

## 5

# Gathering data

This chapter focuses on:

- aspects of methodology;
- ethical considerations;
- methods of data collection and the relative advantages and limitations of these;
- the use of case studies as an approach.



When you set up an action plan for your action research, you will have given some consideration to an all important part of conducting any research – gathering data. You would probably have been asking yourself one particular question for some time: what methods will I be using and how will I go about organizing the collection of data? If you are working towards a qualification you would also have been attending lectures in your academic institution on research methodology. This chapter is devoted to aspects relating to data-gathering. As I mentioned in Chapter 4, as preparation for writing this book I kept tape-recordings of some of my tutorials with students and practitioners who wished to adopt action research as the methodology for their research. I start this chapter with a transcript of one such conversation. Martina, studying on a Master's programme, was intending to carry out a project on curriculum differentiation. After the first few tutorials, she decided to narrow the focus of her study to investigating how three class teachers of 10 year old children in her school addressed curriculum differentiation in their classrooms and then considering what changes they might implement to improve their practice.

### **Our conversation**

*Martina:* I am now ready to start collecting data. I have got some ideas. First, my worry is that I am only working with just three teachers. Is that a big enough sample?

*VK:* Big enough sample for what?

*Martina:* Big enough to have any credibility when I write it up.

*VK:* Why do you have such doubt?

*Martina:* I thought you had to collect information from a larger sample for any research.

- VK:* Let us go back a bit. What is the purpose of your research – of course, other than the fact that it is part of your study? What are your aims?
- Martina:* To find out how different teachers deal with differentiation and learn from it. I will compare what I find out from other classrooms with what happens in my classroom. I need to think carefully about what I am doing. I need to evaluate our practices by asking questions and reflecting on what is happening. That will guide me to generate practical ideas to achieve better curriculum differentiation for a second cycle of work because my head teacher wants me to design a policy on classroom differentiation based on our research.

We then talked about the timescale that Martina had to complete the project, in terms of the requirements set by her school and her study for accreditation purposes. We also discussed the nature of action research which, in Martina's case, would be a small-scale project and a focused study on aspects of practice. Action research offers opportunities for asking 'What is happening here?' and 'How can I improve my practice?' We agreed that the purpose of her research was not to make any generalisations about curriculum differentiation for the whole country, but to study a snapshot of what was happening in her school with a small number of the teachers involved. Personal theorizing of principles through participatory research was the main purpose of Martina undertaking her study. We then went on to discuss what kinds of data she needed to collect.

In the following sections I will present a variety of data-gathering methods, together with their relative merits and any possible disadvantages for their use in action research. The ultimate decision of what kind of data you need and what methods to use will depend on:

- the nature of the evidence you need to collect;
- the time-scale for the study;
- the time available to you for carrying out the project;
- the usefulness of the data you intend to collect;
- a consideration of how you may interpret the data.

The number of different methods you intend to use for collecting data does not make your study any better; indeed I would say that it is the quality of the data you collect that matters. A set of data which has no depth is not going to prove useful when the time comes for data analysis and drawing conclusions. Keep reminding yourself that you will need to analyse the data you collect and provide supporting evidence from that data to justify your conclusions.

Your reading would have provided you with some insights into what aspects you will be looking for. In Martina's case, she decided use a range of methods of data collection: interviewing class teachers on their perceptions of how they achieved differentiation in lessons; collecting lesson plans from all the teachers involved; observing their lessons and collecting students' written work. Martina was encouraged to consider some of the aspects she would be looking for and also how she needed to allow for unexpected outcomes. Running a pilot

study was also suggested to her so that she could consider how she was going to organize her data. She and I discussed when she was going to collect her data and looked into the practical aspects of school time-tables and cover. Did she need to prepare any special resources? What ethical considerations needed to be built into the process of her data collection? Did she have permission from the teachers she was going to study? Had she considered how she was going to share her perceptions and observations with the three other teachers participating? Martina also decided to ask two of her colleagues, who were teaching a different year group, to act as Critical Friends.

## Discussion of methodology

Before considering what data-gathering methods to select, it is necessary to revisit the discussion we had previously on the philosophical underpinning in the context of action research, in terms of its ontological and epistemological considerations. Ontology is concerned with the beliefs we hold about what we are enquiring about. Epistemology – our theory of knowledge – is concerned with our beliefs about what it is possible to know; whether we believe that ‘absolute truth’ can ever be known. It is important for you to voice your philosophical position as your research design, data collection and analysis will be influenced by your beliefs. If you are carrying out your research as part of obtaining a qualification, you will certainly need to demonstrate some knowledge of different research paradigms. An elaborate discussion of different paradigms of research is beyond the scope of this book, so if your study is leading to a dissertation you will need to do some supplementary reading which would be provided in your research methods lectures and from what is listed at the end of this chapter.

Researchers often refer to *positivist* and *naturalistic* paradigms. A positivist (see the glossary of key terms) researcher often gathers large amounts of data in the form of large-scale surveys and analyses them in order to make generalisations, while a naturalistic, interpretative researcher tries to get inside individuals and institutions to understand situations and people. As an action researcher whose research is bound to be located within your specific context that generates knowledge relating to that specific situation, you are likely to follow an interpretive paradigm.

## Quantitative and qualitative data

Action researchers should also be aware of the two categories of data – quantitative and qualitative – and consider their usefulness within the context of their work. Quantitative data can be measured and represented by numbers. When a researcher handles large amounts of data – for example, a large number of questionnaires, surveys, or tests results – it is often necessary to analyse these using statistical methods and presenting them in the form of tables and charts. If you

are collecting views by using questionnaires from a small group of children or colleagues about their perceptions of a style of teaching or attitudes, you may want to represent the data numerically using such tables and charts. The use of questionnaires within a qualitative study often provides ideas for further exploration. However, it is likely that an action researcher would predominantly be working within a qualitative paradigm as the data may be more in the form of transcripts, descriptions and documents for analysis. It must be stressed that qualitative data are not inferior in status and, in action research, that it can illuminate human feelings and provide rich insights into actions and their consequences. What is important is to select the type of data which will best serve the purpose of your study. If you are undertaking action research for the purpose of obtaining a qualification, it is well worth including the distinction between quantitative and qualitative paradigms in your writing-up in order to demonstrate your understanding of research methodology and to provide a justification for the methods you have selected for data collection. Creswell (2009) defines qualitative research as a means of exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the participant's setting, data analysed inductively building from particular to general themes, and the researcher making interpretations of the meaning of the data. In this context, you may remember the view of *social constructivism*, as discussed in Chapter 1. Creswell (2009) maintains that 'social constructivists hold assumptions that individuals seek understanding of the world in which they live and work', that they 'develop subjective meanings of their experiences' and that the goal of the research 'is to rely as much as possible on the participants' views of the situations being studied'. As a result, action researchers who are seeking to generate 'living knowledge' (Reason and Bradbury, 2001) could be described as 'social constructivists'.

Cohen et al's (2007: 166) justification of the use of qualitative methods also provides support for the action researcher in educational contexts. They state that 'the social and educational world is a messy place, full of contradictions, richness, complexity, connectedness, conjunctions and disjunctions. It is multi-layered, and not easily susceptible to the atomization process inherent in much numerical research'. The following features of naturalistic enquiry which is qualitative in nature – listed by the authors – also justify the use of an interpretive methodology for action research.

- Humans actively construct their own meanings of situations.
- Meaning arises out of social situations and is handled through interpretive processes.
- Behaviour and thereby data are socially situated, context-related, context-dependent and context-rich. To understand a situation, researchers need to understand the context because situations affect behaviour and perspectives and vice versa.
- Realities are multiple, constructed and holistic.
- Knower and known are interactive and inseparable.
- Generalisability is interpreted as generalisability to identifiable, specific settings and subjects rather than universally.

An action researcher may use a variety of methods to collect data. Ask yourself the following questions before you start collecting your data.

- What are the aims of my research?
- What aspects am I focusing on?
- What do I need as evidence to achieve my aims?
- What is realistic and feasible?
- How should I record the data?
- How would I analyse the data?

## Ethical considerations

When you are carrying out research it is important to follow ethical guidelines. Academic institutions should maintain a set of guidelines for their students to follow. Reading the guidelines on ethics published by the British Education Research Association (BERA – see the section on useful websites at the end of this chapter) is a useful starting point. Following strict guidelines on ethical issues is of particular importance for action researchers because of the small-scale nature of the projects located within the working situations of such researchers. Special care needs to be taken both for data collection and the dissemination of findings as it would be easy to recognize people and events within local situations.

I would add a special word here about research involving children, which is often the case within action research. You will need to seek permission from the children who are to be involved in your research and not just from their parents. In line with the (1989) United Nations Convention on the Rights of the Child (and see the website at the end of this chapter), you must explain to the children what their role is in the research and that they will be free to drop out of this research at any time during the project.

- Always obtain permission from the participants. If you are collecting data about children, their parents need to be informed. The same principle applies to colleagues, members of local education authorities, parents and governors.
- Provide a copy of your set of ethical guidelines to the participants.
- Explain the purpose of the research. In action research the outcomes are most likely to be used for improving aspects of practice and, therefore, there is less likelihood of resistance from participants.
- Keep real names and the identities of subjects confidential and unrecognizable.
- Share information with colleagues and others whose responses you are interpreting so they can verify the relevancy and accuracy of what you are reporting.
- If you are intending to introduce new ideas and set up interventions with pupils, their parents need to be told.
- Be sensitive to the feelings and perceptions of both parents and students. This is particularly important if the intervention programme is designed to

improve aspects of education, as the students being targeted may be seen to be at an advantage. You need to make it clear that the findings of a research experiment will benefit all.

- Be as non-intrusive as possible in your data collection.
- The information you gather and the changes you make as a result of your research should be shared with all the participants – both adults and children.
- When you are researching socially sensitive issues, you need to make an extra effort to share your purpose and objectives with the participants.

### ***A checklist before you start your data collection***

You may find the following checklist useful before you start collecting information for your project.

- Are any ethical issues being considered?
- Have you got permission from all those who will be involved in the project, such as parents, colleagues and the head teacher?
- Have you checked all the equipment you will need to use? Are the tape recorders, video recorders and cameras operable?
- Have you considered how you will validate the information for accuracy, trustworthiness and relevance (see Chapter 6)?
- Where and how will you store the information?
- Have you a general idea as to how you can analyse and interpret the data (see Chapter 6)?
- Have you organized the resources you need, including any costs?

## **Methods of data collection**

In the following section, we will look at methods for data collection which are commonly used within action research. Data collection methods are also referred to as methods of instrumentation. Before exploring the different methods, let me provide you with two important points which all researchers could usefully bear in mind when planning their data collection.

- There are many ways of gathering data; you have to choose the most suitable method for the task in hand.
- The quality of the data you collect is more important than the number of ways you collect that data.

The methods described in the following sections are:

- using questionnaires;
- conducting interviews;
- gathering documentary evidence;

- keeping field diaries and making notes;
- using systematic observation.

For each method of data-gathering, I have tried to provide some general guidance as well as indicate various advantages and any possible disadvantages for that particular method. Some examples are given in those sections that I felt needed exemplification.

## Gathering data questionnaires and surveys

Using questionnaires at the start of a project can often be very useful because it helps you to collect a range of information with relative ease which can then be followed up as necessary. For example, if you are carrying out a study on how an intervention programme may help to change student attitudes towards learning a particular subject, use of a questionnaire will provide you with a simple means to collect information on student attitudes, before any intervention takes place. The completed questionnaires can help in two ways. Firstly, they provide baseline data on student attitudes before the intervention begins. Secondly, an analysis of the questionnaires may help to shape the nature of the questions you may want to ask during any interviews or observations you might conduct. Within a questionnaire, you can use both short questions and open-ended questions which need fuller responses. When working with children, I often find they enjoy the experience of completing the questionnaires so they can be encouraged to provide full information in response to questions. It is possible to set up questionnaires on-line and experience shows that students do prefer to complete these as opposed to pencil and paper versions.

### Guidelines

Here is a set of guidelines you should find useful to consider.

- Keep the questionnaire simple. By designing appropriate questions, you can often gather a decent amount of data using a small number of questions.
- Consider how you may analyse the responses to the questions at the time of their design.
- Start with questions about the factual information required.
- Use simple language which the respondents will understand.
- Closed questions asking students to select their favourite lesson in school, from a given list (English, mathematics, science, humanities and technology) are easier to analyse by using a frequency chart. Open-ended questions, for example asking students what career they thought they would follow when they leave school, had posed a real challenge to our research assistant at the time of analysis. This question generated so many different responses – including ‘I haven’t thought about it’, ‘I don’t really know yet’ and ‘Nothing, I will win

some money by then' – that this made the analysis much more complex. Some items had to be clustered together for that analysis to take place. But the responses to these question often captured 'real' situations and feelings which proved very illuminating for the researchers, who were also constructing student trajectory maps of changes in their aspirations and attitudes.

- Open-ended questions are useful, but do give some thought as to how you would analyse them.
- Avoid leading questions. For example, a question such as 'Which part of the lesson did you enjoy the most?' assumes that the student enjoyed some parts of a lesson, which may not necessarily be the case.
- Emphasize the anonymity of the responses, as children and adults are often sensitive to who else may be told about how they have responded.
- Undertake a pilot run before you give out your questionnaires and make any adjustments as necessary. In your final report acknowledge your pilot effort and any changes that were made for the final version of the questionnaire.
- Questions do not always have to use words. For example, I have seen some effective use of pictures of happy, puzzled or sad faces, with younger children being asked to select a picture in response to questions such as: 'How do you feel when you are asked to answer a mental mathematics question during a carpet session?'
- Take account of the reading ability of students when administering a questionnaire.

### ***Advantages of using questionnaires***

#### Questionnaires

- enable you to collect background and baseline information quite easily;
- provide information which can be followed up;
- provide a format which is easy to represent in frequencies if you wish to use them;
- are suitable for collecting initial information on attitudes and perceptions.

### ***Disadvantages of using questionnaires***

- You may be subjective and introduce bias in the type of questions you ask.
- Responses to questions may be influenced by what the respondents believe you want to hear.
- Designing a questionnaire needs great skill, especially when you use open-ended questions which are designed to be probing. Take note of the previous section about the challenges involving an analysis of open-ended questions.
- If you are using questionnaires in order to collect data from a large group of people who are not within your institution, returns and response rates may be too low to ensure a valid research outcome.

**An example of a questionnaire**

As part of her data-gathering activities, Stephanie, a member of the senior management team in her school, decided to use a questionnaire to collect information about students' interests, aptitudes and aspirations, prior to designing an intervention programme to be delivered after school to bright students who had the potential to go to university. This was part of a new government initiative. The extracts in Figure 5.1 are taken from Stephanie's questionnaire.

Students' responses to the questionnaire proved useful to Stephanie. Her own evaluation of the use of the questionnaire was as follows:

**Example**

I used about ten multiple choice questions at the start, which the students could respond to quite quickly. As there were about 120 students taking part in the project I was pleased to be able to collect a good amount of information without much effort. The analysis was simple, as I could classify the responses into numbers and represent them visually, using tables and graphs. I felt that the open-ended questions were necessary to encourage students to reveal their aspirations and expectations without giving them predetermined options to choose from.

Responses to the open-ended questions involved greater effort when it came to analysing them. Nevertheless, these questions provided answers relating to some of the aspects I needed to explore. I needed to find out the kinds of aspirations the students had and their perceptions of how they would be able to achieve them. Analysis of these types of questions revealed some significant information. For example, only 14 students expressed any desire to pursue an academic career and listed university education in their future plans. It was also very useful to note that a large number of students had dreams about becoming successful pop singers or sports personalities. In general, the questionnaire provided much useful data which helped me to design an intervention programme that needed to include some strategies to introduce realism in students' aspirations (without shattering their teenage dreams). I selected a sub-sample of students to interview in order to gather more information. I did refine the questions after a pilot run, but it was worth the effort because the questionnaires enabled me to collect much useful data within a short time.

You may consider using Likert scales (where respondents mark on a strongly agree, disagree, no opinion, agree and strongly agree scale) which are also easier to analyse numerically (see Further Reading at the end of this chapter).

**Conducting interviews**

The main purpose of conducting interviews is to gather responses which are richer and more informative than questionnaire data. In some cases, adults and children will give more honest responses in a one-to-one situation. As it is

*The purpose of this questionnaire is to help you to think about any interests which you may like to pursue or develop. It will also help me to organize some out-of-school activities for you. The information you give in the questionnaire is confidential and will not be shared with anyone else, unless you wish me to do so. For some of the questions you are asked to provide brief answers and, for other questions, you are invited to give more information.*

**1. Imagine you are one of a group of students who won a prize in school to set up an exhibition. What role would you want to take?**

- A. Organizer
- B. Artist
- C. Writing and designing brochures for publicity
- D. In charge of sound effects
- E. Any other (say which, and explain why):

.....  
.....  
.....

**2. Suppose a publisher approached you and asked you to help an author write a students' book on one of the following subjects. Which of these will you choose?**

- A. Science
- B. Mathematics
- C. History
- D. Social issues
- E. Art
- F. Technology
- G. Other:

.....  
.....  
.....

**3. If you could select from the following club activities after school, which would you choose?**

- A. A sports activity
- B. Creative writing
- C. Learn a new language
- D. Web design
- E. Learn to play a new instrument
- F. A different club activity that you would like to see in the list. Say which:

.....  
.....  
.....

**4. What do you expect to be doing in ten years' time?**

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.....  
.....

**5. What do you think you should do between now and ten years' time to achieve what you want to be?**

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.....  
.....

Figure 5.1 Questionnaire example

impossible to take notes on all that is said during an interview I recommend tape-recording the interview, if the numbers are manageable. You can make the choice of whether you listen to the tapes or read fully transcribed versions of the interviews when you wish to analyse them. Tape-recording also makes it possible for the researcher to give full attention to the context of the interview.

Interviews may be conducted with individual students or in a group and there are different kinds of interviews. In a **structured interview** the interviewer starts with a set of questions which are pre-determined and only these questions are asked. In a **semi-structured interview**, the researcher prepares a set of questions but also prepares a set of sub-questions which can be used to probe ideas further and gather more information. There is also the option of using **open-ended interviews**. In an intervention programme for raising (13 year old) students' motivation and achievement, a teacher researcher used the following open-ended questions.

- Why do you think you go to school?
- What do you like or dislike about school?
- Can you describe a good experience you have had in school?

Students were encouraged to provide full answers to these questions. The interpretations themselves were different in different cases, but that in itself provided useful data. If you decide to conduct group interviews using open-ended questions you should really get a set of different responses, although there is always the danger of students copying each other or some students trying to dominate the discussions.

There are also other kinds of interviews such as focus group and telephone interviews (see Further Reading at the end of this chapter).

### **Some guidelines**

- Select comfortable surroundings for the interview.
- Make sure that the interviews are not too long. About half an hour to 40 minutes for each is about right.
- Have some idea about what you want to ask. This will, of course, depend on the research topic and what aspects you are investigating. Semi-structured interviews allow you to probe further during the interview.
- If you intend to ask factual questions start with them.
- Begin with a simple question.
- Explain the purpose of the interview in a positive way. I often start with: 'I need your help to find out more about ...' or 'I am working on a project to write something about how children ... and what you are going to tell me will certainly help'.
- Assure interviewees' anonymity so that they feel relaxed.
- Try not to convey your opinions at the interview.
- Avoid leading questions such as: 'When I asked you what 5 and 5 makes, did you use your fingers?', 'Spellings are easy for you, are they not?'
- Open-ended questions can often provide you with richer information. Some ways of encouraging children to talk more is by using phrases such as 'That

is interesting', 'Tell me more' and 'How would you explain that to someone who does not know anything about it?'

- Sometimes it is fruitful to interview a group of children together. It is very important to keep children focused during group interviews.
- Always review the responses to interviews and refine your procedures and questions if necessary.

### **Advantages of carrying out interviews**

- Interview transcripts provide powerful evidence when you are presenting your data and making conclusions.
- Interviews can provide a relaxed context for exploration.
- Information from interviews can supplement what has been gathered through questionnaires and surveys.
- The interviewer can steer the discussion through a fruitful route.
- Group interviews save time and are realistic in classroom contexts.
- Interviews can often provide unexpected but useful perspectives.

### **Disadvantages**

- Conducting interviews is more time-consuming than using questionnaires.
- Typing transcripts requires a significant amount of time.
- Interviewing may not always be a suitable method to use with children who are not confident speakers and those with language problems.
- Tape recorders may intimidate some students.
- The interviewer's presence may make interviewees nervous and bias any responses.
- Children may tell you what they think what you want to hear.

### **A sample interview**

Stephanie, whose questionnaire was discussed in the previous section, interviewed a sub-sample of students after they completed their questionnaires. The following interview with Guli was revealing.

*Stephanie:* I see you have written here that you would like to see yourself as working in the City earning a lot of money. Tell me more about it.

*Guli:* I mean a lawyer or something like that. They earn a lot of money and do an interesting job.

*S:* What would you find interesting about a lawyer's job?

*G:* All sorts of things. Now let me think ... [pause]

*S:* No rush, do think about it before you tell me ...

*G:* I like watching lawyers on television. They have to really think hard about how to argue a case even when they know their clients are guilty. That takes some work. I also like the way they have to stand up and argue point by point. It looks as though they are really enjoying their job.

- S: Anything else that appeals to you?  
 G: Yes, they all dress so smart and have posh cars.  
 S: Do you think you will become a lawyer?  
 G: I would like to, but it is hard. My mum wouldn't know how to go about it. You would have to go to university, won't you? My mum can't spell the word university let alone send me to one ...

The second transcript is an interview with Lloyd.

- Stephanie:* You have said you want to earn a million pounds as a footballer. Do you think you will make it?  
*Lloyd:* It is a dream really. It doesn't matter if it happens or not, does it?  
 S: I am just interested to know how you would go about achieving your dream. For example, tell me why you think you could become a successful footballer.  
 L: Because I want to be one.  
 S: Do you play football?  
 L: A bit on Saturdays.  
 S: Would you say you are good at football?  
 L: I am all right. I suppose you are thinking ... [pause] ... you are thinking ... I am not good enough to become a rich footballer. I suppose you will be right. Only very few people can really become millionaire footballers ... There is no harm in dreaming though ...

Stephanie wrote about her interviews:

It really was very revealing. Guli is a very bright girl, but I had no idea that she and her family would need support to consider an academic route for her. There were other students I interviewed who also showed similar needs. I am happy to say that this information helped me in two ways. First, it highlighted the need for organizing some parents' sessions in which to talk to them about career choices and educational requirements; this could become part of my intervention programme. It also provided a baseline for Guli at the start of the programme which enabled me to track her progress. In Lloyd's case, it occurred to me that even during my interview he started questioning the nature of his ambition and viewed it as an impossibility. It made me think that as part of our intervention programme it would be useful for students to be encouraged to think about the feasibility of their ambitions.

## Gathering documentary evidence

In some cases your data collection would include studying documentary evidence such as policies, minutes of meetings, teachers' planning records and students' work to supplement other data sources. These sources can often provide a useful background and context for the project and can also be very illuminating, especially when you are comparing what is claimed and what has happened in

practice. One of my students, looking for evidence on differentiation, found several claims about differentiation in the school policy, but little evidence of it in practice within curriculum plans or in the actual teaching which she observed. Documents can often provide relevant evidence and are very useful for constructing the whole picture. I have seen students using curriculum planning records over a period of time and keeping an ongoing record of any changes. Similarly, students' written work and portfolios can help researchers to note progress over time. Photographs capturing critical moments and products are also useful as evidence. This is particularly helpful in Early Years' classrooms. Students' journals can provide an excellent set of information to show evidence of the level of student engagement in the activities, the development of processes such as reasoning, critical analysis and so on. Although the documents can be very illuminating, you do need to be selective in what you keep. One way of organizing the collection of documentary evidence is to design a table and list the documents on the left-hand side and what information each document is likely to provide you with. Decide that you will only keep key documents which are directly useful for your research.

### ***Advantages of gathering documentary evidence***

- Documentary evidence can provide insights into a situation where research takes place.
- In most cases it provides information without too much effort.
- A record of objectives and policies which are not easily communicated can be accessed through documents.
- It can support other forms of evidence collected.

### ***Disadvantages***

- Trust in the researcher will be necessary before access to documents is given.
- As it may constitute large amounts of data, selection and analysis could be difficult.
- Personal choices may affect the type of documents collected.

### **Field diaries and notes**

Use of a research diary, or field notes as they are sometime referred to, is often very helpful and this device is becoming more popular with my students. It is adopted to keep a record of what happens, of why and where your ideas evolved and of the research process itself. It is a place where you would keep an account of your reflections and write a personal commentary on your feelings as well as the beginnings of your interpretations. Your research diary

could be extremely valuable when it comes to writing up your project as it contains your authentic voice as described during the research process. The reflective process involved in writing a diary contributes to the professional development of researchers. Diary entries need not be very long. You could record significant events during your observations or particular situations and your feelings.

### **Guidelines**

- A free writing style can be employed when keeping field notes and diaries.
- It is useful to have a structure in your mind. Within that structure, you need to have the flexibility to make notes about aspects which may not fit into your predetermined structure, although these are significant to you.
- Reflective writing supports professional development. Try to be analytical and reflective in your entries.
- Including a section for personal commentary which supports analysis and discussion at a later stage.

### **Advantages of keeping research diaries**

- Keeping a research diary helps to personalize your project. This is important in an action research project as the main purpose is to make changes in practice.
- Diaries help to keep a progress check on the project.
- Field diaries often supplement information obtained from other sources.
- The process of reflective writing is an integral part of your professional development.
- The contents of a diary should help you to construct your research story as a case study.

### **Disadvantages**

It is difficult to think of any disadvantages in keeping a personal journal of incidents during an action research project. However, the following aspects may be worth considering:

- A researcher may be tempted to write too much, which can lead to difficulties at the time of analysis.
- It is sometimes difficult to maintain your writing regularly.
- When your research is not going according to plan, there may be a tendency to stop writing.
- Personalizing incidents may lead to a level of subjectivity.

## Systematic observation

Observation plays an important part in any kind of data-gathering and most action research projects use this as an instrument. Observation is a natural process – we observe people and incidents all the time and, based on those observations, we will make judgements. Basically, we are making use of this method within the research process where there is a need for more systematic observation, so that the information we collect can be used for the purpose of the study being carried out.

When we consider observation as a method for data collection, two types of observation are often referred to – participant and non-participant observation. **Participant observation** involves the researcher living in the context and being a part of it, but one needs to be aware of what Cohen and Manion (1994) point out – that there is a danger of being too subjective in data collection and this can introduce bias. One also needs to be conscious of this and acknowledge, at the outset, the possibility of introducing into the data gathered what one wishes to see. We must also try not to distort the interpretations. **Non-participant observation** is less subjective. This involves observing actions and interactions, perhaps sitting in a corner of the room, silent but attentive. Both types of observation require a careful planning structure.

### Structuring observations

The nature and purpose of the observation process will influence the level of structuring we need to introduce. Through structured observations, we can gather both qualitative and quantitative data. Using carefully designed checklists or observation schedules, we can record behaviour patterns and the number of actions and interactions. In semi-structured observation procedures one may still use checklists and schedules, but some flexibility is required to record both comments and unexpected outcomes. In action research, I feel that the flexibility of recording unexpected outcomes is of some value.

### Contexts for observation

Let us now consider some contexts in which an action researcher may make use of observation as a method of data-gathering.

#### Observing colleagues

If your project involves observing colleagues you will need to have some dialogue with them to discuss both organizational issues and the principles you would want to follow during the observations. For example, you need to make some decisions about where, how often and how long the observations

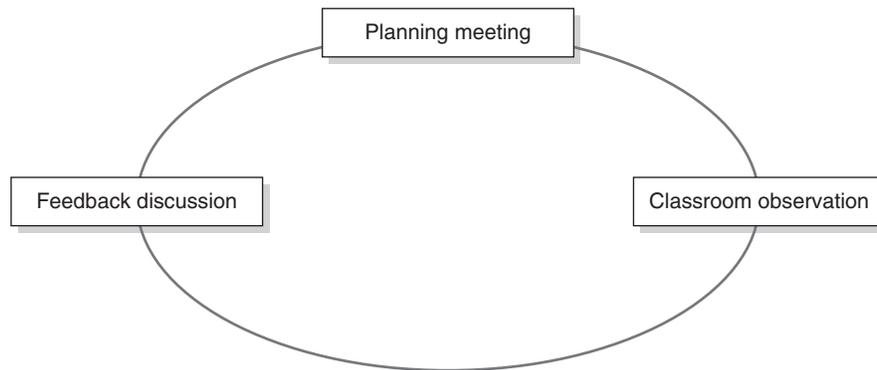


Figure 5.2 The three-phase observation cycle

will be. You must study any schedules and checklists and establish a common understanding of what you are observing. It is also advisable to discuss how you will share your observations with the observed and what form of feedback will be given. This kind of discussion will help to build up trust and make the whole process more effective. An example of this would be when you decide to research the teaching styles of a group of teachers. A researcher completing checklists and making notes would observe each of the colleagues. In this context you would have established, prior to the observation, what you propose to observe and record and how you would validate your observations. When you are observing colleagues, consideration should also be given to your approach. You need to show sensitivity and be unobtrusive. Any feedback should be non-judgemental and relate to the criteria established between you and those you observe.

The three-phase observation cycle proposed by Hopkins (2002), shown in Figure 5.2, is worthy of consideration.

There are three essential phases in Hopkins's model. The *planning meeting* provides the observer and the teacher with an opportunity to reflect on a proposed lesson, which then leads to a mutual decision to collect observational data on an aspect of the teacher's own practice. During the *classroom observation* phase, the observer observes the teacher in the classroom and collects objective data on an aspect of teaching they have agreed upon earlier. During the *feedback session* the observer and the teacher share the information gathered during the observation, decide on appropriate action, agree a record of the discussion and then plan another round of observation.

Here is an example of an observation of a colleague by another colleague. The project title of the action research project was 'Who does the talking?' The project involved two teachers who decided to observe each other to establish the level of teacher talk in the classroom. The objective was to try to increase student participation and discussion and the starting point for this was to make an assessment of one's teaching style at the start of the

project. Helen and Matthew, two colleagues, had an initial meeting to select a lesson for observation and studied the lesson plans. They decided that Helen would sit at the back of the classroom and make notes on the amount of time Matthew spent talking to the students and also the length of time his pupils were involved in responding and discussing. She would make a note of the nature of the questions he asked as they both felt that to be relevant. Helen drew a plan of the classroom and the seating arrangements as they felt these too would have some impact on the level of pupils' involvement in the lesson. It was decided that Matthew would explain to his class that Helen was observing him in connection with her own studies, as he felt that being told the objective of the observation may encourage students to change their behaviour for that session, thus defeating the purpose of the activity.

After a lesson was observed, Helen and Matthew met and discussed Helen's notes and perceptions. They also discussed the possibility that the nature of a question may partly affect pupils' talk. They decided to change the nature of some questions and planned another observation.

Here it can clearly be seen how the observation process fits well into the action research model, which involves selecting a topic, planning, collecting data and taking action based on the findings.

### **Observing pupils**

The process described above may not be suitable if you are observing pupils. It is not always possible to plan and discuss your ideas with pupils, especially if they are younger. Having said that, some of my students had to tell their pupils why they were writing things down when the pupils became curious and wanted to know why they were making notes about them. To reduce the disruption, children were told that their teachers were making notes to help them to think about how their teaching could be made better.

One example of student observation involved watching a group of pupils who were referred to as *disruptive* to identify patterns in their behaviour such as the context, the nature of the lesson and the teacher input during the times in which any disruptive behaviour occurred. For this exercise Carole, an Early Years teacher, decided to involve a colleague in carrying out an open-ended observation of selected children using no preconceived plans or checklists.

The notes from the observer on Nadia, 4 years and 6 months, looked like this.

- 9.00 Nadia sits down at the front of the carpet; she is completely still.
- 9.04 Teacher greets the students and asks them what they had been doing over the weekend. Nadia, with a few others, puts her hand up.
- 9.06 Teacher selects Nathan to tell the class what he had been doing during the weekend.
- 9.12 Nadia gets up and goes to the front of the class, sits down and holds the teacher's hand. She then gets up again and goes to the choosing corner.

- 9.13 Teacher asks Nadia to come back to the carpet, which she does not do.
- 9.15 Teacher says, 'Come and tell us what you have been doing over the weekend'.
- 9.19 Nadia runs back to the carpet and enthusiastically talks about her visit to see a donkey ...

### **Guidelines**

- Decide whether you are going to be a participant or non-participant observer. When you wish to observe while you are working with a group of children, it can be difficult to be a non-participant observer.
- Consider access and timescales for your observations.
- Quite often a structured observation schedule is useful; this may be an established structure or one that you must design for the purpose in hand.
- If you are using a predetermined checklist, you may want to record unexpected outcomes which could be of significance within the context of your project.
- Think about your analysis while preparing your observation schedules. Remember, you will need to analyse your data soon afterwards.
- Consider how you will validate your observations.
- Try a pilot observation and refine the process as necessary.
- Make a note of any difficulties you encounter; these may be of significance when you come to analyse your data and write up your report.

### **Advantages of observation**

- Open-ended observations allow you to capture all aspects of the topic of study.
- It offers first-hand data.
- You need to collect information through a systematic observation and recording of what you see and hear.
- It offers a way of studying, through a close scrutiny of behaviour. Observations provide you with opportunities to make a note of reactions (boredom, frustration and disinterest, for example) which are also of value in the construction of your narrative.

### **Disadvantages**

- Too much information may be collected which could pose a challenge at the time of analysis. Selecting what to observe during observation may become difficult.
- Being observed may affect the behaviour of the person observed.
- Organizational problems may stand in the way.

- Background noise and disruptions may lead to missing important data.
- There may be a temptation to skip over details if they do not fit with the items on a pre-prepared checklist of what to observe.

## Using video and DVD recording and photographs

Using videos and DVDs to record events is becoming increasingly popular as a data-gathering technique. The availability of digital cameras and other technological resources has made recording a viable and effective way of gathering information. One of the advantages of video recording is that it allows the researcher to observe an activity afterwards by watching the video, without the disruptions of the classroom or time constraints. By viewing recordings, practitioners can analyse different aspects of the activity as well as identify an unexpected point which may be significant. These recordings are also very useful when it comes to collecting accurate information on student participation and attitudes. For recording critical incidents in the classroom a digital camera can provide both photographs and a few minutes of video/DVD recordings.

### *Advantages of video/DVD recording*

- Student behaviours and attitudes can be captured with greater accuracy than by making observation notes.
- Provides a more permanent record of incidents, which can be viewed and reviewed.
- Makes sharing data with colleagues and fellow researchers easier to manage.
- Very useful at the time of dissemination. Recording provides powerful images which are hard to match through other means of communication.
- It makes it possible to carry out studies which need a sustained period of development and data collection so as to note changes.
- Video and film clips can often generate a good deal of discussion between observers and audiences with whom you will be sharing your findings.

### *Disadvantages*

- Being recorded can be inhibiting and distracting for the participants.
- Those who are being recorded may behave differently in the presence of a camera.
- The usual technical hitches may lose useful first-hand data which cannot be replaced.
- Photographs may be selected according to the photographer's perception of the importance and significance of incidents.

### ***An example of using a recording for an action research project***

Jill was carrying out an action research project on the impact of introducing a Critical Thinking programme to her 13 year old students, in terms of raising student achievement and enhancing their level of confidence and listening skills. Jill chose a range of methods to collect evidence for her project. She felt she could track changes in students' achievement in terms of test scores and by collecting tangible examples of their work in a range of subjects over a period of time. She also felt that data on any possible changes in the level of students' participation in the programme, their confidence and listening skills were more effectively gathered through video recordings over a period of time.

Jill wrote in her report:

My project was to explore whether the introduction of a structured Critical Thinking programme would help to raise my students' achievement in different subjects. Another objective of the study was to note any changes in students' confidence in taking part in discussions. I felt it was straightforward to compare the results using tests, but collecting evidence on changes in students' level of confidence and participation was rather more challenging. I needed something visual, which could be looked at over a period of time. Using video recordings provided me with an opportunity to achieve this. After every session which I recorded, I watched the recording and asked myself 'What is happening here?', 'Is there any change in the students' behaviour?' If there was, I asked myself what may have contributed to the changes. I showed the recordings to my colleagues who independently reviewed the sessions and made comments. I kept a reflective diary of what I thought was happening. I identified where my objectives of the lessons matched the outcomes in terms of students' responses to the sessions and attitudes. At the time of dissemination at the local teachers' centre, I showed sections of a video recording to illustrate students' behaviour over a period of six months. Data in the form of video recordings offered me authentic evidence to convince other people of the impact of my project.

### **Quality indicators**

Action research is a unique approach in carrying out enquiries into aspects of practice. Although the purpose of action research makes it different from large-scale research studies which use surveys and questionnaires, the action researcher still needs to consider questions of validity, reliability and generalisability within the context of the particular research study. I discuss these in greater detail in Chapter 6.

First, we need to consider the *validity* of the data. This means we need to consider the accuracy of what is collected and used as evidence. We have to be aware that the conclusions are based on the quality of what we gather as data. Interpretations of the same event or evidence can vary between different people. This can affect the validity of the data presented. One way of establishing validity, according to Mason (2002: 246), is to find 'various means of confirmation, such as arranging for a colleague to observe as well, arranging for audio or video recordings, and asking other participants for their versions'. Mason recommends *triangulation* for this purpose, which he describes as the process of obtaining several viewpoints or perspectives. The word '*triangulation*', he explains, is based on the method of surveying land which breaks the region down into triangles, each of which is measured. Hopkins (2002: 133) also emphasizes the role of triangulation in data-gathering, 'as it involves contrasting perceptions of one actor in a specific situation against other actors in the same situation. By doing so, an initial subjective observation or perception is fleshed out and gives a degree of authenticity'. Hopkins quotes Elliot and Adelman (1976: 74) to describe the process of triangulation, which is useful for an action researcher to consider:

Triangulation involves gathering accounts of a teaching situation from three quite different points of view; namely those of the teacher, his pupils and participant observer. Who in the 'triangle' gathers the accounts, how they are elicited, and who compares them, depends largely on the context.

The authors justify the process of gathering accounts from three distinct stand-points in terms of the three points of a triangle having a unique epistemological position.

In the context of action research we also need to consider the aspect of *reliability*. Reliability is described as the consistency or stability of a measure (Robson, 2002) and a consideration of whether, if the measure is repeated, one would obtain the same result. Hopkins (2002) makes a useful distinction between validity, which reflects the internal consistency of one's research, and reliability, which reflects the generalisability of one's findings. He maintains that, in general, most action researchers and those who use qualitative methods are concerned with validity rather than reliability, in so far as their focus is on a particular case rather than a sample.

In the case of practitioner research, the researcher needs to emphasize that generalisability is still possible, in terms of the project being applicable to other similar situations and, in some cases, the study's replicability.

### **Use of case studies**

Carrying out case studies is a popular approach used for studying settings within qualitative methodology. It is a qualitative study which looks closely at what happens, collecting data, analysing information and presenting the

results as accurately as possible. Case studies can be focused on one single case or on multiple cases. They offer rich descriptive data and considerable depth. One of the advantages of presenting a case study is that the reader can often identify with the case and the characters in the case study.

Yin (2003) describes the case study as a research strategy with an empirical enquiry that investigates a contemporary phenomenon within its real life context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources are used. This description of a case study resonates well with the processes involved in action research. Case studies, as in the case of action research, are sometimes criticized for the inevitable subjectivity involved in creating a narrative, but this subjectivity is reduced by sharing the data with those who are involved in the study.

In terms of analysis, carrying out case studies provides us with opportunities to explore both the *how* and the *why* of events (Yin, 2003) and these can be both exploratory and descriptive. Detailed descriptions of cases allow the reader to engage in situations and apply findings within their own context – again, you can see how case study methodology sits well within an action research approach.

Many action research projects are written up as case studies. The following advantages of a case study outlined by Adelman et al. (1976) support their use as a means of disseminating action research projects. The authors' description of case studies demonstrates why they are a powerful means of capturing real data which can act as a basis for action.

- The data within a case study are strong in reality but susceptible to ready organization.
- This strength in reality arises because case studies are down to earth and can hold the attention, in harmony with the reader's own experience, and provide a natural basis for generalisation.

See Further Reading at the end of this chapter which will provide you with more information on how to conduct and write up case studies and about the different types of case study design.

### Summary

This chapter directed the reader's attention to issues of data collection. Large amounts of data, like literature, can be overwhelming in their abundance. Guidance on selection and pertinence was given and a distinction was made between quantitative and qualitative data. The merits of qualitative data for the purpose of action research were highlighted. The importance of addressing ethical issues was also stressed. Issues of validity, reliability and generalisability, within the context of action research, were discussed and the role of triangulation as a means of quality control was also raised. The advantage of using a case study approach within action research was also briefly addressed.



## Further Reading

- Bell, J. (2005) *Doing your Research Project* (4th edition). Buckingham: Open University Press.
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- Flyvbjerg, B. (2006) 'Five misunderstandings about case study research', *Qualitative Inquiry*, 12: 219–45.
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- Kvale, S. and Brinkman, S. (2009) *Interviews: Learning the Craft of Qualitative Research Interviewing*. London: SAGE.
- Silverman, D. (2004) *Doing Qualitative Research: A Practical Handbook* (2nd edition). London: SAGE.
- Stake, R.E. (1995) *The Art of Case Study Research*. Thousand Oaks, CA: SAGE.
- Wragg, E. (1994) *An Introduction to Classroom Observation*. Abingdon: Routledge.
- Yin, R.K. (2003) *Case Study Research: Design and Methods* (3rd edition). Newbury Park, CA: SAGE.



## Useful websites

- AERA Ethical Standards document – <http://www.aera.net/aboutaera/?id=222>
- American Psychological Association – <http://www.apa.org/ethics/code2002.html>
- British Educational Research Association – <http://www.bera.ac.uk/publications/guides.php>
- Unicef, Convention on the Rights of the Child – <http://www.unicef.org/crc/>