Chapter 9

Geographical enquiry

Margaret Roberts

Before reading this chapter consider the following questions:

■ What examples are there in your own classroom practice of ‘geographical enquiry’?
■ In your classroom is geographical enquiry an occasional activity or an approach to learning?
■ What would be the best example of ‘geographical enquiry’ in your own classroom practice?

The first key to wisdom is constant questioning ... By doubting we are led to enquiry and by enquiry we discern the truth (Peter Abelard, 1079-1142).

What is geographical enquiry?

What makes enquiry geographical?
There is nothing particularly new or geographical about the term ‘enquiry’ (or ‘inquiry’ as it is sometimes spelt). The term has been used for centuries in a variety of contexts and, in relation to secondary education in England, it is currently used across seven subjects of the national curriculum: citizenship, design and technology, geography, history, ICT, mathematics and science (DFEE/QCA, 1999a).

What makes an enquiry ‘geographical’ is what is being investigated and the kinds of questions being asked. Neighbour (1992) identified the emergence of five ‘core’ questions that he claims have:

received national and international recognition as the focus for geographical education at high school level:

1. What is the phenomenon?
2. Where is it located?
3. Why is it located there?
4. What impact does its location have?
5. What changes should be made? What ought to be done? (Neighbour, 1992, p. 15).
Section A
What do you think are the characteristics of geographical enquiry? Look at each of the possible characteristics below (A1-A12) and decide whether it is essential for geographical enquiry or not.

<table>
<thead>
<tr>
<th>Geographical enquiry ...</th>
<th>Essential</th>
<th>Not essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>■ incorporates the whole sequence of enquiry skills from questions through to evaluation (Figure 4)</td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>■ includes some field work</td>
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<tr>
<td>A3</td>
<td>■ includes the use of primary data</td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td>■ includes both physical and human aspects of geography</td>
<td></td>
</tr>
<tr>
<td>A5</td>
<td>■ is related to an issue about which there are different viewpoints</td>
<td></td>
</tr>
<tr>
<td>A6</td>
<td>■ is an approach to learning to be applied to all themes and places studied</td>
<td></td>
</tr>
<tr>
<td>A7</td>
<td>■ includes the identification of questions</td>
<td></td>
</tr>
<tr>
<td>A8</td>
<td>■ includes the suggestion of hypotheses</td>
<td></td>
</tr>
<tr>
<td>A9</td>
<td>■ includes the collection of data</td>
<td></td>
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<tr>
<td>A10</td>
<td>■ includes the analysis of data</td>
<td></td>
</tr>
<tr>
<td>A11</td>
<td>■ includes evaluating information</td>
<td></td>
</tr>
<tr>
<td>A12</td>
<td>■ requires students to give their own opinions</td>
<td></td>
</tr>
</tbody>
</table>

Section B
How essential is students’ involvement (B1-B10) in the different stages of geographical enquiry work?

<table>
<thead>
<tr>
<th>The students ...</th>
<th>Essential</th>
<th>Not essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>■ choose the example to be studied (e.g. which volcano, which LEDC)</td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>■ are involved in identifying key questions or hypotheses</td>
<td></td>
</tr>
<tr>
<td>B3</td>
<td>■ devise the procedure for the study</td>
<td></td>
</tr>
<tr>
<td>B4</td>
<td>■ locate sources of information</td>
<td></td>
</tr>
<tr>
<td>B5</td>
<td>■ collect data</td>
<td></td>
</tr>
<tr>
<td>B6</td>
<td>■ decide how to present data</td>
<td></td>
</tr>
<tr>
<td>B7</td>
<td>■ analyse and interpret the data themselves</td>
<td></td>
</tr>
<tr>
<td>B8</td>
<td>■ reach their own conclusions</td>
<td></td>
</tr>
<tr>
<td>B9</td>
<td>■ evaluate the study</td>
<td></td>
</tr>
<tr>
<td>B10</td>
<td>■ express their own views</td>
<td></td>
</tr>
</tbody>
</table>
A list of core questions can provide a supportive framework but should be open to scrutiny, debate, modification and extension because what geographers study and the questions they ask change over time. Neighbour’s questions do not incorporate recent developments in human geography which take into account different geographies and perspectives. These might be addressed by a question such as ‘How is space and place experienced and represented by different people?’. Any set of questions in themselves, however, does not make it clear what geographical enquiry means in the context of the secondary school curriculum. Before we go any further, I invite you to clarify your own views by responding to the questionnaire in Figure 1 and by reading the comments on the questions in Figure 2.
Different understandings of geographical enquiry

Research has shown that people are uncertain of the meaning of ‘enquiry’ (Rawling, 2001; Roberts, 1998). This is hardly surprising as the term is used in two rather different ways, as is evident in the comments on the questionnaire.

First, the term is used to refer to a discrete piece of work, the kind of investigation required for GCSE and A-level geography coursework. Such investigations require the collection of primary data, usually in the field, and the use of the complete sequence of enquiry skills (Figure 3). The use of a similar sequence of enquiry skills in the geography national curriculum (DfEE/QCA, 1999b, p. 22) could lead people to think that what is required is something similar to an investigative course study.

The geography national curriculum, however, uses the term ‘enquiry’ to mean an approach to learning to be used for all themes and places studied. The enquiry approach to learning geography was first introduced by the three Schools Council geography projects of the 1970s and 1980s. Naish et al. (1987), writing about the Schools Council

<table>
<thead>
<tr>
<th>Stage</th>
<th>Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Planning the enquiry, identifying the issue, questions and/or hypotheses, and planning how to investigate</td>
</tr>
<tr>
<td>2</td>
<td>Collecting, recording and presenting data</td>
</tr>
<tr>
<td>3</td>
<td>Analysing and interpreting data</td>
</tr>
<tr>
<td>4</td>
<td>Reaching conclusions</td>
</tr>
<tr>
<td>5</td>
<td>Evaluating the enquiry</td>
</tr>
</tbody>
</table>

Photo: ©Margaret Roberts.

Figure 3 | Sequence of enquiry skills.
16-19 geography project, wanted students ‘to enquire actively into questions, issues and problems, rather than merely to accept passively the conclusions, research and opinions of others’ (Naish et al., 1987, p. 45). The Bristol Project wanted students to be engaged in ‘activities which involve them in processes of inquiry [sic] similar to those which geographers themselves follow when attempting to solve problems’ (Tolley and Reynolds, 1977, p. 21). The Geography for the Young School Leaver (GYSL) Project also emphasised students’ active involvement in the learning process. The style of learning promoted by all three projects contrasted with a style of learning in which geographical information was transmitted or ‘delivered’ to students by the teacher. These projects have had a continuing influence on examination specifications. Four of the current GCSE specifications and two of the current A-level specifications explicitly promote an enquiry approach to the study of all the content specified (Figure 4) and set out what is to be studied under headings of key questions to be investigated rather than as content to be learnt.

Although what is written in this chapter is relevant to separate coursework investigations, its focus is on the second meaning of enquiry as an approach to learning.

**Why is geographical enquiry important?**

An enquiry approach to learning geography can be justified in relation to a theory of learning, in relation to how knowledge is constructed and in relation to the overall purposes of education.

1. **It is an approach to learning which involves students in making sense of new information for themselves**

   According to constructivism, a widely accepted theory of learning, we can learn about the world only through actively making sense of it for ourselves (Barnes and Todd, 1995). Knowledge cannot be transmitted to us ready made; it cannot be ‘delivered’. In order to learn we have to connect new knowledge with what we know already. The sense we make of new knowledge depends on our existing ways of thinking; on what Massey calls our ‘geographical imaginations’ (Allen and Massey, 1995). An enquiry approach provides scope for students to make connections with their existing knowledge and ways of thinking. It enables students to make sense of new data for themselves through their active involvement in analysis and interpretation. It can enable students to become aware of their own geographical imaginations through which they understand the world.

2. **It acknowledges that geographical knowledge is not ‘out there’ as some absolute reality, but that it has been constructed by geographers**

   What counts as geographical knowledge has been constructed by people who have asked particular questions at particular times and in particular places. Geographers have developed ways of seeing the world and have constructed theories to understand it and stories to explain it. They search for new information in light of these stories. These ideas have been well expressed in relation to journalism by Claud Cockburn:

   > To hear people talking about facts, you would think that they lie about like pieces of gold ore in the Yukon days waiting to be picked up. There are no such facts. Or if there are, they are meaningless and entirely ineffective; they might, in fact, just as well not be lying about at all until the prospector – the journalist – puts them into relation with other facts: presents them in other words. They become as much a part of a pattern created by him [sic] as if he were writing a novel. In that sense all stories are written backwards. They are supposed to begin with the facts and develop from there, but in reality they begin with a journalist’s point of view, a conception (quoted in Wheen, 2002, p. xii).
## (a) GCSE specifications

<table>
<thead>
<tr>
<th>Course work essential requirements</th>
<th>AQA A</th>
<th>AQA B</th>
<th>AQA C</th>
<th>Edexcel A</th>
<th>Edexcel B</th>
<th>OCR A</th>
<th>OCR B</th>
<th>OCR C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of primary data</td>
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<td>✔</td>
<td>✔</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Use of complete sequence of enquiry skills</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<td>Fieldwork</td>
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</table>

<table>
<thead>
<tr>
<th>Characteristics of specification as a whole</th>
<th>AQA A</th>
<th>AQA B</th>
<th>AQA C</th>
<th>Edexcel A</th>
<th>Edexcel B</th>
<th>OCR A</th>
<th>OCR B</th>
<th>OCR C</th>
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<tbody>
<tr>
<td>Physical geography studied separately</td>
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<td></td>
<td></td>
<td></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Physical geography in people/environment context</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Emphasis on issues</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Decision making/ problem solving paper</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Enquiry approach encouraged for study of all themes</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Content framed by key questions</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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</tbody>
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## (b) AS/A2-level specifications

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<th>Level at which examined</th>
<th>AQA A</th>
<th>AQA B</th>
<th>Edexcel A</th>
<th>Edexcel B</th>
<th>OCR A</th>
<th>OCR B</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2</td>
<td>✔</td>
<td>✔</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>✔</td>
</tr>
<tr>
<td>AS</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>A2</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristics of specification as whole</th>
<th>AQA A</th>
<th>AQA B</th>
<th>AQA C</th>
<th>Edexcel A</th>
<th>Edexcel B</th>
<th>OCR A</th>
<th>OCR B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical geography studied separately</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Physical geography in people/environment context</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Emphasis on issues</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<td>✔</td>
<td>✔</td>
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</tr>
<tr>
<td>Decision making paper</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Enquiry approach encouraged for study of all themes</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Content framed by key questions</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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</tr>
</tbody>
</table>

*Figure 4 | Enquiry in geography (a) GCSE specifications, and (b) AS/A2 level specifications.*
Geographical stories, like journalists’ stories, start with points of view, with geographical conceptions, and are created by geographers who put facts ‘into relation with other facts’ so that they are not ‘meaningless’.

The enquiry approach to geographical education recognises this; by involving students in constructing geographical knowledge for themselves they can become aware of how such knowledge is created. It can make them aware of the selectivity of knowledge.

3. It has the potential to give students more control over their own learning

Students who are involved in geographical enquiry are learning how to learn at the same time as they are learning geography. By developing enquiry skills, students learn how to investigate an issue, how to select data, to be critical of data, to analyse and interpret data for themselves and to reach their own conclusions. Geographical enquiry can be an empowering process in which students gain greater awareness of how they learn and how knowledge is constructed and presented to them. This can only happen if the teacher allows students to participate in the decisions that are made in constructing knowledge. If teachers make all the decisions, then students learn to do little more than follow instructions. If we think it is important that students learn to take more control of their own learning, then we need to be aware of when and how and why we are controlling enquiry work and when and why and how we are enabling students to have control.

Figure 5, based on a framework devised by Barnes et al. (1987) provides a structure for analysing the extent to which teachers control enquiry work and the extent to which students are enabled to participate in the construction of geographical knowledge.

<table>
<thead>
<tr>
<th></th>
<th><strong>Closed</strong></th>
<th><strong>Framed</strong></th>
<th><strong>Negotiated</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content</strong></td>
<td>Focus of enquiry chosen by teacher.</td>
<td>Focus of enquiry chosen by students within theme (e.g. choosing which volcano to study).</td>
<td>Student chooses focus of enquiry (e.g. choosing which LEDC to investigate).</td>
</tr>
<tr>
<td><strong>Questions</strong></td>
<td>Enquiry questions and sub-questions chosen by teacher.</td>
<td>Teacher devises activities to encourage students to identify questions or sub-questions.</td>
<td>Students devise questions and plan how to investigate them.</td>
</tr>
<tr>
<td><strong>Data</strong></td>
<td>All data chosen by teacher. Data presented as authoritative evidence.</td>
<td>Teacher provides variety of resources from which students select data using explicit criteria. Students encouraged to question data.</td>
<td>Students search for sources of data and select relevant data from sources in and out of school.</td>
</tr>
<tr>
<td><strong>Making sense of data</strong></td>
<td>Activities devised by teacher to achieve pre-determined objectives. Students follow instructions.</td>
<td>Students introduced to different techniques and conceptual frameworks and learn to use them selectively. Students may reach different conclusions.</td>
<td>Students choose their own methods of interpretation and analysis. Students reach their own conclusions and make their own judgements about the issue.</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>The teacher controls the construction of knowledge by making all decisions about data, activities and conclusions.</td>
<td>The teacher inducts students into the ways in which geographical knowledge is constructed. Students are made aware of choices and are encouraged to be critical.</td>
<td>Students are enabled, with teacher guidance, to investigate questions of interest to themselves and to be able to evaluate their investigation critically.</td>
</tr>
</tbody>
</table>

*Figure 5 | The participation dimension in geographical enquiry.*
What are the essential aspects of geographical enquiry?

There are four essential aspects of geographical enquiry that need to be considered in planning both schemes of work and individual lessons: creating a need to know; using data as evidence; making sense of data; and reflecting on learning. These aspects together with some of the thinking skills related to them are shown in Figure 6.

Creating the need to know

Geographical enquiry is about having an inquisitive attitude towards the world and to what we know and understand. It seems vital, if students are to learn anything in school, that they too have a ‘need to know’, that they too are made curious, are puzzled, and want to ask their own questions. Even when the key enquiry questions are identified by an examination specification or by the teacher, it is important that these questions and any subsidiary questions become the students’ own questions.

**Creating a need to know**

To:
- be curious
- speculate
- hypothesise
- use imagination
- generate ideas
- make links with existing knowledge
- identify issues
- ask questions
- plan how to research

**Using data**

- Locate evidence
- Collect evidence
- Select evidence
- Sort data
- Classify data
- Sequence data

**Making sense**

To make connections of all sorts including to:
- Relate existing knowledge to new knowledge
- Describe
- Explain
- Compare
- Contrast
- Analyse
- Interpret
- Recognise relationships
- Analyse values
- Clarify values
- Reach conclusions

**Reflecting on learning**

To be critical in relation to:
- Data sources
- Skills and techniques used
- Criteria for making judgements
- Opinions
- What has been learnt
- How it has been learnt
- How the enquiry could be improved
- How the enquiry could be further developed
- The value of what has been learnt

*Figure 6 | A framework for learning through enquiry.*
There are several ways of creating a need to know, these include:

1. **Stimulus** Teachers can provide some sort of stimulus to promote curiosity and questions (Davidson and Catling, 2000). The stimulus could be in the form of resources, e.g. photographs, or in the form of activities which invite students to speculate, e.g. intelligent guesswork (Roberts, 2003).

2. **Stance** Bruner (1986) contrasted two stances that a teacher could adopt in relation to what was being studied. A teacher could ‘open wide a topic to speculation and negotiation’ by suggesting doubt and uncertainty in his/her talk. Alternatively, a teacher could ‘close down the process of wondering by flat declaration of fixed factuality’. One of the ways of creating a need to know is by recreating in the classroom the sense of the uncertainty that preceded what is now known. But how often do teachers convey uncertainty? When they do, it is memorable. For example I can still remember my biology teacher, Miss Page, being genuinely puzzled about how birds managed to migrate. Her ‘stance’ made us wonder and puzzle with her. In an enquiry approach to learning it is more appropriate at the start of a lesson or unit of work to establish the questions which are to frame the investigation than to inform a class of the outcomes of what is to be learnt. How can outcomes of enquiry work be anticipated with any degree of certainty?

3. **Choice** Enquiry work can be organised so that students investigate what interests them most. They could, for example, be given a choice of which volcano or earthquake or tourist destination to investigate.

4. **A motivating outcome** A need to know can be created by students having to present their findings to the class or to a wider audience: e.g. in a television presentation, in a PowerPoint presentation, in a role-play, on a display or in a letter or report which is actually going to be sent to someone.

### Using data as evidence

Geographical enquiry needs good data that can be used as evidence in the investigation. But what constitutes ‘good data’ and how can data be used as ‘evidence’? Good data for enquiry would:

- be relatively unprocessed, so that information has not already been extracted for them. The range of data that can be used in geography is vast (Figure 7);
- include data likely to be encountered in the world outside the classroom, e.g. publicity maps, televised weather forecasts, in order to help students make sense not only of geography resources but also of the world they live in;
- include some irrelevant information. Students need to learn to distinguish between relevant and irrelevant information and to select what is relevant;
- have the source of the data acknowledged.

The following activities would encourage students to use data as evidence rather than as ‘fact’:

- Locating information on the internet or in libraries. This can make students aware of the vast amount of data on any subject and of the presence of conflicting data.
- Selecting relevant information (from textbooks, libraries, the internet,
Extracting information from data, using a variety of note-taking frames. If students are introduced to a variety of note-taking frames they can learn how the same data can be used in different ways to produce different information.

Making inferences from data. Students should be encouraged in geography, as they are in history, to distinguish between what they can definitely say, what they can infer from a data source and what they cannot say from a given data source. The Layers of Meaning framework (Figure 8) can be used to develop these skills in relation to a variety of data sources, e.g. photograph, text, map, graph.

What further questions do I need to ask?

What does the data not tell me?

What can I infer from the data?

What does the data definitely tell me?

Figure 8 | Layers of meaning framework. Photo: ©Diane Wright.
Making sense

Making sense is at the heart of learning. Geographical enquiry is essentially about using the information collected from data to develop understanding and to construct geographical knowledge. There is a difference between information and knowledge. Students can find information from a wide range of data but that in itself is not enquiry. Enquiry is not simply about students finding information to answer a question and writing the correct answer in their books. It is about developing understanding. In order to do this, students need to do something with the information they have collected. They need to see relationships between different bits of information, to make all kinds of connections, to relate it to what they already know and to develop their own understanding of what they are studying.

Activities which help students to make connections and make sense include:

- Extended writing of all kinds, including personal writing
- Making oral presentations to others
- Creating a PowerPoint presentation
- Producing a video or a set of photographs
- Drama activities, including formal role-play
- Concept mapping (Leat and Chandler, 1996)
- Making displays.

Reflecting on learning

Another essential aspect of learning through enquiry is the process of reflecting on learning. This has two elements:

- Reflecting on what has been learnt
- Reflecting on how it has been learnt.

Reflecting on what has been learnt

Throughout enquiry work it is important to stand back and ask critical questions. All of the following should be open to scrutiny and evaluation:

- the questions posed at the outset;
- the way the data was collected and/or selected;
- the validity of the data;
- the reliability of the data;
- the ways in which the data have been presented;
- the ways in which the data have been analysed and interpreted; and
- the conclusions reached.

Students can be prompted to think critically about what they are doing throughout the enquiry process. Reflecting on what has been learnt pays critical attention to the way knowledge has been constructed and could be part of a planned debriefing activity.

- Are there any other questions we could have asked at the start of the enquiry?
- Which resources did you find most useful and why?
- Were these sources of information reliable? Why or why not?
- Would it have been useful to have some other sources of information? If so, what?
- Do you think you would have found out something different from different resources?
- What advice would you give to another class carrying out a similar enquiry?
Reflecting on how learning has taken place: ‘going meta’

Psychologists are paying increasing attention to the role of metacognition in learning. Bruner describes this as ‘going meta’ or ‘turning around on what one has learned’ (1996, p. 88). ‘Going meta’ involves making students aware of their own thought processes. When students are ‘going meta’ they are attempting to put their thinking processes into words so that thinking processes can be shared, evaluated and developed further. Research has shown that students are capable of doing this and that ‘going meta’ improves learning (Bruner, 1996).

Students can be encouraged to ‘go meta’ both during individual or small group consultations with teachers or in whole-class plenary activities. Questions which encourage students to ‘go meta’ would vary according to the activity but might include:

- How did you set about doing this?
- What did you find easy/difficult? Why?
- What things did you consider when making that decision?
- What alternatives did you think of?
- What categories did you use?
- How did you set about combining information from different sources?

The questions above are only suggestions; questions need to be devised which are appropriate to particular enquiries. Such questions are important not only as plenary whole-class debriefing questions but also for the conversations that teachers have throughout a lesson with individuals and small groups. Some of the essential differences between an enquiry approach to learning and a transmission ‘delivery’ approach to teaching are in the kinds of conversations that teachers have with students. Research showed that it was these interactive conversations and not the activities themselves that were ‘the difference that made the difference’ in children’s learning (Beveridge, 1995, p. 151). In the same way that a teacher can adopt a stance in creating a need to know, so a teacher can adopt a stance that encourages critical reflective thinking throughout the enquiry process. Critical reflective questions can be included in the planning process for geographical enquiry.

Example 1: Year 8 enquiry: recycling

In this series of lessons year 8 students investigated the theme of recycling. These lessons demonstrate the essential aspects of an enquiry approach to learning. The teacher created a need to know by inviting students to devise their own questions and by providing a wider audience for the outcome of their research. The students had to locate and select data from the internet and to make sense of the data by planning how to present their own work to create a newsletter. The plenary discussion sessions encouraged both the students and the teacher to reflect on the process of the enquiry and the adequacy of the data. The data could have been supplemented with resources on recycling in the area local to the school.

Lesson 1

*Starter: Introduction to the enquiry*

Introduce students to the topic being investigated: What shall we do about recycling?

Give students Task Sheet (Figure 9)

- Inform students about what they are going to do:
- Generate questions about recycling in groups
- Find out about recycling from the internet
- Use the information to produce a newsletter
### Recycling - what can we do about it?

**Aim of this series of lessons:**
To produce a Tupton Hall Newsletter about what we can do about the recycling issue. We could be:
- As individuals
- As a group
- As a family
- As a school
- Or a mix of all of the above

**Tasks**

1. **Group work:** Brainstorm the key question you wish to research (use the grid over the page to help you)
2. **Individually/pairs:** Use the internet to find out the answers to your key questions (Quick tip: each member of the group researches the answers to different key questions)
3. **Group work:** Gather back as a group and share your research answers
4. **Individually:** Using PagePlus, produce a newsletter about 'What we can do about recycling' (Hint: use the why, what, where, how order for your newsletter)

**Websites**
- www.alupro.org.uk
- www.foe.co.uk/campaigns/waste/issues/recycling
- www.epa.gov/recyclicity
- www.wastepoing.co.uk/wasteconnect
- www.useitagain.org.uk/texts/green02b.html
- www.bbc.co.uk (search recycling or go to 'where I live' then Leicester, then Links)

**Figure 9** | The year 8 recycling activity sheet.

**Activity 1: Devising questions (creating a need to know)**
Students work in groups of 3 and 4. Each group devises four questions using note-taking frame (Figure 10). The group decides who should investigate each question.

### Recycling - what can we do about it?

<table>
<thead>
<tr>
<th>Key Questions</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Why?</strong></td>
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<td><strong>What?</strong></td>
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<td><strong>Where?</strong></td>
<td></td>
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<tr>
<td><strong>How?</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 10** | The note-taking frame. Photo: ©Diane Wright.
Activity 2: Using data
Students work individually at computers. Teacher supports.

Plenary: Reflecting on learning
Feedback on enquiry so far:
What have they found out so far?
Which questions were easy to research? Which websites were good/not so good?
Which questions were difficult to research? Can these questions be re-phrased?

Lesson 2
Activity 1: Using data
Students continue their research using the internet. Teacher supports.

Activity 2: Making sense of data
Students reconvene in groups. Each student reports back on what he/she has found out. The group decides how this information should be presented in a newsletter. The group decide on what each person in the group will do.

Plenary: Making sense of data: scaffolding
Discussion of how to present and structure the newsletter.
What ideas have the groups had so far? What kinds of headings could be used?
How could the information be presented? What is the most important information to include?

Lesson 3
Activity 1: Making sense of data
Students work on the computers compiling the newsletter.

Plenary: Reflecting on learning
What have they learnt about recycling?
What kinds of things can be recycled? Which are the easiest for people to recycle?
Where is it possible to recycle? Is it important to recycle? If so, why?
What have they learnt from writing the newsletter? If they were starting the whole project again, what would they do differently? What advice would they give another class?
Follow up: the newsletters are displayed for everyone to see.

Example 2: Year 10 enquiry: urban redevelopment
This series of lessons was used with year 10 students studying for GCSE Geography (OCR specification B). Again, the essential aspects of an enquiry approach to learning were evident. The teacher created a need to know by asking the students to take part in a real-life consultation exercise about the town they lived in. Students’ own local knowledge and their own opinions were highly relevant to the study. The teacher also created a need to know by providing a real audience for the students’ reports; they were going to be read by Town Planners. They had access to real data from the world outside the classroom: Local Plans, consultation documents and Ordnance Survey maps.

They had to make sense of the data for themselves by responding to the consultation questions when writing their reports.

Lesson 1
Starter: introduction to the enquiry
Students were asked to think about their local town, Worksop, and to jot down any
problems or issues that needed to be addressed. Their ideas were pooled on a spider diagram on the board. For a few of the issues raised, possible solutions were discussed briefly.

The class was then given the leaflet produced by Bassetlaw District Council entitled ‘A new Local Plan for Bassetlaw: Your chance to shape the future of Bassetlaw’. They were told that the class would take part in the consultation process. Attention was drawn to some of the questions in the leaflet:

- How would you like to see your town change in the future?
- Are there any features that should be protected or kept just as they are now?
- Is more land needed for housing? If so where should this be?
- Is there a need for any environmental improvements?

Students were informed that they were going to work in groups to find out more information and to produce reports of their own recommendations. These would be submitted to Bassetlaw District Council within the period of the consultation and a Planning Officer from the Council would read them and report back to them.

*Activity: Using data to find out about the Local Plan*

Students worked in groups using copies of the Local Plan and copies of the local Ordnance Survey map to identify what they wanted to stay the same and what they wanted changed.

*Lesson 2 and homework*

*Activity: Using data and making sense of data*

Students continued to collect data for a report. Students started to plan their reports, supported by the teacher.

*Lesson 3 and homework*

*Activity: Using data and making sense of data*

Students completed their reports which were then sent to the Council.

*A few lessons later…*

*Activity: Plenary meeting with Planning Office*

A Planning Officer from the Council visited the class, gave a talk on ‘A planner’s job and duties in relation to urban regeneration’ and replied to all their suggestions. Each group had a chance to raise an important local issue to which the Planning Officer responded. Following the lesson, the Planning Officer wrote to the class commenting on their suggestions about:

- Removing the one-way traffic system
- Improving public transport
- Providing more CCTV cameras
- Providing better leisure activities
- Redeveloping the Mayfair Centre

The students’ reports and suggestions were kept at the local council offices for later inspection together with any proposals made by other members of the general public.

*Related publications from the Geographical Association:*


*Acknowledgement*

The author wishes to thank Jeanette Shipley, Tupton Hall School, Chesterfield, and Matt Podbury for permission to reproduce the series of lessons in Examples 1 and 2. Matt organised and developed the activities when he was a PGCE student on school experience at Valley Comprehensive School, Worksop.
Implications for practice

(a) How can I create a ‘need to know’ for my students?

It is all too easy for geographical enquiry to remain the teacher’s enquiry, in which students have no real curiosity about what is being investigated. It is good to reflect on what creates a need to know for particular classes; to explore what provokes their curiosity, what makes them want to investigate. The three ‘S’s are important: stimulus, stance, speculation. It is worth exploring different kinds of stimulus, it is worth adopting a wondering stance rather than an authoritative stance and it is worth developing strategies to promote speculation.

(b) How can I help students make sense of data?

Making sense takes time and involves more than transferring information from data sources to notes. We need to give students opportunities to:

- relate new information to existing knowledge
- select data for themselves so that they become aware of the selective nature of knowledge
- deal with conflicting data
- apply geographical frameworks and concepts to knowledge
- think for themselves about data, to discuss data and to reconstruct information in new ways
- reflect critically on what they have learnt.

References