1 What is Educational Research?

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This first chapter seeks answers to the question in its title and a second one, 'Can I do it?'. The answer to the first seems to require an exploration of various terminologies, for example positivism, interpretivist paradigm, ontology, epistemology, symbolic interactionism, action research, ethnography, grounded theory, critical theory and so on. Now, before these terms start to perhaps 'blow your mind' and you think about putting this text down, read on.

These terms, and the many others not mentioned, can, at first sight, seem baffling and complicated and only readily understandable by those who have been working in the area of educational research for many years. The truth of the matter is that to 'do' educational research at the Masters level one need only grasp a subset of such terms – and these are kept to a minimum and form the basis of this and the other chapters in this book.

This latter paragraph will undoubtedly raise eyebrows and criticism from some in the educational fraternity. What terms should be included? What criteria for their selection have been used? Why are those that have been excluded so treated? What is the validity (a term which will be explored more fully later in this book) for making these choices? One could, and rightly so, be criticised for a level of personal subjectivity in selection of the terminology deemed to be 'appropriate' at Masters level. Those chosen though are based on over a decade of experience of working with distance learning students and discussions with the colleagues who have worked with them in completion of their degrees. In this way the terminology presented here takes on a level of objectivity.

I would argue that in reality the majority of Masters students finish their degree blissfully unaware of much of the amassed educational research terminology, which exists. Should the educational research world be worried? Unless their student is undertaking a specific Research Masters designed as a prerequisite for a PhD as, for example, required by the recently introduced Educational and Social Research Council '1 + 3' (ESRC, 2001) guidelines, then surely the answer has to be no. What is more important is that a

Masters student, who, perhaps typically is not seeking to further their studies to a higher level (e.g. PhD), is aware of the main aspects of educational research terminology and crucially how these impinge upon the actual research they are seeking to undertake and the research procedures they need to employ.

To reiterate the context for this book is to provide a text, which meets the needs of beginner researchers. Limiting the terminology to be engaged with is one way of doing this. There are also numerous other eloquently written texts on the market, which more than adequately cover any 'deemed missing' terminology (Cohen et al., 2000; Walliman, 2001) should the reader wish to extend his or her knowledge of educational research terminology.

Having, I hope, indicated how I intend to answer the first of these two questions how about the second? This is much easier – the answer is yes – and hopefully you will come to this conclusion yourself as you work through this and the others chapters in this book.

Many of the chapters require you, the reader, to start from position of personal reflection. What do you think? What do you understand by? What are your views? This format is intentional as it begins to get you to explore various aspects of educational research from your personal perspective, knowledge and present understanding. You may, as some cultures do, feel this is relinquishing responsibility as a not uncommon view from those beginning research is that the MEd tutors are the experts so they should tell those less versed in this field what to do.

What this does though is deny the inherent knowledge and personal educational experiences, which any new researcher brings to the task. Experiences of working with children and colleagues, introducing and co-ordinating teaching schemes, reflecting on teaching problems, managing resources and the myriad of other day-to-day activities all add up to a wealth of knowledge which will almost certainly have some pertinence for any research being proposed. Where the MEd tutor is of value is in refining the research to be done and providing, as we shall see later, a systematic approach to its undertaking.

So, let's start from your perspective of research, as shown in Figure 1.1. We shall not consider any answers to the third sentence(c) in Figure 1.1, although the normal paucity of answers, which usually occurs, is probably indicative of some of the issues we will raise in answering the first two. Hopefully though by the time we have worked our way through these you will have any worries about undertaking educational research dispelled, and realise you can do educational research.

What is educational research?

(a) Research is …

What are your views of Research?

1 Complete the following sentences:

   (a) Research is …
   (b) Research is something that requires …
   (c) Research is done by…

2 List around five or so words you associate with the word Research.
3 Now jot down some research that has either influenced your teaching, or your own learning, or has influenced another aspect of your life perhaps, in a non-academic sense. Note, if you can, who did this research? Why was it influential?

Figure 1.1 Views of educational research

> Seeking through methodical processes to add to one's body of knowledge and, hopefully, to that of others, by the discovery of non-trivial facts and insights. (Howard and Sharpe, 1983: 6)

> A search or investigation directed to the discovery of some fact by careful consideration or study of a subject; a course of critical or scientific inquiry. (OED, 2001)

You may not have arrived at such specific definitions but hopefully you will have begun to appreciate that research aims to overcome the limitations of 'common-sense knowing' (Cohen et al., 2000: 3–5). You will undoubtedly have jotted down other terms such as 'systematic process' and concepts such as 'control' and we will address these later in this book. For now it is sufficient to keep the principle of the definitions above in mind. A lot of what will be written refers to social science research in its most general sense. But, as the social sciences cover a vast array of subject areas it is also worth providing a definition of educational research and its importance in the context of practising teachers, as it is these points we will be focusing on throughout this book. Educational research can then be viewed as 'the collection and analysis of information on the world of education so as to understand and explain it better', with a significance for practising teachers in that it should be

> viewed as a critical, reflexive, and professionally orientated activity … regarded as a crucial ingredient in the teacher's professional role … generating self-knowledge and personal development in such a way that practice can be improved. (Hitchcock and Hughes, 1989: 3–4)

(b) Research is something that requires …

- the collection of quite large amounts of data
- results which can be generalised

- a hypothesis
- the undertaking of experiments
- objectivity rather than subjectivity
- the use of statistics
- that something is proved
- specific expertise, as it is difficult.

Those new to educational research often come up with answers not to dissimilar to those above. This list is not definitive and its order is no more than for convenience of this text, but it gives a fair picture of 'typical' views. None of them is necessarily correct although each will have its own significance depending on the kind of research being undertaken. Let us though look at each of these points in the context of the kind of research likely to be undertaken in the context of an MEd dissertation and the timescale within which to do it, typically six months.

Collection of large amounts of data

Educational research of the type involved at Masters level will be relatively small scale. This is not to say it may not have significant impact upon personal practice or that of others, or add 'new' knowledge to a particular field of enquiry. It will though in most cases *not require the collection of large amounts of data* – although again the definition of large is open to interpretation.

Typically one may be working with around two or three classes, say a hundred students maximum, but on the other hand research may centre on one's own class of 20 to 30 students. Good dissertations (Lees-Rolfe, 2002) have also resulted from in-depth studies of just one student. What is not likely to happen (although I have had a few good MEd dissertations, against my advice, which have) is that research will be undertaken with hundreds of students or involve the collection of tens of thousands of pieces of data (Fan, 1998). Neither time nor access are usually available to allow this to be achieved and even if it does then the overall timescale for the research will almost invariably limit the analysis of it, which begs the question, 'Why was it collected it in the first place?' (Bell and Opie, 2002).

Hopefully this last paragraph has shown that there no definitive answer to the amount of data you might collect. This quantity, as it should be, will be determined by your research question, the methodology you choose to investigate it and the procedure(s) you select to gather the data to answer it. This may sound less than helpful but it reflects the realities of educational research. At the risk of being criticised by others more eminent in the field than myself, the following are guidelines based on my experiences with MEd students. Take them as guidelines though, as there are no hard and fast rules and listen to your tutor's words of advice.

If you are asking closed questions (see Chapter 5) keep the total number of data items obtained to no more than 2,000. This will give you around 20 data items per student, for your three classes of 30. This should be more than sufficient if you have defined your research question well. However, if some of these questions are open ended you are well advised to reduce the total number asked.

If you are undertaking interviews you might consider limiting these to no more than six people (less is acceptable); with no more than ten questions being asked; and to take around 45 minutes to complete. This may seem very small but just transcribing a 45-minute interview will take you a good two to three hours and then you'll spend more time analysing your findings and collating views. Invariably your interview questions will have arisen from an analysis of a previous questionnaire so you have this data to analyse as well.

Results which can be generalised

Although there is *no need to try and provide results which can be generalised*, the findings may have important implications, either for personal practice or others working in similar areas. But, collecting large volumes of data in order that the educational research they stem from might provide useful generalisations is not necessary or, if one is really honest, even possible given the scale of research being addressed in this book. As Bassey notes, 'the study of single events is a more profitable form of research (judged by the criterion of usefulness to teachers), than searches for generalisations' (1984: 105).

Bassey draws a distinction between 'open' generalisations where 'there is confidence that it can be extrapolated beyond the observed results of the sets of events studied, to similar events' and 'closed' generalisations 'which refers to a specific set of events and without extrapolation to similar events' (1984: 111). He goes on to link the latter term with the 'relatability' (1984: 118) of a piece of educational research, that is how can it be related with what is happening in another classroom. Perhaps the most telling comments by Bassey are that although '"open" generalisations are the more useful in pedagogic practice, they also seem to be the more scarce' (1984: 103). Perhaps the merit of any educational research is 'the extent to which the details are sufficient and appropriate for a teacher working in a similar situation to relate his (or her) decision making to that described' (1984: 119). In short the relatability of the work is more important than its generalisability.

Hypothesis and undertaking of experiments

The third and fourth elements of our list of what research requires suggest the need to have a hypotheses and to undertake experimental work. These may seem essential to educational research, for as Walliman notes:

Does Studying a foreign language in high school increase students' verbal ability in English?

Julie obtains lists of all seniors in her high school that did and did not study a foreign language. Then she compares their scores on a standard test of English reading and grammar given to all seniors. The average score of the students who studied a foreign language is much higher than the average score of those who did not.

Does this observation show that studying another language builds skill in English?

Figure 1.2 Problems of experimental research

> A good hypothesis is a very useful aid to organising the research effort. It specifically limits the enquiry to the interaction of certain variables; it suggests the methods appropriate for collecting, analysing and interpreting the data; and the resultant confirmation or rejection of the hypothesis though empirical or experimental testing gives a clear indication of the extent of knowledge gained. (2001: 174)

However, this technique of educational research suggests that the action of people can be controlled or conditioned by external circumstances; that basically they are the products of the environment they find themselves in. In this case thoughts, personality, creativity and so on, are irrelevant. You may like to think about this latter point in terms of your own personal development, working environment and culture. In so doing ask yourself if you have been conditioned to think or perform in a particular way or have you been the controller of your destiny? It is unlikely that you will come up with just one view as in reality this is dependent on particular situations and as these change over time you are likely to pitch your personal answer somewhere in between these extremes.

Look at the example in Figure 1.2, adapted from (Moore, 1997: 94), and before glancing at the answer decide for yourself what you think it might be and discuss it with others if you have the opportunity.

The answer to the question in Figure 1.2 is that it does not. Students will (in most cases at least) have decided whether to study a foreign language that is, it is their *personal choice* to do so, and for many of them they will already be better at English than the average student. So, these students will differ in their average test scores for English but there can be no suggestion that studying a foreign language has caused this (see Chapter 3 for more about the issue of causality). Moore goes on to indicate how Julie might

undertake such an experiment but then highlights the impracticality and unethical nature of doing so.

Objectivity rather than subjectivity

The terms objective and subjective are often used in everyday conversation and in general people understand what they mean when they use them. They both refer to the degree that personal feelings and opinions should have in any argument. From a purely objective standpoint such conscious perceptions have no place. Knowledge has to be built upon demonstrable facts or observations. A subjective stance takes an opposing view. Here knowledge is regarded as belonging to the individual as a result of his or her own consciousness and thoughts. In this way prominence is given to individual points of view and the need to have a collective opinion is of secondary importance. Perhaps there is no need to rehearse these definitions here but a clear appreciation of their differences, and how these influence educational research, is important. What is being considered here is the *epistemological* stance one takes: 'the very bases of knowledge, its nature and forms, how it can be acquired, and how communicated to other human beings' (Cohen et al., 2000: 6). Pat Sikes will develop these points in chapter 2, and what is offered here is just a quick overview of the main issues. It needs to be noted though that what follows are not hard and fast rules and educational research almost inevitably ends up becoming a blend of research procedures.

To take a pure objectivist's standpoint requires some assumptions to be made. First, events have causes and these can be found – *determinism*. The aim then is to formulate laws to account for these events. For this, research of any phenomenon should result in outwardly measurable criteria; which originate from experience; can be verified by observation; and so used to derive a particular interpretation – *empiricism*. Such research clearly lends itself to the kind of hypothesis and experimental work noted previously and quantitative approaches in an attempt to lead to generalisability. All these are aspects of *positivism*, discussed later in this book, although further comprehensive discussion of this area is also provided by Cohen and colleagues (2000: 8–17).

We have already noted though that undertaking experimental work in educational research is fraught with difficulties and the extent to which generalisability of findings is attainable, scarce. This 'scientific' approach to research, although demonstrably successful in the field of natural and physical science, comes under justifiable attack, at least from a subjectivist's point of view, from a social science position in that it excludes '*notions of choice, freedom, individuality, and moral responsibility*' (Cohen et al., 2000: 17).

Table 1.1 Comparison of positivistic and anti-positivistic approaches to educational research

Positivistic approach	Anti-positivistic approach
Quantitative research techniques	Qualitative research techniques
Objective	Subjective
Experimental	Naturalistic
Pure	Applied
Outsider research	Insider research
Statistical analysis	Non-statistical analysis
Impersonal	Individual
Certain assumptions taken for granted	Taken for granted assumptions investigated
Macro concepts: society, institutions, norms, roles, positions	Micro concepts: individuals, personal constructs, negotiated meanings
Generalise from specific	Interpret the specific

◄───────────────────── Continuum ─────────────────────►

McMillan and Schumacher state this position quite clearly when they note that to the layperson 'objectivity means unbiased, open-minded, not subjective and as a procedure refers to data collection and analysis procedures from which only one meaning or interpretation can be made'. But they then go on to note that 'although objectivity is important in all research, it is more difficult in research on humans' (McMillan and Schumacher, 1984: 5).

Such criticism of *positivism* leads to an *'anti-positivist'* view where what is important are individuals' values and self-interpretation and representation of their experiences. In short, the characteristics that make humans human. Although Table 1.1 provides a comparison of these two views of educational research, as we shall see shortly, caution needs to be heeded in interpreting it as suggesting that educational research follows well-defined patterns falling squarely into one approach or another. As you will come to realise actual research normally lies somewhere along the continuum between these two extremes.

Up to this point we have said nothing about qualitative and quantitative research procedures, preferring instead to begin to give the reader a feel for the kind of approaches to educational research that are possible. This is important as it is the approach taken which will largely determine the procedure(s) used although a particular approach does not negate the use of any particular procedure which probably leads to part of the reason for Wellington's comment that, 'Research can be messy, frustrating and unpredictable' (1996: 7)

To be a little more precise taking a positivistic approach to educational research will almost certainly lead to procedures, which result in the collection of quantitative data and testing of hypotheses, such as data from questionnaires and hard facts from experimental work. Conversely, research which seeks to obtain softer facts, and insights into how an individual

creates modifies and interprets the world in which they find themselves, an anti-positivistic approach, would employ qualitative techniques. In this case interviews and participant-observation would predominate.

To round off this section we have noted that educational research often does not follow well-defined patterns falling squarely into one approach or another. This is clearly discussed by Travers (2001) in the opening chapter of his book on qualitative research. Here, although discussing that from an interpretivist's (anti-positivistic) perspective that 'there are no benefits in working with large data sets, since these encourage a positivist mentality towards analysing interviews' (2001: 11), he discusses proponents of positivistic approaches to qualitative research, such as the British ethnographer Martyn Hammersley (1991), who he notes 'argues that all studies should be judged by a set of scientific criteria, which include reliability and representativeness (the same criteria used in quantitative research)' (2001: 10). Similarly a grounded theory approach to research (e.g. Glaser and Strauss, 1967; Strauss and Corbin, 1997) 'has taken on a positivist flavour, in the sense that it presents qualitative research as a scientific method' (2001: 21).

In short then drawing a positivist and anti-positivist approach to educational research may seem to have little value. Indeed some might argue that it serves little purpose at all. However, it does provide something of a starting point for beginners, as trying to come to terms with the nuances of interpretation of research approaches can be problematic for short-term research such as that often associated with MEd work. Hopefully, what should be clear is that linking any procedure slavishly to any particular approach is wrong. The reality is of course that a range of procedures pertinent to the research at hand should be used rather than a resolute adherence to any deemed more appropriate. The important issue is to ensure that the research procedure(s) used is appropriate to the research question being asked and the research answers being sought and this is developed further in the next chapter.

Use of statistics

The mention of the word statistics to a group of people new to educational research is likely to give rise to, at the very least, some disquiet. To indicate that a working knowledge of statistics may be needed, will invariably turn this into a full-blown panic attack. Unfortunately, the significance attributed to the 'importance of including statistical evidence' in some cultures only adds to this problem.

Statistics have their rightful place and, used appropriately, are an important part of the armoury for educational research. Later (see Chapters 7 and 10) reference to the two aspects of statistics – *descriptive* and *inferential* – and the

degree of their importance will be made. The reality is that the majority of educational research at MEd level need go no further than using straightforward descriptive statistics with recourse to inferential statistics limited to a few specific areas.

That something is proved

Many newcomers to educational research invariably feel they have to prove something. Whether this phenomenon, as with the presentation of statistical evidence, is a personal, cultural or political trait is in some senses immaterial, but the fact is it does exist. The reality is that it is very difficult to 'prove' anything in educational research. We have already discussed the issues of relatability versus generalisability and indicated the view that the former, besides being achievable, is of far more importance to actual practice. We have also highlighted the problems of taking a positivistic (objective) approach to working with human beings. These points indicate the difficulty of 'proving' anything in educational research; yet this is often seen as the necessary outcome if it is to be of any value and taken seriously by others.

So, let's say your research question is:

> An investigation to prove that using a Chinese word-processing program helps students with writing in Chinese.

This question is not only fraught with difficulties but at MEd level, I would argue, not achievable. Over the six months typically available for your research, you might, over a few weeks observe a class or two seemingly enjoying using the program. Interviewing some of the students you observed might indicate that they felt it helped them with their writing skills. Tests on these students might even indicate there seems to be a general improvement in the number of and speed at which they can put Chinese sentences together correctly. Do these findings answer the research question?

No, what they actually do, and no more, is indicate that there appears to be some positive value in using a Chinese word-processor to help students with writing in Chinese. If you were going to try and obtain categorical proof for your research question, although it is doubtful if you ever could, you would be looking at issues such as working with hundreds of classes, catering for age, gender, race, social class, academic background, home and school environment, language use in the home, access to resources and so on, and carrying out a longitudinal study over several years. Clearly a research task not feasible within the timescale typically allotted to an MEd.

This may sound very discouraging but let us change the research question to:

An investigation to ascertain whether using a Chinese word-processing program helps students with writing in Chinese.

Now your MEd research can be influential. The evidence you collect can certainly answer this question and, depending on where it was carried out, over what timescale, with what age and gender students, and access to resources (although looking at all these aspects would not be appropriate) provide an indication to others whether it would be worth looking at your research in the context of their own teaching.

I'll leave you with a question. Which of the above two research questions would seem of most value in having an impact upon day-to-day educational practice and helping to inform wider considerations for the use of Chinese word-processors to help students with writing Chinese?

Specific expertise, as it is difficult

The commonly held view is that often research is 'done' by academics, who are specialists in their field, and who have the time and resources to do it. This view has achieved prominence as a result of where educational research takes place – in institutes of higher education. Such work is also, and I think unfairly in many cases, criticised for its lack of relevance to actual educational practical. The view that teachers can do educational research is not new. As Howard and Sharpe note:

> Most people associate the word 'research' with activities which are substantially removed from day-to-day life and which are pursued by outstandingly gifted persons with an unusual level of commitment … we would argue that the pursuit is not restricted to this type of person and indeed can prove to be a stimulating and satisfying experience for many people (teachers included) with a trained and enquiring mind. (1983: 6)

It is also important to understand that teachers should do educational research as it is 'part of the teacher's professional role, so as to improve their self knowledge and practice' (Hitchcock and Hughes, 1989: 3–4). In this sense connections with practice do not disappear and it addresses relevant problems in their context.

The view that teachers can, and should, undertake educational research has received prominence over the years and indeed one of the most recent funding initiatives from the UK Department for Education and Skills (DfES, 2002), Best Practice in Research Scholarships (BPRS, 2002), squarely focuses the place of research on the practising teacher. How much this is a backlash against the universities – although teachers still have to work in conjunction with institutes of higher education using their expertise, for example, in research procedures – is not an issue for this book. What is evident is that

teachers I have worked with have welcomed the opportunity to undertake classroom-based research, which is aimed at informing their own and/or their school's practice. Reports published on the DfES website are indicative of the kind of research which could form the basis of an MEd dissertation and help to dispel the notion that research requires specific expertise only found in institutes of higher education.

If anything a collaborative venture – the focus of MEd courses and relationships between students and tutors – is the crucial factor in any educational research venture.

Can I do educational research?

This question invariably brings up procedural terms such as questionnaires, interviews, surveys, data and experiments and we have addressed these above within the context of the purpose of educational research. Generic terms such as quantitative, qualitative and statistics have also been addressed in this latter context and hopefully by now you will have some idea of how these terms and the procedural ones are linked. You are beginning to understand that any fear you may have had of educational research and your ability to do it is based solely on the myth surrounding the need to understand complex terms and have specialist skills to undertake it.

This is not to minimise or denigrate the value of educational research, or the excellent work carried out in a whole host of settings such as higher education. It is, though, an attempt to try and demystify the area so that those of you new to it can build up the confidence and acceptance that you can do educational research. It is also to make you aware that although typically you will be undertaking your research over a short period of time it is nevertheless of value and, in terms of influencing personal practice, probably more so that any larger, longer research project.

The final types of terms that this second question invokes are ones of practicality: hard work, time consuming, problematic, difficult, requires expertise. There is no use denying that undertaking educational research is hard work. It needs careful planning and organisation if it is to be completed successfully within expected timescales and David Hyatt in Chapter 3 will raise these issues again. It will also be time consuming, and require commitment and sacrifices from yourself and others. There will be problems, but this is where regular contact with your tutor is so important and making sure your research is achievable, not only from a pragmatic viewpoint, but also in the timescale allotted. It does require expertise but again nothing you cannot acquire with the help of your tutor.

In short you can do educational research and the rest of this book provides you with additional information to help you to do so.
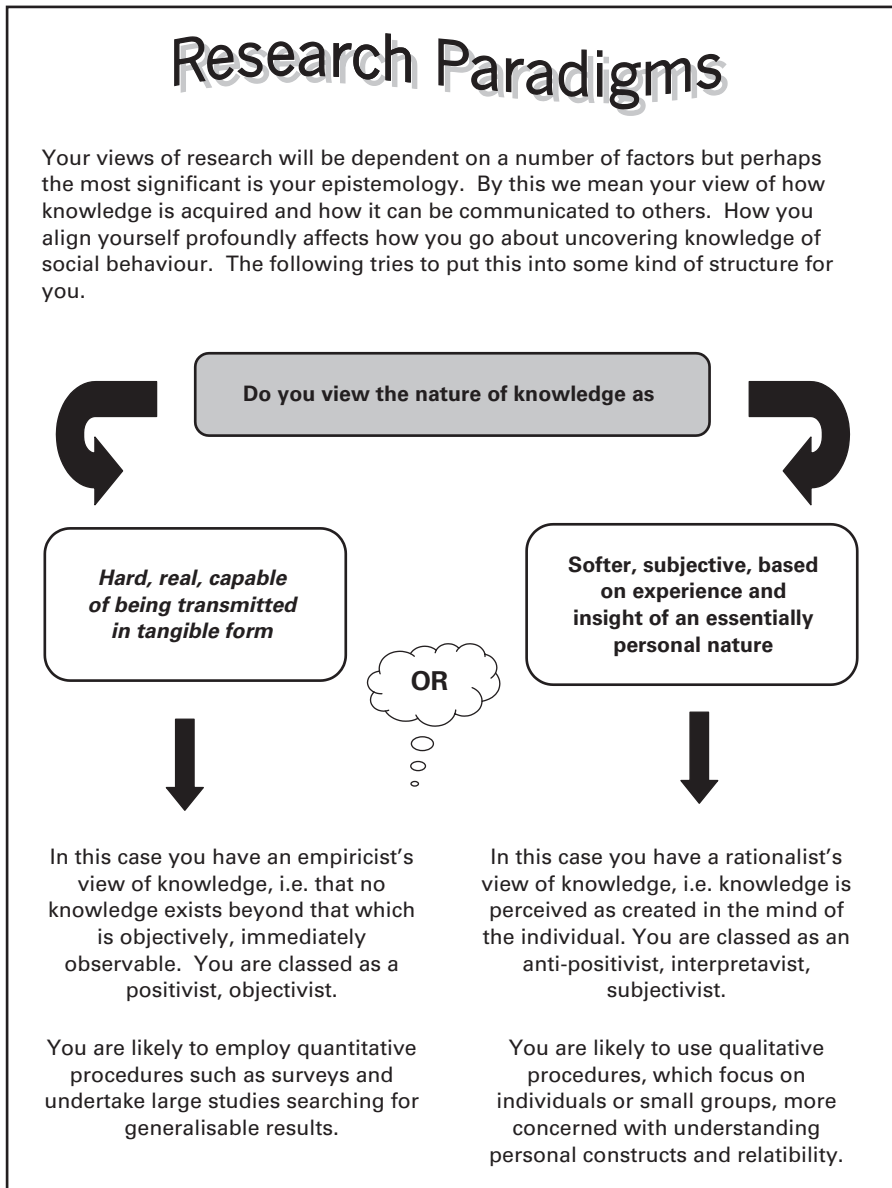
Research Paradigms

Your views of research will be dependent on a number of factors but perhaps the most significant is your epistemology. By this we mean your view of how knowledge is acquired and how it can be communicated to others. How you align yourself profoundly affects how you go about uncovering knowledge of social behaviour. The following tries to put this into some kind of structure for you.

Do you view the nature of knowledge as

Hard, real, capable of being transmitted in tangible form

OR

Softer, subjective, based on experience and insight of an essentially personal nature

In this case you have an empiricist's view of knowledge, i.e. that no knowledge exists beyond that which is objectively, immediately observable. You are classed as a positivist, objectivist.

You are likely to employ quantitative procedures such as surveys and undertake large studies searching for generalisable results.

In this case you have a rationalist's view of knowledge, i.e. knowledge is perceived as created in the mind of the individual. You are classed as an anti-positivist, interpretavist, subjectivist.

You are likely to use qualitative procedures, which focus on individuals or small groups, more concerned with understanding personal constructs and relatibility.

Figure 1.3   An overview of research paradigms

Summary

This chapter has attempted to dispel some of the myths surrounding educational research. Its aim has been to show you that undertaking educational research is not the prerogative of a chosen few who make it
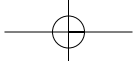
the focus of their working life. Educational research is 'doable', albeit at different levels of depth and sophistication, by all interested in making a 'systematic, critical and self-critical enquiry which aims to contribute to the advancement of knowledge' (Bassey, 1990: 35) of the world around them.

It also begins to show you how a view of knowledge determines the type of research you would engage in and the procedures you might use, and this is indicated in Figure 1.3.

Thus, the overall intention of this chapter has ten to begin to allay any fears you might have as a newcomer to educational research. You can do educational research.