
Fieldwork in the PGCE year: A case study

Context

There has been growing concern about pupils' experience of ecology raised by a number of bodies including the Field Studies Council, British Ecological Society, the Royal Society and the Government, the latter through its Select Committee report on 14–16 science education published in 2002. The Association for Tutors in Science Education (ATSE) summer conference in 2004 also recognised the importance of the issue through making one of the conference themes studies relating to fieldwork and the teaching and learning of ecology.

I must acknowledge my indebtedness to Colin Wood-Robinson and Sheila Gosdon, both formerly of the University of Leeds, School of Education, who have helped form and develop my views which are firmly based on their practices.

The following sections of this paper give an overview of the way in which the one-year PGCE science: biology course at the School of Education in the University of Birmingham approaches the training of teachers in ecological subject knowledge and understanding and pedagogy of ecology.

Elements of fieldwork in the PGCE course

Each cohort of science students in the University of Birmingham contains approximately 20 biology graduates training to be science: biology teachers. There are two key elements relating to the teaching and learning of ecology, both located in the third term, these are:

- Residential fieldwork (3 to 5 days); and
- Serial teaching practice with an 11–16 school in a city country park (2.5 days).

Written assignments and assessed tasks are linked to these activities as follows:

- One assignment (out of six) on teaching and learning in the field, based on the residential fieldwork;
 - One 'assessed task' (out of 22) linked to the fieldwork, requiring the production of a booklet that would support course members in running their own fieldwork activities in the early years of their career; and
 - One 'assessed task' (out of 22) linked to serial practice, requiring the development of resources and the evaluation of the teaching and learning activities involved with them.
- With, typically, five days in each PGCE course spent in the field and a further two days spent in planning, preparation and debrief, in effect approximately two of the 36 weeks of the PGCE course are devoted to fieldwork, taking into account the individual and team work required by students in assessed work surrounding the activities.

Residential fieldwork

The main aims of the fieldwork are for students to:

- Become competent in issues relating to the teaching and learning of ecological and environmental issues in post-16 syllabuses and the National Curriculum;
- Be able to lead groups on work related to:
 - grassland
 - freshwater
 - woodland/walls/hedgesSuch habitats are in easy reach of most schools, irrespective of their location;
- Gain experience and knowledge of organising a trip away for a party of pupils, be that a day or longer event (@TS standard 3.15); and
- Develop awareness and knowledge of safety issues and first aid.

Although the context of the work carried out in the field is firmly

set in that of the AS/A2 level student, the activities involved and the techniques and approaches used could all be modified for use at key stages 3 and 4. The serial teaching practice with the 11–16 school, that follows on from the fieldwork activity, requires the students to modify and adapt the activities, hence making this point clearly to the students.

The activities are all led and introduced by the course tutor. During years when there have been issues such as foot and mouth outbreaks, I have introduced an animal behaviour study in a wildlife park and modified some of the fieldwork activities to use accessible hedgerows instead of woodland and studies of lichens on gravestones. The animal behaviour activities proved so successful that with behavioural aspects of AS syllabuses increasing in prevalence, this element has been retained within the current approach.

I also involve fun activities such as making plaster casts of animal footprints in mud, observing a badger set, listening to bats echo locating and a scavenger hunt.

Organisation

Students are split into four support teams taking responsibility for:

- Information, recording and equipment;
- Domestic and social activities;
- Safety, security and first aid;
- Booklet editors.

Each team has a range of activities built into their job specification and all of these activities lead to materials that are produced and included in the fieldwork booklet. Samples from the job specifications include:

- Produce a guide and give an illustrated talk on organising a school trip involving fieldwork from a school's perspective. (In

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order to undertake this task, student teams are provided with the relevant materials from four local education authorities);

- Give a practical demonstration on first aid;
- Draw up a list of equipment for field activities;
- Make a photographic and video record of ecological activities;
- Draw up a list of ideas and suggestions for indoor ecology as an alternative on severe weather days;
- Compile a list of fun and educational activities;
- Organise transport to/from the youth hostel for people with interviews;
- Compile a list of local medical contacts; and
- Plan social activities for the evenings.

Students work on these activities before, during and after the fieldwork. The final booklet includes not just the products of these tasks but also sample worksheets linked to all the activities and extracts from different students' responses to the assignment. In this way, the fieldwork booklet contains a complete 'do-it-yourself' approach to running your own field course, including information about safety and first aid, risk analyses, wet weather activities and activities to interest younger pupils in the evening slots, as well as a set of worksheets and sample data collected and analysed by the students.

Assignment

The assignment based on the fieldwork is intended to fulfil several purposes:

- To carry out small-scale research in the field, including animal behaviour, and to assess the value of such activity to AS/A2 level biology students; and

- To use ICT data in the presentation and analysis. In this way, the assignment requires students to carry out field activities and collect data, present reports on three ecology activities (one grassland, one woodland and one freshwater), along with a report on an animal behaviour study. Their assignment should illustrate that they can use ICT within the specifications of current AS/A2 level courses.

Students' responses to the assessment are good. For example one student in 2004 commented:

'I thought that the assignments were well planned and were relevant, particularly the fieldwork assignment which has really helped me to understand how fieldwork can be carried out and written up.'

Serial practice

The serial practice has involved 160 year 9 pupils from a single school in the period between the end of the science SATs and half term in the summer term. The aims of the exercise for students are:

- To put into practice knowledge and skills learned in the field work;
- Planning work in an out-of-school context;
- Leading a whole Sc1 investigation; and
- Experience of further school work outside the laboratory.

Over the two-day period in a local country park, pupils are expected to carry out a whole Sc1 investigation and to record the result of their investigation, usually in the form of poster displays set up in the school focusing on biodiversity and population size.

This work is thoroughly enjoyed by pupils and students alike and it has remained a popular activity with members of staff at the school.

What are the issues?

There are a number of issues that may influence the inclusion of field work studies in the context of a one-year PGCE course. These could include:

- Tutor expertise
 - Fieldwork experience
 - Minibus driving experience
 - Residential issues (sex and alcohol);
- Student experience
 - At school
 - Undergraduate level;
- Cost and funding of the field work;
- Time;
- Assessment; and
- Relating the activities to QTS standards.

I feel that the inclusion of fieldwork and the teaching and learning of ecology brings a unique flavour to our PGCE course, one that I always ensure contributes to the Career Entry Development Profile statement of our students, indicating that, with support, they should be able to participate in and eventually lead fieldwork with students from key stage 3 upwards.

In my own mind I am clear that this is an important part of an initial teacher training year, but I am unsure as to whether other colleagues share these views. Little is known about what sorts of fieldwork activities form part of initial teacher training experience nationally and there appears to be little consensus about whether fieldwork activities are an appropriate part of initial training. For my own students, I recognise that I know little about whether their experience on the PGCE course influences their later practice. This is an aspect that I hope to investigate in future years.

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