

Fieldwork strategies

Aims of this session

- To support teachers' understanding of the purposes of geographical fieldwork and to highlight the outcomes of fieldwork experiences for pupils.
- To engage teachers in reflection on a range of fieldwork strategies in order that the quality of teaching and learning in the field is improved.

Starter

“Geography wants to take children outside the school and into the streets and fields; it wants to take keyboard tappers out of their gloomy offices and into the rain or the sunshine”
Bonnett (2008)

Why do geographers want to ‘take children outside the school and into the streets and fields’? What do we want children to *do* when they get there and what do we want them to bring *back*?

More pertinently, if *you* are planning to ‘take children outside the school’, what type of experience do you want them to have and which approaches are most likely to meet their needs and interests?

Perhaps the first step in realising the potential of geography fieldwork is to recognise the very broad range of **purposes** it has. As the table below makes clear, there are a number of aims to choose from when designing a geography field excursion; these aims relate both to broader educational purposes (not always sufficiently acknowledged) and to a range of positive outcomes for young people (in this case, drawn from the Learning Outside the Classroom Manifesto).

Table 1: The purposes of geographical fieldwork

Broad educational purpose	Geographical fieldwork aim	Outcomes for learners (from the Learning Outside the Classroom Manifesto)
Conceptual	Developing knowledge and understanding of geographical processes, landforms, issues	<ul style="list-style-type: none"> • Improved academic achievement • A bridge to higher order learning. • Opportunities for informal learning
Skills related	Developing skills in data collection, presentation and analysis with real data	<ul style="list-style-type: none"> • Skills and independence in a widening range of environments • The ability to deal with uncertainty.
Aesthetic	Developing sensitivity to and appreciation of built and natural environments	<ul style="list-style-type: none"> • Stimulation, inspiration and improved motivation. • Nurture of creativity
Values related	Developing empathy with views of others and care about/for the environment	<ul style="list-style-type: none"> • Development of active citizens and stewards of the environment.
Social and personal development	Personal, learning and thinking skills such as independent enquiry, critical thinking, decision-making, teamworking	<ul style="list-style-type: none"> • Engaging and relevant learning for young people. • Challenge and the opportunity to take acceptable levels of risk. • Improved attitudes to learning. • Reduced behaviour problems and improved attendance.

Adapted from: Caton (2006), Job (1996) and <http://www.lotc.org.uk/>

Being clear about your purpose(s) is important. So too is recognising the enormous range of **strategies** for teaching and learning in the field – and finding the most suitable mixture of strategies to meet the needs and interests of your learners. The **main section case studies** of this session examines case studies from real schools and asks:

- (1) What was the teacher/school trying to achieve?
- (2) How did the teacher/school organise the learning?
- (3) How well did the teacher/school achieve their aims?

The most direct way to measure the success of your fieldwork strategies is to ask the opinions of the experts – your students.

The **pedagogy and thinking section** explores some of the key ideas that underpin the fieldwork strategies seen in each case study. This section encourages you to reflect on what you have seen and begin to plan strategies that will improve your students' learning in the field.

Activity

1. Read your geography department policy on fieldwork or 'learning outside the classroom' (LOTC). Which of the **purposes** of fieldwork outlined in this section does it explicitly include? Does it contain a balance of conceptual, social and other broad purposes? Are there any other purposes you now feel should be added?
2. Write down a list of the fieldwork excursions your pupils currently experience. Referring to the **pupil outcomes** from the LOTC Manifesto (column 3 of Table 1) identify the three KEY outcomes your pupils gain from the fieldwork programme you provide.
3. Think about the **evidence of learning** produced by your pupils following fieldwork, such as display work, fieldwork projects, school assemblies, newsletters and so on. Which **pupil outcomes** do you have the best evidence for? Is there a balance of evidence of academic achievement with enjoyment and social development? How do you 'capture' these latter types of evidence?

References for this section

Bonnett, A. (2008) What is geography? London. SAGE.

Caton, D. (2006) 'Real world learning through geographical fieldwork' Chapter 6 in Balderstone (ed.) Secondary geography handbook Geographical Association. Sheffield.

Job, D. (1996) 'Environmental education' in Kent, A. et al Geography in education Cambridge University Press. Cambridge.

<http://www.lotc.org.uk/getmedia/42c7c3e7-7455-43cc-a513-d6aef9654846/1.0-Learning-Outside-the-Classroom-manifesto.aspx> (2006)

Case studies

Case study 1: **All Saints Catholic School and Technology College**, Dagenham, Essex.

Engaging with a changing place

Year 7 day trip to London Docklands April 2009

(1) What was the department trying to achieve?

- The geography department at All Saints has a well established programme of fieldwork which includes residential and foreign fieldwork post-16. Fieldwork provision is seen as a strength of the department.
- A new teacher to the department, Gemma Baxter, wanted to establish a field trip for year 7 students. The aim was to provide a foundation of fieldwork skills and to give students a sense of the changes underway in the Thames Gateway urban corridor adjacent to the school.
- Gemma wanted to ensure students engaged with the places they were to visit and learned to think critically about the changes underway there. She wanted them to form their own opinions about what sustainable urban development 'looks like'.

(2) How did the teacher organise the learning?

- A preliminary visit to the area was used to find suitable areas of study for year 7 students.
- West India Quay and Cabot Square areas of Canary Wharf were selected as being self-contained and safe for students to operate independently in pairs and small groups
- Multiple study areas enabled students to carousel activities and to visit the Museum of Docklands as part of their studies in history.
- A third location, Greenwich Millennium Village (Greenwich Peninsular) was added so students could see an unfinished phase of Docklands urban redevelopment and share their views about its future.
- Great care was taken over the selection of resources and activities so that students would engage personally with the study areas and begin to ask critical questions about change. The department recognised that 'well-conceived questions' (Job 1999) were needed to unlock the desired learning. In this instance, the teachers were keen to pose questions including:
 - What evidence is there of change in this area?
 - Who uses this place and who does it 'cater for'?
 - What do we think about this area and what do other people think?
 - What future do we want for this place?
- As can be seen from the questions above, the department wanted students not only to acquire some technical skills (such as field sketching and environmental quality assessment) but to think and talk about what they could see in a critical way and to begin to address some values and opinions connected to urban change.

Strategy 1: word banks

Students used word banks throughout their visit in order to:

- pick out and name features in the environment
- acquire language and spelling
- articulate their feelings about the places they visited.

Strategy 2: Photo trails

Digital images were taken during the preliminary visit and used to direct student observations so that:

- observation was encouraged and 'finding features' became a fun challenge
- searching and interpreting could be tackled independently
- critical questions could be introduced for key features

- a record could be made of students' thinking about the place

Strategy 3: people survey

Some students were asked to observe people using the area during the visit. The purpose was:

- to provide Year 7 students with a quantitative technique for mapping and graphing in the classroom
- to make students aware of who was using the area and for which purposes
- to introduce the idea that people might have different views about this place and that changes to the area have led to changes of function

Strategy 4: working as a team

Groups of pupils worked on different tasks. They were brought together before leaving each place to:

- share their findings about the place
- give personal reflections on working or living there
- reach early conclusions about the questions posed

(3) How well did the teacher achieve their aims?

- Pupils developed a good understanding of sustainable urban change through their work. This pupil includes clear references to place in her work
- Pupils also showed the ability to make sensible suggestions for urban change in the area they studied and to give reasoned opinions about living in the area.

Case study 2: **Steyning Grammar School**, Steyning, West Sussex

Using an enquiry approach

Year 7 day trip to Cuckmere Haven June 2009

(1) What was the department trying to achieve?

- The geography teachers at Steyning Grammar School (a comprehensive school in West Sussex) had been developing their system of assessment for some time, as part of a pilot project for the Qualifications and Curriculum Authority (QCA)
- They wanted to extend the enquiry skills of their students in key stage 3 and saw an opportunity to adapt a long-running field trip to the Cuckmere Valley.
- This had previously been a traditional 'walk and talk' field excursion. The aim was to put more responsibility for learning on the students and ask them to gather a wider range of evidence than previously in order to tackle an enquiry question.
- The Cuckmere Valley is an area of outstanding natural beauty within the South Downs of East Sussex. Parts of the valley are likely to be subject to increased river and coastal flooding as the Environment Agency introduces its policy of 'managed retreat' in the near future. The teachers wanted students to decide for themselves if the valley should be allowed to 'return to the sea'.

(2) How did the teacher organise the learning?

- The teacher gave them a 'mystery' enquiry question in order to capture their interest
- Students were allocated a role to play throughout the day
- Students were given structured activities and asked to gather evidence to help 'solve' the mystery
- Dialogue was encouraged throughout the day to help develop emerging ideas and test evidence

Strategy 1: creating a need to know

- "Mysteries can completely transform the teaching and learning process ... [they] are designed to encourage pupils to deal with ambiguity through addressing a question which has no single correct answer and where they are not even sure what information is relevant - rather like real life in fact" Leat (1998)
- The department designed a mystery question to engage students' interest.
- Intrigue was generated as the question was seen as 'unusual' and did not seem at first to have anything to do with the place they had arrived in.
- The subject of the question was a character of interest to this age group - but the connection to 'geography' was less than obvious!

Strategy 2: using role play

- The teachers wanted to avoid creating 'identikit' characters (e.g. "an environmentalist")
 - The teachers researched a number of REAL people and agencies involved in the debate and provided students with information about these people
 - This created opportunities for complex opinions and for students to see the actual places where some of the 'characters' lived and worked
 - Students were provided with some quotes but were asked to work out the attitude of their character towards the 'managed retreat' issue for themselves
- The owner of one of the coastguard cottages at Cuckmere Haven threatened with coastal erosion
 - The local publican fearful of the impacts on business
 - The chairperson of the Cuckmere Estuary Partnership (representing local councils, county councils and landowners such as the National Trust)
 - The Sussex area manager for the Environment Agency

Strategy 3: gathering evidence

Small groups of students worked together to gather a range of evidence about the area

Some secondary information was also made available during the day. Students had to decide which evidence would be useful to their arguments

Methods included:

- Describing the present land use
- Assessing the current management of the area
- Evaluating the landscape value
- Evaluating the ecological value

Strategy 4: encouraging dialogue

- The teachers wanted to avoid a gap between 'data gathering' and 'making sense of the data'
- They felt the best chance of understanding the issue would come on site - not back in the classroom
- They built in group discussion, 'mini-plenaries' and chances for different 'characters' to talk together during the day

Case study 3: **Royal Geographical Society**, East London local fieldwork network

Designing fieldwork activities

Professional development day for teachers, Stratford, June 2009

(1) What was the session intended to achieve?

The Royal Geographical Society (RGS) has established a number of 'local fieldwork networks' in order for teachers within an area to explore together how to make best use of local opportunities for learning outside the classroom.

The East London network was established in Spring 2009. The first CPD day was centered on Stratford and the Olympic and Paralympic Park and took place in June 2009.

The day was intended to develop teachers':

- Knowledge and understanding of the redevelopment of the area;
- Repertoire of fieldwork strategies;
- Confidence in selecting appropriate strategies and designing their own fieldwork experiences.

(2) How was the day organised?

- The day began in a very 'exploratory' fashion. Teachers used some techniques for exploring the area and were asked to develop a 'place profile'
- A short theory input provided a structure for the remainder of the day
- Groups of teachers worked together, selecting and evaluating different fieldwork strategies at each location
- Enquiry questions emerged during the day, were shared and matched to appropriate fieldwork strategies

Strategy 1: creating a 'place profile'

- An 'exploring kit' was provided to groups of teachers. This contained a digital camera, location maps, a choice of fieldwork activities and a hand-held computer (with built-in microphone)
- Groups were given little instruction but encouraged to explore the area and bring back impressions, recordings and questions

Strategy 2: building an enquiry

- Delegates returned from the 'exploration' of the area with their own impressions of the place - and questions about it
- These questions were shared and used to form the basis of investigation for the following session
- Delegates were asked to select places and fieldwork strategies for further investigation.
- Some tasks and questions were site-specific. Others could be adapted to location.

Questions included:

- Does Stratford 'need' the Olympics?
- Was Stratford a good place to choose for the 2012 Olympics?
- What do local people feel about the changes taking place?
- How will the Olympics impact on the local community?
- Will the Olympics leave a sustainable legacy?

Strategy 3: designing fieldwork strategies

- The most challenging aim of the day was to build confidence (and capacity) in selecting fieldwork strategies and designing fieldwork experiences
- This involved adapting the approaches used during the first two sessions and showing awareness of the types of fieldwork strategy available - and being clear about obstacles and outcomes

Case study 4: **Barking & Dagenham School Improvement Service**, London

Literacy through the environment

Primary geography coordinators CPD session June 2009

(1) What was the session trying to achieve?

- This Professional Development session was for coordinators of primary geography
- The session was based 'in the field' in order to give the teachers a stimulating environment in which to work
- A number of strategies for developing oracy and literacy skills were used and evaluated

The aims were to

- show the importance of getting out of the classroom (and teacher centre!)
- boost confidence of using innovative fieldwork strategies
- show how Learning Outside the Classroom (LOTC) can develop children's oracy and literacy skills by encouraging observation and the use of language

(2) How was the learning organised?

- Teachers worked independently in pairs, navigating their way around a Country Park and trying selected strategies
- Hand-held computers with microphones were used to record ideas, encourage clear, articulate responses and allow a different form of feedback

Strategy 1: Scavenger hunt

- Discuss with students some of the things that can be collected from the environment around us (without causing damage!)
- Students hunt for these and 'scavenge' - either physically collecting them or recording what they find
- The aim is to collect 10 of one 'treasure', 9 of another and so on
- After observing and feeling the items, students use adjectives, alliterations and collective nouns:

Strategy 2: recording stations

- Use a hand-held computer with built-in microphone
- Ask students to find locations where they can stop and record their observations and impressions
- The aim is to encourage an emotional reaction to the environment, use of observation and descriptive language

Strategy 3: Jabberwocks

- Jabberwocks are new names for objects we find in the environment
- Concentrate on what the object is like: long, slow, sticky, sharp?
- Give it a 'nonsense' name and repeat this over and over
- Pass the object around and tell others its name
- Name some of the features and processes in the environment in the same way
- Collect some jabberwocks together and write a short poem using them
- Use some 'proper' words to link the jabberwocks together

Strategy 4: Story boards

- Use either objects collected from the environment (perhaps from a scavenging activity) or notes or drawings of these
- Ask students to work in groups
- Tell them they need to be creative and imaginative!
- Students put the objects into a sequence to create a story: how are the objects linked?
- They either create 'captions' underneath each object, or record their story using a microphone and hand-held computer

Strategy 5: Personal responses

- A variety of methods can be used to prompt students to give their reaction to things they see in the environment around them
- These can be recorded on paper, marked on maps or spoken into a microphone
- The methods shown here show a range of difficulty and sophistication.

Strategy 6: Making an animal

- This strategy helps students to think about the characteristics of a specific environment or place (e.g. a wood) and to explain how animals could adapt to it
- Start with some questions and, if needed, give the students one or two important characteristics the animal needs to have
- Students can think creatively but also choose from a list of characteristics if needed. They still need to justify their choices

(3) How well did the session achieve its aims?

Both teachers and students demonstrated the extent to which they were:

- enjoying the activities
- connecting with their surroundings;
- making observations about places and environments;
- displaying oracy and teamwork skills

Case study 5: **Sprowston Community High School**, Norwich, Norfolk
Investigating sustainable urban development
Year 8 local area field excursion July 2008

(1) What was the department trying to achieve?

- The geography department at Sprowston wanted to make full use of the opportunities within the 2008 Programme of Study for Key Stage 3
- The teachers decided fieldwork was an ideal means of addressing aspects of the Importance Statement - using enquiry to encourage 'questioning, investigation and critical thinking about issues affecting...people's lives, now and in the future' and focusing on a local housing development scheme to raise 'awareness of sustainable development ... differing points of view people hold and possible conflicts'

By the end of an investigation, they wanted pupils to:

- be comfortable collecting data independently
- give their own opinions on features they observe first hand
- make suggestions for improvements or changes
- apply the idea of sustainable development

(2) How did the teachers organise the learning?

- Students' prior understanding of sustainable housing was determined by annotating a cartoon of a typical suburban house
- Carefully scaffolded fieldwork strategies were developed to promote independence during a local fieldtrip to observe current housing and a potential site for future development
- After the fieldtrip, students drew plans and made models of a new development, applying their ideas about sustainable living

Strategy 1: assessing the level of prior understanding

- To introduce the investigation a cartoon of a typical suburban house was presented to students
- After discussion, students assessed the sustainability of the housing by highlighting features and annotating the cartoon

- Further discussion was used to embed the concept of sustainability

Strategy 2: investigating sustainability in the field

- The following three slides show techniques used to investigate the concept of sustainability in the field
- The emphasis is on making observations and judgments and deepening understanding
- The tasks were carefully scaffolded to allow students to work independently. They were encouraged to draw conclusions for themselves.
- In the photo survey, students were able to select their own views to pick out sustainable or unsustainable features of housing
- The environmental survey prompted them to observe additional features
- The interpretation task developed their understanding of sustainability by asking them to relate specific features of the environment to the concept of a sustainable community

Photographic Survey (see slide 6 in the ppt version of this page)

Environmental Survey of Housing Estate at Sprowston (see slide 7 in the ppt version of this page)

Environmental Survey Interpretation (see slide 8 in the ppt version of this page)

Strategy 3: communicating ideas about sustainability

- After the field excursions, students took part in a decision-making exercise to select the most sustainable way of developing new housing in their local community
- They produced maps and models to communicate their ideas. These were based on a critical analysis of their experience in the field

(3) How well did the teachers achieve their aims?

- Students self-assessed their fieldwork and associated research skills
- These skills also underpinned the teacher-assessed outcomes for the investigation
- Students across the attainment range were able to access the tasks and work independently in the field
- By the end of the investigation, students were able to generate their own design ideas for sustainable housing in the local area
- These ideas were a combination of critical thinking based on first-hand observation and creative thinking drawing on secondary sources

Case study 6: **Barking Abbey Comprehensive School**, Barking, London

Participating in local change

Year 7 local issue investigation September 2008

(1) What was the department trying to achieve?

- The geography department at Barking Abbey has a well established programme of fieldwork. Fieldwork provision is seen as a strength of the department.
- The department recently adapted its curriculum to a two year Key Stage 3. With limited time available, the department felt a need to engage students early in Year 7 and to make a 'baseline' assessment of a range of skills and understanding in the subject.

With the local park being redesigned and refurbished, the department saw an opportunity for developing:

- a local investigation making use of fieldwork skills
- application of Geographical Information Systems
- 'real and relevant contexts' by using the Park Ranger Service and adapting the Green Flag criteria used by the service.

- student voice in a geographical context by encouraging students to 'have their say' on this issue.

(2) How did the teachers organise the learning?

- The teachers researched planned changes to the park area next to the school
- A preliminary visit was used to identify specific sites of interest
- Students investigated the park using GIS software before their visit
- The Park Ranger was invited to talk to students after their visit

Strategy 1: using the local context

- The preliminary visit was used to identify specific areas of interest to young people or areas earmarked for change.
- These included play areas, a skate park and a boating lake.
- Students were encouraged to share their prior knowledge and opinions about the park and how it should change.
- The teachers generated questions to prompt students to consider the issues at each location during their visit

Strategy 2: investigating with GIS

- Students investigated the current features and lay out of the park using GIS software before their visit.
- They used their own knowledge of the park to identify some areas of interest/in need of improvement

Strategy 3: providing real contexts

- The students were encouraged to tackle the real issues in their local park
- They researched the Green Flag scheme (a 'kitemark' for green spaces).
- They applied the official Green Flag criteria to their park to find out how it needed to be improved and to gain Green Flag status

Strategy 4: encouraging student voice

- After their visit, the Park Ranger visited the school to give students more information about planned changes and to hear their views
- Students presented their ideas about specific features of the park

(3) How well did the teachers achieve their aims?

- The teachers surveyed students at the end of the investigation
 - 100% of pupils agreed that the field work was an enjoyable experience (44% agreed strongly)
 - 65% found the visit from the Park Ranger interesting
 - Nearly 85% of students said they enjoyed presenting their own ideas for the park, as part of a group assessment
 - 93% agreed that the unit was an enjoyable one (nearly two thirds 'strongly' agreed).
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- Student presentations included recognition of a range of needs in the park
 - Students began to take account of the Green Flag criteria for a 'successful' park and build these in to their proposals
 - They were able identify how specific places within the park could be improved

The department self-evaluation of the unit recognised:

- a need to develop better use of mapping through GIS as part of student 'outcomes
- the potential for students to explore their own feelings and responses to the park environment before undertaking the 'enquiry' aspect of the work
- the opportunity to make a more formal input of students' ideas to the park authorities and encourage 'active participation' for students

Activity

1. After studying each case study:
 - Compare the study to the table in the Introduction section. What are the geographical aims and outcomes of the work?
 - Use Figure 1 in the Pedagogy section. Which type(s) of strategies are employed by the teachers in the case study?
2. Refer to the third part of the case study ('How well did the teacher achieve their aims?').
 - What types of evidence were gathered by teachers to assess the success of their fieldwork strategies?
 - How successful do **you** think each strategy was?
 - How might the teachers have made the fieldwork more successful?

Pedagogy and thinking

“Well planned fieldwork in geography adds clear value to learning in the subject as well as providing a positive contribution to the wider curriculum”

Ofsted (2008)

In the **introductory section** to this session, you were asked to think and reflect on the variety of fieldwork experiences you currently provide for your learners, and the range of purposes and outcomes linked to these. An effective fieldwork practitioner, like an effective classroom practitioner, is not only clear about aims, purposes and outcomes: they also possess a repertoire of teaching approaches that can be adapted to a wide variety of needs and circumstances. Working in schools under time pressures for planning and thinking, it can be easy to ‘default’ to a narrow range of preferred strategies: to use a familiar approach time and again. The purpose of this section is to look again (critically) at the breadth of possibilities available.

Like any aspect of teaching and learning, there are countless ‘strategies’ for and approaches towards geographical fieldwork. The case studies section included in the **main section** of this session contain more than thirty distinct methods for conducting fieldwork (see Table 2).

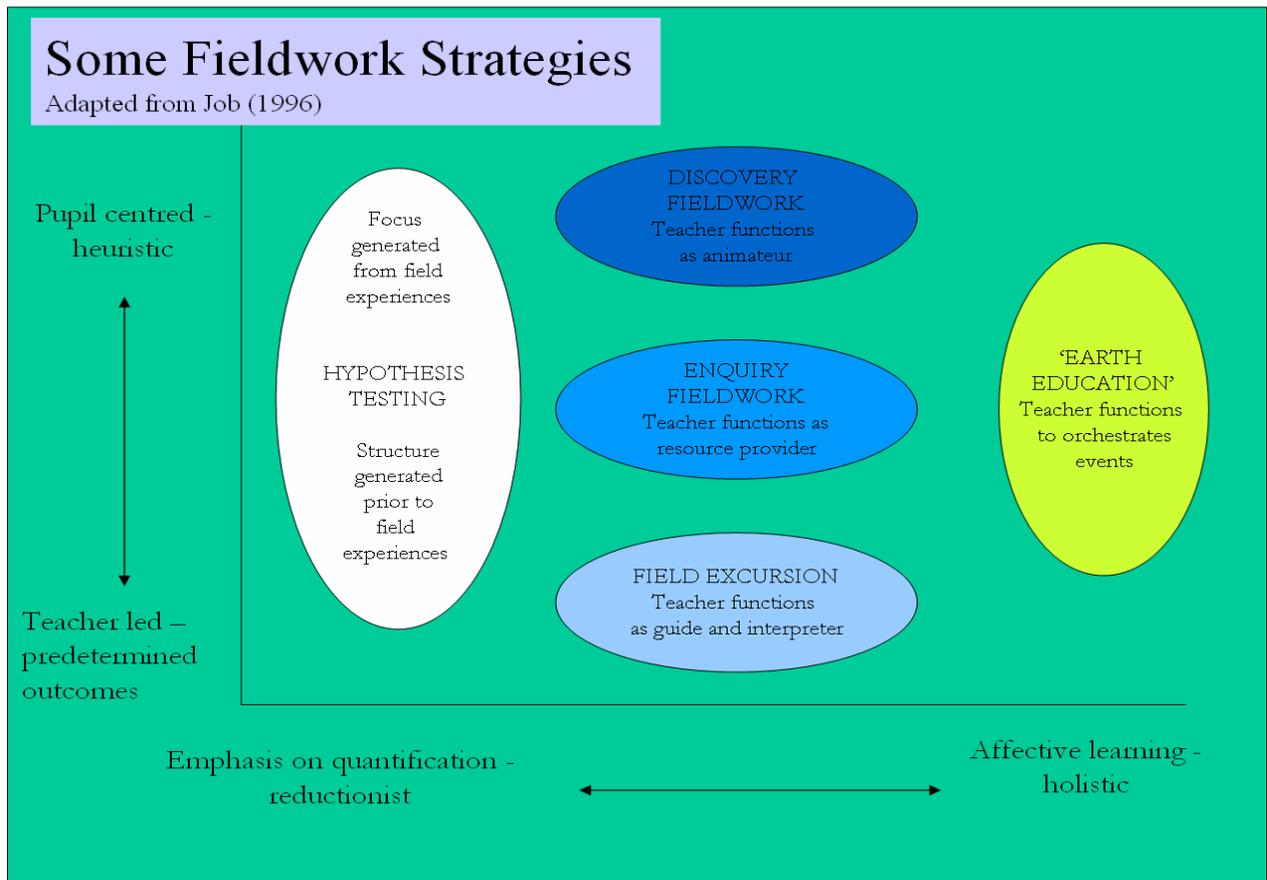
Table 2: List of strategies and approaches included in the main section case studies

<p>1: All Saints Catholic School Word banks Photo trails People surveys Team working</p>	<p>4: Barking & Dagenham School Improvement Service Using hand-held technologies Scavenger hunts Recording stations Jabberwocks Story boards Personal responses Making an animal</p>
<p>2: Steyning Grammar School Creating a need to know Role play Evidence gathering Encouraging dialogue</p>	<p>5: Sprowston Community High School Assessing prior understanding Photographic surveys Environmental surveys Communicating sustainability ideas</p>
<p>3: RGS local fieldwork network Developing a place profile-response: - I am a camera - Photo challenge - Place-check - Character trail Developing enquiry approaches Futures visioning</p>	<p>6: Barking Abbey Comprehensive School Using the local context Investigating with GIS Providing real contexts Encouraging student voice</p>

This is by no means an exhaustive list – a library of fieldwork texts is available if the purpose is to compile a list of ‘tips for teachers’. But how can we make sense of these choices and learn to design experiences for ourselves?

One approach is of course to apply a system of classification to fieldwork strategies. The model (Figure 1) is the work of David Job (Job (1996))

Figure 1



This method of analysing fieldwork strategies applies two parameters – these are shown as the vertical and horizontal axes of a graph. These parameters can be re-phrased as questions:

- What degree of freedom for discovery and self-education is afforded by the strategy?
- How broad is the learning likely to be?

Five 'families' of strategy emerge from this analysis. As can be seen from the diagram, each of these can in themselves contain variety – the classification shows areas rather than points on the graph.

1. Field excursions

Once seen as the 'traditional' approach to fieldwork, field excursions have also been described as 'the guided tour' Lenon & Cleves (1994). Excursions are led, as Job's model implies, by an expert (perhaps the teacher) who's role is to impart knowledge and understanding to the group. For example, understanding the geomorphological processes at work in a landscape might be tackled very effectively by using the expertise of the teacher, with students being asked to notice subtle evidence they might otherwise have missed. This principle might be summed up by the phrase, 'the more you know, the more you see'.

Typical 'strategies' for field excursions include:

- explaining and note taking
- field sketching
- question and answer sessions (to check understanding)

Field excursions are therefore ideal where:

- we are unable to design strategies for students to discover this knowledge and understanding for themselves
- the group is under pressure of time or the environment is considered too hazardous for independent work
- outside, non-teaching expertise is available and a 'walk and talk' strategy allows access to the knowledge and perspective of the speaker

There are of course reasons for the decline in the 'traditional' field excursion. Critics of this approach point out the low degree of engagement and autonomy amongst students and its unsuitability for younger students. The 'walk and talk' method also makes the assumption that an explanation provided by the teacher promotes understanding in the mind of the student – that complex knowledge and understanding can be 'transmitted' relatively easily through teacher exposition. Research (and practical experience) suggests otherwise.

2. Hypothesis testing

This 'scientific' approach to geography fieldwork is frequently, but not always, characterised by the collection and analysis of quantitative data. The approach gained currency during the 'quantitative revolution' of the 1960s and 70s, and has remained a mainstay of geography fieldwork ever since.

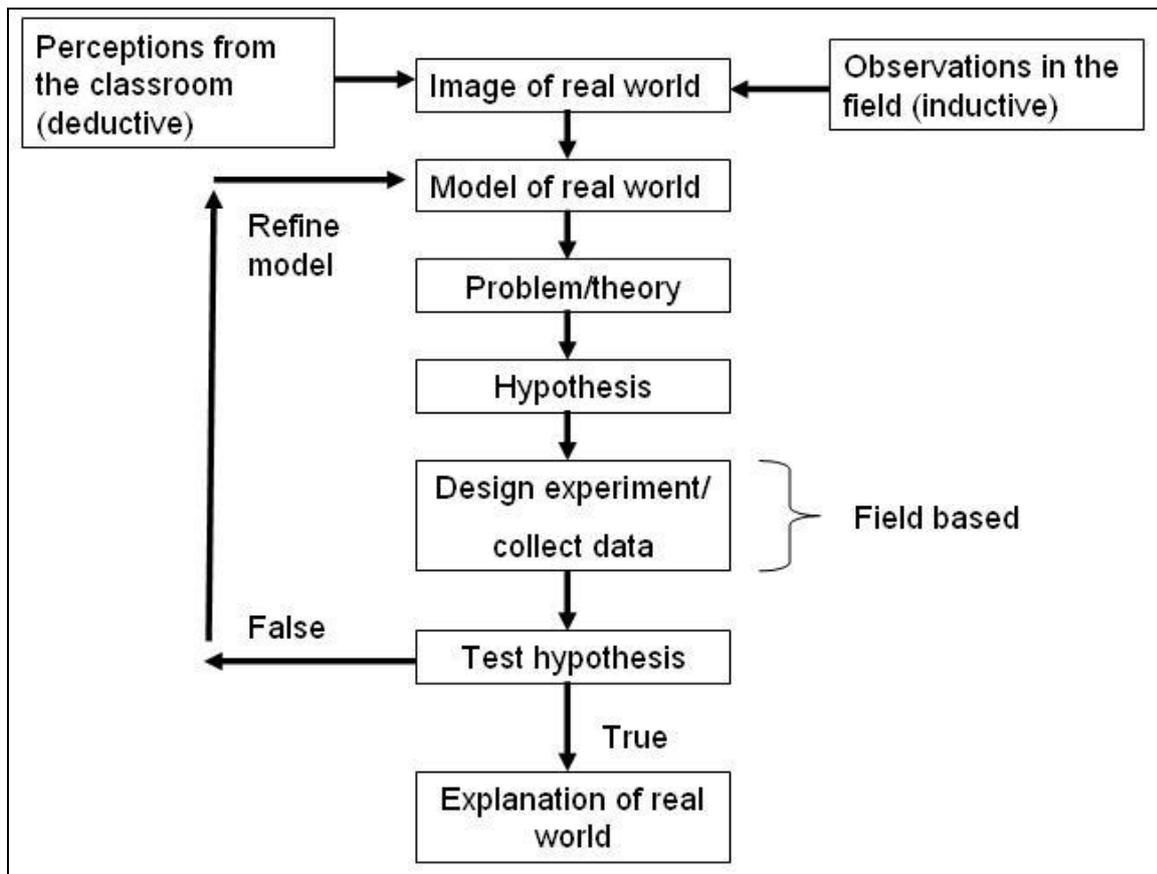
Hypothesis testing promotes a 'rigorous' image of the subject as a scientific discipline. Typically, the hypothesis is generated from geographical models or theories and 'applied' to specific locations. Lenon & Cleves (1994) therefore distinguish between truly experimental work which is 'trying to find answers to previously unresearched problems' and *pseudo-experimental* fieldwork where 'measurements are taken but the outcome is probably already known'. Unfortunately, a good deal of hypothesis-testing conducted at school level is of this latter type.

As is clear from Job's model, hypothesis testing can also be organised deductively (teacher-led – with the introduction of geographical theory leading to the formulation of an hypothesis) or inductively (encouraging students to develop hypotheses based on initial observations in the field).

The hypothesis-testing approach has a number of distinct benefits:

1. It allows students to 'test' general models and theories in specific locations. Handled well, it can encourage critical thinking about geographical ideas.
2. Students gain experience in data-gathering methods, often making use of a range of fieldwork equipment
3. The quantitative data collected in the field often lends itself to sophisticated data transformation and processing methods. This helps students develop mapping, graphing and statistical techniques. The resultant research reports have, until recently, been the most common form of geography 'coursework' submitted for A level and GCSE examinations.
4. The process of hypothesis testing promotes a logical and sequential approach to investigation, allowing students to make sense of highly complex situations (Figure 2)

Figure 2: a sequential framework for hypothesis testing (adapted from Job 1999)



The hypothesis testing approach has been increasingly criticised in recent years for a number of key ‘failings’. Broadly speaking, whilst geography at university level has taken a ‘cultural turn’ away from a reductionist approach to understanding the world, the hypothesis testing habits of school geographers have come to be seen at times as narrow and over-simplistic.

Taylor (2004) asks pointedly:

“How often do we take students to interesting places, perhaps areas far removed from their normal range of experience, and then get them to spend most of their time looking at a clip board or measuring instrument?”

Caton (2006) identifies the following problems:

- Student engagement with repetitive activities or ones for which they do not understand a meaningful purpose can be low;
- Knowledge and understanding can be poorly developed, especially where data collecting and data processing or interpretation are widely separated (i.e. where there is no discussion in the field). Transfer of doing to *learning* is limited;
- The narrow focus of work can limit an holistic appreciation of a place or issue. Students’ feelings or responses to a place are not addressed or developed;
- With deductive approaches in particular, limited use is made of the student’s prior understanding or experience;
- Values and opinions can be given insufficient weight, or are abstracted (“the shopkeeper’ or ‘environmentalist’ rather than the actual people involved)

3. Enquiry

Enquiry fieldwork, as the name implies, is concerned with posing questions worth answering! One of geography’s foremost experts on enquiry goes as far as to say that ‘The value of an academic subject lies in the extent to which it answers questions we are interested in’. (Roberts 2009)

Job (1999) proposes some 'well-conceived questions': What is this place like? What distinguishes it from other places that you know?

- What does it mean to me? What does it mean to other people who live here?
- How is it related to other places?
- How did it used to be? How might it change?
- Are there different views about change in the locality? How would we prefer it to change?
- Can it go on like this?

Whilst these questions are not in themselves 'fieldwork strategies', they do draw on some powerful geographical thinking and seem likely to unlock the curiosity of our students in the field. A number of the strategies seen in the case study section are underpinned by such questions.

Note also that, like any set of approaches, these questions are far from being 'value-free'. Many of them have a strong humanist or ecological slant. The issue of values is discussed later in this section.

Given the ease with which an hypothesis can be turned into a question ("The depth of a river increases downstream" becomes "What happens to the depth of a river as it approaches its mouth?") some practitioners make the mistaken belief that the two approaches are interchangeable. This is to misunderstand the nature of an **enquiry** question. Riley (2000) suggests that good enquiry questions:

- Capture the interest and imagination of pupils
- Place an aspect of geographical thinking or investigating at the forefront of the mind
- Result in tangible, lively, substantial, enjoyable 'outcome activities'.

So not any question will do!

Questions that students can relate to, that they pose themselves, that they want to know the answer to or that allow them to consider 'what might' are all more likely to be successful enquiry questions. Common pitfalls are not involving students (the teacher posing questions without reference to students' needs and interests) or posing questions that limit possibilities ('where should the factory go?' rather than 'should it be built?').

The final two types of fieldwork strategy are known collectively as 'experiential'. This distinguishes them from the 'positivist' approaches already dealt with. The ethos of these approaches is probably best captured by Van Matre (1979):

"Many of life's most rewarding, enriching and heartfelt experiences can barely be put into words, let alone placed on a scale. If we relied too much on the usual processes of collecting and testing, what would happen to our goals of instilling a sense of wonder, a sense of place and a reverence for life?"

4. Discovery

Discovery fieldwork involves the teacher taking a calculated risk. In order to function as an 'animateur', the teacher provides an opportunity and encouragement for students to explore an environment for themselves. New observations and personal discoveries are likely. Outcomes and even locations determined by the participants, not the teacher.

The emphasis of discovery fieldwork is on exploration and the development of independent learning skills. Typically, students are given the opportunity to use generic tools and techniques (for example, taking photographs, making observations or collecting objects) driven by their own curiosity. As they discover features in an environment, they develop a sense of where they are and begin to generate ideas and questions for further discovery. The results are invariably unpredictable!

Table 3: arguments for and against the use of discovery approaches

Arguments against/concerns	Arguments for/benefits
Requires good standards of student discipline and behaviour	Promotes good behaviour by transferring responsibility to students
Causes concerns over safety as locations not as clearly specified	Promotes responsible approach to identifying and managing risk
Allows students to focus on issues/aspects that are not related to the curriculum	Builds on students' prior experience and understanding
Difficult for the teacher to 'plan for' – limited activity structure	Engages students in learning and develops personal, learning and thinking skills

Of course, a degree of structure CAN be accommodated within the discovery model. The limits of exploration can be defined; maps, time frames and even worksheets provided. The 'scavenger hunt' strategy for primary students (case study 4) fits this model of discovery fieldwork, as do some of the 'place profile' strategies from case study 3.

A variation on discovery fieldwork is to ask students to 'discover' a place from a particular perspective. This can involve giving students roles and asking them to explore an area with particular needs in mind (for example, imagining an area from an older person's point of view). Alternatively, students can engage in an 'ethnographic' approach by closely observing or talking to members of a community.

5. Earth education

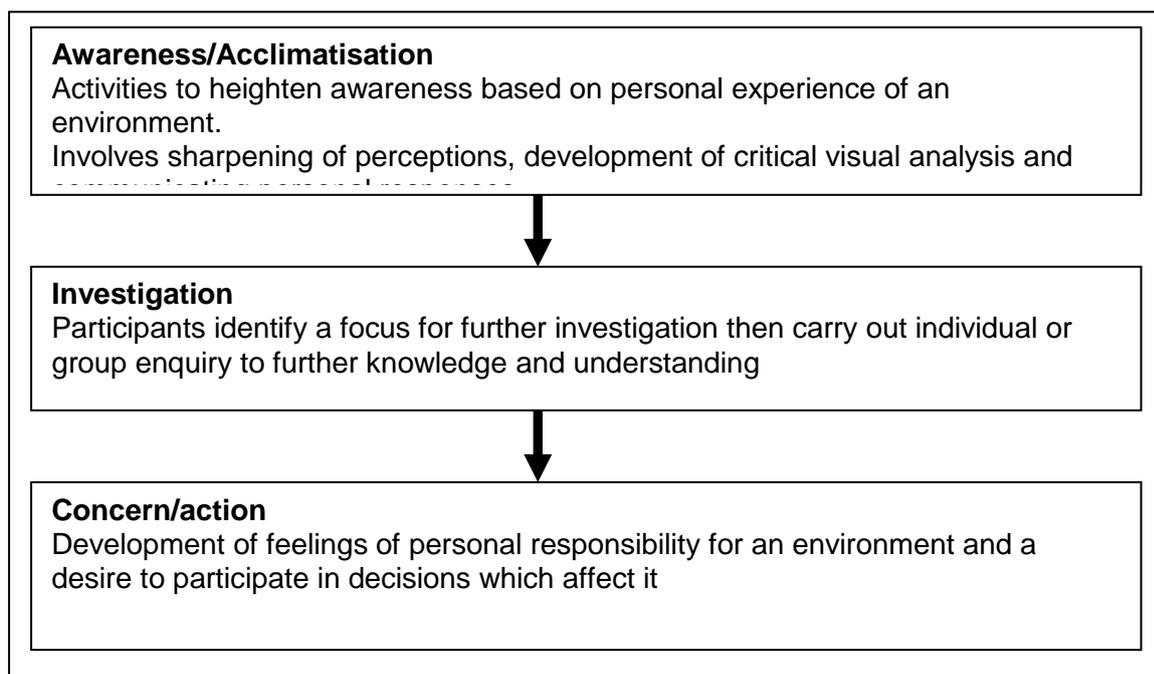
Many commentators prefer the term 'sensory fieldwork' to the more value-loaded 'earth-education'. The link between the two terms is, however, well-established:

“‘Sensory fieldwork’ activities are most often aimed at re-establishing the somewhat fractured connections between people and nature” (Job et al 1999)

By asking students to take 'time out' from the tasks we ordinarily ask them to undertake and instead to connect with their sense of smell, touch, sight, hearing and even taste, sensory approaches can effect a deep emotional response to environments. Typically, the strategy involves **depriving** the student of other senses (e.g. with a blindfold) in order to heighten their awareness. Although these approaches began in natural and often remote environments as a way of 'reconnecting' people and nature, they are just as applicable in urban environments as a means of investigation.

Like any approach to education, earth education is not value-free. Its origins are in environmental education, with a purpose of creating concern and even action on environmental (and now perhaps social) issues. The 'model for outdoor education' (after Hawkins 1987) makes this perfectly clear:

Figure 3: A model for outdoor education (Hawkins 1987)



For many teachers, adopting this model in its entirety presents a challenge. We are, perhaps, more familiar with the use of the first stage as a means of ‘connecting’ students to a place before pursuing more familiar approaches such as enquiry.

Activity

1. Refer to Table 2 in the Pedagogy section:
 - Which of these strategies are you already familiar with?
 - How might you adapt some of these strategies to suit the needs of your learners?
Can they be made more challenging or accessible?

2. Use Figure 1 (a classification of fieldwork strategies):
 - Think about some fieldwork activities you have been involved with recently:
 - Which type(s) of strategy were involved?
 - How might the fieldwork experience/location have been used for a different purpose?
Adapt one of the approaches dealt with in this section to a location you have used.
 - Design a whole day’s programme of fieldwork for a group of students and a location with which you are familiar.

3. Draw a table to compare the various types of fieldwork strategy. What criteria could be used (i.e. if the column headings are Job’s five types of strategy, what might the row headings be?)? Think about advantages, disadvantages and issues connected with the various strategies.

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Conclusion

“All children have a natural enthusiasm for learning about the world around them ... If we listen to what young people say inspires them most, we can be left in little doubt that good quality learning outside the classroom should be part of our educational mainstream”

Sir Al Aynesley-Green, Children’s Commissioner for England, Learning Outside the Classroom (LOTC) website 4-6-09 www.lotc.org.uk

The research evidence, student voice surveys and experiences of teachers point the same way: fieldwork is a vital and enriching element of the geography curriculum. Perhaps this is truer today than at any time previously.

With reduced prescription of curriculum content in Key Stage 3 and the weakening of the equivalence of geography coursework with fieldwork post-14, it seems that there is also more freedom for teachers to select and shape their own fieldwork programmes throughout the curriculum. This poses a professional challenge. The purpose of this module has been to widen the range of strategies from which you might in future choose when designing fieldwork experiences for your pupils. By clearly defining your purpose and critically analysing the evidence of impact (as exemplified through the case studies) you will be able to develop your own repertoire of ‘tried and tested’ fieldwork strategies that work well for you, your students and the locations you visit.

Activity

1. What do your pupils say about geography fieldwork? Create some interview questions for your students to find out more about the experiences they value most.
2. Look at the Learning Outside the Classroom Manifesto website www.lotc.org.uk. Persuade your head teacher to sign up to this manifesto!
3. Use the internet to find additional innovative but successful approaches to fieldwork. Start with QCA’s ‘Innovating with geography’ website www.qca.org.uk/geography/innovating.

List of web links for further information

QCA’s ‘Innovating with geography’ website www.qca.org.uk/geography/innovating

Learning Outside the Classroom www.lotc.org.uk

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