

# Research Methods in **Education**

8<sup>TH</sup>  
EDITION

LOUIS COHEN,  
LAWRENCE MANION  
AND KEITH MORRISON



Very much still the key text for 'all' education students and researchers. Cohen *et al.* continue to update *Research Methods in Education*, with new theoretical, ethical, virtual and mixed methods information. It's worth noting the impressive web page and links to materials for all chapters which is still the benchmark when looking at the competition for books in this area of social and education research.

*Dr Richard Race, Senior Lecturer in Education, Roehampton University, UK*

A clear enhancement on the already well-established text. The new edition addresses an important need to explain research design and question setting in more detail, helping guide the newcomer through the research process from inception through analysis to reporting.

*David Lundie, Associate Professor of Education, University of St Mark & St John, UK*

*Research Methods in Education* is a unique book for everybody who has to undertake educational research projects. The book gives an in depth understanding of quantitative and qualitative research designs and offers a practical guide for data collection and data analysis. It is an essential 'friend' for teachers and students from various disciplines who are not familiar with social science research.

*Dr Ellen P. W. A. Jansen, Associate Professor, Teacher Education, University of Groningen, The Netherlands*

*Research Methods in Education* continues to offer an excellent route map, a well-structured and inspiring travel guide, for students engaging in research. It works across levels, and while it provides clarity for the beginning researcher there is plenty here to aid the seasoned researcher with an open mind to new approaches and emerging practices. A superb text that provides guidance for my own research as well as for students and partners in research projects.

*Peter Shukie, Lecturer in Education Studies and Academic Lead in Digital Innovation, University Centre at Blackburn College, UK*

*Research Methods in Education* is, besides being my personal favorite research methods book, a deep as well as a broad handbook useful both for undergraduate teacher education students as well as researchers and PhD students within educational sciences. In this new edition, new chapters are added emphasising both quantitative and qualitative methods in combination with thought-through discussions about how to mix them. The book can be used when planning a project and then throughout the whole research process and is therefore a complete methods book.

*Karolina Broman, Senior Lecturer in Chemistry Education, Umeå University, Sweden*

Comprehensive, well written and relevant: the eighth edition of *Research Methods in Education* offers the background for methods courses at different levels. The new edition keeps the strong focus on education studies. Excellent extensions will make the book an even more popular basis for classes on both qualitative and quantitative methods.

*Felix Weiss, Assistant Professor for Sociology of Education, Aarhus University, Denmark*

*Research Methods in Education, Eighth Edition* is an up-to-date, one-stop shop, taking education research students from conceptualization to presentation. With this book on your library shelf, you are good to go.

*Dr Fiona McGarry, Lecturer in Research Methods, University of Dundee, UK*

The eighth edition of *Research Methods in Education* contains a wealth of up-to-the-minute information and guidance on educational research which will be of immense value to researchers at all stages of their careers and across the education domain from early years settings to higher education. As research and education move into increasingly fluid and complex dimensions, *Research Methods in Education* will support students, researchers and practitioners in charting a course through these changing waters as they seek to create new knowledge about effective teaching and deepen our understanding of how learners learn.

*Julia Flutter, A Director of the Cambridge Primary Review Trust, Faculty of Education, University of Cambridge, UK*

As a doctoral supervisor I know that my students routinely return to *Research Methods in Education* as they develop their own research projects. This text has always been a mainstay on our reading lists but this new edition now features additional research topics and new perspectives on a wider range of research methods. As with previous editions this book is clearly organised and well written and appeals to a wide audience of experienced and novice researchers alike.

*Dr Val Poultney, Associate Professor, University of Derby, UK*



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# Research Methods in Education

This thoroughly updated and extended eighth edition of the long-running bestseller *Research Methods in Education* covers the whole range of methods employed by educational research at all stages. Its five main parts cover: the context of educational research; research design; methodologies for educational research; methods of data collection; and data analysis and reporting. It continues to be the go-to text for students, academics and researchers who are undertaking, understanding and using educational research, and has been translated into several languages. It offers plentiful and rich practical advice, underpinned by clear theoretical foundations, research evidence and up-to-date references, and it raises key issues and questions for researchers planning, conducting, reporting and evaluating research.

This edition contains new chapters on:

- Mixed methods research
- The role of theory in educational research
- Ethics in Internet research
- Research questions and hypotheses
- Internet surveys
- Virtual worlds, social network software and netography in educational research
- Using secondary data in educational research
- Statistical significance, effect size and statistical power
- Beyond mixed methods: using Qualitative Comparative Analysis (QCA) to integrate cross-case and within-case analyses.

*Research Methods in Education* is essential reading for both the professional researcher and anyone involved in educational and social research. The book is supported by a wealth of online materials, including PowerPoint slides, useful weblinks, practice data sets, downloadable tables and figures from the book, and a virtual, interactive, self-paced training programme in research methods. These resources can be found at: [www.routledge.com/cw/cohen](http://www.routledge.com/cw/cohen).

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Keith Morrison

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# Preface to the eighth edition

We are indebted to Routledge for the opportunity to produce an eighth edition of our book *Research Methods in Education*. The book continues to be received very favourably worldwide; it is the standard text for many courses in research methods and has been translated into several languages.

The eighth edition contains much new material, including entirely new chapters on:

- Paradigms in educational research
- Mixed methods research
- The role of theory in educational research
- Ethics in Internet research
- Research questions and hypotheses
- Historical and documentary research
- Internet surveys
- Meta-analysis, research syntheses and systematic reviews
- Virtual worlds, social network software and netography in educational research
- Using secondary data in educational research
- Statistical significance, effect size and statistical power
- Beyond mixed methods: using Qualitative Comparative Analysis (QCA) to integrate cross-case and within-case analyses.

Whilst retaining the best features of the former edition, the reshaping, updating and new additions undertaken for this new volume now mean that the book covers a greater spread of issues than the previous editions, and in greater depth, catching the contemporary issues and debates in the field. In particular, the following new material has been included:

## Part 1:

- Post-positivism, post-structuralism and postmodernism
- Constructionism in educational research
- Subjectivity and objectivity in educational research
- Mixed methods research
- Paradigms, ontology and epistemology in mixed methods research
- Working with mixed methods research
- Stages in mixed methods research
- Value-neutrality in educational research
- The role of theory in educational research
- Types and meanings of theory
- Worked examples of causation in educational research

## Part 2:

- Regulatory contexts of ethics
- Sponsored research
- Ethical codes and their limitations
- Ethics and the quality of research
- Power and position

- Reciprocity
- Ethics in data analysis, reporting and dissemination
- Key ethical issues in Internet research
- Challenges to privacy and informed consent in Internet research
- Public and private matters in Internet research
- Ethical codes in Internet research
- Choosing a research project
- Deriving and devising research questions
- Different kinds of research question
- Organizing research questions
- The need for warrants in educational research
- Statistical power in sampling issues
- Sampling in mixed methods research
- Effects of sensitive research on the researcher

### Part 3:

- Autoethnography
- Virtual ethnography
- Reflexivity
- Historical and documentary research
- Survey questions
- Low response, non-response and missing data in surveys
- Constructing Internet-based surveys
- Ethical issues in Internet-based surveys
- Typology of case studies
- Generalization in case study
- What makes a good case study researcher?
- Randomized controlled trials
- The importance of randomization
- Concerns about randomized controlled trials
- The limits of averages in randomized controlled trials
- Null hypothesis significance testing
- Participatory action research
- Ethical issues in action research

### Part 4:

- Considering the demands on the respondent in questionnaire construction
- Administering questionnaires
- Planning and conducting interviews
- Prompts and probes in interviews
- Interviewing children
- Group interviewing
- Telephone interviewing
- Online interviewing
- Key issues in observations
- Video observations
- Using secondary data in educational research
- Sources and types of secondary data
- Advantages of, and challenges in, using secondary data
- Ethical issues in using secondary data
- Examples of secondary data analysis
- Working with secondary data
- Photo-elicitation



- Provision of images in educational research
- Video and moving images in educational research
- Ethical practices in visual research

**Part 5:**

- Elements of qualitative data analysis
- Making sense of qualitative data
- Computer Assisted Qualitative Data Analysis (CAQDAS)
- Examples of CAQDAS
- Reflexivity in CAQDAS
- Strengths and weaknesses of CAQDAS
- Advances in CAQDAS
- Ways of organizing and presenting qualitative data analysis
- Examples of coding qualitative data with software (CAQDAS)
- Concerns about coding
- Content analysis with software (CAQDAS)
- Worked examples of using software in analysing visual data (CAQDAS)
- Challenges in interpreting visual images
- Analysing moving images
- Versions of, stages in and concerns about grounded theory
- Moderator and mediator variables
- Confidence intervals
- Concerns about statistical significance
- Hypothesis testing and null hypothesis significance testing
- Statistical power
- Coping with missing data
- ‘Safety checks’ and assumptions when using statistics (for all the statistics addressed)
- Command sequences for running statistics in the Statistical Package for the Social Sciences (SPSS)
- Reporting statistical analysis
- Cluster analysis
- What to look for in factor analysis output
- Additions to guidance charts when choosing statistics
- Using Qualitative Comparative Analysis (QCA) to integrate cross-case and within-case analyses
- Starting from quantitative and qualitative stances in QCA
- Ragin’s QCA
- Worked examples of QCA

A signal feature of this edition is the inclusion of very many extensively worked examples and more figures, diagrams and graphics to illustrate and summarize key points clearly. Several of the tables in Part 5 include SPSS and NVivo output, so that readers can check their own SPSS and NVivo analysis against the examples provided.

To accompany this volume, a companion website provides a comprehensive range of materials to cover all aspects of research (including summaries of every chapter on PowerPoint slides), exercises and examples, explanatory material and further notes, website references, SPSS data files, QSR NVivo data files, together with further statistics and statistical tables. These are indicated in the book.

This book stands out for its practical advice that is securely rooted in theory and up-to-date discussion from a range of sources. We hope that it will continue to constitute the first ‘port of call’ for educational researchers and continue to be the definitive text in its field.

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# Part 1

## The context of educational research

This part introduces readers to different research traditions, with the advice that ‘fitness for purpose’ must be the guiding principle: different research paradigms for different research purposes. A major message in this part is that the nature and foundations of educational research have witnessed a proliferation of paradigms over time. From the earlier days of either quantitative or qualitative research have arisen the several approaches introduced here.

This part commences by introducing positivist and scientific contexts of research and some strengths and weaknesses of these for educational research, followed by post-positivist views of research. As an alternative paradigm, the cluster of approaches that can loosely be termed interpretive, naturalistic, phenomenological, interactionist and ethnographic are brought together, and their strengths and weaknesses for educational research are examined. Postmodernist and post-structuralist approaches are also introduced, and these lead into an introduction to complexity theory in educational research. The paradigm of mixed methods research is introduced, and its foundations, strengths, weaknesses, contribution to and practices in educational research are discussed.

Critical theory as a paradigm of educational research is discussed, and its implications for the research are indicated in several ways, resonating with curriculum research, participatory research, feminist research, post-colonial research and queer theory. These are concerned

not only with understanding a situation or phenomenon but with *changing* it, often with an explicit political agenda. Critical theory links the conduct of educational research with politics and policy making, and this is reflected in the discussions of research and evaluation, noting how some educational research has become evaluative in nature.

This part includes a new chapter on the role of theory in educational research, indicating its several meanings, its origins and roles in educational research, and what makes a theory interesting and useful. It also includes the discussion of causation in educational research and key elements in understanding and working with causation.

The term *research* itself has many meanings. We restrict its usages here to those activities and undertakings aimed at developing a science of behaviour, the word *science* itself implying both normative and interpretive perspectives. Accordingly, when we speak of social research, we have in mind the systematic and scholarly application of the principles of a science of behaviour to the problems of people within their social contexts, and when we use the term educational research, we likewise have in mind the application of these same principles to the problems of teaching and learning within education and to the clarification of issues having direct or indirect bearing on these concepts.



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### Setting the field

This large chapter explores the context of educational research. It sets out several foundations on which different kinds of empirical research are constructed:

- the search for understanding
- paradigms of educational research
- scientific and positivistic methodologies
- naturalistic and interpretive methodologies
- post-positivism, post-structuralism and postmodernism
- complexity theory in educational research

Educational researchers cannot simply ‘read off’ the planning and conduct of research as though one were reading a recipe for baking a cake. Nor is the planning and conduct of research the laboratory world or the field study of the natural scientist. Rather, it is to some degree an art, an iterative and often negotiated process and one in which there are typically trade-offs between what one would like to do and what is actually possible. This book is built on that basis: educational research, far from being a mechanistic exercise, is a deliberative, complex, subtle, challenging, thoughtful activity and often a messier process than researchers would like it to be. This book provides some tools for such deliberation and planning, and hopefully some answers, but beyond that it is for the researcher to consider how to approach, plan, conduct, validate and evaluate the research, how to develop and test theory, how to study and investigate educational matters, how to balance competing demands on the research, and so on. There is no one best way to plan and conduct research, just as there is no one single ‘truth’ to be discovered. Life is not that easy, unidimensional or straightforwardly understood, just as there are no simple dichotomies in educational research (e.g. quantitative *or* qualitative, objective *or* subjective). Rather, we live in a pluralistic world with many purposes and kinds of research, many realities and lived experiences to catch, many outcomes, theories and explanations, many discoveries to be made, and many considerations and often contradictions or sensitivities to be addressed in the planning and conduct of the research.

Whilst arguing against simple foundationalism, this chapter sets out some conceptions of research which researchers may find helpful in characterizing and deliberating about their studies. The chapter considers paradigms and their possible contribution to educational research, positivism, post-positivism, post-structuralism, postmodernism and interpretive approaches.

#### 1.1 Introduction

Our analysis takes an important notion from Hitchcock and Hughes (1995, p. 21), who suggest that ontological assumptions (assumptions about the nature of reality and the nature of things) give rise to epistemological assumptions (ways of researching and enquiring into the nature of reality and the nature of things); these, in turn, give rise to methodological considerations; and these, in turn, give rise to issues of instrumentation and data collection. Added to ontology and epistemology is axiology (the values and beliefs that we hold). This view moves us beyond regarding research methods as simply a technical exercise to being concerned with understanding the world; this is informed by how we view our world(s), what we take understanding to be, what we see as the purposes of understanding and what is deemed valuable.

#### 1.2 The search for understanding

People have long been concerned to come to grips with their environment and to understand the nature of the phenomena it presents to their senses. The means by which they set out to achieve these ends may be classified into three broad categories: *experience*, *reasoning* and *research* (Mouly, 1978). Far from being independent and mutually exclusive, however, these categories are complementary and overlapping, features most readily in evidence where solutions to complex problems are sought.

In our endeavours to come to terms with day-to-day living, we are heavily dependent upon experience and authority. However, as tools for uncovering ultimate truth, they have limitations. The limitations of personal



experience in the form of common-sense knowing, for instance, can quickly be exposed when compared with features of the scientific approach to problem solving. Consider, for example, the striking differences in the way in which theories are used. Laypeople base them on haphazard events and use them in a loose and uncritical manner. When they are required to test them, they do so in a selective fashion, often choosing only that evidence which is consistent with their hunches and ignoring that which is counter to them. Scientists, by contrast, construct their theories carefully and systematically. Whatever hypotheses they formulate have to be tested empirically so that their explanations have a firm basis in fact. And there is the concept of control distinguishing the layperson's and the scientist's attitude to experience. Laypeople may make little or no attempt to control any extraneous sources of influence when trying to explain an occurrence. Scientists, on the other hand, only too conscious of the multiplicity of causes for a given occurrence, adopt definite techniques and procedures to isolate and test the effect of one or more of the alleged causes. Finally, there is the difference of attitude to the relationships among phenomena. Laypeople's concerns with such relationships may be loose, unsystematic and uncontrolled; the chance occurrence of two events in close proximity is sufficient reason to predicate a causal link between them. Scientists, however, display a much more serious professional concern with relationships and only as a result of rigorous experimentation, investigation and testing will they postulate a relationship between two phenomena.

People attempt to comprehend the world around them by using three types of reasoning: *deductive reasoning*, *inductive reasoning* and the *combined inductive-deductive* approach. Deductive reasoning is based on the syllogism, which was Aristotle's great contribution to formal logic. In its simplest form the syllogism consists of a major premise based on an a priori or self-evident proposition, a minor premise providing a particular instance, and a conclusion. Thus:

All planets orbit the sun;  
The earth is a planet;  
Therefore the earth orbits the sun.

The assumption underlying the syllogism is that through a sequence of formal steps of logic, from the general to the particular, a valid conclusion can be deduced from a valid premise. Its chief limitation is that it can handle only certain kinds of statement. The syllogism formed the basis of systematic reasoning from the time of its inception until the Renaissance. Thereafter its effectiveness was diminished because it was no longer related to

observation and experience and became merely a mental exercise. One of the consequences of this was that empirical evidence as the basis of proof was superseded by authority and the more authorities one could quote, the stronger one's position became.

The history of reasoning was to undergo a dramatic change in the 1600s when Francis Bacon began to lay increasing stress on the observational basis of science. Being critical of the model of deductive reasoning on the grounds that its major premises were often preconceived notions which inevitably bias the conclusions, he proposed in its place the method of inductive reasoning by means of which the study of a number of individual cases would lead to a hypothesis and eventually to a generalization. Mouly (1978) explains it by suggesting that Bacon's basic premise was that, with sufficient data, even if one does not have a preconceived idea of their significance or meaning, nevertheless important relationships and laws will be discovered by the alert observer.

Of course, there are limits to induction as the accumulation of a series of examples does not *prove* a theory; it only *supports* it. Just because all the swans that I have ever seen are white, it does not prove a theory that all swans are white – one day I might come across a black swan, and my theory is destroyed. Induction places limits on prediction. Discoveries of associations of regularities and frequent repetitions may have limited predictive value. We are reminded of Bertrand Russell's (1959) story of the chicken who observed that he was fed each day by the same man, and, because this had happened every day, it would continue to happen, i.e. the chicken had a theory of being fed, but, as Russell remarks, 'the man who has fed the chicken every day throughout its life at last wrings its neck instead' (p. 35), indicating the limits of prediction based on observation. Or, to put it more formally, theory is underdetermined by empirical evidence (Phillips and Burbules, 2000, p. 17). Indeed Popper (1980) notes that the essence of science, what makes a science a science, is the inherent falsifiability of the propositions (in contrast to the views of the method of science as being one of verifiability, as held by logical positivists).

This is not to discard induction: it is often the starting point for science. Rather, it is to caution against assuming that it 'proves' anything. Bacon's major contribution to science was that he was able to rescue it from the stranglehold of the deductive method whose abuse had brought scientific progress to a standstill. He thus directed the attention of scientists to nature for solutions to people's problems, demanding empirical evidence for verification. Logic and authority in themselves were no longer regarded as conclusive means of

proof and instead became sources of hypotheses about the world and its phenomena.

Bacon's inductive method was eventually followed by the inductive-deductive approach which combines Aristotelian deduction with Baconian induction. Here the researcher is involved in a back-and-forth process of induction (from observation to hypothesis, from the specific to the general) and deduction (from hypothesis to implications) (Mouly, 1978). Hypotheses are tested rigorously and, if necessary, revised.

Although both deduction and induction have their weaknesses, their contributions to the development of science are enormous, for example: (1) the suggestion of hypotheses; (2) the logical development of these hypotheses; and (3) the clarification and interpretation of scientific findings and their synthesis into a conceptual framework.

A further means by which we set out to discover truth is *research*. This has been defined by Kerlinger (1970) as the systematic, controlled, empirical and critical investigation of hypothetical propositions about the presumed relations among natural phenomena. Research has three characteristics in particular, which distinguish it from the first means of problem solving identified earlier, namely, experience. First, whereas experience deals with events occurring in a haphazard manner, research is systematic and controlled, basing its operations on the inductive-deductive model outlined above. Second, research is empirical. The scientist turns to experience for validation. As Kerlinger puts it, subjective, personal belief must have a reality check against objective, empirical facts and tests. And third, research is self-correcting. Not only does the scientific method have built-in mechanisms to protect scientists from error as far as is humanly possible, but also their procedures and results are open to public scrutiny by fellow professionals. Incorrect results in time will be found and either revised or discarded (Mouly, 1978). Research is a combination of both experience and reasoning and, as far as the natural sciences are concerned, is to be regarded as the most successful approach to the discovery of truth (Borg, 1963).<sup>1</sup>

### 1.3 Conceptions of social reality

The views of social science that we have mentioned represent strikingly different ways of looking at social reality and are constructed on correspondingly different ways of interpreting it. We can perhaps most profitably approach these conceptions of the social world by examining the explicit and implicit assumptions underpinning them. Our analysis is based on the work of Burrell and Morgan (1979), who identified four sets of such assumptions.

First, there are assumptions of an ontological kind – assumptions which concern the very nature or essence of the social phenomena being investigated. Thus, the authors ask, is social reality external to individuals – imposing itself on their consciousness from without – or is it the product of individual consciousness? Is reality of an objective nature, or the result of individual cognition? Is it a given 'out there' in the world, or is it created by one's own mind? Is there a world which exists independent of the individual and which the researcher can observe, discovering relationships, regularities, causal explanations, and which can be tested empirically and repeatedly (i.e. under similar conditions) (cf. Pring, 2015, p. 64)? These questions spring directly from what philosophy terms the nominalist–realist debate. The former view holds that objects of thought are merely words and that there is no independently accessible thing constituting the meaning of a word. The realist position, however, contends that objects have an independent existence and are not dependent for it on the knower. The fact that I can see a dog is not simply because of my perception or cognition but because a dog exists independent of me.

The second set of assumptions identified by Burrell and Morgan are of an epistemological kind. These concern the very bases of knowledge – its nature and forms, how it can be acquired and how communicated to other human beings. How one aligns oneself in this particular debate profoundly affects how one will go about uncovering knowledge of social behaviour. The view that knowledge is hard, objective and tangible will demand of researchers an observer role, together with an allegiance to the methods of natural science; to see knowledge as personal, subjective and unique, however, imposes on researchers an involvement with their subjects and a rejection of the ways of the natural scientist. To subscribe to the former is to be positivist; to the latter, anti-positivist or post-positivist.

The third set of assumptions concern human nature and, in particular, the relationship between human beings and their environment. Since the human being is both its subject and object of study, the consequences for social science of assumptions of this kind are far-reaching. Two images of human beings emerge from such assumptions – the one portrays them as responding mechanically and deterministically to their environment, i.e. as products of the environment, controlled like puppets; the other, as initiators of their own actions with free will and creativity, producing their own environments. The difference is between *determinism* and *voluntarism* respectively (Burrell and Morgan, 1979), between *structure* and *agency*. Human action involves

some combination of these two, polarized here for the sake of conceptual clarity.

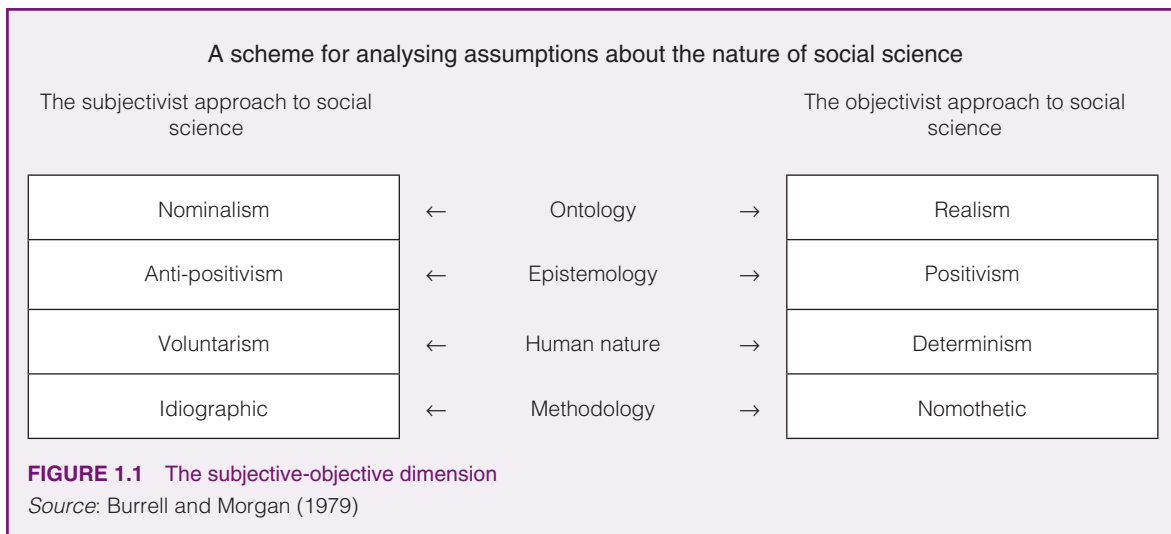
It follows from what we have said so far that the three sets of assumptions identified above have direct implications for the methodological concerns of researchers, since the contrasting ontologies, epistemologies and models of human beings will, in turn, suggest different research methods. Investigators adopting an objectivist (or positivist) approach to the social world and who treat it like the world of natural phenomena as being real and external to the individual will choose from a range of options such as surveys, experiments and the like. Others favouring the more subjectivist (or anti-positivist) approach and who view the social world as being of a much more personal and humanly created kind will select from a comparable range of recent and emerging techniques – accounts, participant observation, interpretive approaches and personal constructs, for example.

Where one subscribes to the view which treats the social world like the natural world – as if it were an external and objective reality – then scientific investigation will be directed at analysing the relationships and regularities between selected factors in that world. It will be concerned with identifying and defining elements and discovering ways in which their relationships can be expressed. Hence, methodological issues, of fundamental importance, are thus the concepts themselves, their measurement and the identification of underlying themes in a search for universal laws which explain and govern that which is being observed (Burrell and Morgan, 1979). An approach characterized by procedures and methods designed to discover general laws may be referred to as *nomothetic*. Here is not the place

to debate whether social life is ‘law-like’ (i.e. can be explained by universal laws) in the same way as that mooted in the natural sciences (but see Kincaid, 2004) or whether social life is quintessentially different from the natural sciences such that ‘law-like’ accounts are simply a search for the impossible and untenable.

However, if one favours the alternative view of social reality which stresses the importance of the subjective experience of individuals in the creation of the social world, then the search for understanding focuses upon different issues and approaches them in different ways. The principal concern is with an *understanding* of the way in which individuals and social groups create, modify and interpret the world in which they find themselves. As Burrell and Morgan (1979) observe, emphasis here is placed on explanation and understanding of the unique and the particular individual cases (however defined: see Chapter 19 on case study, in which emphasis is placed on the denotation of what is the case: an individual, a group, a class, an institution etc.) rather than the general and the universal. In its emphasis on the particular and individual case, this approach to understanding individual (however defined) behaviour may be termed *idiographic*.

In this review of Burrell and Morgan’s analysis of the ontological, epistemological, human and methodological assumptions underlying two ways of conceiving social reality, we have laid the foundations for a more extended study of the two contrasting perspectives evident in the practices of researchers investigating human behaviour and, by adoption, educational problems. Figure 1.1 summarizes these assumptions along a subjective/objective dimension. It identifies the four



sets of assumptions by using terms we have adopted in the text and by which they are known in the literature of social philosophy.

Each of the two perspectives on the study of human behaviour outlined above has profound implications for research in classrooms and schools. The choice of problem, the formulation of questions to be answered,

the characterization of students and teachers, methodological concerns, the kinds of data sought and their mode of treatment, all are influenced by the viewpoint held. Some idea of the considerable practical implications of the contrasting views can be gained by examining Table 1.1, which compares them with respect to a number of critical issues within a broadly societal and

**TABLE 1.1 ALTERNATIVE BASES FOR INTERPRETING SOCIAL REALITY**

<i>Conceptions of social reality</i>		
<i>Dimensions of comparison</i>	<i>Objectivist</i>	<i>Subjectivist</i>
Philosophical basis	Realism: the world exists and is knowable as it really is. Organizations are real entities with a life of their own.	Idealism: the world exists but different people construe it in very different ways. Organizations are invented social reality.
The role of social science	Discovering the universal laws of society and human conduct within it.	Discovering how different people interpret the world in which they live.
Basic units of social reality	The collectivity: society or organizations.	Individuals acting singly or together.
Methods of understanding	Identifying conditions or relationships which permit the collectivity to exist. Conceiving what these conditions and relationships are.	Interpretation of the subjective meanings which individuals place upon their action. Discovering the subjective rules for such action.
Theory	A rational edifice built by scientists to explain human behaviour.	Sets of meanings which people use to make sense of their world and behaviour within it.
Research	Experimental or quasi-experimental validation of theory.	The search for meaningful relationships and the discovery of their consequences for action.
Methodology	Abstraction of reality, especially through mathematical models and quantitative analysis.	The representation of reality for purposes of comparison. Analysis of language and meaning.
Society	Ordered. Governed by a uniform set of values and made possible only by those values.	Conflicted. Governed by the values of people with access to power.
Organizations	Goal oriented. Independent of people. Instruments of order in society serving both society and the individual.	Dependent upon people and their goals. Instruments of power which some people control and can use to attain ends which seem good to them.
Organizational pathologies	Organizations get out of kilter with social values and individual needs.	Given diverse human ends, there is always conflict among people acting to pursue them.
Prescription for change	Change the structure of the organization to meet social values and individual needs.	Find out what values are embodied in organizational action and whose they are. Change the people or change their values if you can.

Source: Adapted from Barr Greenfield (1975)

organizational framework. Implications of the two perspectives for educational research unfolds in the course of the text.

## 1.4 Paradigms

Educational research has absorbed several competing views of the social sciences – the scientific view and an interpretive view – and several others that we explore in this book, including critical theory and feminist theory. Some views hold that the social sciences are essentially the same as the natural sciences and are therefore concerned with discovering natural and universal laws regulating and determining individual and social behaviour. The interpretive view, however, while sharing the rigour of the natural sciences and the concern of social science to describe and explain human behaviour, emphasizes how people differ from inanimate natural phenomena and, indeed, from each other. These contending views – and also their corresponding reflections in educational research – stem in the first instance from different conceptions of social realities and of individual and social behaviour. We examine these in a little more detail.

Since the groundbreaking work of Kuhn (1962), approaches to methodology in research have been informed by discussions of ‘paradigms’ and communities of scholars. A paradigm is a way of looking at or researching phenomena, a world view, a view of what counts as accepted or correct scientific knowledge or way of working, an ‘accepted model or pattern’ (Kuhn, 1962, p. 23), a shared belief system or set of principles, the identity of a research community, a way of pursuing knowledge, consensus on what problems are to be investigated and how to investigate them, typical solutions to problems, and an understanding that is more acceptable than its rivals.

A notable example of this is the old paradigm that placed the Earth at the centre of the universe, only to be replaced by the Copernican heliocentric model, as evidence and explanation became more persuasive of the new paradigm. Importantly, one has to note that the old orthodoxy retained its value for generations because it was supported by respected and powerful scientists and, indeed, others (witness the attempts made by the Catholic Church to silence Galileo in his advocacy of the heliocentric model of the universe). Another example is where the Newtonian view of the mechanical universe has been replaced by the Einsteinian view of a relativistic, evolving universe. More recently still, the idea of a value-free, neutral, objective, positivist science has been replaced by a post-positivist, critical realist view of science with its hallmarks of conjecture

and refutation (Popper, 1980) and with the ability for falsification being the distinguishing feature of science. Further, social science has recognized the importance of the (subjective) value systems of researchers, phenomenology, subjectivity, the need for reflexivity in research (discussed later in this book), the value of qualitative and mixed methods approaches to research, and the contribution of critical theory and feminist approaches to research methodologies and principles.

Paradigms are not simply methodologies (Hammersley, 2013, p. 15); they are ways of looking at the world, different assumptions about what the world is like and how we can understand or know about it. This raises the question of whether paradigms can live together, whether they are compatible or, since they constitute fundamentally different ways of looking at the world, they are incommensurate (which raises questions for mixed methods research – see Chapter 2). At issue here is the significance of regarding approaches to research as underpinned by different paradigms, an important characteristic of which is their incommensurability with each other (i.e. one cannot hold two distinct paradigms simultaneously as there are no common principles, standards or measures).

As more knowledge is acquired to challenge an existing paradigm, such that the original paradigm cannot explain a phenomenon as well as the new paradigm, there comes about a ‘scientific revolution’, a paradigm shift, in which the new paradigm replaces the old as the orthodoxy – the ‘normal science’ – of the day. Kuhn’s (1962) notions of paradigms and paradigm shifts link here objects of study and communities of scholars, where the field of knowledge or paradigm is seen to be only as good as the evidence and the respect in which it is held by ‘authorities’.

Part 1 sets out several paradigms of educational research and these are introduced in Chapters 1 to 3.

Social science research is marked by paradigmatic pluralism and multiple ways of construing paradigms. For example, Pring (2015) contrasts two paradigms (pp. 63–74). The first paradigm espouses the view that there is an objective reality which exists independent of the individual and comprises causally interacting elements which are available for observation; that different sciences (e.g. social, physical) can be used to define that reality once consensus has been reached on what that objective reality is; that the research is replicable and cumulative, i.e. a scientifically rooted body of knowledge can be gathered and checked for correspondence to the world as it is (the correspondence theory of truth) (pp. 63–4). Such a view resonates with Hammersley’s (2013) summary of quantitative research which is characterized by hypothesis testing, numerical



data, ‘procedural objectivity’, generalization, the identification of ‘systematic patterns of association’ and the isolation and control of variables (pp. 10–11).

The second paradigm, by contrast, espouses the view that the world consists of ideas, i.e. a social construction, and that researchers are part of the world which they are researching, that meanings are negotiated between participants (including the researcher), that an objective test of truth is replaced by a consensus theory of truth, that ideas of the world do not exist independently of those who hold them (i.e. require a redefinition of ‘objective’ and ‘subjective’), that multiple realities exist and that what is being researched is context-specific (Pring, 2015, pp. 65–6). Such a view accords with Hammersley’s definition of qualitative research as that which uses less structured data, which emphasizes the central place of subjectivity in the research process and which studies ‘a small number of naturally occurring cases in detail’ using verbal rather than statistical analysis (Hammersley, 2013, p. 12).

However, Pring’s (2015) point is not simply to set out these two paradigms, but to argue that they constitute a false dualism that should be rejected, as they artificially compel the researcher to make an either/or choice of paradigms and, thereby, misrepresent the world as multiply meaningful and both independent of and part of the researcher, not only a social construction. He argues (p. 69) that, just as an independent physical world must exist in order for researchers to construe it, the same can be said of the social world – there must be independent actors and social worlds in order for apperception and social construction of it to make sense.

Pring cautions against adopting *a priori* either a quantitative or qualitative view of the world as this massively over-simplifies the real world, which is complex and complicated. Rather, how we pursue the research depends on what the research is about, and this recognizes that social constructions vary from social group to social group and humans can be both the object and subject of research (2015, p. 73).

Pring is not alone in characterizing different paradigms of educational research. For example, Creswell (2013) notes four ‘philosophical worldviews’ (pp. 7ff.): post-positivism, constructivism, advocacy/participatory and pragmatism. These are discussed in Chapters 2 and 3. Here we note that the advocacy/participatory paradigm concerns the disempowered and marginalized, and it studies oppression and lack of voice; this brings it under the umbrella of critical approaches which we discuss in Chapter 3, including gender, race, ethnicity, disability, sexual orientation, socio-economic status and differentials of power that prop up inequality.

Lather (2004) sets out four paradigms: prediction (positivism); understanding (interpretive approaches); emancipatory (critical theoretical approaches); and deconstruction (post-structuralist). We discuss these in Chapters 1 to 3. Lukenchuk (2013) identifies six paradigms which, she notes, are not exhaustive (pp. 66ff.):

- Empirical-analytic (empiricist; scientific; concerned with prediction and control; quantitative; experimental; correlational; causal; explanatory; probabilistic; fallibilistic; concerned with warrants for knowledge claims; quantitative);
- Pragmatic (focus on ‘what works’; trial and error; problem-centred; practical; experimental; action oriented; utility oriented; practitioner research; qualitative and quantitative);
- Interpretive (hermeneutic and existential understanding; meaning-making; phenomenological; qualitative; naturalistic; constructivist; interactionist; *verstehen* approaches; ethnographic; qualitative);
- Critical (ideology-critical; concerned with analysis of power and ideology; consciousness-raising; emancipatory and concerned with advocacy/participatory approaches; transformatory; politically oriented and activist; qualitative and quantitative);
- Post-structuralist (anti-foundation knowledge; deconstructionist; interpretation of life as discourse and texts; transformative; qualitative);
- Transcendental (asserts reason, intuition, mysticism, revelation as ways of knowing: mind, body, soul and spirit; life as directed by an ‘internal moral compass’; foundational; qualitative).

This is not to say that paradigms necessarily *drive* the research, as research is driven by the purposes of the research. Indeed we can ask whether we need paradigmatic thinking at all in order to do research. Rather, it is to say that the purposes and nature of the research may be clarified by drawing on one or more of these paradigms; the paradigms can clarify and organize the thinking about the research. Further, it is not to say that these paradigms each have an undisputed coherence, unity or unproblematic singularity of conception. Rather, they are characterizations, ideal types, typifications and simplifications for ease of initial understanding, recognizing that this blurs the many variations that lie within each of them, and, indeed, may overlook the overlaps between them; each paradigm is not all of a single type and they are by no means mutually exclusive. To consider them as mutually exclusive is to prolong the unnecessary ‘paradigm wars’ to which Gage (1989) alluded so compellingly.