotland and Northern Ireland for use with year 12 only (a copy of this latter questionnaire is available in the online report). The questionnaire included demographic information, Likert-scale style questions and open-text responses. The students were asked about their interest in school topics, perceptions of influences on their subject choice, what they think geography / geology / environmental science is all about, what jobs they think geographers / geologists / environmental scientists do and what interest, if any, they have in planet Earth and its people. The data were entered into an Excel spreadsheet to provide an electronic record (many thanks to Sian Evans, the GEES Subject Centre's graduate placement student for her hard work on this) and then analysed statistically and qualitatively by the author.

It is important to note that the responses were obtained through a written questionnaire that was not overseen by a researcher (though teachers

were provided with guidelines for administration of the questionnaire). The responses are likely to be the school students' immediate thoughts on the subjects and may not represent fully considered opinions. In addition, differences in writing ability / speed may also have affected the range of responses. The data should be considered, therefore, as 'food for thought' and to provide indicators for further, more rigorous research rather than as definitive descriptors of the students' understandings of the subjects.

(NB: It should be noted that the term 'Geology' was used rather than 'Earth Science' or 'Geoscience' as this is the title of GCSE and A-level courses. It was considered that students would be less familiar with the latter two terms. For this part of the GEES community, it would be interesting to explore these concepts further to ascertain the best terminology to use when marketing the subject. Although academics may be able identify a distinction between the three terms, it is probable that school students may not. Indeed, it could be conjectured that the Geological Society's 'Careers in Geoscience' publication may not be attractive to students browsing through careers libraries if they are simply not familiar with the term.)

Influences on A-level Subject Choice

Other studies have suggested that perceived career opportunities, closely followed by current ability and performance, have the strongest influence on A-level students' choice of subject for study at University (Maringe 2006 and references therein). It follows, therefore, that there may be a relationship (albeit somewhat complex) between choice of A-levels and choice of subjects to study at HE. (NB There are as many different stories regarding subject choice at University as there are students – just ask any of your colleagues how they chose their degree – interestingly, however, there has been relatively little formal research in

this area. Most research into HE choice tends to focus on the institution, rather than the subject. In addition, there are many studies asking school students about their intended choices, but far fewer that question undergraduates once they are at University.)

The year 12 students in the GEES research were asked to rank various factors according to how much influence they had had on their choice of A-level subjects. The responses were from a total of 664 year 12 students: 548 students from 10 schools from the final survey, and 110 student responses from three schools taken from those year 12 students participating in the pilot study (six students from the final survey did not provide any responses to any questions so were not included in the data analysis). Of the 548 students who responded to the final survey, 177 were studying geography/geology and 371 were non geology/geography students. Across all the schools, the responses were generally similar, with the following factors consistently being selected as 'Very Important' or 'Important':

- My interest in the subject
- My future career or job
- My enjoyment of the subject
- What I want to study at university

The total data for all the schools were analysed for differences in responses between males and females. Statistically significant differences in responses were found.

'How well I did in GCSEs' and 'How much money I can earn in my career' received a relatively high rating when averaged across all the schools, but there was a greater spread of responses between schools than for the above four factors (Figure 1).

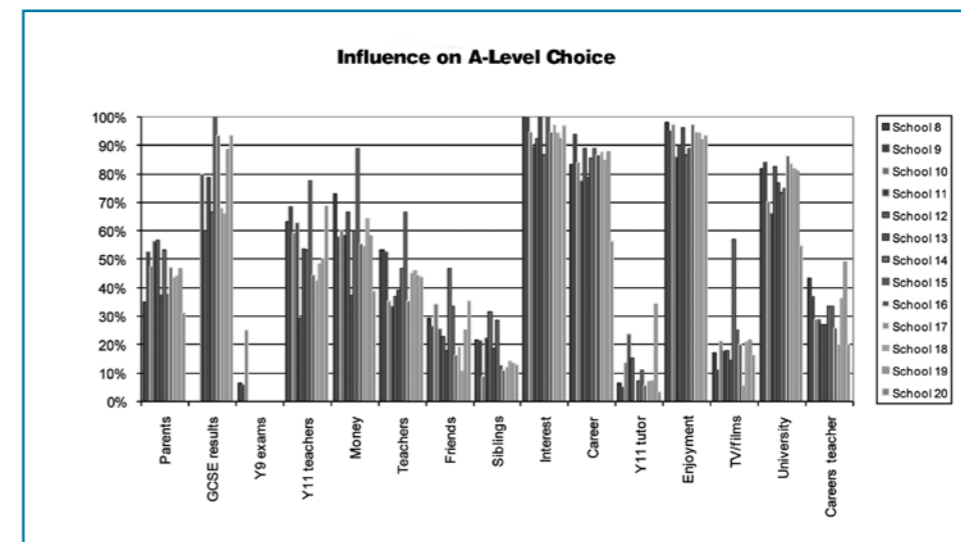


Figure 1: Percentage of respondents from each school (not including those who responded 'don't know') who indicated that a factor was 'Very Important' or 'Important'.

The total data for all the schools were analysed for differences in responses between males and females. Statistically significant differences in responses were found for the following factors (using the Chi-squared test):

- How well I did in GCSEs (more girls than boys indicated that this was 'Very Important' or 'Important': 1% confidence level)
- How much money I can earn in my career (more boys than girls indicated that this was 'Very Important' or 'Important': 1% confidence level)
- My enjoyment of the subject (more girls than boys indicated that this was 'Very Important' or 'Important': 5% confidence level)

The main influences of GCSE results, Interest, Career, Enjoyment and University found here, reflect the findings of other research studies into student choice at GCSE and 17+ levels (e.g. Ashworth & Evans, 2001; Garratt, 1985; Rolfe, 2001; Weeden, 2007).

Perceptions of Careers in GEES

The GEES Subject Centre research and that of others highlights perceived career opportunities and interest in the subject as the important factors potentially influencing degree subject choice. If this is the case, then in order to ensure recruitment into Geography, Earth and Environmental Sciences, the disciplines must be familiar, interesting and relevant to school students both in terms of content and career opportunities. In order to gain a broad understanding of school students' current perceptions of careers in the GEES disciplines the questionnaire asked students to provide a free-text answer to the question 'What jobs do you think geographers do?' (and similarly for geologists and environmental scientists). For comparison, they were also asked about their own career aspirations.

The following data analysis illustrates the range of responses from years 7 and 10 (from the pilot study) and year 12 from the final study only. In the analysis phase of this study, the year 12 responses from the pilot study and the final survey were kept separate due to the slightly differing questionnaires used. As a greater number of responses were received in the final survey, this has been used in this analysis rather than the pilot responses (however, there is broad agreement between the two datasets).

Career Aspirations

The school students were asked what career or job they wanted to do when they finished their education. Their first choice options are outlined below:

Year 7 Students (aged 11+)

- 64% stated a named job
- 24% wanted to be professional sports people
- 6% suggested a topic which interested them (e.g. 'working with others' or university)
- 1 student wanted to run their own business
- 7 students (4% of 165) offered no response

| Named Job (Year 7) | No. of responses |
|----------------------------|------------------|
| Teacher | 14 (8%) |
| Vet | 8 (5%) |
| Mechanic | 6 (4%) |
| Armed Forces | 6 (4%) |
| Police | 5 (3%) |
| Fashion Designer | 4 (2%) |
| Actor | 4 (2%) |
| Technician | 3 (2%) |
| Make Up / Beauty Therapist | 3 (2%) |
| Lawyer | 3 (2%) |
| Engineer | 3 (2%) |
| Carpenter | 3 (2%) |
| Architect | 3 (2%) |

The students named a total of 44 different jobs. Those that were named by three or more students were:

Year 10 Students (aged 14+)

- 63% stated a named job
- 7% wanted to be professional sports people
- 9% suggested a topic which interested them (e.g. 'something in computers')
- 4 students wanted to run their own business
- 20 students (17% of 117) didn't know or offered no response

The students named a total of 39 different jobs. Those that were named by 3 or more students were:

| Named Job (Year 10) | No. of responses |
|---------------------|------------------|
| Lawyer | 6 (5%) |
| Teacher | 5 (4%) |
| Police | 5 (4%) |
| Hairdresser | 4 (3%) |
| Engineer | 4 (3%) |
| Doctor | 3 (3%) |
| Vet | 3 (3%) |
| Designer | 3 (3%) |
| Childminder | 3 (3%) |
| Surgeon | 3 (3%) |
| Mechanic | 3 (3%) |

Year 12 Students (final study)(ages 16+)

Forty-two of the 177 students studying Geography and/or Geology at A-level ('Geo' students), and 86 of the 371 non-Geo students didn't know what they wanted to do or offered no response. The other responses were categorised as follows:

| | Named Job | Sport | Topic | Own Business |
|-----------------------------------|-----------|---------|----------|--------------|
| Geo Students No. of Responses | 106 (60%) | 5 (3%) | 20 (11%) | 1 (1%) |
| Non-Geo Students No. of Responses | 229 (62%) | 10 (3%) | 44 (12%) | 2 (0%) |

The jobs that were named by 3% or more students were:

| Geo Students (49 different named jobs in total) | |
|---|------------------|
| Named Job | No. of responses |
| Teacher | 13 (7%) |
| Lawyer | 9 (5%) |
| Police | 6 (3%) |
| Journalist | 6 (3%) |
| Engineer | 6 (3%) |

| Non-Geo Students (75 different named jobs in total) | |
|---|------------------|
| Named Job | No. of responses |
| Medicine | 33 (9%) |
| Engineer | 16 (4%) |
| Lawyer | 16 (4%) |
| Journalist | 15 (4%) |
| Teacher | 14 (4%) |
| Business Management | 7 (2%) |
| Design | 10 (3%) |

Of the students studying Geography /Geology, the following discipline-related vocations were named (the number of responses is provided in parentheses): Geologist (2); Conservationist (1); Volcanologist (1); Palaeontologist (1); Ocean Scientist (1); Environmental Management (1)

To summarise, the percentages of school students who provided named jobs when asked about their own career aspirations were 64% in year 7, 63% in year 10 and 61% in year 12 (Geo and non-Geo combined).

Perceptions of GEES-related Careers

Students were asked 'what jobs do you think geographers / geologists / environmental scientists do? (each asked separately). The categories of responses for each disciplines are illustrated graphically in figures 2a,b and c (please note that some students provided responses in more than one category). A further category that featured for geography jobs only was 'Travel or Explore': 18% of year 7 and 10, and 5% of year 12 respondents suggested this.

to ensure recruitment into Geography, Earth and Environmental Sciences, the disciplines must be familiar, interesting and relevant to school students both in terms of content and career opportunities.

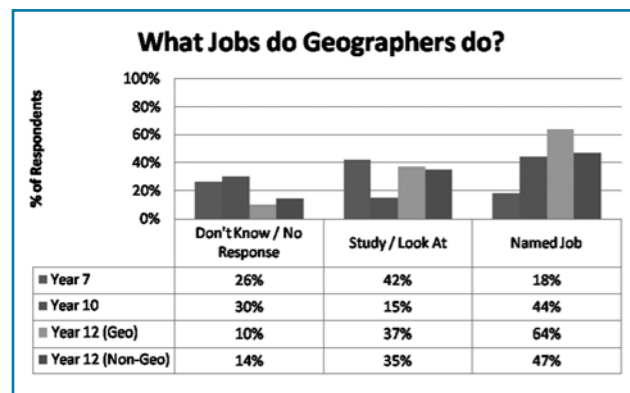


Figure 2a: Categories of responses from each year group regarding their perceptions of careers in geography.

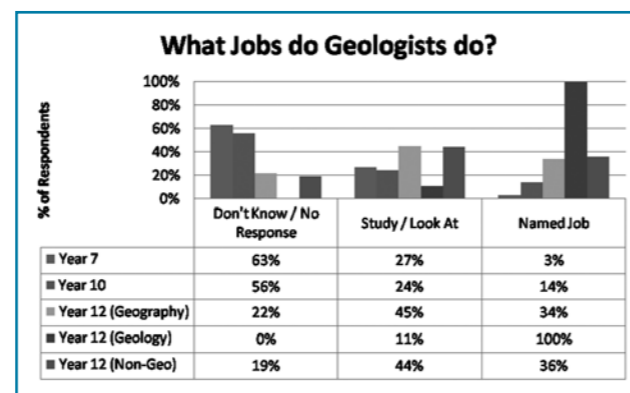


Figure 2b: Categories of responses from each year group regarding their perceptions of careers in geology.

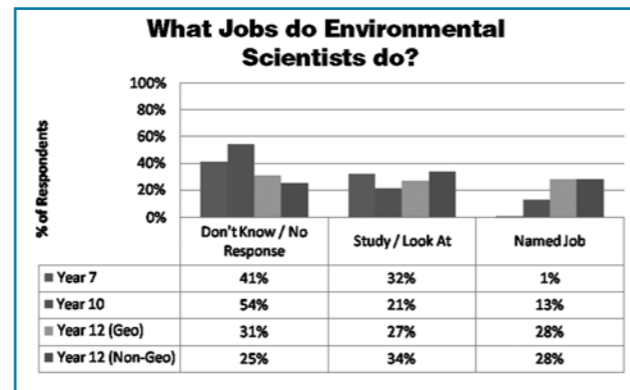


Figure 2c: Categories of responses from each year group regarding their perceptions of careers in environmental science.

Discussion

As illustrated in Table 1 below, at all school years the majority of students think about their future career in terms of a named job. In many cases these are jobs which are 'seen' on a regular basis (either directly or through the media) e.g. doctors, vets, teachers, journalists: Below table 1: How students think about their future career

When asked what jobs they thought geographers, geologists and environmental scientists might do, interestingly, at all school years many students could not come up with a named job, but wrote something vague such as 'study rocks', 'travel the world' and so on. Of those jobs they could name, the greater proportion were again those that are 'seen' e.g. weatherperson / meteorologist, teacher

| | Year 7 | Year 10 | Year 12 (pilots) | Year 12 (Geo) | Year 12 (Non-Geo) |
|---|---|---|--|---|---|
| % career aspiration = named job | 64% | 63% | 67% | 60% | 62% |
| % suggest named job for Geography | 18% | 44% | 41% | 64% | 47% |
| % suggest named job for Geology | 3% | 14% | 25% | 100% (Geol students) 34% (Geog students) | 36% |
| % suggest named job for Env Science | 1% | 13% | 11% | 28% | 28% |
| No. who want to be one of suggested GEES named jobs | 14 Teachers 3 Architects 1 Scientist 1 Planner 1 Journalist | 6 Teachers 3 Doctors 3 Vets 2 Pilots 1 Architect 1 Archaeologist 1 Oceanographer 1 Geologist | 6 Teachers 5 Engineers 3 Surveyors 2 Business Managers 2 Journalists 2 Architects 1 Marine Biologist | 13 Teachers 6 Engineers 3 Architects 2 Geologists 1 Archaeologist 1 Bin man 1 Conservationist 1 Environmentalist 1 Estate Agent 1 Scientist 1 Volcanologist 1 Oceanographer 1 Chemist | 18 Engineers 15 Teachers 15 Journalists 6 Accountants 3 Architects 4 Economists 3 Photographers 2 Biologists 2 Pilots 2 Scientists 1 Surveyor 1 Env Manager 1 Anthropologist 1 Forensic Scientist 1 Historian |

Table 1: How students think about their future career
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(although lots of jobs were suggested, mostly these were only by one or two students). Of all the students, those studying Geology A-level had the best idea of the variety of jobs in their subject area (all 19 students were able to name geology-related vocations).

It could be inferred, therefore, that because school students tend to think in terms of named jobs, and because many such jobs in GEES are 'hidden' (i.e. you don't tend to meet them on a regular basis), it is difficult for students to see the relevance of studying these disciplines in their lives. Where the students' own career aspirations matched their year group's suggested GEES jobs (see table above) these tended to be in areas not necessarily related to GEES HE courses (e.g. architecture, journalism, archaeology, engineering etc).

When asked what jobs they thought geographers, geologists and environmental scientists might do, interestingly, at all school years many students could not come up with a named job, but wrote something vague such as 'study rocks', 'travel the world'.

Of the 946 students surveyed only nine mentioned wanting to pursue a career directly related to the GEES disciplines (2 oceanographer, 3 geologists, 1 conservationist, 1 environmentalist, 1 volcanologist and 1 environmental manager). It can be argued, of course, that GEES graduates can move into a wide variety of jobs. However, many of the GEES-related jobs suggested by the students actually require study in a different degree subject (e.g. archaeology, architecture, engineering). Many students also suggested 'study...' or 'look at...' as possible jobs for geographers, geologists and environmental scientists. However, only four out of the 946 students surveyed mention the word 'research' as a career aspiration.

It could be inferred from the data that there is a mismatch between students' perceptions of career opportunities in the GEES disciplines and their own idea of getting a job, particularly at years 7 and 10. The literature review noted that there is a cumulative process of evolving perception and achievement that influences degree subject choice and, for most people, this starts well before the age of 14 years. The challenge for the GEES community, therefore, is to find a way to market itself in order to make it highly relevant to children of all ages.

These findings, regarding the perceived relevance of career opportunities in the GEES disciplines reflect those reported in the literature review (in particular in Lord & Johnson's 2005 review of the National Curriculum) and anecdotal evidence from colleagues in the GEES communities, for example:

...for quite a long time now, I have been giving a presentation to schools, colleges, careers advisors etc focusing on the societal and personal value of the subject knowledge, skills and attributes that are developed (and which are very attractive to employers) via the study of Geography and Environmental Science. The response to this talk is generally very positive and usually involves surprise about the nature of the subjects and the range of careers graduates enter.

Mike McGibbon, University of Greenwich

Conclusions and Recommendations

This study was intended to act mainly as a pilot to identify key areas for further, more in-depth research. The resourcing of the project was such that, although a common questionnaire and teacher-guidelines were sent to all participating schools, it was not possible for a team member to attend each questionnaire-completion session. It cannot be guaranteed, therefore, that the conditions were exactly the same in each school. In addition, the students were asked to write their response – variations in writing ability and effort put into the task will also affect the responses. For example, it is likely that the responses are 'off the top of the student's head' rather than having been well considered. Furthermore, the data analysis was to some extent subjective and another author might select different categories. Even with these caveats, however, it is still possible to draw out some strong conclusions and recommendations for future work.

There are many career avenues through which a degree in GEES may take a graduate (and some apparently tangential to the content of the courses) and this is a great strength of the disciplines. However, the research suggests that around two-thirds of the school children surveyed tend to think about their own careers in terms of named jobs. A small number are more general (e.g. I want to do something with computers) and, in our survey, none of the year 7 or 10 students mentioned a GEES subject and only 4 of the 664 year 12 students wanted to do 'something related to' GEES. This research and that of others suggests that school students may be unaware of the usefulness of the GEES disciplines for their

future careers.

This project has indicated that a lot more work needs to be done to enhance school children's understanding of the relevance and usefulness of the GEES disciplines. Subject choice is an evolving process that begins well before A-level and even GCSE. Outreach activities must start early in the school curriculum and be sustained through to HE.

There are many examples of pockets of outreach activity in GEES but these mostly occur in each of the disciplines separately. It is the author's belief that it is timely for the overall GEES community to come together to develop a more strategic approach. By increasing the overall number of children interested in studying planet Earth and its people, each discipline will be drawing from a larger pool.

Perhaps fully fledged 'GEES' academics find it difficult to remember a time when they didn't know about the disciplines. So, school children themselves should be involved in developing outreach activities, to ensure that they are being communicated with in their own language and assumptions are not being made about what they already know or don't know.

So, what activities might the GEES community pursue?

- Further research is certainly required in order to gain a deeper understanding of the perceptions of the disciplines.
- To follow up this project, it would be interesting to get the school students to study and illustrate the usefulness and relevance of the GEES disciplines, for example through running a poster competition.
- Other ideas? Please contact the author.

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Changes in A-level Geography & their implications for HE

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Abstract

From September 2008, new A-level specifications will be taught in schools and colleges.¹ Sixth-form geography teachers have a difficult choice to make, as the content of the five new specifications on offer differs significantly from very conventional to highly innovative. There will no longer be a core curriculum, thus Higher Education Institutions (HEIs) will not be able to assume a commonality of prior learning. Assessment formats are also changing; most significantly, coursework is being removed and, despite imaginative efforts by some awarding bodies (ABs), this may diminish students' preparedness for independent research in HE. This article, based on a presentation to the GEES Subject Centre Conference 2007, examines some of the changes in A-level geography and suggests how they may affect the induction of students onto geography degree courses. It may be useful for HEIs to differentiate applicants according to the A-level specification they have studied.

Changes in A-levels: the framework

Four significant changes to A-levels have been initiated by the Government:

- The number of assessment units is being cut from six to four to reduce examination time; this has little impact on AS, which had already been restricted to a maximum of three hours, but has reduced A2 examination time to a maximum of four hours.
- Coursework is no longer allowed, in response to cross-curriculum accusations of plagiarism and lack of authenticity.
- An A* grade is being introduced to differentiate the most able students (27.3% of A-level geographers gained an A grade in June 2007).
- The introduction of the concept of 'stretch and challenge', requiring the ABs to ensure that there is sufficient flexibility within assessment to enable more able candidates to demonstrate fully their ability.

In addition, the QCA (Qualifications and Curriculum Authority) criteria for A-level geography were revised in 2005-2006. Much of the previous repetition and prescription was removed, the intention being to enable the ABs to draft new specifications without restraint on content. There is now no core content in A-level geography. This means that HEIs can no longer assume that their new undergraduates will have a fully comprehensive basic knowledge of the subject. QCA suggests only general themes on ideas, processes, concepts, scales, skills, applications, and synopticity: thus the ABs have produced specifications that are significantly different in content, structure and approach.

The five ABs (AQA, Edexcel, OCR, WJEC, and CCEA) submitted their revised specifications for approval, with specimen questions and mark schemes, to QCA in Spring 2007. The number of geography specifications has been reduced from eight to five; currently AQA, Edexcel and OCR offer two routes – the A specifications are traditional in structure and substance, and the B specifications contain more innovative content and assessment structures. Each of these ABs has been obliged to combine their A and B courses. In September 2007, the new specifications were sent to schools and colleges, and teachers will make their choice. Teaching on AS courses commences in September 2008, and the A2 courses in September 2009. Thus, the students on these courses will be entering HEIs from September 2010.

Changes in A-level geography: course content

The content of some of the new specifications (and they are specifications not syllabuses) is very traditional, covering rivers, coasts, population, and urban change, much as they have done for the last decade at least. From the HE perspective, this may be advantageous, ensuring students have a good grounding in basic concepts and processes prior to undergraduate study.

¹ *In fact, the entire geographical journey through school is changing: at Key Stage 3 and AS/A-level from September 2008, and at GCSE from September 2009. New forms of qualification are also being introduced: vocational diplomas (which include Environment and Land-based Studies, Travel and Tourism, and others with some essentially geographical content), international, English and Welsh baccalaureates, and the Cambridge Pre-U Diploma will considerably extend choice for sixth-formers.*

However, there are drawbacks. Some of this content, or the materials that teachers will continue to use, may be out-of-date and incorrect (Knight, 2007). Also, the overwhelming majority of students will have already studied these traditional topics for GCSE and Key Stage 3 and probably at earlier Key Stages.² Selling A-levels to youngsters will be harder to do when we can only offer more of the same.

It is necessary to present issues that are topical and relevant to recruit students to the sixth-form. Thus, the new themes introduced in the more innovative specifications, such as a much greater emphasis on poverty and social inequality, contemporary conflicts, and emerging Asia, will be very welcome. In human geography there is a significant reduction in theoretical approaches, and a focus on the more topical themes of globalisation, development, health, and migration. These will enable teachers to draw from news media and to relate learning more closely to the student experience. Overall, human geography content has made a greater step forward than physical geography, and is starting to address aspects of cultural and social geography more effectively. This will help to overcome the contrast between A-level and degree geography (Marriott, 2007).

In physical geography there will be much greater emphasis on climate change; some ABs tackle it immediately in AS, while others leave it for A2 when students may approach the topic with greater maturity. The risk is that there is a lot of mis- and dis-information available; HE academics could help teachers to convey an accurate message, and A-level students should begin to appreciate both complexity and uncertainty (Hall, 2006). Extreme weather and tectonic hazards are also attractive and exciting subjects for 16-18 year-old students, and are covered well within the new specifications. Geomorphology is approached through options on coasts, glacial/periglacial, and hot/arid environments. HEIs will regret the reduction in geomorphology in one of the more popular specifications. Keylock (2006) has suggested that students may wrongly believe it possible to go up for a physical geography BSc degree without engaging with real science. The

new specifications will not remedy this inadequacy; such students will arguably continue to need mathematics, physics and chemistry A-levels, or thorough supplementary science education.

HE Academics could help teachers to convey an accurate message.

Changes in A-level geography: assessment issues

The most significant assessment issue is the loss of coursework. Timed examinations are the only form of assessment allowed and, though there are fewer examinations, they are generally longer. Within them, essays are required, but the time allowed to write them varies from 30 to 90 minutes, depending on specification. The loss of coursework will hinder the development of many students' independent learning skills; this will impact on research, analysis, and reporting. Many students will need to be taught how to research, write up, and reference their work as they commence HE.

One of the most controversial features of the new Geography A-level affects fieldwork assessment. In the past, there has been a tendency to connect coursework to fieldwork and now there is a fear that fieldwork may suffer. While the QCA subject criteria explicitly require fieldwork in both AS and A2, fieldwork skills are to be tested via a limited series of rather predictable examination questions. However, it should be noted that the ABs have been set an impossible task by the DfES and QCA. Two of the ABs will allow candidates to take primary data, collected in the field, into the examination and to analyse it in timed conditions; the others set highly predictable questions for which some students will doubtless learn set answers.

Thus, the development of research skills will be extremely variable, with the exception of those students taking the Edexcel course. In this course, the Global Futures examination is reborn as 'Unit 4: Geographical Research' and candidates do preparatory research for a 90-minute exam, in

which they write one essay. This challenging test may prepare these students better for HE than any other in the new A-level geography specifications.

The ABs are required to enable 'stretch and challenge' in A2 assessment, to differentiate effectively the more able candidates. The extent to which this may be achieved by the new specifications and their assessment is variable. Clearly, an examination requiring an essay to be written in 30 minutes does not challenge as much as one requiring 45 minutes of assessment time. Further, there is variation in the complexity of the questions set and in the structure of mark schemes. The new A* grade will, however, distinguish those who are at the lower end of the A grade band from those at the upper end.

Other curricula developments

HEIs should not see many prospective geography candidates with the new 14-19 diplomas until at least 2011. The Environmental and Land-based Studies diploma, which will be introduced in 2009, is largely agricultural, but contains a significant amount that is geographical. The following year, teaching of the Travel and Tourism diploma will commence. There are also elements of geography in many of the other diplomas, but it is unlikely that their students will progress to HE geography courses. These diplomas are essentially vocational in outlook.

However, Cambridge International Examinations has developed a different type of diploma, the Cambridge Pre-U, in consultation with mainly public schools and subject associations. This is being launched at the same time as the new A-levels and its students will enter HE in 2010. At the time of writing, this qualification is only available to independent schools as it awaits QCA accreditation and, thus, cannot yet attract funding for teaching in the state sector.

The Pre-U is intended to be a more academically-rigorous alternative to A-levels. The diploma has a linear structure, though, with a half-way assessment option for students who want to opt out of a subject at the end of the lower sixth. Students will choose three or four subjects from an initial choice of twenty-six in their first year; in addition, they will compile a Global Perspectives portfolio (which is inevitably quite geographical) and an independent research report. The geography option is content-heavy with fairly traditional physical geography, based on hazards and environments, and a more up-to-date human geography with options on social

inequality, housing, and crime. It also contains an independent research project involving an oral presentation and use of presentation media. The Cambridge Pre-U diploma is not unlike the International Baccalaureate (IB) in structure, but does not restrict choice of subjects. The IB is also being extended across schools and colleges, with additional funding from the government. Thus, by 2010, HEIs will receive an increase in applications from candidates with the IB. The WJEC (the Welsh AB) is also enabling its candidates to group A-level, GCSE and vocational qualifications alongside a key skills core, language skills, work placement and PSE for the Welsh Bacc. Also, the AQA Bacc is in preparation, comprising A-levels, an extended project, personal development and AS General Studies, Critical Thinking, or Citizenship.

Summary

From 2008, A-levels will comprise fewer examinations, but no coursework. There are significant differences between the demands placed upon students by the ABs in terms of both subject content and in the development of skills. Consequently, the extent of 'stretch and challenge' within them is variable. Applications for undergraduate courses will also come from candidates with diplomas or baccalaureates, thus, there will be a wider range of entry qualifications from English, Welsh and Northern Irish schools and colleges. Many new undergraduates will have a narrower knowledge base, but some will be more familiar with 21st Century geographical themes. Their research skills and experience may be completely absent. Fewer applicants will have studied A-levels, as more will come via the IB or Pre-U or through vocationally-based diplomas. Consequently, from 2010, HEIs will have to look more closely at their students' entry qualifications and tailor their induction courses more precisely to students' needs.

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² The revision of Key Stage Three, announced 11 July 2007, will mean that from September 2008, the content of school geography will be significantly different. There will be a much greater emphasis on sustainable development, environmental interaction, cultural understanding, and climate change, and rather less on physical processes although some such as "geological activity" will come under science. GCSEs are also now being revised, and teaching of these new specifications will commence in September 2009. Thus, it is possible that students beginning A-level courses in September 2013 may not have studied some conventional themes (rivers, coasts, ecosystems, population, settlement, economic activity), in which case, the more traditional A-levels will seem to them remarkably novel. But, assuming curriculum change to be a continuing process, we may be introducing another set of new A-level specifications by then!

The Engagement of Higher Education in the 14-19 Reforms

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Abstract

One of the biggest reform programmes in education is taking place within the secondary education sector, and as receivers of the secondary education 'product', there are potentially far reaching implications for Higher Education (HE). In 2010, the majority of students entering HE from schools and colleges in the UK will have studied something different and been assessed differently, from those who have preceded them. This paper looks at the engagement of HE in the 14-19 reforms, based on a presentation given to the GEES Subject Centre Conference in July 2007, themed on 'Recruitment and retention issues in the GEES Disciplines'.

Introduction

HE has already been challenged by Leitch (2006) to think differently about the delivery of education and training to meet the future skill demands of the UK economy, and the reform of qualifications for 14-19 year-olds will contribute to this agenda.

If students are learning different things, in different ways, and being assessed differently, there will be an impact on the programmes delivered in HE, their content and assessment methods; potential changes in the trends in subject take up, and the future employability of young people.

A good education is often the key to better life chances – a route out of poverty and into better opportunities. HE plays an important role in helping shape young people's life chances, therefore, it is important that we in HE understand the changes sufficiently, adapting programmes, entry requirements and so on, where necessary.

The Government is keenly aware of the role of HE in influencing the choices that young people make about what they study and where. It is essential, therefore, that the HE sector has confidence in the outcome of the reforms and feels able, in the future, to welcome students progressing to HE from the new system and with new qualifications. The reforms have taken into consideration the concerns of HE about the preparation for young people for higher level study, and the Government

believes that the reforms meet those needs.

However, to ensure that the reforms 'stick', HE needs to feel that it can accept the new qualifications. To achieve this, certain conditions need to be met, such as ensuring universal availability to learners. The situation that arose with certain aspects of the Curriculum 2000 reforms (particularly Key Skills and the Advanced Extension Award) was the extent to which schools made them available to their students, when, for the further education sector, it was compulsory. Admissions staff in HE institutions felt that they could not insist on particular qualifications for entry if they were not available to all learners. There was a concern about being discriminatory and working against widening participation policies. As such, a difficult challenge arose, with schools and learners not wanting to take qualifications that were not 'counted' as part of university entry requirements. The reform programme currently being implemented answers that problem, by making the revised and new qualifications an entitlement to all learners in the maintained sector by 2013.

The Higher Education Engagement Project

To help secure the engagement of the HE sector in the reforms, a Higher Education Engagement Project Board has been established at the DSCF, comprising representatives of the main stakeholder groups. This includes the Higher Education Academy, Foundation Degree Forward, The Higher Education Funding Council for England (HEFCE), Universities UK (UUK), and representatives of the different HE mission groups. Its Joint Chair, Professor Deian Hopkin, Vice Chancellor of South Bank University, is leading the group along with Chris Tweedale, Deputy Director at DSCF. The purpose of the Board is to promote understanding

In 2010, the majority of students entering HE from schools and colleges in the UK will have studied something different and been assessed differently, from those who have preceded them.

of the 14-19 reforms and to encourage HE institutions to become involved. It also aims to provide a two way dialogue between ministers and the HE sector. The HE Engagement Project has two main strands: Communications and Awareness Raising, and Engagement – trying to secure meaningful involvement of HE institutions with the organisations designing the changes, and the schools and colleges implementing them.

The Reforms

The reforms are extensive and include:

- Changes to A-level
- Introduction of a new integrated qualification – the Diploma, offered along 14 lines of learning (subject areas) and three levels (Foundation, Higher and Advanced)
- Introduction of an Extended Project
- Inclusion of Functional Skills (English, Mathematics and ICT) into GCSEs and Diplomas
- Reform of Key Stage 3 and GCSE.

The changes to A-level (reduction in the number of units of assessment to four in many subjects, introduction of an A* grade, and removal of optional coursework) and the introduction of an extended project can be seen to meet the criticisms of HE about the current system. It is intended that students will benefit from greater synoptic assessment, and the opportunity to undertake a sustained piece of work. The A* grade will allow institutions to make finer distinctions between well qualified students. However, much of the focus of information and press reporting to date has been about the diplomas and how HE will view them. The introduction of diplomas is something completely new that will require those involved in teaching and admitting in HE to invest the time to understand them.

The new Diplomas

Diplomas are intended to sit between the academic and vocational qualification routes. They are described as general education within a context – the context being 14 different employment sector areas, from engineering, through environment and land, to public service management. They are being developed as 'integrated qualifications' that combine essential skills and knowledge, hands-on experience and employer-based learning to prepare young people for work or further study. It is intended that the programmes will be challenging and motivational, and will attract a range of learners, including the most able. The revised A-levels, extended projects and the first five Diploma lines will be taught from Autumn

2008, and will provide the first cohort of students wishing to enter HE in 2010. Two more phases will see another five diplomas, including the Diploma in Land-based and Environmental Studies, begin teaching in 2009, and the final four diplomas in 2010.

Diplomas have been developed by Diploma Development Partnerships, established by the Sector Skills Development Agency, and are, therefore, greatly influenced by the needs of employers. However, representatives of HE have played a role, including involvement within the Diploma Development Partnerships at the Chair level, to being part of an HE reference group. The challenge, though, is to ensure that the involvement in HE is worthwhile at this stage – there is little point in developing qualifications with progression to HE in mind, if those progression routes are closed. HE representatives at subject level need to be involved in influencing curriculum content for the Diplomas, and to critically assess their own curricula in the light of the likely demands of the learners for something equally engaging and motivational in HE. Recent research with young people, carried out by the DfES shows that young people are attracted by the notion of the diplomas and gives indications of the way they like to learn and receive information.

There are a number of diplomas that may provide

The Diploma most likely to provide progression to GEES subjects at degree level is the Diploma in Environmental and Land-based Studies.

potential students to GEES subjects in HE, for example, Construction and Built Environment, and Engineering. However, the Diploma most likely to provide progression to GEES subjects at degree level is the Diploma in Environmental and Land-based Studies, which has been developed by Lantra (the Sector Skills Council for the Environmental and Land-based Sector). The Advanced Diploma comprises three compulsory principal learning themes: the productive and working environments; plants and animals; developing the sustainable environment and a choice of one specialist learning pathway: Managing plants, land-use and recreation; working with, and managing animals; food chain technology and management. In addition, students will complete a project, functional skills, personal learning and thinking skills, and additional or specialist learning (ASL). ASL can be chosen from

a wide range of qualifications, or specialist units written for this Diploma line. It is expected that many students will choose to take an A-level or one or more AS-levels as their additional learning.

Whilst the volume of the first Diploma cohorts at Level 3 (A-level equivalent) will inevitably be small during the pilot phase to 2012, the aspiration of the government is that about one-third of the age cohort will be studying for diplomas from 2013. If that happens, and given the demographic downturns of the next 10 years, HE institutions will need to embrace the qualifications, if they are to continue to admit sufficient numbers of students to fill their places. Colleagues in HE have shown considerable interest in the developments so far, with positive statements appearing about extended projects, in particular, and the Diploma plans. Acceptability for entry to degree programmes is something that providers of the new qualifications in schools and colleges will want to see as soon as possible, and admissions policies are emerging as the Diploma specifications are available. In the meantime, efforts to inform and involve continue apace, as HE institutions are being encouraged to make links with the school and college consortia recently approved to deliver the first five Diploma lines.

In time, like many 'new' qualifications before them, Diplomas will become a 'standard' route into many programmes in HE and will be the preferred entry route to some.

The reforms themselves must be seen as a positive step in improving the preparation of young people for HE study. Being optimistic, the reforms will address the criticisms of the current system from HE: they will deliver students that HE recognises are better prepared in terms of their knowledge, skills and motivation and they will allow greater differentiation between students. In time, like many 'new' qualifications before them, Diplomas will become a 'standard' route into many programmes in HE and will be the preferred entry route to some. One of the real milestones will be when we begin to see HE programmes being developed specifically as a progression route from a Level 3 (Advanced) Diploma programme.

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Sources of Further Information:

- For more information on the 14-19 reform programme, visit the DfES website at: www.dfes.gov.uk/14-19
- The Diploma in Environmental and Land-based Studies visit Lantra at: www.diplomalbe.co.uk; info@diplomalbe.co.uk
- The Qualifications and Curriculum Authority at www.qca.org.uk
- For detail of qualification content and specifications: The Assessment and Qualifications Alliance at www.aqa.org.uk; OCR www.ocr.org.uk; Edexcel www.edexcel.org.uk

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Raising Earth Science awareness amongst Year 11 & 12 school students

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Abstract

Applications to study Earth Science and related disciplines at UK higher education institutions have been falling for the past decade. Part of the problem is the lack of awareness of the subject and its career potential for students interested in science. This article describes a one day workshop set up at Liverpool University to raise awareness of Earth Science amongst Year 11 and 12 school science students, and to outline career possibilities. Review of student responses to an end-of-workshop questionnaire indicates that such events can help raise subject awareness and that the GEES community may benefit from similar events in other regions of the UK. An interactive review of some of the workshops activities was also presented at the 2007 GEES Subject Centre Conference on Recruitment and Retention Issues in the GEES Disciplines.

Introduction

In the UK, the number of students taking Geology at A-level peaked in 1983, since when it has almost halved (Figure 1). A-level Environmental Science entry peaked in 1994 and has nearly halved since (King & Jones, 2006). This disturbing pattern is also reflected in university applications over the past 11 years (Figure 2) where F6* (Geology, Geophysics) applications have fallen steadily since 1998, F7* (Oceanography) applications have fallen to 87 from a high of 164 in 2000, and F9* (Environmental Science) applications have fallen substantially (albeit there are some UCAS recoding artefacts in the data that accentuate the Environmental Science fall for 2002). Together, these subjects make up Earth and Environmental Sciences, referred to here as EES. At the same time as the falls in A-level take up and UCAS applications for EES subjects, the inception of the National Curriculum for schools has decreased the amount of EES taught, and often where EES subjects are taught they are taught by non-specialists (ref Chris King at Keele ESEU). As a result, a key challenge facing the EES disciplines is how to raise their public profile and address the problems of recruiting students to these subjects. There is a clear need to continue producing EES subject specialists as the problems of sustainability and climate change become increasingly apparent.

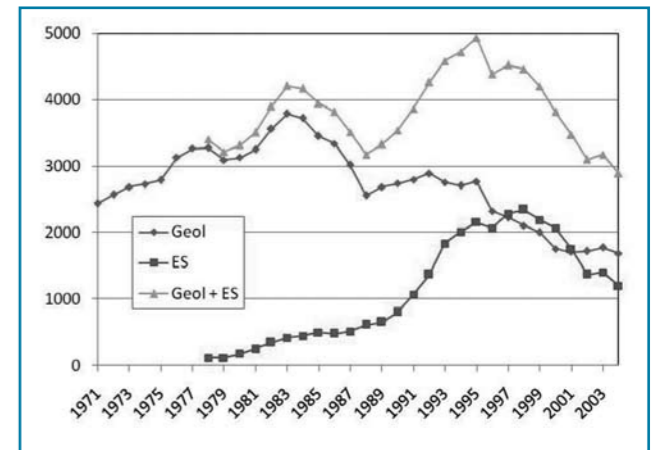


Figure 1. A level entry for Geology and Environmental Science during 1971-2004 (data from Chris King, University of Keele ESEU at <http://www.chugd.ac.uk/Earth%20Science-Geology%20in%20Schools-%20May%20'06.ppt>).

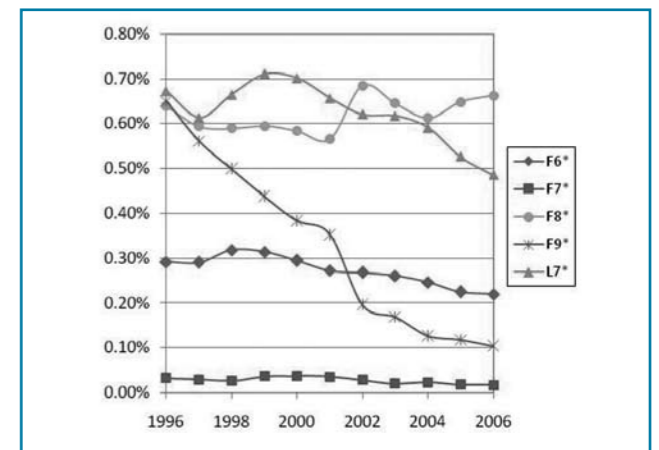


Figure 2. UCAS applications for F6* (Geology/Geophysics), F7* (Oceanography), F8* (Physical Geography), F9* (Environmental Science) and L7* (Human Geography) for 1996-2006 expressed as a percentage of all UCAS applications, which, incidentally, increased 21% during this period. Data from www.ucas.ac.uk web site.

Some approaches have already been tried. For example, sixth form conferences are run at Leicester University (and other HEIs too) for Geography and at Dudley Museum for Geology. There are also Ambassador schemes such as those run by the DfES funded Geography Ambassador Scheme (RGS-IBG) and by the Earth Science Education Unit at Keele University, which involve

arranging current undergraduate students to go into schools and act as subject ambassadors. Liverpool University had already been approached by the Geological Society of London to develop some local event(s) for their Bicentenary Celebrations under the theme "Local Heroes", so we saw this as an opportunity to organise a one-day workshop for Year 11 & 12 (GCSE/AS) students and their science teachers, with the aim of demonstrating the fascination of Geology and related disciplines to the workshop attendees.

During initial discussions in Autumn 2006, the workshop was going to concentrate on granites to reflect the major contributions of "Local Heroes", Professors W.S. Pitcher and H.H. Read, two men who spent a significant part of their careers in the (then) Geology Department at Liverpool. Both men were pioneer geologists (Leake, 2006; Sutton, 1970) who made significant contributions towards the understanding of "Granites" and revolutionised understanding of the development of the continents on which we live. However, it soon became apparent that it would be more appropriate to open out the theme, so that ultimately five thematic sessions were specifically designed for science teachers and their Year 11 & 12 (GCSE/AS) students. We recognised that the invited "science teachers" may include teachers who, by virtue of their first degree qualification, were Geology, Earth Science, Chemistry, Physics, Biology or Geography specialists. We also assumed that, by this stage in their school careers, all students within the Year 11 and 12 cohorts would have at least some Earth Science background as a result of studying the Earth Science components of the National Curriculum (Kennett, 2006; Qualifications and Curriculum Authority, 2007).

Since the workshop aimed to demonstrate to students how their science can be applied in the Earth Sciences, the main idea was to take aspects of Physics, Chemistry and Biology and show how basic science concepts could be used to understand Earth materials (such as granite), to explore Earth processes (such as magma emplacement and volcanism) and to understand the nature and evolution of planet Earth. In essence, this was a subject-marketing event, so another essential part of the workshop was to demonstrate to our visitors how Geology, Geophysics and Ocean Sciences could let them use their science in a novel, interesting and rewarding way.

In this paper we summarise the logistics of running the workshop and the views of the workshop participants, before assessing the effects of

this subject awareness-raising event on student perceptions. We suggest that workshops like this offer a partial solution to the problems of recruitment and could be used for similar GEES subject awareness-raising events in other Higher Education institutions.

Workshop logistics and programme

Planning to accommodate 100 visitors at the one-day event, we decided to organise a series of 'hands-on' workshop stations, each run by staff of the Department of Earth and Ocean Sciences, assisted by support staff and/or postgraduate students. Visitors would get an introductory talk outlining the scope of Geoscience, the career possibilities, and the format of the day. Workshop stations were established in different laboratories, each offering various instructive activities and opportunities for practical work. We initially considered up to ten groups visiting each workshop station, each group including a teacher and guided by a student from the Department. In the event, we dealt with five groups, timetabled to allow students to spend at least 50 minutes at each station and to have approximately 10 minutes change around time: two stations before lunch and three afterwards.

Session 1: Molten rock and volcanic eruptions

This involved a brief PowerPoint illustration of volcanic explosions, focusing on the simple physics behind the phenomena, and then an out-door demonstration of ballistic behaviour resulting from a powerful blast. Newton's Laws are readily demonstrated in understanding how the furthest-travelled ballistic 'bomb' has a specific mass, not too great, not too small. The experiment uses solid CO₂ with the explosion occurring beneath water in a dustbin buried in the ground and with various sponges and polystyrene 'bombs' near the surface. The post-eruption distribution of the 'bombs' was evaluated by students, although those lodged on the roof of the nearby four-storey building were abandoned. Slow-motion video records of the explosions were also examined to help understand the physics. The simulations are similar to those described by Harpp et al. (2005) and it is vital that safety issues are carefully considered. We cordoned-off the experiment to 10m distance; the occasional soaking from a falling wet sponge seemingly added to the memorability.

Session 2: Crystallization close up: from molten to solid rock

This involved two activities. Ken Wohletz's

computer program Heat3D (<http://www.ees1.lanl.gov/Wohletz/Heat.htm>) was used to investigate the time available for crystallisation of granite sheets of different thicknesses intruded at the same depth. Students graphed the results of time against thickness and investigated the reasons for the non-linear relationship. Students then studied polished slabs of Shap granite, recording relationships between the host granite, blobs of included diorite, and K-feldspar megacrysts found in both the granite and the diorite. One potential explanation was modelled using olive oil (granite magma), vinegar (diorite magma) and fennel (megacrysts) to show how megacrysts in one liquid (granitic) could cross the boundary into the other liquid (dioritic).

Session 3: Fluid behaviour in the Earth

This session examined the importance of time-scales when investigating the conundrum of how material, like the mantle, can be both solid and fluid. Experiments were conducted with a thick mixture of cornflour and water (e.g. see <http://www.csiro.au/resources/ps1v6.html>) and with Silliputty to show how material viscosity can vary with deformation rates.

Session 4: Breaking rocks and probing the Earth

This session looked at the behaviour of rocks in a high-pressure deformation rig and also showed how geophysical methods can investigate the subsurface. Further experiments were conducted with sand boxes to demonstrate fault development.

Session 5: Geochemistry and health

This session considered the need for people to have a supply of clean, healthy drinking water and how river and groundwaters can be contaminated by industrial chemicals and natural pollutants derived from rocks being weathered at the Earth's surface. Students studied how these pollutants are detected and analysed, looked at the need to understand contaminant sources when planning to build a reservoir, and considered the human and political consequences that can result if the science is not done properly.

Feedback data collection

Because of the tight scheduling of the day, students had little opportunity to discuss their responses with either their teachers or their peers, so we believe the feedback to be individual. The questionnaire mixed open and closed questions to collect data on what A-level subjects were

being studied, or planned, and also to investigate student perspectives on future career plans and impressions of Geosciences as a career. We also sought views on what the students had found to be the most enjoyable session and what had been the most memorable part of their day. In addition, a final section on the questionnaire gave respondents an opportunity to comment on the whole event. Additional unsolicited feedback was also provided from the teachers.

Seventy-seven students completed feedback forms, representing 12 schools and colleges in the North-West region, drawn from an area within a 65 kilometre radius of the University. Respondents comprised 36 students in Year 11 and 41 Year 12 students.

Results and discussion

Students following GCSE courses (Year 11) were asked to list the subjects they were planning to study (see Figure 3). The majority of these students (53%) were aiming to take up to two sciences together with Geography, Geology or Environmental Science. Of the remaining 47%, only 14% were planning to study the three sciences (Biology, Chemistry and Physics).

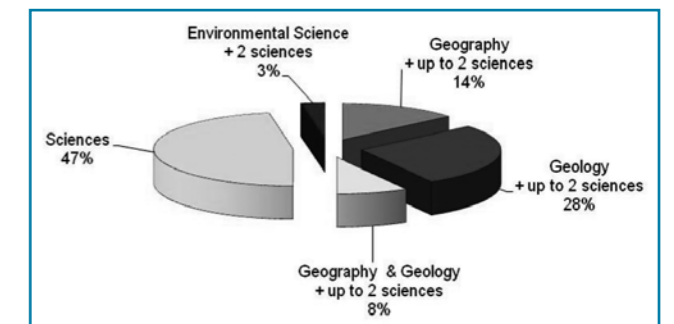


Figure 3: Year 11 Students - AS subjects planned to study.

Year 12 students were asked to state their 'AS' courses and to list the subjects they intended to study at A2-level (see Figure 4). The majority of these students (67%) were studying up to two sciences together with Geography and/or Geology, and only 14% were studying the three sciences (Biology, Chemistry and Physics). Based on their choices for A-level, a reduction in the number of students studying up to two sciences together with GEES disciplines is predicted. It is interesting to note that of the 43% intending to take sciences at A-level, only 12% are planning to study Biology, Chemistry and Physics.

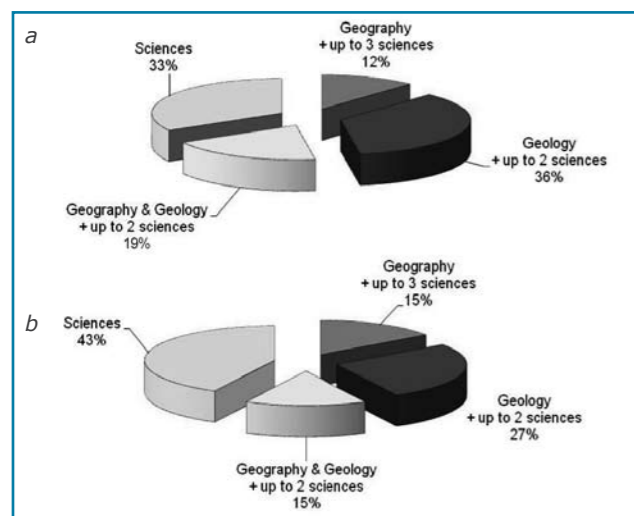


Figure 4: Year 12 Students – a. AS-level subjects studied; b. A2-level subjects planned to be studied.

Students gave a range of reasons why they had come to Liverpool for the workshop (Figure 5). Although the most frequently expressed views from both Year 11 and Year 12 students were related to their wish to gain careers advice about a subject that was of interest to them, a higher proportion of the Year 12 students mentioned that it was their interest in Geology or Earth Science that most influenced their decision to attend the event.

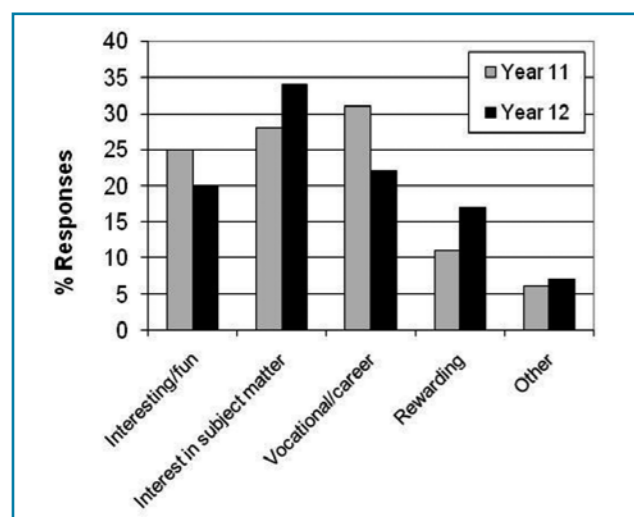


Figure 5. Summary of student reasons for attending workshop

Figure 6 summarises their most memorable part of the day. Volcanic explosions were the clear winner, but a significant number of students were seduced by the corn flour experiment. Year 11 students were more enamoured by igneous crystallisation than Year 12 students, while more Year 12 students expressed most enjoyment for

the geochemistry and health session. Perhaps not surprisingly, for all of our visiting students, the most memorable part of the day was the simulated volcanic explosion!

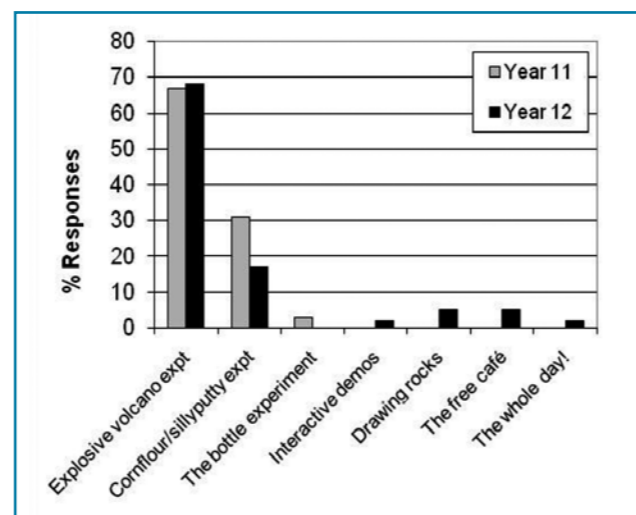


Figure 6. Summary of most memorable part of the day.

As part of the questionnaire, respondents were asked to indicate their future career plans (Figure 7). These data show Year 12 students more certain than Year 11 students about their career plans, with only 23% unsure/undecided about their future career against 40% of Year 11 students in the unsure/undecided category. It was also clear that Year 12 students were more likely to be specific about the type of science career they intended to follow; in these students' questionnaires fewer responses stated "scientist" and more mentioned particular careers such as chemical engineering, nanotechnology, meteorology, environmental science and oceanography. It is also noteworthy that whereas only 8% of the Year 11 respondents mentioned GEES disciplines as the basis of possible career routes, 29% of Year 12 students listed careers linked to the GEES disciplines.

The final question on the evaluation forms covered students' impressions of Earth & Ocean Sciences as a career choice. Figure 8 compares Year 11 and Year 12 student responses and indicates that there is a close similarity; in both year groups; over 65% of respondents expressed the opinion that a career in Earth and Ocean sciences would be interesting, enjoyable and exciting. However, a higher proportion of Year 12 students pointed out that while they thought it would be an interesting career, they did not think it would be the choice for them. Boxes 1 and 2 show a selection of comments from Year 11 and Year 12 students respectively. A few of the unsolicited comments from the teachers are given in Box 3.

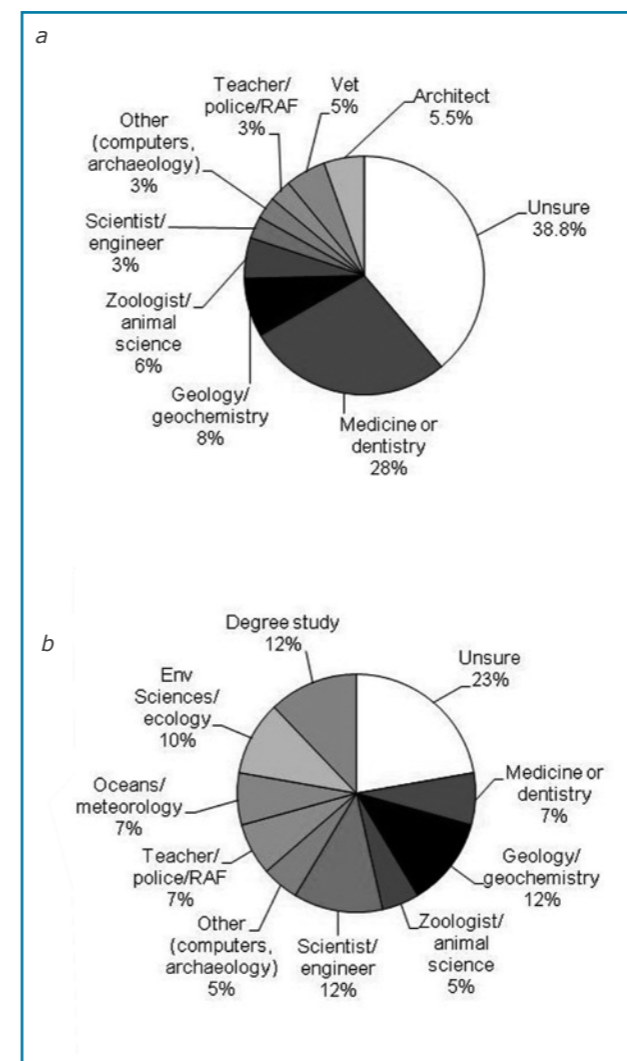


Figure 7. Career plans for a. Year 11 and b. Year 12.

Box 1 – some Year 11 comments

'I found this day very interesting. It also gave me an insight into university life'.

'It was a good day and I'm glad I came. Was better than expected, I learnt a lot and I understand things better now'.

'I really enjoyed the day. I would recommend more handouts about the subject itself with information on specific aspects of Geology'.

'Experiments and demonstrations were very informative and helped us to understand ideas about movement in the mantle and volcanoes'.

'Undergraduates helpful. Some parts more complicated – need to explain certain issues more and have longer workshops'.

'More integration between schools needed so it can be a social event'.

'More hands on work with rocks and minerals to understand things better'.

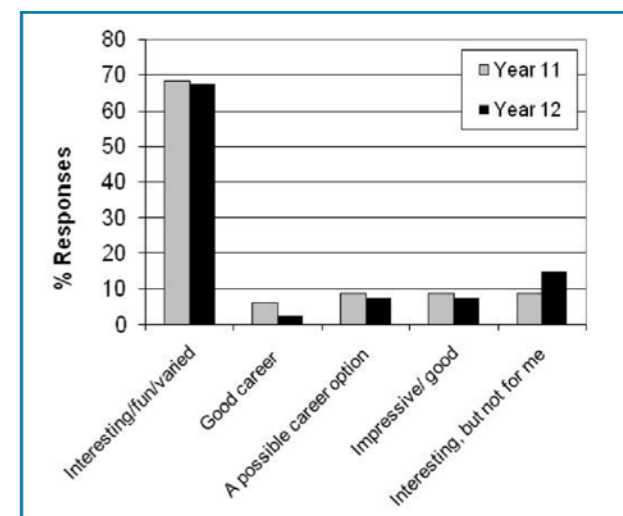


Figure 9. Impressions of Earth and Ocean Science as a career.

What next?

We believe the workshop was a success, despite being extremely hard work, and plan to run it again. It has opened up various possibilities to build relations with some of the schools that have contacted us since. We shall monitor changes in UCAS applications from schools that attended, to see if there is any positive effect. Lastly, we believe that similar workshops in other parts of the UK would help raise awareness of the GEES subjects.

Box 2 – some Year 12 comments

- 'Excellent, informative day giving insight into the subject as a career path'.
- 'Interesting and enlightening day – gave a good idea of what Geology at university is like'.
- 'Very interesting. It was good that there was a wide range of lectures'.
- 'The teachers were helpful and informative'.
- 'Excellent day, filled with amazing facts and sound knowledge'.
- 'Seeing the facilities allowed for an insight into the subject as a career path'.
- 'This day has certainly made me re-think the courses I'm taking'.

Box 3 – some teacher comments

- 'I thought the event was extremely well planned and in the main sufficiently interactive to maintain the students' interest. The enthusiasm of the staff was evident and everyone was extremely pleasant'.
- 'Thanks for all the thought and hard work setting up and running the day. It was well worth bringing the pupils (mostly Year 11 aiming to do 'A' Level sciences)'.
- 'Very interesting – perhaps I should have done Geology instead of 'straight' Chemistry!'.
- 'The 16 students and myself would like to thank you all for the excellent day you all helped put together. It was a tremendous insight not only into the courses you run at the Department of Earth and Ocean Sciences but also into the fascinating world in which we live. Certainly the students were very keen to talk further about what they had seen and taken part in whilst we travelled back. Well done to all who gave up their time and our many thanks'.

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A case study of activities to enhance undergraduate recruitment into Geography

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Abstract

This paper examines a variety of activities undertaken at the University of the West of England, Bristol, to enhance undergraduate student recruitment into geography. Activities include outreach sixth form conferences, internal teacher conferences, departmental newsletters, student associate schemes, interactive teaching web sites, widening participation activity days and publication of accessible research. Key principles in enhancing student recruitment are identified, including demystifying the university experience, highlighting the relevance of the discipline through its focus on pertinent global issues and skills, and maintaining continuity of taught themes from schools into higher education. The infrastructure required to support activities is discussed, privileging the productive links that can be forged between the Academy and external institutions (notably the Geographical Association, the Royal Geographical Society with the Institute of British Geographers, local authorities and regional schools networks). The paper concludes by offering an agenda on how best to strengthen the schools/higher education interface, by uniting local self-help with national organisations, policy and resources.

Context

In line with national trends (Croot and Chalkley, 1999; Sidaway and Johnston 2007) applications for single honours undergraduate geography courses at the University of the West of England (UWE), Bristol have declined, in general, since the turn of the 21st Century. In association with this, the student market has become increasingly localised. These trends can be explained partly by the discipline suffering competition from others that are perceived to be more vocational within the university market place, and partly by the loss of students to competitors as they reduce entry requirements to secure a larger share of the reducing market. Student recruitment is central both to the longevity of the discipline and to issues of staffing, teaching and marking loads, timetabling, curriculum delivery and the quality of the student learning experience. Additionally, issues of student recruitment are allied to those of retention, as the factors that attract students to

a particular university or geography course need to be actualised and maintained if students are to remain with their choice.

Activities to enhance undergraduate recruitment into the discipline

GEM (Geography and Environmental Management) School staff organise two outreach conferences per year, which take place at local host schools and draw students from surrounding catchments. The aim of these conferences is to introduce students to staff research and to provide case study material for AS-/A-level answers. In general, four short talks are delivered per conference and recent topics have included coastal management, community-led development in the third world, resource management in hot deserts and conservation of tropical forests. Students are supplied with printed readers that include a summary of each talk, along with activity questions to engage them further. These can be used by the teacher in the classroom to extend subject discussion.

The conferences also provide implicit opportunities to market the GEM School's geography programmes, as the case studies are linked clearly to modules and/or field trips. Students are consequently given a taster of the range of subjects available across programmes, in addition to the overall range of programmes that exist within the GEM School. The conferences have proved valuable to school pupils and have helped to support recruitment at UWE. In an end-of-course evaluation, for example, a year 13 Castle School student commented that:

...having the opportunity to attend university conferences helped further my knowledge and understanding of geography post-sixth form level and supplied me with high quality case studies, both of which gave me the edge I needed in my A-level geography examinations.

The student who, as a result of these links is currently undertaking a geography course at UWE went on to say:

I felt that the Castle School Geography Department's links with the University of the West of England gave me an excellent insight into studying the subject in higher education.

Additionally, issues of student recruitment are allied to those of retention, as the factors that attract students to a particular university or geography course need to be actualised and maintained if students are to remain with their choice.

In terms of preparation for the conferences, staff time is minimised as material is utilised from ongoing research, or selected lecture material. Utilising a number of staff from across the School also spreads the workload. Perhaps more restrictive, is the logistics of locating a workable conference date within busy school timetables. Planning and liaison between the University and schools has to occur early to ensure that an appropriate time is identified. Similarly, staff regularly take part in Geographical Association (GA) Bristol Branch Lectures, in an attempt to reach a wider audience than is gained via the outreach programme alone.

The Faculty of Education at UWE hosts an annual geography conference for teachers largely within the South Gloucestershire Local Educational Authority. Staff within the GEM School contribute to this event, highlighting advances that are taking place within the discipline, with the aim of connecting school and university syllabuses. The geography staff benefit as they can ascertain which themes and issues are popular in schools, and can feed these appropriately into programme development. The importance of this two-way knowledge exchange is discussed later in the paper.

The GEM School initiated, in 2004, an annual departmental newsletter. Adopting an accessible and colourful style to engage its readers, it aims to update current students on events in the GEM School and to introduce prospective students to the geography community at UWE. The newsletter is produced within the University and it is sent to any student who makes an enquiry about studying geography at UWE. A student who builds on their enquiry with an application receives the next copy of the newsletter just before they make their decision about where to study. In this way, the publication contributes to the development of a sense of identity and belonging within students from the moment they express an interest in the University. The newsletter is also disseminated at open days and at the sixth form and GA conferences just highlighted. This is in addition to being available on the University website. It is also

sent to partner organisations, such as placement providers, who learn about the experiences of their students, from their contributions to the publication. The cost of production, funded from the Faculty marketing budget, is roughly £1.00 per copy, when 1,000 copies are printed.

UWE and the University of Bristol jointly manage a Student Associate Scheme. It involves university students visiting local secondary schools for one day a week and supporting classes in the discipline that they are studying. This scheme dovetails nicely with the Royal Geographical Society-Institute of British Geographers (RGS-IBG) scheme of Student Ambassadors, who aim to enthuse school students from all backgrounds about the wider context of geography and careers. A second year geography student who took part in the UWE Student Associate Scheme in 2007 commented:

It is very rewarding to be able to apply what I am learning in university and at the same time gain extra skills that may help me after I graduate.

GEM School staff have taken part in a geography best practice website created by the Local Educational Authority. They contributed to an on-line revision course and geography open forum for A-level students. The lecturers responded to questions asked by students across 14 schools in South Gloucestershire. This association between schools and the University evolved due to staff enthusiasm within the University and within the Castle School. As with many of the previous activities, this is dependent upon staff giving their time in addition to a variety of regular duties, to get involved in the project and to respond to student queries in a timely manner.

In 2007, members of the GEM School, in liaison with other Faculty schools, piloted an activity day for 80 year 12 pupils using the theme of flooding to introduce the roles of built and natural environment professionals. The human, economic, environmental and heritage costs of flooding were examined. The programme provided a case study of a flood event, sessions examining aspects of flooding from the viewpoint of different professionals, and it ended with a competition for

Adopting an accessible and colourful style to engage its readers, it [the annual departmental newsletter] aims to update current students on events in the GEM School and to introduce prospective students to the geography community at UWE.

students to create a short presentation to raise public awareness of flood risk and mitigation. This was such a success that the day will become an annual event covering a number of different issues in a cyclical format. Also, in 2007 a similar event was held at the Faculty of Education for 60 Gifted and Talented Geographers from all South Gloucestershire secondary schools. This event, called 'Challenging Geography', was linked to the South Gloucestershire Secondary Geography Best Practice Forum and the Bristol Region Network in Geography Teaching. It was a day event for year 9 pupils to model coastal change, and research into/debate aspects of the proposed Severn Barrage Scheme. The aim here is to excite younger students to further their geography education.

The final activity for discussion is the publication of staff research in an accessible form for school pupils. The GEMs School aims to publish one article in Geography Review per year and to write up discovery research for Geography, one of the three publications of the GA. The latter journal is targeted towards students and teachers in post-16 and Higher Education institutions. Such publications make the University visible within schools and introduce students to exciting new research that is undertaken within the discipline.

Key principles in enhancing student recruitment

Three key principles underlie the activities discussed above. The first of these is de-mystifying the university experience through information transfer and heightened accessibility (Table 1).

There has been a perceived erosion of discipline identity within schools. Students may enjoy aspects of geography whilst being taught about issues such as citizenship and education for sustainable development, but they do not realise that they can further their studies of such

issues by means of an undergraduate course in geography. The conferences discussed here are an ideal way to highlight the place of geography within schools curricula as the students make their university subject choices. The conferences are used to exemplify pertinent global issues that the GEM School staff research and teach. Associated with this is a need to label geography programmes and modules using terms familiar to school students. An example of this is a newly revised BA (Hons) Human Geography programme at UWE, which develops curriculum issues identified in the new Key Stage 3, such as cultural understanding and diversity.

In terms of individual students, barriers to student applications must be considered. Two key constraints here are low student self-confidence and poor student integration. Studies by Fisher and Hood (1987) and Fisher (1989), for example, established that home-sickness can reduce the likelihood of efficient coping strategies to the demands of university life. This was often attributed to a perceived lack of control over a new and demanding environment. Thus, effort expended in providing an enabling environment for student learning from the outset, is liable to reduce feelings of disorientation and aid the student in transitioning from school to university. A new Graduate Development Programme at UWE, which aims to increase student motivation and course commitment, building confidence via a programme of learning and inter-personal skills development, along with an integrated skills spine across geography programmes, clarifies that students are not expected to possess all the academic skills they require at university on arrival. The programme aims to integrate students slowly into the demands of university life and to build confidence in their abilities as they learn. Additionally, the activity days render the university environment accessible to school students, as they consider their university and subject choices.

| Factors for consideration | Explanation |
|---------------------------|--|
| Discipline identity | Highlight geography within schools curricula as students make their university choices |
| Discipline branding | Use labels familiar to school students for university geography programmes and modules |
| Student self-belief | Build prospective students' confidence in their capabilities |
| Student integration | Make students feel part of the university from the moment they apply |

Table 1 De-mystifying the university experience for prospective students

By instilling a sense of familiarity in the students of the physical environment of the university, in the staff and their styles of teaching, and in the types of learning and assessment activity that they might encounter (via group competitions), the disorientation identified above can be much reduced on arrival, whilst student self-confidence can be increased. In short, students must feel prepared and supported both academically and emotionally for the transition to university.

A second important principle in enhancing student recruitment and retention is to highlight the relevance of the discipline to pertinent global issues and hard and soft skills. Students often do not perceive the high employability offered by a degree in geography (Le Heron and Hathaway, 2000). However, the discipline deals with some of the most pressing issues of our times, such as global environmental change, sustainable resource management, community health and security, and identity and social justice. Additionally, a degree in geography offers a comprehensive skills base for employability. With the integration of personal development planning in all three years of geography programmes at UWE, students explicitly develop and track their competencies in knowledge, intellect, skills, flexibility and adaptability, preparing them well for emerging 'portfolio' careers (Harvey et al., 1997). In addition, the GEM newsletter is careful to feature the wide employability of geography graduates due to their discipline-specific skills and knowledge and often includes interviews with past students to highlight their career progress. In an increasingly globalised and dynamic world there exists a crucial role for geography education in relation to preparing a national workforce that is able to play an active role in adapting to changing circumstances, and in organising appropriate responses.

The third principle in enhancing student recruitment is to unite school and university curricula. Exciting advances in university research can be slow in seeping down to schools. At UWE, this has been particularly noticeable within modules on development geography, where students have not previously challenged neo-Malthusian environmental narratives. They then question, for example, why they have not learnt about indigenous groups managing semi-arid rangelands and tropical forests in a sustainable manner (see Leach and Mearns, 1996; Fairhead and Leach, 1998). The transfer of geographical research (and technologies) from HE to schools can excite students about the discipline early in their learning, and it can inspire them to further their

geographical education. The Teacher Conferences mentioned here, specifically aim to facilitate such knowledge transfer. They also allow exchange of knowledge and practice from teachers to university staff, an important issue as Key Stage 3 and 14-19 curricula are being revised for September 2008.

Infrastructure required to support recruitment activities

To put the principles discussed above into practice, specific infrastructure and support mechanisms are required. Importantly, links must be forged between the Academy and external institutions. A number of staff within the GEM School liaise with pro-active teachers within local schools and regional schools networks, to enable outreach conferences and widening participation activity days to take place successfully. Active links are also maintained with the local branch of the Bristol Geographical Association (via committee membership). Additionally, meetings have taken place with the RGS-IBG and local school representatives to gain financial support to further links. In December 2006, UWE hosted a conference for teachers and university staff about the importance of local fieldwork and the Chartered Geographer scheme. This event, supported by the RGS-IBG, came about through recognition of the excellent school-HE links being developed in the Bristol region.

The successful planning and execution of the activities described in this paper requires an immense amount of resources in terms of staff time, commitment and enthusiasm (for both academic and administrative staff). Importantly, this effort needs to be recognised in university promotions processes, such that student recruitment and widening participation activities feature clearly in the responsibilities of a Principal Lecturer. At present, rewards for such staff activities are not transparent in terms of promotional recognition. As outreach activities can be extended much further than the activities outlined here, including weekly visits to schools to raise the University profile, there will come a time when such a role demands formal recognition. Also, staff must be engaging and approachable to current and prospective students despite tension from other duties such as RAE-driven research, knowledge exchange and module/programme administration. The list of duties for university lecturers continues to expand and so the importance of recruitment activities should be acknowledged in professional development planning. Importantly, this paper presents evidence that privileging recruitment activities is

'worthwhile' as it creates opportunities for students and the University.

An agenda for the future

Crucially, the identity of geography as a discipline and enthusiasm for it, must be raised both inside and outside of education to broaden its appeal to a wide range of students. Only this will raise the overall demand for geography students, rather than intensifying competition within a shrinking market. The discipline needs to be re-imaged (Le Heron and Hathaway, 2000) and marketed as exciting and relevant to students, employers and policy makers (Martin, 2001; Gedye et al., 2004). Extending Chartered Geographer status to undergraduate level via accreditation of programmes, may prove to be an effective means of promoting this. Teachers, university academics and organisations representing geography must act together as advocates for the discipline in which they share a passion and profound belief. Such integration is gaining momentum as the RGS-IBG and GA combine forces to support and lead the future development of the discipline, linked to the Action Plan for Geography, which aims to revitalise the teaching and learning of geography in schools (Gardner and Lambert, 2006). As these organisations support the 'bottom-up' activities described here, and forge links upwards via their co-ordination with the Department for Children, Schools and Families (DCSF), there is growing articulation of the intrinsic worth of geography to individuals, employers, society and the environment. It can be concluded that a successful future for the discipline of geography lies in strengthening the schools/HE interface, by uniting local self-help with national organisations, policy and resources. This might be achieved by establishing Regional Centres of Excellence at institutions which exemplify best practice in forging schools/HE links, and in encouraging rejuvenation of the discipline at primary and secondary schools. Progress needs to be made along many avenues to ensure that geography exists as a vibrant and exciting discipline well into the future.

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The application of marketing thinking to student retention

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Abstract

This article is a little different from those in most issues of Planet. Rather than report on the outcomes of initiatives already undertaken, in this case initiatives into student retention, this article will propose an alternative way of thinking about the issue—through the lens of marketing as a discipline. Most applications of marketing in higher education (HE), to date, have been in the field of student recruitment. In this article (based on a presentation delivered at the GEES Subject Centre 2007 Conference), key marketing concepts and practices will be revisited, to assess whether they may be used to address issues of retention in GEES (and other) disciplines in HE.

Introduction

Part of the reason for suggesting a marketing perspective on retention derives from the close relationship that exists in HE between policy making for recruitment and retention. Although the two are sometimes kept apart, and both tend to be 'off the radar' of most academics for the practice of teaching and learning, it makes sense to re-unite them; and this can be done by taking a marketing perspective. Another reason for looking at retention from a marketing viewpoint is that a significant element of our efforts at improving retention is a process of persuading students, by a variety of means, to see their studies through to completion at their chosen university. Persuasion, as is widely recognised, is a significant element of marketing (Fennell, 1985).

Marketing research: getting to know our students better

Over the past seven or eight years, a significant minority of the students taking my two independent study modules (one on Geodemographics, the other on GIS for Business) do poorly, and each semester a few drop out after the first few weeks of the semester. I have explored several possible reasons for this performance problem: students lacking self-motivation for independent study; students who are under-achievers across the board; and the pressure on students to achieve competence in

a brief 11-week period of study. More recently, I have begun to explore an alternative hypothesis.

Because my modules require students to read a significant amount of information from web-based study units, and then apply the knowledge and instructions in these units to practical work involving computer software and digital data, my explanation for the under-performers and dropouts has been that they are students who dislike reading, or who are unable to read effectively.

In order to flesh out this idea, I asked the obvious next question: where did this reading problem originate? The first explanation lay in their schooling: many students are poorly prepared at school for reading for comprehension and reading for action -- i.e. implementing procedures (Lowe & Cook, 2003). To compound this, lecturers in HE fail to recognise their students' unpreparedness, and/or we assume it has been rectified by our colleagues who teach them study skills in year 1. A second, and complementary, explanation lies in the computer games culture, in which no-one ever reads a user manual, largely because nowadays no games publishers supply one! So, our games-playing students learn to do things by trial-and-error, and/or by asking their friends, and/or by looking up 'cheats' on games websites. (Can you spot a familiar pattern emerging here?)

When I turned to relevant data to support my hypothesis, the first eye-opener was a recent student survey in my Business School which revealed that among our current crop of students, 79% stay at home, and only 21% leave home in order to study with us. In other words, most of our students are commuters, and in some senses may be considered as not being fully engaged in the educational process, in its broader sense. A second line of evidence began to clarify why these figures seemed to be so significant: our students come from ethnically diverse backgrounds. Indeed, only 12% classify themselves as 'white', and so it is only natural to find many students speaking a language other than English amongst themselves on campus. I decided to follow up this line of evidence through module evaluations.

In my end-of-semester module evaluations in 2005

and 2006, I asked: 'What is your first language, native language or mother tongue?' The results, summarized in Table 1, were as startling as they were unexpected. It should be noted when interpreting them that only 2 students in each year were born outside the UK. Clearly, I had unearthed a contrary explanation for my students' lack of reading ability. It was not (necessarily) a lack of reading per se that was undermining their performance on my modules, but perhaps a lack of reading ability in English. The solution to my module problems therefore seemed relatively obvious: require all students to attend our Language Lab to improve their English reading and writing skills. So, problem solved, or so I thought, until I began to ask myself another troubling question: is language the real problem here?

| Language | 2005 | 2006 |
|----------|-------|-------|
| English | 15.8% | 11.2% |
| Other | 79.0% | 85.4% |
| DNA | 5.3% | 3.5% |

Table 1. First language of students taking author's modules.

If we regard education as a transformative process (Marsick & Watkins, 1999), and if we view cultural transformation (in its broadest sense, including the role that education plays in shaping world views) as an integral part of this process, then we may need to address something deeper than language fluency in order to redress the problems I've been facing in my modules.

With this thought in mind, I am now designing a research project to help me understand the limitations placed on engagement with learning (sensu lato) when students remain in their family, friendship and local social networks while they are supposedly participating fully in HE. (This is not to ignore the fact that, for some students, studying from home may provide significant learning benefits.) This problem applies not only to my own rather specialist modules, with their atypical study method, it applies to all subjects, and most universities, because the stay-at-home culture is now fairly widespread throughout the UK. I am hoping that this research will not only contribute to improved retention, but will also increase student performance generally.

Segmentation

Market segmentation is the long-established marketing practice of subdividing consumers into

groups that share similar characteristics, either for the purpose of designing a product or service for each group, or for marketing products or services to each group. Segmentation, in its formal sense, has been applied only rather rarely to students. An example is provided by a study at Arkansas State University (Nonis & Hudson, 2002) which divided students into four groups (Slackers, Achievers, Challenged and Strivers), based on data for two variables: student characteristics and student abilities. This segmentation was used to guide tutors in providing appropriate advice and support for individual students based on which group they belonged to. However, many academics have devised their own informal student segmentations, based on many years of teaching experience rather than hard data.

Why are segmentations so widely used in marketing, do they have a place in HE, and what is the connection with student retention? In terms of marketing, segmentation provides a cost-effective way of marketing, being more discriminating than broadcasting (in which you send out the same marketing message to virtually everyone), and personalised marketing (in which you send everyone an individually tailored message). Segmenting students, enables us to handle each group in significantly different ways: using different teaching and learning methods with each segment; matching students in each segment to relevant academic and support staff; and modifying the pace of learning to suit members of particular segments. Each of these segment-driven initiatives should result in an increased likelihood of student progression and improved performance.

And, of course, this is precisely what many of us do already. For example, we identify student group membership roles on the basis of Belbin scores; we design varied study approaches based on students' preferred learning styles or type of intelligence and we emphasize face-to-face teaching and learning with our first-year students, and increased doses of independent study among our final-year students. Here is an admittedly rather crude example of how a segmentation-based approach might be applied to guiding students to make strategic decisions about their HE studies:

| Student segment | Advice |
|---|--------------------------------------|
| Able and committed to achieve | Independent learning |
| Committed, but maybe not (yet) able, to achieve | Guided learning |
| Neither committed nor able | Strategic withdrawal from university |

There are several reasonable objections to the application of segmentation principles to students and their learning, among them that it may be unethical, counterproductive, and fail to give sufficient attention to the needs of individual learners. We should remember, however, as mentioned above, that students on some courses are already being segmented into groups (e.g. on the basis of their preferred learning styles), in order to provide them with learning experiences that match their abilities and/or preferences. On the face of it, this makes good marketing sense, in that it appears to be a consumer-friendly approach. But isn't it just possible that students may learn more from being encouraged to adopt an unfamiliar or uncomfortable style of learning? Won't they grow in unexpected ways by taking a more challenging route to learning? This example may be used in contrary ways in the context of student retention. On the one hand, it could be used to support the argument that students should be encouraged—even against their own motivations—to persist with the life-transforming experience that is HE. On the other hand, it could be used to support the idea that students should consider reversing their decision to participate in HE, because greater opportunities might lie outside academia.

The challenge is, therefore, to devise the most effective segmentations of our students, and to do so on a regular, rolling basis, recognising that each student group, each module and even each learning intervention requires its own segmentation. Adopting a single, once-only segmentation risks repeating the stultifying segregation of students that used to occur as a result of the 11-plus examination in schools.

Relationship marketing

A great deal has been written in the discipline of marketing over the past decade on the subject of relationship marketing (RM). Indeed, it has now become one of the prevailing paradigms of the discipline. One of the main roles of RM is as a solution to the problem of customer churn: i.e., the loss of customers through lack of loyalty to a particular product, service or company. The thinking, in a simplified form, is that if you develop a relationship with customers, it improves their loyalty, and if you improve their loyalty, this translates into increased revenues. The current paradigm of RM in business-to-consumer (B2C) marketing can be represented in a simplified form as follows:

Process: Relationship building
Objective: Loyalty
Goal: Repeat sales, up-selling, cross-selling

Of course, students are not nearly the same thing as customers. For example, once they embark on a three-year (or longer) programme of study, only a small minority of them switch to another programme, and a much smaller proportion switch to another institution. In other words, to use the language of RM, switching costs are relatively high in HE as a service industry when compared with most other businesses in the service sector. An adapted version of the marketer's model of RM that is more suited to HE might look something like this:

Process: Effective delivery
Objective: Satisfaction
Goal: Progression and retention

In an educational context, the goal may not only be short-term retention (i.e. during the lifetime of the students' current 'service encounter'), but also longer-term engagement (i.e. through the up-selling to students of later products, such as masters programmes, research programmes, and/or CPD).

It might be appropriate to temper our thinking about how RM might be applied to the retention problem by reminding ourselves of what marketers are finding out about how not to do relationships. First, it is increasingly recognised that most consumers don't want a relationship, in the conventional sense, with their service providers. What they want is effective service delivery (Rose, 1996) and responsiveness throughout the service encounter. So, rather than spending a great deal of time attempting to develop friendships with students, it may be more effective from a satisfaction point of view to ensure that (for example) you promise to reply to student emails within 24 hours of receiving them.

Another caveat is that HE should avoid implementing RM the way that marketers have tended to do over the past decade i.e., as a database-driven 'solution' known as customer relationship management (CRM). Technology-supported relationships, especially those based on using knowledge stored in student databases to personalise messages, may not be appropriate, even in the context of the learning encounter. A podcast or 'talking head' video lecture may appear to be technologically savvy, but they can lack the human dimension of face-to-face encounters

between student and tutor. Where communication with students is increasingly facilitated through email and virtual learning environments (VLEs), it is imperative that we avoid lapsing into high-tech, low-effort messaging that does little to boost students' engagement in a meaningful learning relationship.

A final caveat is to recognise that minor executional details without the main academic (i.e. teaching) process, often get in the way of effective relationship building with students. In e-commerce, for example, a significant proportion of aborted transactions occur because of payment problems on the e-tailing website, rather than with misgivings about the product or service being purchased. What this suggests for HE is that when we try to identify the success and failure factors in student retention, we need to bear in mind the many minor things that get in the way. We refer to these as irritants.

A common set of irritants results from capacity shortfall i.e. the inability of a service function to operate above a restricted threshold level. The commonest symptom of a capacity constraint in HE is student queuing, whether it is to pay fees (at enrolment), to see a module leader (during term time), while driving to campus (daily/weekly), or while entering the university car park (daily/weekly). A recent business student reportedly terminated his enrolment after waiting in line for over two hours to pay his fees with this comment: 'I refuse to study management at a Business School that can't manage its fees paying process any better than this!'

One way of reducing certain capacity constraints, and thus of improving our relationships with students, is to use a spatial approach to relationship building. For example, at my own Business School, we are currently exploring the use of GIS and location-based Web technology for student car pooling, and the feasibility of setting up local study centres (e.g., at schools, colleges, libraries, or community centres) in areas of high student density and traffic congestion in our catchment area.

Everyone a marketer

Read the two questions that follow this sentence, then stop reading while you arrive at the answers:

- How many students are there at your university?

- How many Student Retention Officers do you employ?

When you have the answers to hand, you may like to compare them with those from my own institution¹. This is where a marketing mantra becomes relevant. It is best expressed by Matt Blumberg (2005), when he said that 'In your business, everyone's a marketer'. In an educational context, this principle makes a mockery of the widespread practice of devolving the responsibility for student retention onto the shoulders of very few people—and often a single person.

If student progression is to be taken seriously, and if it is to be effective, then it must surely be the responsibility of all of those who work in an HE institution. On what grounds can we devolve responsibility for such a fundamental activity? And yet a cursory search of the Web for 'Student Retention Officer' will reveal dozens of HEIs in the UK that already have them. Some institutions are now calling them 'Student Achievement Advisors', which may be excellent PR, but it is hardly effective marketing. The challenge posed for HE by the discipline of marketing is to consider moving from a perspective in which retention is seen as someone's specific role to a position in which retention is viewed as everyone's responsibility.

Changing individual mindsets—and the cultures in which they are embedded—is possibly the hardest thing to achieve in any organisation, so this is where those versed in marketing need to partner with change agents steeped in organisational theory. So, what alternatives are there for improving engagement with students within current resource constraints? For a start, it might help if all lecturers placed increased student contact, access and responsiveness much higher on their to-do lists.

Personal marketing: building student commitment through personal confidence

Research evidence suggests that self-confidence and self-esteem underpin student performance, in geography as well as other subjects (e.g. Hughes, 1998; Bennett, 2003). Increased self-confidence can lead to improved commitment to study, and this in turn may result in improved performance and higher retention rates. The big question then is: how do we improve self-esteem and personal confidence among students?

¹ At Middlesex University Business School the numbers are currently 5,380 and one, and the one (now called a Student Achievement Advisor) is shared with the School of Computing Science, which has another 1300 or so students.

My own approach is being pursued through a new first-year module in Personal and Professional Development, taken by all marketing students at Middlesex University. A goal of this module is to encourage students to feel confident in themselves, by helping them focus on becoming marketing professionals as well as academics, from day one of their studies. To achieve this, the module combines the development of knowledgeable skills and personal development, with professional development and career planning experience. At the heart of the module is the application of marketing and branding to individuals i.e., regarding students as potential subjects of the marketing principles and practices that are normally applied to products, services, corporations and places. We aim to develop students' abilities to market themselves and to develop their own personal brands. However, in order to avoid some of the obvious problems in doing this (Shepherd, 2005 provides a critical review), we also encourage students to explore the problems and limitations with taking this approach to becoming employable and successful.

Our positive aspiration is that we will increase student self efficacy by fostering a professional outlook to their studies, and that this will result in improved motivation, a reduced likelihood of dropping out, and even improved performance.

Conclusion

Perhaps the main conclusion to be drawn from this exploration is related to the language we use when describing student performance and progression. The word 'retention' seems to reflect none too well on current managerialist and highly politicised approaches to HE. As we have seen, some institutions have begun to replace their Student Retention Officers with Student Achievement Advisers, but it will take more than window dressing to mask the fundamental intentions of retention policies across much of HE. In terms of marketing principles, retention policies amount to a product-oriented approach, in that the needs of the producer (or, in an educational context, the service provider) are deemed to be paramount. No matter that some students may be better off not pursuing their degree studies to completion; no matter that we set up systems of student arraignment and restraint on increasingly tenuous educational grounds; and no matter that we devolve responsibility for retaining students from the shoulders of those who should be challenging, encouraging and supporting student learning. It is academic staff that should be at the heart of any strategy aimed at engaging students with learning,

and a shared sense of purpose between students and staff should have a greater say in shaping institutional policy.

So, next time you pause to cast doubt on the probity of applying marketing thinking to educational problems, perhaps it is worth thinking that it may not be quite as heretical as some people make it out to be.

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Pre-entry qualifications – staff perceptions versus reality

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Abstract

The Student Transition and Retention Project (STAR, 2007) conference in 2004 raised awareness of the gap between the expectations of first-year lecturers at Higher Education Institutions (HEIs) and the reality of the secondary school curriculum. This article will provide an introduction to the issues covered by the conference. Examples will be provided of changes in practice that have addressed the issues raised. The aim is both to identify ways in which practice can be modified to support students through the period of transition, taking a realistic starting point, and to demonstrate a developmental way of approaching the problem.

Introduction

Members of the Staff Development Team at the University of Ulster lead the University's project on Enhancing the First Year Experience and inform strategic policy development linked to this. In addition, we are routinely involved in providing consultancy and training/educational development support relating to first year teaching and retention throughout the university and, increasingly, through other UK HEIs in our roles as advisors for a number of HE Academy Subject Centres including the GEES Subject Centre. Through this engagement with academic staff we became aware of a significant mismatch between what academic staff expect first-year students to have experienced in the secondary curriculum, in terms of teaching, learning and assessment strategies, and the reality of that experience. Concern was apparent regarding students' perceived lack of basic knowledge of core concepts and also skills such as the ability to write in an academically mature fashion or to manage the numeracy requirements of certain courses. It was clear that, apart from staff whose own children were progressing through the secondary system and those who acted as examiners for curriculum boards, few of us had up-to-date knowledge and understanding of our students' secondary experience. In addition to this, it was becoming apparent that our current advice for teaching staff, which drew extensively on the body of literature on student retention (McInnes et al. 1995; Ozga and Sukhnandan, 1997; Rickson and Rutherford,

1995; Tinto,1987; Yorke,1999; Upcraft et al., 2005) and guided staff to consider first year as a period of transition requiring extended induction to allow social and academic integration, was only having partial success when applied to practice.

To address this knowledge gap, Staff Development, in conjunction with the FDTL funded Student Transition and Retention Project (STAR, 2007), organised a one day conference in 2004 with inputs from examination boards, secondary teachers, FE lecturers and students. This was extremely well received and reinforced the need for more staff to gain an understanding of the issues raised.

This led the Staff Development Team to develop a workshop aimed at helping staff teaching first-year students to understand the dichotomy inherent in the current approaches of the secondary and tertiary educational systems. This workshop has been customised for delivery in a variety of contexts and has been used both in our home institution and elsewhere. Participants have commented on its value in terms such as 'this should be compulsory for all staff' and 'now I understand that it's not all the students' fault'.

Workshop development: understanding pre-entry qualifications

The workshop was developed to raise staff awareness and also to encourage them to consider the implications of the issues for their own teaching and learning environments.

The initial section of the workshop involved updating participants' awareness of the key qualifications our students had achieved prior to entry. As participants were drawn from a wide range of subject areas, we concentrated on providing generic information regarding the structure, teaching and learning approaches and assessment strategies. In addition, we identified the strengths and weaknesses students, who had experienced these teaching approaches, were likely to have developed. A summary of key aspects of this range of qualifications is provided in Table 1 and further discussion can be found in Cook (2005). In the section below, we have provided a summary of the key points covered in relation to

A-levels, as these are still the most common pre-entry qualification. It should be noted that these apply to students currently being recruited, and that very recent changes in the qualifications are not covered.

An overview of A-levels

Structure

Students take six modules over two years, three at AS level and three at A2. The modules carry equal weighting whether at AS or A2 level. Currently around 15-20% of marks are allocated for a synoptic element in an A2 paper. Coursework counts for not more than 30% of the total marks.

Specifications

Each module is highly specified for every A-level, and students will have access to detailed information on:

- Subject content
- Scheme of assessment—detailing assessment objectives and the key features being sought, together with the particular exam they will appear in, and the weightings for each one
- Grade descriptors—published for Grades A, C & E

Teaching methods

Feedback from teachers has indicated that, due to pressures from league tables, governors and parents, teachers have become increasingly strategic and skilled in their preparation of students for assessment. This has impacted significantly on the teaching approaches adopted. Students are taught closely to the syllabus requirements. Teachers direct them in 'unpacking' assignment requirements, selecting and highlighting the key words, and focusing their learning when reading texts/materials. One teacher stated that reading beyond the subject requirements could lead to a student losing marks when answering exam questions, due to there being only limited space to provide exactly what was being looked for in the mark scheme.

Marking criteria are highlighted to raise pupil awareness of standards required, and students are given samples of good coursework to enhance their understanding of the required standard and to learn how to structure assignments. Teachers devote class time to the supervision or correction of coursework attempts. In addition, this facilitates teacher monitoring of student progress. Teachers try to ensure that students remain 'on message'

at all times. All students submit at least two drafts of each piece of coursework. Some may also enter their coursework project in January and re-submit in June to secure an improved grade.

Examinations

The AS exams for one subject may not last more than 3 hours in total e.g.,

- Geography 2 x 1h (17.5% of marks each); 1 x 1h (15%) (no coursework)
- Biology 2 x 1h (16.7% of marks each); 1 x 1h (9.3%); internal practical work (7.4%)

At A2, exams can last longer but students are unlikely to have experienced the standard 3 hour university length exam e.g.,

- Geography 2x 1h 30m (15% each); 1 x 2h (20%) (synoptic questions in 2 modules amounting to 20% of total marks)
- Biology 2 x 1h 30m (16.7%); 1 x 1h (9.3%, synoptic paper); internal practical work (7.4%)

A-level examination papers are highly structured, with many subjects requiring students to respond with short answers needing knowledge recall and limited literary skill. Again, this experience is unlike the essay-type questions routinely set in university examinations. Where exam questions have multiple parts, students will be provided with a breakdown of marks for each section. Following examinations, students have access to their scripts and can identify clearly how and why they have achieved the marks allocated.

Each module may be retaken and the best mark counted for the final grade, so students may decide strategically to repeat AS modules to gain a few extra marks and increase their likelihood of achieving the final grade they need. This is contrary to most university regulations, where only one initial attempt is allowed and resits for those who fail only permit a pass mark to be recorded. This may also help to explain why many university students are prepared to strategically fail modules, concentrating on a few and resitting the others during the summer without any stigmatisation of failure.

Independent learning

Many teachers feel that the current approach to teaching A-levels and other pre-entry qualifications is less likely to develop and encourage independent learning habits and skills than in previous years. The coursework burden places heavy demands on students' time and workload, which teachers should recognise by providing greater direction and

support, and also by carefully monitoring progress. Students are trained to use assessment criteria to structure their study. High university 'asking grades' contribute to pressure on students and teachers to achieve these grades. Students will be supported to ensure that any coursework makes a positive contribution to the overall mark, so it will probably be marked through at least two drafts. Students are unlikely to have to learn to manage their own time as incremental deadlines are carefully mapped out for them. The reality at this stage is that learning is structured and focused. Students are also used to receiving frequent feedback on their progress. They are encouraged to think and work independently, but there remains a strong element of guidance. Only the very best students will go beyond the course requirements and acquire a more comprehensive knowledge of topics.

Students' views

When university students were asked to provide us with an idea of how their school and university experience differed they highlighted the following.

What was different about coursework and assessment from school/college?

- University Group working is difficult to achieve successfully—training needed
- A lot is expected in presentations at an early stage i.e. use of Powerpoint—again training needed
- Getting notes from WebCt is not always straightforward—needs to be clearly explained/demonstrated
- Intensity of continuous assessment
- Tend to leave all assessment until the last minute, as not reminded by teachers
- Not chased for submission of work

What helped the transition?

- Module handbooks are very useful, all relevant information
- Studies Adviser
- Tutorial sessions were invaluable
- Assessed practicals help to structure work as they have to be done on a regular basis

What more could be done?

- Training in some areas—mentioned above
- Information on marking schemes
- Quick feedback on first assignment

What advice would you give new first years?

- Find out how much to read
- Don't be afraid to ask
- Keep on top of work and assessment—don't leave it to the last minute

It is evident from their responses that students are expecting and seeking the same level of direction and support from their university teachers as they received in school and that they struggle where this is not forthcoming.

Workshop tasks

The second stage of the staff workshop allowed participants to clarify their understanding of the earlier presentation by examining, in some detail, curriculum specifications, exam papers and chief examiner reports covering a range of subjects, exam boards and qualification types. Specifications are downloadable from exam board websites and other documents can be purchased from the relevant boards. We attempted to resource each workshop with subject materials broadly relevant to the range of staff we knew were attending, to increase the relevance for them. At each workshop we also provided materials for GCSE English and Mathematics. The tasks varied depending on the group, but sample activities are described below.

The workshop concluded with staff identifying how they were going to take their new learning from the session forward. Examples of changes that we are aware of are discussed later in this article.

Workshop tasks:

Task 1

- Compare content of both qualifications (A-level and Advanced Vocational Certificate Education (AVCE)) and reflect on current 1st year university curriculum for that subject

Task 2

- Focus on the assessment of both qualifications particularly the style of questions. Compare against current assessment of 1st year modules
- Focus on marks and levels of each qualification and student effort required. See Chief Examiner's Reports

Evaluation

...this should be compulsory for all staff

...now I understand that it's not all the student's fault

These quotes are representative of those collected at each workshop, with staff talking about 'penny dropping' moments. When asked to identify what has been particularly revealing the following are regularly mentioned:

1. Understanding why students are so unconcerned about failing at the first attempt
2. Understanding why surface learning prevails
3. Recognising that it is unrealistic to expect students to start off as independent learners
4. The disparity between the ways they have been assessed previously compared to HE practice
5. The lack of scope for developing literacy skills e.g. essay writing within the pre-HE curriculum
6. Understanding why students struggle in 'getting' what we are looking for in assignments

Changes in T&L Practice

As a result, in part at least, of attendance at these workshops, we are aware of a number of modifications that have been made to courses across the university. One example which includes several interventions is provided below:

- more guidance on assessment requirements and criteria provided in year 1 tutorials
- Early formative feedback provided on a piece of coursework
- Greater use of MCQ assessment within semester 1 modules (instead of essays to test knowledge acquisition), together with input on essay writing, so that these can be introduced in Semester 2.
- Regular monitoring of attendance and performance linked to personal development planning.
- Briefings for all staff at a School Away Day, regarding the content, and teaching and learning approaches of pre-entry

Conclusion

Learning about the prior educational experiences of our students has been illuminating, challenging many of our views that the standard of our intake was slipping. Repositioning our viewpoint to see our incoming students as the, often highly successful, products of a teaching and learning environment with different approaches and expectations to our own, has allowed academics to move from a 'blame' stance to one where it is possible to identify practical solutions to guide students through the

transition to more independent, open ended and deeper learning.

As a result of this journey, we, in Staff Development, have included outcomes of the workshop within a range of our activities, including broader 1st year experience workshops, Academic Induction, post-graduate higher education practice modules, and within our advisory work.

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Comparison of qualifications

| | A-level | AVCE (Advanced Vocational Certificate Education) | BTEC National | Irish Leaving Certificate | Access Courses |
|-----------------------|--|---|---|--|---|
| Structure | 2 year course. Final pass grades A - E | 2 year course, may be double or single. Vocational subjects. Often taken with 1 or 2 A-levels Final pass grades A - E UCAS tariff same as A-level. | 2 year course. Vocational subjects related to work. Final pass grades pass, merit, distinction. Award = 6 units, Certificate=12 units, Diploma = 18 units. UCAS tariff: P (for 6 units) = 40, M=80,D=120. | 2 year course. Subjects taken at either ordinary or higher level. System of grades at each level, A1, A2, B1-3, C1-3, D1-3 are passes. A1 at ordinary is equivalent to C3 at higher. Grades then translated into points. | 2 year part-time. Final grade is % mark, >60% gets commendation. |
| No. of modules | 3 modules at AS, 3 further at A2. | 6 modules for single AVCE, equivalent to 1 A-level. | 6 units are equivalent to 1 A-level. | At least 5 subjects must be studied, including Irish. Most students take 6/7. | Part-timers take 3 modules per year. Modules will include basic maths and english, other modular content will vary between type of course and colleges. |
| Assessment type | Mainly exams, externally set, marked and moderated, coursework not more than 30% of any subject AS level exams not more than 3 hours in total. Years weighted 50:50 | At least 1 module out of 6 must be assessed by external examination. Modules use only ONE assessment type. Portfolio work externally moderated at end of module | Mainly internally assessed. At diploma level, 16 of 18 units must be passed | Exams, externally set, marked and moderated, all taken at end of course. | Mostly 50% CA, 50% exam. Latter include both short answers and essays. University of Ulster validated courses have UU appointed external examiner. |
| Assessment objectives | Clearly specified | Clear specifications | Explicit assessment criteria | | |
| Grade descriptors | Clearly set out for A, C, E grades | Clearly set out for A, C, E grades | Descriptors for pass, merit and distinction | | UU validated courses use Level A descriptors |

Table 1: Summary of Key Qualifications

What should a (Geography) degree for the 21st century be like?

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Abstract

Students who started degrees September 2007 will, all being well, graduate one tenth of the way into the century. So, have we posed the question, what that degree should be 'like'? I believe not.

The question posed is important, especially for a non-vocational subject like Geography (and may also be applied to GEES disciplines in general) with respect to recruitment, retention and 'return':

- What attracts a student to a degree programme?
- What attracts students' parents to a degree programme?
- What are students expecting from such a degree in general?
- What expectations does the government have about degrees?
- What expectations do employers have about degrees?

This paper aims to start refining a conjecture and, perhaps, a debate about our expectations of a GEES degree and its delivery.

Introduction

The need for a curriculum (the manner in which a subject is taught) to be focussed on employability skills is considered an essential foundation for a 21st century degree in the GEES disciplines. This is based upon student expectations when they embark upon geography, in particular, to answer questions such as 'what can I do with Geography?' Employability of graduates is also a governmental expectation. A scheme of employability skills is outlined and placed in the context of education which is experiential. The importance of tacit knowledge is emphasised, and placed in an assessment context using criteria referencing. These curriculum attributes should both entice students to the subject syllabus (content) as well as retain them, to maximise 'graduateness'. The skills agenda helps to deliver subject-specific material in appropriate syllabi. It is further suggested that Howard Gardner's 'five minds for the future' provides an overall rationale for 21st century education.

We, perhaps, respond to students and parents at school recruitment fairs about 'what you can do with a geography degree', by providing examples of past student jobs, probably with no statistics, but convince students that they will get a degree in a subject they like and that it will make them fitted for employment. The government certainly wants a graduating population to be wealth-creating. Knight and Yorke (2003) have pointed out that the Robins report stated as much in 1963. Discrete enquiries of colleagues, however, suggest that such a utilitarian focus is not what they think students are there for. Yet asking students in mid-course whether they would like (some/more) employability skills suggests that they would. Are these skills supplied in our programmes? A recent paper by Peter Washer (Washer, 2007) makes an excellent case for making key (or employability) skills, an important part of the curriculum. As Washer states:

Put bluntly, the vast majority of students around the world go to university with the prime, perhaps even sole, aim of enhancing their career prospects

Further, Washer suggests (p. 60) that:

This model of a liberal education for an elite few and these prejudices against vocational education and skills persist, despite the evidence of Britain's relative economic difficulties in the global context. The British higher education system was designed for a minority, for an age when knowledge changed slowly, and when jobs were frequently 'for life', whereas in the modern world, there is mass participation in higher education, knowledge and technology advance rapidly and short contract and portfolio work is increasing.

However, if we ask 'what expectations does the university sector have about degrees?' the answer probably relates to the percentage of 1sts and 2is or perhaps, 'the tail' of 2iis and 3rds. In other words, it is assessment-standard oriented. This is perhaps understandable, in a way that relates to a degree which might have been appropriate from Victorian times to the 1980s, but which is increasingly difficult to defend if academics continue to look on a graduating class as a source

of research students. The assessment orientation, however, is related to a single valued function of three year's achievement. This function, as Rust (2007) has recently summarised, is, itself, a curious and variable animal. Unfortunately, as Boud (2007) has argued, university assessment policies tend to be driven by 'quality assurance, of confirming learning outcomes'. Yorke has also discussed some of these issues from a student perspective (Yorke, 2004). Such approaches do not necessarily provide good learning experiences that provide 'graduateness'.

Some ways will now be explored, to provide a degree more suited to student needs in the 21st century. There is not space here to present and discuss the many ideas, both pedagogic and practical, that emanate from a full analysis. Restriction is given by outlining ways of managing the curriculum to produce a better experience of employability skills that would help to satisfy student (and government) needs for this 21st century degree, and also provide balanced academic subject coverage.

Curriculum and syllabus

Here, I distinguish between two words that are mostly used inter-changeably: curriculum and syllabus. In brief:

Curriculum: the manner in which a subject is taught (within, for the sake of simplicity here, a

three year degree). This is the main pedagogic rationale of Aims, Objectives, Learning Outcomes, skills delivered within a year-progressive structure, which includes aligned formative and summative assessment control systems.

Syllabus: the main subject matter that is taught within (or on top of) the curriculum. Benchmarking, for example, is thus largely within a subject's syllabus.

Although this is not a clear-cut division, it does allow us to distinguish more clearly what is taught in the syllabus (subject matter), from the way we do it in a curriculum (see e.g. Diamond, 1998). Within GEES disciplines, for example, the basic tenets of a curriculum allow us to bring best practice to bear within field and laboratory work, library and archive investigations etc. Consequently, skills, especially employability skills, are largely within the curriculum domain. We can then use this distinction to explore better ways of linking academic aspects of syllabuses into aligned curricula.

Employability skills

If a subject is to mean anything in terms of providing a student's needs to study at university then, following from some of the comments in Washer (2007), his useful four-way expectations of employability skills (Levels 3-6; university entrance, year 1, year 2 and year 3) is a

Table 1:

Taken from Washer (2007) Level 3 or Entry Level at admission into university, students should be able to:

| | |
|---|--|
| <p>Communication skills</p> <ul style="list-style-type: none"> • Read and identify the main points and ideas from documents about straightforward subjects • Understand and communicate clearly (e.g. speak and write) in English about straightforward subjects • Working with others • Take part in discussions about straightforward topics • Work or study under supervision with some autonomy • Work co-operatively with others | <p>The use of information technology</p> <ul style="list-style-type: none"> • Use a web browser to find, explore and develop relevant information • Use the basic functions of a word processing package • Send and receive electronic mail |
| <p>Problem solving</p> <ul style="list-style-type: none"> • Understand straightforward problems and identify options for solving them • Try out identified options, using support and advice given by others • Solve routine problems using simple rules and tools • Check if the problem has been solved and describe the results | <p>Learning how to learn</p> <ul style="list-style-type: none"> • Use relevant information to carry out tasks • Plan how to meet short term targets • Review progress and achievements • Be aware of their personal learning preferences |
| <p>Numeracy</p> <ul style="list-style-type: none"> • Interpret numerical information appropriate to the discipline • Carry out straightforward calculations using whole numbers, simple decimals and percentages • Interpret the results of calculations and present findings in an appropriate format | <p>Personal and professional development</p> <ul style="list-style-type: none"> • Follow a plan to meet targets and improve performance • Understand why they wish to gain a degree |

benchmarking exercise. Although some of these attributes are arguable (for example, a CV perhaps should be within PDP preparation of year one, rather than at year three), nevertheless they are a good start. Washer's main skills divisions are:

- Communication skills
- Working with others
- Problem solving
- Numeracy, (to which we should add Graphicacy)
- The use of information technology
- Learning how to learn
- Personal and Professional development

Table 1 is his suggested expectations at the entry to university. Detailed analysis of these expectations and attributes will be considered elsewhere, but here I shall focus on two aspects, skills assessment and delivery, and 'fly a kite' on another.

This allows what we really need from assessment, not a mark that is given for achieving a (staff-oriented) standard, but, rather, that marks are used to guide students as to what is important to do a task well.

Assessment, criteria referenced marking and what this may tell us

Students' learning experiences once they have been 'recruited' to a GEES course are important in relation to their retention—how we meet their expectations of what type of assessment and how it is carried out is likely to have an impact on this.

The use of explicitly stated criteria in marking students' work is becoming increasingly seen as good practice instead of 'norm' referenced marking (Kempa, 1986; Rowntree, 1987). Various papers, (e.g. Neil et al., 1999; Rust et al., 2003; Baum et al., 2004, and Tan and Prosser, 2004) have reviewed some of the basic ideas and principles of criteria referenced assessment, the first from a geographic perspective. However, in the main, the criteria are rather generally stated as expectations, perhaps for a particular level. Neil et al. (1999), for example, provide a specific example for geographical essays.

When marking practical work, then, it is both easier and more student-orientated to define what is required. This allows what we really need from assessment, not a mark that is given for achieving a (staff-oriented) standard, but, rather, that marks are used to guide students as to what is

important to do a task well. Table 2 gives a simple example by showing what is required from a poster reporting a piece of work. This uses a more precise statement and categorisation of what is expected to be achieved. Not only does this provide some guidance to the students, but shows what must be achieved to accomplish sub tasks and what those sub tasks actually are. The assessment drives the learning rather than rewards per se. Furthermore, remarks returned to the student allow focus on what was achieved, or not. This is experiential learning with guidance. For one of my modules, all practicals were posted on a web-site portfolio, which required comments about each practical, and how well the work had been done.

It might be argued that if we supply such criteria, then students may achieve 100%. Ideally, yes they should because they have done the task 'well'; i.e. learned by their experiences. In practice, however, they don't! Both points, however, reinforce the view that, 'if not 100%, why not? Were students too lazy? Were they incompetent? Or could they not be bothered to motivate themselves? Additionally, were the instructions too vague? Was too much 'hidden' knowledge required? All are possible, and students should reflect on this as it provides information for the 'feed-forward' process, which also helps the tutor. A single set of instructions may not fit all. What is 'just right' for Goldilocks may be too demanding for Baby Bear, but too trivial or undemanding for Mother and Father Bear.

The assessment drives the learning rather than rewards per se. Furthermore, remarks returned to the student allow focus on what was achieved, or not

Criterion-referenced marking highlights a problem in providing appropriate lab class (or fieldwork) instructions. If the instructions are too all-embracing they may be too complex and the student 'switches off'. This may be the equivalent of the 'programming a video recorder is too difficult for me' syndrome. This example, in 'The design of everyday things' (Norman, 1988), is used to show how designing objects and instructions can be difficult without considerable thought; 'Most things are intended to be easy to use, but aren't (Norman, 1988, p. 204). We can use some of the design principles in Norman's work to design better practicals—learning experiences. However, more instructions may not mean better understanding by students. This should include not only what to do and what not to do, but how the task is to be assessed.

Table 2.

A simple criterion referencing associated with the production of a PowerPoint Poster. Your poster 1 should contain

| Item | Notes | Approx. % | given |
|---|---|-----------|-------|
| Title and author, Aim, objective(s) | Well positioned, clear | 5 | |
| Map (s) of the field site | Good indications, not cramped | 5 | |
| Location of field site | Info about the site | 5 | |
| Between 4 and 6 images of field locations | 'Right' size, not distorted | 5 | |
| Captions and remarks for each image | Your observations on each | 20 | |
| Links on poster from images to site map | Show where locations are | 5 | |
| Summary of findings | Distinct, perhaps in separate box | 20 | |
| Reference to related investigation | Specific to site, you find this | 10 | |
| Reference list | Not over long, max say 6 refs | 5 | |
| Layout, lettering, organisation | How well you have done this | 10 | |
| Discretionary | Re layout and organisation but esp extra (relevant) content | 10 | |
| | Total | 100 | |

Skills delivery and assessment

The more psychologists probe the workings of the brain, the more we realise how complex it is. Some of the points sketched above suggest that, if we want students to experience their learning in a way likely to positively impact on retention, we need to be increasingly aware of this complexity in teaching, especially with respect to learning opportunities for students. The skills, for example those in Table 1, do not specify how they should be actually delivered. The short reply from the foregoing is 'experientially', although the associated caveats have been hinted at. The skills programme above should be experienced by students with specific attention to the transfer of tacit knowledge.

Furthermore, there is more to experiencing than just doing or seeing. Some close reading and marking of student field and lab notebooks suggests that even good students do not always realise what is going on, or understand what they have 'observed'. This deficiency in writing reports and related tasks has also been noted from elsewhere (see, for example, some interviews in Shapiro (2003)). For some reason their experience is not related to 'deep learning'. The difficulty students may have in appreciating the 'hidden knowledge' referred to above may be related to the importance of tacit knowledge.

The useful distinction between 'explicit' and 'tacit' knowledge is due to Polanyi (1967); tacit knowledge is that which is carried in the mind ('we

know more than we can tell'). The role of tacit knowledge in assessment is discussed further by Rust et al. (2003). Clearly, different people with different experiences and abilities have different tacit knowledge bases. Master and apprentice come to mind, in that the apprenticeship relates to conveying tacit knowledge by experience, from master to student. Thus, how do we best convey this tacit knowledge, which may be very important in solving problems? A further point about delivering, or discovering, tacit knowledge is the importance of a social context, and is closely related to the 'affective domain' (Boyle, 2007; Boyle et al., 2007).

A forward view of the world order?

The previous sections have been concerned primarily with aspects of the curriculum. Some will rail against an instrumentalist view of what university education 'should' be. University education should be so much more than 'skills'. And so it should. Here, I merely suggest that the skills agenda should be based in a syllabus, which contains not only subject matter, but attempts to blend these aspects within 'education for the 21st century' and, which is applicable for any discipline. The essential book is Gardner (2006) who states:

Those at the workplace are charged with selecting individuals who appear to possess the right kinds of knowledge, skills, minds – in my terms, they should be searching for individuals who possess disciplined, synthesizing, creating, respectful, and ethical minds. But

equally, managers and leaders, directors and deans and presidents, must continue perennially to develop all five kinds of minds in themselves and – equally – in those for whom they bear responsibility. (Gardner, 2006, p. 9)

Gardner's thrust is that education should encompass these 'five minds' and perhaps these should provide an over-arching remit for the construction of curriculum and syllabus.

Discussion—bringing the elements together

The original intent was to look at a 21st century curriculum, and I argue that employability skills should be a major aspect of this, fulfilling the needs of students and employers (and government policy), but allowing appropriate subject matter (syllabus) to be developed within this structure. Experiential learning is necessarily a significant part of this education. However, there is clearly much research to be done in this field and in the assessment of experiences in particular. (This is one significant reason why the secession of coursework at A-level Geography is to be deplored.) The provision of coursework commentary ('marks and remarks', or 'feedback') and recognition of the importance of tacit knowledge within experiential education is important.

Statements from employers are seen in the press to the effect that, 'students can't'. However, from a more positive viewpoint, skills can be linked to employability, as shown in the arguments of Oblinger and Verville (1998) in a general context, and in GEES-related environments by Gedye and Chalkley (2006). The former is from a north American viewpoint and the objectives are very similar to The Conference Board of Canada document (in Diamond, 1998) which outlines foundations skills for employability, and makes an interesting comparison with the level statements in Washer (2007). Where problems arise in real world teaching, is in bringing syllabus materials into employability with appropriate assessment. This appears to be one area where considerable effort is now required in the development of ideas in teaching (Gedye and Chalkley, 2006) with appropriate assessment. If universities really are knowledge-creating institutions (Nonaka and Takeuchi, 1995) then perhaps businesses that promote such tacit, as well as explicit knowledge transfer, should be suitable models for education in an employability setting.

Conclusions and a look forward

In the belief that 'it all comes down to assessment', the following tenets by Clegg and Bryan (2006) are useful pointers for the way we should be going:

- Active participation in authentic, real-life tasks that require the application of existing knowledge and skills
- Participation in a dialogue and conversation between learners (including tutors)
- Engagement with, and development of, criteria and self-regulation of one's own work
- Employment of a range of diverse assessment modes and methods adapted from different subject disciplines
- Opportunity to develop and apply attributes such as reflection, resilience, resourcefulness, and professional judgment and conduct in relation to problems
- Acceptance of the limitations of judgment and the value of dialogue, in developing new ways of working

(Clegg and Bryan, 2006, p. 225)

Graduates should leave higher education better in many ways than when they entered it, and this improvement should be attributable to the undergraduate curriculum, rather than to the fact they are simply three or four years older. They need to be equipped with skills that they can use to 'sell themselves' to employers. (Washer, 2007, p. 60)

Of great importance to universities and to the GEES disciplines, in particular, within them is recruitment, retention and 'return'. Students' experience at university and how their expectations are met, has an impact on these. Experiential learning is a critical way of involving students in their learning programmes from entry to graduation. Integrating such schemes into the curriculum should improve student learning and improve performance in the employability skills. Achievements in subject material should also be attained at the same time because of the better use of learning and, especially, assessment techniques. It all comes down to assessment.

The last four years have seen what I believe to be three important books on assessment in the HE sector—Knight and Yorke (2003), Boud and Falchikov (2007) and Bryan and Klegg (2006). We need to take ideas and inspiration from these contributions and build assessment methods that are appropriate to experiential and constructivist learning to help develop curricula for this century. These curricula also need to be implemented on, or within a 'skills agenda'. There should be

no difficulty in implementing subject specific syllabuses within such curricula.

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Masters marketing: routes to success?

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Abstract

In today's increasingly competitive environment, attracting the quality and quantity of students you require for your Masters portfolio is no longer a given: a pro-active approach to what is often a very diverse market is now needed to produce the desired results. And because of the diversity of the market and the available channels through which the market can be reached, it can be difficult to determine where to start, and what will work.

There are many routes to success when recruiting students to Masters courses. Here, we outline briefly three key elements that are crucial to the process:

- Understanding your market
- Effective marketing – communicating value
- Sustained, excellent customer service

This paper is a brief overview of the presentation delivered at the GEES Subject Centre national conference in July 2007.

Understanding the market: market segmentation

The easiest place to start when identifying your markets is with your existing student body. Often, assumptions are made about students based on who the course was originally intended for, that may not be correct: As a result, markets may be missed and marketing information may be inappropriately targeted. This approach works particularly well for a group of related courses, and, to be really useful, should include enquiry, applications and admissions data for up to three years.

This type of market analysis will provide a breakdown of key information on the current markets served by the course, including, for example, age and career stage; country of origin; previous institution; and how and when students accessed information and applied. From this information, existing core markets can be identified, as well as unexpected market opportunities, which can then be explored.

In the same way, analysing career or study areas that course alumni have progressed into can be usefully compared to the stated purpose of the course. What the course is selling may not be the same as what potential students were buying, and new markets may be identified as a result.

Students who declined an offer are another important group. The results of a decliner survey can provide a range of information from attractiveness of course content, to information needs, customer service and pricing. This may result in modification of courses, and/or identification of course elements that are present, but need to be emphasised.

Effective Marketing: the communication of value

A thorough understanding of your markets from the market analysis then allows you to identify which markets to concentrate on, and what those markets need from you to understand the



benefits of your courses. Communicating value is essential. Many course descriptions concentrate on the content of the course, and leave potential students to identify the implied benefit. Making benefits explicit, preferably with examples, such as student and alumni profiles, ensures the value of your course is immediately identifiable to potential students. For example, for a newly identified market of mid-career professionals, course descriptions can be amended to make benefits explicit: 'This course provides mid-career professionals with specialist information that is much in demand in the X profession. Course alumni now occupy senior management positions in a range of companies including X and Y'.

And your market analysis will provide you with information on how and when your potential students will access information, so marketing channels can be chosen to maximise effectiveness.

The Importance of Customer Service

Increasingly, individual courses and institutions are differentiating themselves not only through content and markets, but also through customer service. In a diverse, competitive marketplace, students are likely to apply to a range of courses and accept

a number of offers. Really effective customer service goes beyond the mechanics of enquiry and response, many of which can be handled through efficient systems and use of FAQs. Potential students also need the opportunity to engage with a department, and to feel that the department is willing to engage with them. This requires regular communication, opportunities to visit, or contact at external events. Creating a community of offer holders before enrolment, either electronically or via an offer holders' event, or both, can then create a powerful sense of engagement and belonging, and help ensure that the students you want will choose your course.

These are just some of the core elements of successful marketing at Masters level. More information is available at www.PostgraduateDirections.org.uk or you can contact me directly.

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GEES Resource Briefing on BS 8848: a specification for visits, fieldwork, expeditions and adventurous activities outside the UK

The new BSI British Standards BS8848 was published in April 2007. It specifies operational requirements for organisers of fieldwork activities and student placements abroad.

To help you make the most of this new standard, the GEES Subject Centre is publishing in late February 2008 a Resource Briefing available at www.gees.ac.uk.

BS8848 is open for feedback during its first year, with the last **date for suggestion being 23 April 2008**. To comment on BS 8848 email sarah.horsfield@bsigroup.com.

Copies of the new standards can be ordered from the BSI web site at www.bsigroup.com/shop. Please note that charities are eligible for a discount. To order at the reduced rate, email orders@bsi-global.com with your registered charity number.

An employer's perspective on the recruitment & retention of GEES graduates in the Environmental Sector

Chris Thomas

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Introduction

The Environment Agency is the leading body in England and Wales protecting and improving the environment. As one of the largest employers of geoscientists, we have been affected in recent years not only by the quantity of graduates, and particularly postgraduates, applying for our posts, but also by the quality of their core technical skills.

We have a range of geoscientist-related roles, but employ a significant number of GEES subject graduates in a wide range of other roles. In this paper, the scale and type of GEES subject-related work is summarised before concentrating on the specific investigations and workforce planning that is in progress relating to geoscientists. This paper is based on the presentation given at the GEES Subject Centre Conference 2007.

About the Environment Agency

The Environment Agency is the main body with responsibility for the protection, improvement and regulation of air, water and land in England and Wales. As such, we are the largest UK employer of hydrogeologists, the second largest employer of geoscientists and one of the largest employers of GEES subject graduates.

Of our 12,500 staff, a significant proportion, possibly 40%, are likely to have a background in environmental science, geography, earth science or related subjects. The roles that they undertake include providing environmental advice, regulation, monitoring, protection and dealing with incidents. That work could be related to water quality, water resources, flood risk management, conservation, land quality—from agriculture to contaminated land, air quality, land use planning or recreation. Within this range of work, there are roles for:

- good communicators and the practical application of skills in field roles
- technical specialist roles for the more experienced staff, who are able to mentor less experienced staff
- supporting office-based roles, including scientific research and report writing

We employ around 350 geoscientists, 1200 field officers, 160 science and research staff plus many more in monitoring, hydrology, hydrometry, geomorphology, land use and climate change related roles.

Our entry requirements

Generally, we would require new staff to have a relevant scientific degree for all GEES related positions. Geoscience roles have traditionally required a postgraduate qualification for even the most junior positions. The science and research roles have similar requirements for postgraduate degrees, especially in more senior positions. Whatever the academic background of new staff, there will be further development, training and 'on-the-job' experience provided before someone would be considered fully capable of doing their job.

What issues have the Environment Agency had with recruitment and retention?

For this section, the issues can best be illustrated by concentrating specifically on geoscientists, where we have the most complete data set.

The work of the geoscientists within the Agency can be broadly divided into four areas:

- groundwater quality—monitoring, pollution prevention, land use planning, regulation
- groundwater resources—abstraction regulation, catchment management, monitoring, resources modelling
- land contamination—re-development, regulation and remediation of land and water, risk assessment
- geotechnical—slope stability, landfill liner assessment and engineering, landfill gas etc

From the mid 1990s, there was a reduction in the number of hydrogeology and other related postgraduate courses. This, combined with the introduction of tuition fees and increased student debt, led to less people choosing to do postgraduate courses. Consequently, there was a reduction in the number of available candidates for us to recruit. Such courses had been the source of the majority of our geoscientists for many years.

In addition, when we started to analyse the data on our 350 geoscientists, we found that in 2001/02, our turnover for geoscientists was 44%, when all internal and external staff movements were included. The largest group of staff that were leaving was after 2-3 years service. This was a pay-related issue. Our salary bands enabled enhanced percent salary increases for the first 3-4 years provided there was demonstrable development. After a maximum of 4 years, staff moved onto performance-related pay and the potential increases each year were smaller.

Further analysis showed that while we could easily attract graduates to apply for our geoscientist roles, there was an increased need for specialist training and development that had previously been provided by the universities during M.Sc. courses. Around this time, we were spending over £1 million per year on consultants to cover vacancies to enable us to deliver our day job (i.e. excluding any specialist project work). Often the consultants were as inexperienced as our own staff and were costing us far more. We had around 35-40 vacancies in our operation technical teams at this time.

What did we do about it?

We set up a working party with representatives from the four areas of geoscience, including those with operational experience, with support from our HR and workforce planning colleagues. This group gathered data, tried various solutions and started much of the work that has been delivered in the last couple of years. In 2005, the Head of Business role for Geoscience was created with a remit to understand, monitor and review the state of the geoscience workforce and to develop a workforce plan for the future.

The most significant action has been to define what technical capabilities our geoscientists need and prepare a technical development framework to enable staff to assess their capability levels and develop into the future. Team Leaders can use the data for succession planning and to identify skills gaps; individuals can clearly see how they can progress to higher capability levels and training can be targeted to the key capability gaps in teams and across the Agency. The key capabilities can be grouped into four categories:

- health and safety of themselves and others
- personal 'behaviours' or skills such as written and oral communication, team work, customer focus, influencing etc

- core technical skills such as multi-dimensional conceptualisation (thinking in 3-D), numerical modelling (including basic risk assessment through to water resources regional modelling or contaminant transport modelling), basic geological knowledge etc
- application of the core skills through knowledge of legislation, to permit applications and compliance inspections etc

For each of the capabilities, there are five levels ranging from awareness, working supervised, working unsupervised, area or regional expert and finally, national expert. In the specialist capabilities, such as groundwater modelling, there are less than 10 of our staff at the highest level of capability. For each role and grade, the expected level of capability is defined as well as the expected level when fully capable.

The framework was launched in December 2006, with the first results collated nationally during February and March 2007. The results were alarming as they showed for the operational teams that 20% of the workforce was below the entry level in the core technical skills. 40% of staff needed supervision for much of their work. The data revealed that staff seemed to be more capable in applying the core skills than in the core skills themselves. On the plus side, the health and safety and personal skills were not a problem.

Other related work has included a link on the Environment Agency's website for receiving geoscientists' CVs, a short term retention bonus for existing staff and a national recruitment campaign. By early 2007, there were only eight vacancies in the operational teams but, as a consequence of filling the large number of vacancies from 2001 and the former high turnover, over 40% of the staff now have less than 5 years experience and are still being trained and developed.

The results were alarming as they showed for the operational teams that 20% of the workforce was below the entry level in the core technical skills. 40% of staff needed supervision for much of their work.

What is happening now?

The key areas to be tackled in the future are the development of the core technical skills in our existing staff and reducing our tendency to recruit

poorly skilled new staff, with the goal of developing a workforce plan for the next 3-5 years.

By developing new assessment tools and resources and providing training and mentoring for staff, we are reinforcing our recruitment criteria with team leaders—the need to get a person in post must not take precedence over them having the core skills, if at all possible. If people need to be appointed with skills gaps, we will have a structured training and development programme to improve their skills.

For this group, and more specifically, our existing staff, we are developing a series of postgraduate modules specific to our core technical capabilities under an umbrella arrangement that the Environment Agency has with the University of West of England. We are working with national academic, Agency and industry experts to develop and deliver different modules. The modules already in existence include groundwater hydraulics, conceptual modelling, borehole construction and aquifer characteristics. In development this year, we have modules relating to groundwater hydrochemistry, groundwater contaminant fate and transport, geotechnical engineering, remediation risk management and landfill gas. We have 45 CAT points approved so far and a further 50 in development. Staff will be able to complete as few or as many modules as the business needs. Some will be able to complete an M.Sc. degree after additional research linked to a work-related topic or project.

As well as this, we are working closely with various universities, especially those with postgraduate courses or research in relevant subjects, to provide either single modules or specific additional courses for our staff. A sponsorship scheme for places on postgraduate courses has not been progressed, as the main current issue is with our existing staff rather than attracting new ones.

Our new workforce plan will enable us to define the number of staff we need to deliver geoscience work in 3-5 years and for us to plan on how to improve the current capability levels to get there, with any related changes that arise from new legislation, organisational priorities and more capable staff, who need less supervision. This will also include a continued need to attract and train new staff, but at an acceptable lower turnover rate and through use of the expertise of our older, more capable staff as mentors.

The technical development framework data on capability levels across the Agency will soon be

We are developing a series of postgraduate modules specific to our core technical capabilities under an umbrella arrangement that the Environment Agency has with the University of West of England.

collected again, with a view to separating those capabilities that staff can do, from those that they are required to use to deliver their current role. For example, someone may have skills in groundwater resources but only currently be delivering land quality or vice versa. If they scored their capability for both types of skills, one would probably be higher than the other, giving a false picture of the situation. We have set ourselves a target of 15% improvement in overall capability this year.

Conclusion

The recruitment and retention problems affecting universities have knock on effects to the employers of such graduates. As employers, we have to fill the training gaps left by universities. The key missing skills relate to the ability to think in 3D and to apply the knowledge and theory they have learned to real situations. The Agency has identified recruitment and retention issues in geoscience, hydrology, civil engineering (flood risk management) and land use planning at present.

We are concerned about any recruitment and retention issues in GEES subjects at undergraduate and postgraduate level, as this can only increase the pressure on employers to provide additional training and will further reduce the available candidates for any vacancies. There is a need to promote interest in these subjects within schools and for employers to promote the range of potential jobs that the GEES subjects can lead to at schools and universities.

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The data provided in this paper was gathered as part of the Environment Agency's work on recruitment and retention of geoscientists. The views expressed in this paper are those of the author and do not necessarily represent those of the EA

Some key ideas on recruitment and retention in the GEES Disciplines

The GEES Subject Centre Conference 2007

The 2007 GEES Subject Centre residential conference, themed on Recruitment and Retention in the GEES disciplines, yielded some useful key ideas from attending delegates. Listed below are some 60 suggestions (in no particular order) that derive from the conference presentations and workshops, from informal conversations in the bar and over dinner, and from post-it notes completed by some delegates on departure. We hope that Heads of Department, staff responsible for recruitment etc and, indeed, all GEES academics will find this set of ideas to be useful.

Recruitment

1. Re-design promotional websites to get into the student 'mind set'. The quality and accessibility of websites is obviously now crucial.
2. Research your own institution for good practice in recruitment and retention. What are other departments/schools doing? Learn from their experience.
3. Become involved with Student Ambassador Programmes. For example, find out about the RGS-IBG Ambassador Scheme (contact Kate Amis at kate.amis@rgs.org).
4. Establish and run a subject-based conference for local schools (e.g. providing guidance on how to succeed at 'A' level and/or life at university).
5. Advertise and promote the career benefits of a GEES degree.
6. Adjust your curriculum to enhance graduate employability and links to the world of work. (We know that about 90% of students enter HE primarily to improve their career prospects.)
7. Use a survey or focus group of your former graduates to identify ways in which your degree programme(s) could be enhanced, particularly in terms of career relevance and employability.
8. Read the GEES Subject Centre guide and other GEES resources on how to enhance employability in the GEES disciplines (<http://www.gees.ac.uk/projtheme/emp/employ.htm>)
9. Support the Geography Action Plan and other comparable initiatives in related disciplines
10. Use your alumni as 'recruitment agents' especially those in school teaching.
11. Ensure your staff have a good understanding of what is taught at GCSE and A level and how the school curriculum is changing.
12. Get prepared for the new Diplomas and revise your advertising and admissions policies accordingly.
13. Provide guest lectures/workshops in local schools
14. Provide CPD activities for school teachers e.g. on climate change, GIS or supporting the new Diplomas.
15. Explore the Leitch agenda on skills, employer engagement, CPD and learning in the work-place. Might new provision and programmes in this area help to offset the forthcoming demographic decline in the number of 18 year olds?
16. Devote more staff resource to recruitment. Try to ensure that everyone sees it as their job to bring in 'customers'.
17. Consider a substantial time release for one or two staff who could lead up on recruitment.
18. Try recruiting overseas for all courses but especially for those at Masters level.
19. Reward staff who excel in recruitment (promotion, conferences, travel etc)
20. Develop a 'special relationship' with schools that provide (or have the potential to provide) a significant number of your students.

which could encourage students to take GEES subjects at degree level.

21. Work not just with 6th forms but also with pupils at key stages 3 and 4 (or even earlier).
22. Provide a fieldwork experience for local schools/pupils.
23. Work with your institutional Widening Participation Unit (minorities and disadvantaged groups tend to be under-represented in the GEES disciplines).
24. Upgrade your fieldwork curriculum so that it is prominent in your advertising and looks attractive.
25. Enhance your Open/Preview days so that prospective students (and their Mums and Dads) are made to feel really welcome and leave with a very positive impression.
26. Polish up your promotional literature.
27. Keep prospective students/applicants 'warm' by staying in touch with them ('good luck in your exams', newsletters, novelty items)
28. Remember that these days most students work part-time. Ensure that potential applicants are aware of the kinds of part-time job opportunities available locally.
29. Advertise our disciplines' generally strong performances in the new National Student Survey (our 'customers' are 'happy')
30. Ensure your department and/or its students appear in the local, regional or even national media (for good reasons, if possible!).
31. Design your website so that 6th form students visit it to help their A levels.
32. Think in terms of customer relationship management (CRM) and building a relationship with your prospective students.
33. Offer more Open/Preview Days and perhaps provide non-attendees packs for those unable to come.
34. For students who ultimately did not enrol on your degree course, find out why they became 'decliners'. What put them off? Why did they go elsewhere?
35. Set up a marketing and recruitment committee to lead up and co-ordinate work in this area. Prepare a plan or strategy.
36. Take steps to ensure that your current undergraduates are fully aware of the postgraduate courses and opportunities you offer.
37. Especially at postgraduate level, market by segments not by subjects.
38. Develop classroom materials for use by schools
39. Offer revision courses to local school pupils.
40. Design a curriculum which matches student needs and interests (not those of the staff). Let's get modern!
41. Calculate roughly what proportion of the staff's time and the department's budget are devoted to marketing and recruitment. Given the importance of student numbers, is it enough?
42. Think about the department as a small business. Consider the importance which small businesses typically attach to bringing in customers and ask whether you are giving it a comparable level of priority and resource.
43. Consider widening your portfolio of courses.
44. Review the website and promotional literature of other departments and disciplines. Identify examples of good practice.

Retention

1. Focus on linking the curriculum to the students' academic background and preparedness.
2. Adapt your current induction programme to include less talking from Programme Directors and more listening to students and getting them to work together and with Subject Tutors.
3. Try to give your students a real sense of belonging, engagement and community – through both academic and social activities.
4. Ensure that students at risk of leaving (or under-achieving) are identified and given appropriate support and encouragement.
5. Remember that for some students leaving university or changing courses will be the right decision.
6. Provide good pastoral support and an active personal tutoring system. Ensure every student is known.
7. Motivate students through active learning and fun. Ensure that they see the purpose, value (and sometimes the career relevance) of their GEES studies.
8. Bring back some former students early in the course who can act as possible role models: 'you could be where I am in three/four years time'.
9. Use your best teachers in stage one.
10. Use you alumni as mentors and perhaps as sources of work-based learning placements.
11. Consider using fieldwork early in the first term to increase social bonding and to help students to fit in (not a guaranteed aid to retention but it might help)
12. Bring in guest speakers representing different areas of career opportunity (e.g. Environment Agency, petroleum industry etc)
13. Provide sensitive and constructive feedback on students' work. Try not to demoralise 'weaker' students.
14. Remember that students may not be happy discussing any academic issues they are having with someone who marks their work ('If they know I'm struggling, they'll mark down my work').
15. Consider seeing your students as 'customers' who (given fees etc) increasingly expect and are entitled to excellent 'customer service'.
16. Remember that although students may be struggling to 'settle down' in their first year, it is in their third year when they are most under pressure and likely to 'crack'. Just because they have learnt the ropes by now doesn't mean they aren't in need of support, especially as this is the time where they have the least face-to-face contact.

If you have other suggestions that you would like to add, we would be delighted to hear from you via email to elaine.tilson@plymouth.ac.uk.

GEES Subject Centre Small-Scale Learning & Teaching Project Funding 2008-09

Have you got a curriculum development idea or an interest in researching something about student learning in the disciplines? Have you been to a GEES Subject Centre event or been involved in one of our other activities that you would like to follow up? Then how about bidding for some project funding!

The GEES Subject Centre has set aside funding for 2008-2009 to support small-scale learning & teaching projects for one year. It is expected that funding for individual projects will normally be in the range £2,000 - £5,000 and will be awarded by open competition to projects that will enhance student learning and / or enrich the learning and teaching research literature in one or more of the above three disciplines.

You will be able to find further information at <http://www.gees.ac.uk/> from mid-March onwards.

Coming up in 2008...

| Activities | Details |
|--|--|
| Planet | Each year, we produce two issues of Planet: The Special Issue is released in December/January, after the GEES Subject Centre Summer Residential Conference, and contains the papers for each of the conference sessions. The General Issue is released six months later in June/July, after a call for papers. The copy deadline for the Special Issue is 31 March and for the General Issue is 30 September each year. |
| Postgraduate Conference: Developing issues associated with taught postgraduate level education within the GEES disciplines | We will be running an event on this topic on 26 February 2008, in association with SPacial Learning IN Teaching (SPLINT). For more information and registration forms, please see our web site www.gees.ac.uk . |
| Earth Science Fieldwork Guide (and Environmental Science Fieldwork Guide) | Guides with information, ideas and resources relating to fieldwork will be published for Earth Sciences February/March 2008 (and for Environmental Sciences later in 2008). |
| Student Essay Competition | The title for the Higher Education Academy Student Essay competition is: "Discuss the best & worst feedback you have had on your University course work" Deadline for submission: 28th March 2008. For more information and submission forms, please see our web site www.gees.ac.uk |
| Small Scale Learning & Teaching Project Funding 2008-2009 | Call for bids for the GEES SC L&T Project Funding will be open from 17 March—2 June 2008. Do you have a curriculum development idea or an interest in research on student learning in the disciplines? If so, then try bidding for up to £5000. More information available from 17 March at www.gees.ac.uk . |
| New and Aspiring Lecturers' Workshop | For new academic staff and post graduate teaching staff, we will be holding our annual workshop in Birmingham from 10-11 April 2008. Registration is open from February 2008. For more information please email elaine.tilson@plymouth.ac.uk or visit www.gees.ac.uk . A New and Aspiring Lecturers' Resource Pack will also be available from 10 April 2008. For more information on the pack please contact esther.bobek@plymouth.ac.uk . |
| GEES Subject Centre Residential Summer Conference | We, we will be holding our 2008 GEES Subject Centre Summer Residential Conference in Edinburgh from 2-3 July 2008. The theme is 'Employability and Employer Engagement in the GEES Disciplines'. |
| Scottish Network Meeting | We will also be holding a pre conference event, before the GEES Subject Centre Summer Residential Conference, specifically for staff in Scottish institutions on 1 July 2008. |

| Activities | Details |
|---------------------------------|--|
| 20 Departmental workshops | As usual, we will be running and facilitating 20 departmental workshops throughout the year. Please note that the quota for workshops this year has been filled. However, if you would like to apply for a workshop for next year, please contact esther.bobek@plymouth.ac.uk . |
| Extended Departmental Workshops | We will be completing and reporting on the success of our pilot extended departmental workshops, and evaluating how this idea could be facilitated in the future. |

* Please note that some of these dates may be an approximation. Accurate information is on our website at www.gees.ac.uk and will be circulated when it is available, on the GEES Subject Centre announcement list (to sign up please visit <http://www.jiscmail.ac.uk/lists/gees.html>).

GEES Subject Centre Summer Residential Conference on Employability and Employer Engagement

2-3 July 2008, Edinburgh

The GEES Subject Centre will be holding our 1 ½ day Summer Residential Conference in Edinburgh, 2-3 July 2008.

To follow on from last year's theme of recruitment and retention issues, this year's theme is 'Employability and Employer Engagement in the GEES Disciplines'.

More information, calls for contribution and registration details will be available in February 2008. For more information, please visit www.gees.ac.uk or contact elaine.tilson@plymouth.ac.uk.

New and Aspiring Lecturers' Workshop

10-11 April 2008 at the University of Birmingham Conference Park

This two-day residential workshop is designed for recently-appointed teaching staff and postgraduates/GTAs who are aspiring to be lecturers in Geography, Earth and Environmental Sciences (GEES).

The aim is to help participants learn about, evaluate and discuss a range of approaches, methods and resources for learning, teaching and assessment in these disciplines.

By being discipline-specific the event will complement any generic-based institutional courses that delegates are attending or have taken. It will also provide an informal opportunity for delegates to meet and share experiences with new GEES staff from other institutions.

Registration will be opening in February 2008. For more information, please visit www.gees.ac.uk or contact elaine.tilson@plymouth.ac.uk.

The GEES Subject Centre runs 20 FREE Departmental Workshops each year

To date, the GEES Subject Centre has co-ordinated and funded about 200 workshops in GEES departments. This programme has been designed to support the GEES communities' learning, teaching and assessment needs.

Current workshop topics include:

- Independent learning
- Fieldwork
- E-Learning
- Problem based learning
- Key skills
- Practicals and Laboratory Work
- Student Transition and Retention
- Learning Outcomes and Assessment
- Work-based learning
- Linking Teaching & Research
- Personal Development Planning (PDP)
- Employability
- Developing an Inclusive Curriculum
- Entrepreneurship and Enterprise
- Education for Sustainable Development (ESD)

Historically, these workshops are quickly filled (the quota for the current academic year is already taken up). If you would like more information about how a workshop could benefit your department or you would like to express your interest for a workshop in 2009, please contact esther.bobek@plymouth.ac.uk or visit www.gees.ac.uk.