

Cottingham, C. & Healey, M. (2001) Undergraduate geography fieldcourses: exploring the learning experiences of students. *Poster presented at the International Network for the Learning and Teaching of Geography in Higher Education symposium*, Plymouth, 4 January.

Cousin, G. (2000) Strengthening action-research for educational development. *Educational Developments*, 1(3): pp 5-7.

Dearing, R. (1997). Higher Education in the Learning Society. Report of the National Committee of Inquiry into Higher Education. <http://www.leeds.ac.uk/educol/ncihe/> [Accessed 31 October 2003]

Gibbs, G. (1992) *Improving Student Learning*. Technical and Educational Services: Bristol.

Gold, J.R., Jenkins, A., Lee, R., Monk, J., Riley, J., Shepherd, I. & Unwin, D. (1991) *Teaching Geography in Higher Education: a manual of good practice*. Blackwell: Oxford. pp 47-57

Healey, M. (2000) Developing the scholarship of teaching in higher education: a discipline-based approach. *Higher Education Research and Development*, 19(2): pp 169-187.

Healey, M. (2003) The scholarship of teaching: issues around an evolving concept. *Journal on Excellence in College Teaching*, forthcoming.

Healey, M. & A. Jenkins (2003) Discipline-based educational development, in Macdonald, R. & H. Eggins (Eds.) *The Scholarship of Academic Development*. Open University Press: Milton Keynes

Higher Education Funding Council for England (HEFCE): <http://www.hefce.ac.uk> [Accessed 31 October 2003]

Institute for Learning and Teaching in Higher Education (ILTHe): <http://www.ilt.ac.uk> [Accessed 31 October 2003]

International Geoscience Education Symposium IV, Calgary, 2003: <http://www.geoscied.org> [Accessed 31 October 2003]

Jenkins, A. (1997) *Teaching More Students: Fieldwork with more students*. Oxford Centre for Staff and Learning Development: Oxford Brookes University, Oxford.

Learning and Teaching Support Network (LTSN): <http://www.ltsn.ac.uk> [Accessed 31 October 2003]

McGill, I. & Beaty, E. (1997) *Action learning: a guide for professional, management and educational development*. Kogan Page: London, 2nd Edition.

Quality Assurance Agency for Higher Education (QAA, 2000a). *Subject Benchmarking Statement for Earth Science, Environmental Science and Environmental Studies*. Gloucester. <http://www.qaa.ac.uk/benchmark/earth.pdf> [Accessed 31 October 2003]

Quality Assurance Agency for Higher Education (QAA, 2000a). *Subject Benchmarking Statement for Geography*. Gloucester. <http://www.qaa.ac.uk/benchmark/geography.pdf> [Accessed 31 October 2003]

Redish, E.F. (1996) Discipline-based education and education research: the case of physics. <http://www.physics.umd.edu/perg/papers/redish/nas/nas.htm> [Accessed 31 October 2003]

Research on Learning in the Geosciences: http://www.dlseccommunity.carleton.edu/research_education/learning.html [Accessed 31 October 2003]

Rust, C. (Ed.) (2000) *Improving Student Learning Through the Disciplines: Proceedings of the 7th International Symposium*. Oxford Centre for Staff and Learning Development, Oxford Brookes University: Oxford.

Weimer, M.E. (1993) The disciplinary journals of pedagogy. *Change* (November / December), pp 44-51

Wenger, E. (1998) *Communities of Practice: Learning, Meaning and Identity*. Cambridge University Press: Cambridge.

Winchester-Seeto, T. & Hart, D. (2000) Field teaching – just a nice day in the sun? *Presented at the 3rd International Conference on Geoscience Education, Sydney, Australia*.

Yorke, M. (2000) A cloistered virtue? Pedagogical research and policy in UK higher education. *Higher Education Quarterly*, 54(2): pp 106-26.

Helen King
LTSN-GEES
hking@plymouth.ac.uk

Fieldwork is Good? The Student Experience of Field Courses

[*'Student Views of Fieldwork' project*]

Alan Boyle (Liverpool University), Stacey Conchie (Liverpool University), Sarah Maguire (University of Ulster), Adrian Martin (University of East Anglia), Clare Milsom (Liverpool John Moores University), Rhu Nash (Southampton Institute), Steve Rawlinson (University of Northumbria at Newcastle), Andrew Turner (Coventry University), Sheena Wurthmann (Glasgow Caledonian University)

Abstract

This paper describes the results of the 'Student Views of Fieldwork' project, as part of the wider LTSN-GEES pedagogic research and fieldwork programme. Research was conducted across Geography, Earth and Environmental Science disciplines to examine the effect of fieldwork on students' affective domain. The project aimed to monitor changes in student's attitudes to learning that occurred as a result of attending residential field courses. In addition, the changes in how students value the fieldwork experience were examined and differences in attitudes and values between different groups of students (for example age and gender) were explored.

Introduction

Fieldwork features prominently in both QAA subject benchmark statements for Geography and for Earth Sciences, Environmental Sciences and Environmental Studies (ES3). As such, most GEES courses incorporate a fieldwork element with a commonly shared belief amongst academic staff in the disciplines that fieldwork is an essential part of the undergraduate curriculum. Gold *et al.* (1991) and more recent reviews about fieldwork (Kent *et al.* 1997; Winchester-Seeto and Hart, 2000; Healey and Blumhof, 2001) have, however, highlighted that there is only anecdotal research evidence to support this commonly held view. In the current climate of budget constraints, field courses are increasingly a target for reducing costs. There is a clear need therefore for research to investigate the assumptions about the educational benefits of fieldwork. As part of the LTSN-GEES pedagogic research programme, the "Fieldwork is Good?" (FIG) project addressed this need by conducting research across all GEES disciplines to examine the effect of fieldwork on students' affective domain which deals with processes of emotions, feelings and values.

There have been relatively few studies of the impact of fieldwork on students' affective domain. In one study, Kern and Carpenter (1984) found that fieldwork significantly enhanced the affective responses of students in a section of an Earth Sciences course in the USA. Where field activities were included in the curriculum, students enjoyed the course more, felt it was more interesting and attached greater importance to their work. There is evidence that student motivation is primarily a product of the affective responses of students toward the learning experience (see Kern and Carpenter, 1984 and Biggs, 1999) and that successful learning is partly dependent upon motivation. This LTSN-GEES project aimed to monitor changes in student attitudes to learning that occur as a result of the field experience and examine if changes occur in how students value the field experience as a result of attending a residential field course. In addition, the responses of different subgroups of the student population (e.g. gender and age) to fieldwork are examined.

Methodology

Questionnaires were given to students before a field course experience (the pre-questionnaire) and on their return (the post-questionnaire) across 7 UK HEIs covering Geography, Earth and Environmental Science departments, including both pre-and post-1992 universities. The field courses surveyed included examples held in the first, second and final year of undergraduate degree programmes. Field courses held as part of the first-year induction programme were also included in the survey. All the field courses were 'process-orientated' and involved students in active learning covering project planning, data collection, interpretation and presentation. The questionnaires were designed and piloted by the research group before full use on field courses from 2001 – 2002.

The pre- and post- fieldwork questionnaires comprised a number of sections which examined the following aspects of students' attitudes, perceptions and feelings towards the fieldwork experience (their 'affective' domain):

1. Feelings. Students were asked to rank three out of 10 descriptions which best described their feelings before and after going on a field course.
2. Knowledge. Students were asked whether they agreed with a series of statements relating to the development of subject knowledge during a field course experience. Responses were recorded on a 5 point Likert scale (totally disagree to totally agree).
3. Anticipation. Students were asked to comment on the anticipatory aspects of fieldwork and the accuracy of these feelings post-fieldwork. A three-point scale was used to assess views that included, getting to know staff, visiting a different place and sharing rooms.
4. Perception. Students were asked to comment on the perceived usefulness of fieldwork. A five point Likert scale was used to assess agreement with a series of statements relating to problem-solving, career choice and enhancing understanding of the topic/subject.
5. Student Collaboration. Students were asked to comment on the level of collaboration, enjoyment and motivation on fieldwork. Assessed using a three-point scale (agree – neutral – disagree), students indicated agreement with a series of statements relating to collaboration, enjoyment and motivation.

Open questions were also included in the post-fieldwork questionnaire including "What was your most memorable fieldwork experience?" and "How has your relationship with the other students and with staff changed as a result of the field course?".

All the questionnaire responses were inputted to a standard office database and analysed with SPSS statistical software using appropriate parametric and non-parametric statistical tests.

Summary of Main Findings

In total, 300 students completed the questionnaires.

Although, prior to going on a field course, approximately one third of students ranked being "apprehensive" in their top three feelings, students were more likely to select feelings of "relaxed" and "happy" as those best reflecting their feelings. Those least likely to be selected were "concerned", "worried" and "don't want to go". After attending a field course, students are more likely to select "thoroughly enjoyed it", "worthwhile" and "learnt a lot" as those best reflecting their feelings. Those least likely to be selected included, "didn't enjoy the fieldwork", "lived up to my fears" and "wish fieldwork was not compulsory".

The questionnaire responses show students have more positive than negative feelings about fieldwork both before fieldwork. An important finding was a significant difference between males and females for the feelings "worried" ($p=0.026$) and "don't want to go" before fieldwork ($p=0.032$). Females were significantly more apprehensive than males. These initial concerns were not apparent in the post-field course feedback with no significant differences found between males and females in their rankings of feelings after fieldwork. As such, we are able to infer from these data that the fieldwork experience changed some students' overall views on the value of fieldwork, in a positive direction.

Moreover, after the fieldwork was complete only 5% of students (<20) did not enjoy the experience. Over two thirds of the students indicated that they thoroughly enjoyed the experience and perceived that they learnt a lot.

The overwhelming sentiment from the student feedback was that fieldwork was useful and beneficial which was perceived in a number of ways such as: learning a lot, group work and putting theory into practice. After a field course, students were significantly more positive in their attitudes to "liking challenges in their academic work", "being confident in working with others" and "coping with the physical challenges" (Table 1).

Question	Before	After
Achieving the academic demands of the work	58%	72%
Getting to know other students	81%	92%
Getting to know staff	71%	86%
Coping with the physical challenges	65%	76%

Table 1. Self-confidence in aspects of fieldwork: a comparison of before and after the course. For each row the change in response is significant ($p<0.001$).

An important finding was that fieldwork boosted confidence, with students indicating that they were much more confident in meeting academic challenges. Perhaps the most beneficial aspect of fieldwork was evident in how relationships between students and between staff and students changed as a result of going on a field course. When responding to the question: "How has your relationship with other students and with staff changed as a result of the field course?" the responses of the students indicated a high degree of social integration during the field course (Box 1).

"Bonded more with both groups - students/staff"

"I have got to know the staff a lot more. Good friendships have been made with people I have hardly spoken to before"

Developed closer relationships with both friends and staff. Got to know people who I haven't met before"

"I have got to know the other students better and staff. I feel I have worked well in a team"

"Got to know people a lot better and have not experienced any conflict. Think maybe the fieldtrip could be closer to the beginning of the year, so that working relationships are better."

Box 1. Selected typical student responses to the question "How has your relationship with other students and with staff changed as a result of the field course?"

In terms of the knowledge gained during a field course, students indicated that they expected that fieldwork would increase their knowledge and this was reflected in the post-questionnaire responses. The significant positive shift in attitudes to fieldwork and learning in general was evident in every section of the survey.

The benefits of induction field courses

A separate analysis was undertaken of a subset of 50 students (out of the total 300) who attended an induction week residential field course. Results indicated that prior to attending the field course the feelings most students were likely to select were "don't know what to expect" (58%), "relaxed" (56%), "happy" (46%), "eagerly anticipate" (42%) and "apprehension" (36%). After the fieldwork was complete: "thoroughly enjoyed it" (66%), "worthwhile" (66%), "learnt a lot" (48%) and "glad we had to go" (46%) were those most likely to be selected as representative of students' feelings. Despite 36% of students listing apprehensive as one of their main feelings before fieldwork, in the event, only 4% of students did not enjoy the field course. The levels of anxiety were significantly higher than that expressed by non-induction students attending other field courses. Analysis of responses to the questions on memorable experiences and skills learnt during the field course indicate that meeting new people and forming new friendships was a particularly key aspect of the student experience on an induction field course (Boxes 2 and 3). Familiarisation with members of staff and group work were other common responses.

"meeting new people"

"working in groups, meeting new people"

"ecology and meeting new friends"

"making friends"

"geology - enjoyable but challenging"

"groupwork especially in Donegal"

"meeting people/making friends"

Box 2. Typical student responses to the question "What was your most memorable experience?" after attending an induction field course.

"meeting lecturers, classmates and insight into course"

"new friends and met new classmates"

"easier settling, meet new people"

"meet new people"

"meet colleagues, staff and introduction into course topics"

"new people and insight into what standard expected at uni."

Box 3. Typical student responses to the question "What skills have you learnt or developed during the fieldwork?" after attending an induction field course.

Implications for Fieldwork Policy and Practice

In addition to enhancing subject knowledge and understanding, the field courses studied during this project were highly effective in achieving academic and social integration. This may be important in addressing the major issues of student retention and progression. Yorke *et al.* (1999) suggest that the reasons given by students who drop out from University are as much about affective (social and personal) as academic reasons. If an early field experience could assist students in the transition process to HE, then the significance of this work might have implications for retention and progression. Sellers and van der Velden (2003) have provided a series of principles that underpin their work on student retention which include motivation, socio-educational networks, academic confidence building and targeted learning support. When the results of the questionnaires are considered and student reflection reviewed, common features with these principles can be identified from this study.

Prior to attending a field course, many students were clearly anxious about the experience and did not know what to expect. Room sharing and accommodation were among the contributory factors to this anxiety. Of clear importance is the need for effective pre-field course briefing and preparation in which students should be advised of the situation regarding accommodation. Maguire (1997) has previously reported on gender differences in confidence about physical fitness necessary for fieldwork that may partly explain the increased level of worry expressed by female students in this study. A useful strategy in the briefing process might be to use students who have previously attended the field course to share their experiences to alleviate worries and fears.

An important postscript is that whilst the overwhelming majority of students had a positive field course experience, there were a small number of students who did not enjoy the field course socially or academically and further research is required to identify whether there is any pattern amongst students who do not enjoy the experience. Field course design and operation needs to address the issue of the minority that do not enjoy the experience or fail to find it valuable.

The findings of this study have clear implications for policy. There is a strong case for maintaining field courses as a key element of courses in the GEES disciplines and field courses should be considered for inclusion in other subject areas that traditionally have not included a field course element. In induction programmes, a mix of academic and social activities is standard but the residential element and the selection of the student groupings makes the field course different. With the development of e-learning and distance learning, this social part of learning and education is often neglected. Salmon (2000) has shown that this is part of the "shared learning" experience that needs to be developed for these learners.

This work has demonstrated that field courses are an important mechanism for developing subject knowledge and understanding and many of the skills detailed in the Geography and ES3 subject benchmark statements. The study has also shown the key role that fieldwork has in achieving student academic and social integration. With student retention a key issue nationally, field courses could be an important mechanism to aid retention.

References

- Biggs, J. (1999) *Teaching for Quality Learning at University*. Open University: Buckingham.
- Healey, M. and Blumhof, J (2001) *Mapping the territory: the nature of fieldwork and fieldwork research in geography, earth and environmental science*. Paper presented to the LTSN Subject Centre for Geography, Earth and Environmental Sciences workshop, the Geographical Society, London 5 June 2001

Kent, M. Gilbertson, D. and Hunt, C. (1997) Fieldwork in Geography Teaching: a critical review of the literature and approaches. *Journal of Geography in Higher Education*, 21: pp. 313-332

Kern, E. and Carpenter, J (1984) Effect of field activities on student learning. *Journal of Geography Education*, 34: pp. 180-183.

Maguire, S. (1997) Gender differences in attitudes to undergraduate fieldwork. *Area*, 30: pp. 207-214.

Salmon, G. (2000) *E-moderating: the key to teaching and learning online*. Koogan Page, London

Sellers, J. and van der Velden (2003) *Supporting Student Retention* LTSN Generic Centre CPD publication: London

Winchester-Seeto, T and Hart, D. (2000) Field-teaching – just a nice day in the sun? Presented at 3rd. International Conference on Geoscience Education Sydney, Australia

Yorke, M. (1999) *Leaving Early: non-completion in higher education*. Falmer: London.

Andrew Turner

Educational Development
Coventry University
a.p.turner@orange.net

Carrying out Pedagogic Research into the Constructive Alignment of Fieldwork

[*'Fieldwork in the Curriculum' project*]

Jim Andrews, University of Southampton
Pauline Kneale, University of Leeds
Wendy Sougnez, Martyn Stewart and Tim Stott,
Liverpool John Moores University

Abstract

This paper describes the results of the 'Fieldwork in the Curriculum' project, as part of the wider LTSN-GEES pedagogic research and fieldwork programme. This project sought to understand to what extent current practice in fieldwork reflects Bigg's constructive alignment model (Biggs, 1999) in which teaching methods and assessments are closely aligned with intended learning outcomes. The overt curriculum of field skills, hands-on experience and linking the real world and the classroom, appears to be well defined and well developed. However, learning outcomes reflect a 'hidden curriculum' (e.g. group work) which is considered important but which does not generally appear to align closely with teaching content or with assessment.

Context and Aims

This project is nested within the Pedagogic Research and Fieldwork Programme funded by the LTSN-GEES. It investigates the degree to which teaching in the field (and pre- and post-fieldwork activities) are compatible or aligned with curriculum objectives via related teaching and learning activities and assessment tasks. Particular attention has been paid to staff perceptions of the role of fieldwork in the curriculum, the extent to which departments design or adopt fieldwork strategies and the degree to which fieldwork is integrated into the wider curriculum. Biggs' (1999) concepts of constructive alignment have been employed to inform the analysis.

The project was undertaken in two strands, the first being a questionnaire sent to the subject representatives in each GEES department in the UK. This was followed up by a series of in-depth interviews with a selection of these staff. Parallel development of pedagogic research capacity amongst the investigators has been an important additional outcome of this project.

Phase 1 Data Collection

The first data collection phase used a short, semi-structured questionnaire. The first and second questions concerned perceptions of the present and future role of fieldwork in the wider curriculum, and the degree to which fieldwork is currently integrated into the curriculum. Respondents were also asked to indicate their perceptions of the relative importance of various aspects of fieldwork in the wider curriculum. Following on, two open questions sought opinions on how the respondent considered the role of fieldwork in the curriculum might develop over the next five years and what they considered would be the most notable impact on students' learning were fieldwork opportunities to be reduced. 40 questionnaires were returned representing 20% of the GEES departments surveyed nationally. Responses were coded for analysis according to institution type (pre-1992, post-1992 universities, and Further Education colleges) and the three GEES disciplines.

Two types of data were generated by the project's first phase. Responses recorded on a 3- or 5- point scale were statistically summarised, but responses to 'open' questions required qualitative data analysis using techniques unfamiliar to the team. To facilitate this, a social science researcher (Sougnez) with experience of interpretative methods in educational research joined the group.

Phase 2 Data Collection

The intention of the second phase interviews was to uncover depths of understanding that may otherwise have been inaccessible. The first phase data analysis was used to inform the structure of these interviews. The in-depth interviews with members of academic staff who had returned the original questionnaires were designed to explore in detail issues raised in the questionnaire and to further investigate departmental strategies for fieldwork management.

Each of the four field-active investigators undertook two semi-structured, 30-45 minute, taped interviews in a schedule designed to cover all three GEES disciplines and old university, new university and FE provision. Most interviews were conducted during the Summer of 2002.

Capacity for qualitative data analysis was enhanced after two members of the team attended the LTSN-GEES Data Analysis Workshop in May 2002 supporting the overarching project (Coventry, May 2002).

Critical Reflection

The first phase questionnaire was useful in collecting quickly a large amount of data from a range of HE providers. While a 20% return rate was lower than hoped for, the returns were an adequate base for selecting a maximum variation sample for the second phase. This enabled the researchers to construct an interview schedule covering the full range of HE providers.

The questionnaire was used to inform the operation of the second phase where data were collected from a range of interviews. A number of issues emerged that merit further exploration. For example, one question asked: *Is there a conscious effort to generate and then map a portfolio of field-skills and experience across various field courses?* The responses are typified by: *In construction of documentation conscious mapping takes place but field courses were designed on the basis of what generations of geographers feel makes a good field course.* This example suggests that policy and practice may be at best only loosely-coupled and this has implications for alignment.