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Theories of Educational Research

Aims

This chapter addresses some of the complex and vexed questions associated with the various theories surrounding educational research, including the purposes of research, methodology and methods, and the relationship between research and evaluation. It is the many and varied approaches to educational research that give rise to this complexity, and as we will show below there are many within the research community who would argue passionately for one particular approach at the expense of others based on claims which are said to encompass the philosophical worldview of the researcher. It is noted that leadership and management research has a close relationship to the wider field of educational effectiveness and improvement, as well as being dominated by a pragmatic commitment to mixed methods that are seen as being fit for purpose in attempting to improve school outcomes. By the end of this chapter you should be able to:

- understand the purposes of research as a whole and educational leadership research specifically;
- have a sound grasp of the relationship between methodology, method and philosophical approach;
- see how different research paradigms influence the development of a framework for research;
- understand the nature of research strategies;
- be aware of the relationship between research and evaluation.



The purposes of research

School-based research is claimed by Joyce (1991) to be one of the five 'doors' to improving practice within schools and systematic enquiry into how educational institutions are led is, or should be, a crucial component in institutional improvement and improved outcomes. Traditionally, such research has been carried out by 'expert' researchers based in higher education institutions, but recent years have revealed an increasing emphasis on the importance of

school-based research as part of continuing professional development and we have argued elsewhere that practitioners need to be seen as equal partners with academic researchers in the process of producing evidence to raise standards (Burton and Brundrett, 2005: 21).

Morrison suggests that educational research has a twin focus: attitudinal – ‘a distinctive way of thinking about educational phenomena’, and action – a systematic means of investigating them (2002: 3). Brown and Dowling make an attempt to distinguish between ‘professional educational practice’ – the reflective practitioner – and ‘educational research practice’ (1998:165) which tries to address and understand the deeper issues underlying educational phenomena by asking the question ‘why?’ and not just raising the more immediate and more practical considerations of ‘what?’ and ‘how?’ This suggests that whilst educational research will certainly influence what happens in the classroom, the major force of its impact will be in the long-term policy decisions made within educational institutions.

Methodology, method and philosophical approach

The difference between methodology and methods is one of the most contested and challenging issues in research. In part, this is an abstract discussion that can be frustrating to students and even professional researchers who simply want to begin to find out what is going on in a given situation or institution, but the discussion about methodology is one which can rarely be sidestepped completely. For instance, there is a general expectation that all students submitting for a research degree will carry out a detailed discussion of the methodology that they have employed and offer a cogent defence of their approach. Equally, when professional researchers submit a proposal or bid for research funding there is often a requirement that they will both outline and justify their methodology, as well as state the research tools that they will employ. The basic confusion is usually between:

- *methodology*, namely the broad system or body of practices and procedures that will be employed to investigate a set of phenomena, and
- *methods*, the actual analytical approaches that will be employed in the research process.

Since one governs or overarches the other, it is inevitable that there will be a considerable overlap when discussing the two concepts.

Both the methodology and methods will depend on your philosophical approach to knowledge and to thinking about your research strategy. *Ontology* is a branch of philosophy concerned with the nature of being and is about matters relating to reality and truth. What is the nature of the world? What really exists? What is reality? There are two extreme positions: on one hand, it can be

argued that reality and truth are a 'given' and are external to the individual, but on the other it can also be argued that reality and truth are the product of individual perception. *Epistemology* is the philosophical study of the nature, limits, and grounds of knowledge. It is closely related to ontology but refers to knowledge and its construction/production. It is concerned with what distinguishes different kinds of knowledge claims, i.e., with what the criteria are that allow distinctions to be made and how what exists can be known. What knowledge counts and by what evidence? Again there are two extreme positions. On one hand, it can be argued that knowledge is hard, real, and capable of being transmitted in a tangible form, but it can also be argued that it is subjective and based on experience and insight. For obvious reasons scientists will tend to hold the former view while social scientists will often champion the latter.

The researcher's worldview will impact directly on the overall research approach that they will take since if they subscribe to the scientific approach it is inevitable that both their methodology and methods will reflect those beliefs. Alternatively, if they are social constructivists they are far more likely to employ approaches which will try to elicit rich data via qualitative methods that will allow them to interpret the complex social world they are interested in. For these reasons, broadly speaking, the approaches employed in all research will fall into the general categories of objective/positivist (i.e., following the logic of demonstration), or subjective/interpretive (i.e., following the logic of discovery). We can unpack these terms a little further:

- *Positivism* attempts to apply theory to the research context to assess how applicable these are – that is, to compare an often idealised model in theory with reality. This implies that research should focus on the observable and the measurable, whether in absolute terms or via the perceptions of relevant individuals or groups of individuals. This relationship with the evidence base tends to link positivism with quantitative research, where the measurement of variables and concept formation has a central role and the focus of the research is concerned with the nature of causality.
- *Interpretivism* is a more 'people-centred' approach which acknowledges the research's integration within the research environment – that is, where each will impact on the perceptions and understandings of the other. Interpretivists will immerse themselves in the research environment and attempt to 'explore the "meanings" of events and phenomena from the subjects' perspectives' (Morrison, 2002:18). The evidence collected by interpretivists will be qualitative in nature, offering a rich and deep description of the research environment as a unique context.

While positivism will impose a direction and focus on the research, interpretivism will be driven by the subject, thus adopting a much more holistic and longitudinal perspective. Comparability is of no particular concern to interpretivists as the research becomes the unique 'storyteller' where the story has no

Table 2.1 Opposing research methodologies

Interpretive		Positivist
<p>Reality is a construct. It is multi-dimensional, ever changing, and dependent on different frames of reference.</p> <p>The research process is underpinned by democratic principles, giving equal status to participants and welcoming a diversity of perspectives. The researcher forms part of the research setting and affects and is affected by it (e.g. insider/outsider position). Issues related to status, power, ownership and control (gender, race, class, culture, political perspective) are important.</p>	<p>1. How is reality defined? (<i>Ontology</i>)</p> <p>2. How does the researcher perceive him/herself in relation to the research setting? (<i>Positionality</i>)</p>	<p>Reality is to be discovered. It is objective, rational, and independent from the observer.</p> <p>The researcher is objective and independent from the research setting/experiment (outsider position). The individual self is suppressed or negated since personal values impair scientific objectivity and impartiality. The researcher operates within clearly defined parameters, following pre-determined procedures. Observation should be uncontaminated by extraneous data.</p>
<p>Qualitative data, but not exclusively. Insights, deeper knowledge and understanding of human behaviour and relationships. Exploring different perspectives relating to one phenomenon. Uniqueness.</p>	<p>3. What is (are) the purpose/aim(s) of the research? (<i>Rationale</i>)</p>	<p>Qualitative data. Generalizations. Proving/disproving the hypothesis. Searching for the 'truth'. Hypotheses are derived from theories and are submitted to empirical tests for verification and rejection.</p>
<p>The construction of knowledge is a democratic process, involving both researcher and research participants. Knowledge is constructed from multiple perspectives. The element of subjectivity and bias is acknowledged and declared – the 'belief' system underpinning the viewpoint of the research (e.g. Feminist research).</p>	<p>4. How is knowledge created? (<i>Epistemology</i>)</p>	<p>The researcher is perceived as the 'guardian' and 'creator of knowledge' and as such occupies a position of authority in relation to the research 'subjects'. Only those phenomena that are observable and measurable can validly be warranted as knowledge (empiricism).</p>
<p>Theory-building is perceived as an ever-developing entity, not a perfect product. It is central to the research process and emerges from the dialogue</p>	<p>5. What role does theory play?</p>	<p>Theory and hypothesis testing provide the rationale for the research and inform its design. The conceptual framework underpinning the research</p>

(Continued)

Table 2.1 (Continued)

<p>between theoretical and professional perspectives and the data gathered (e.g. Grounded Theory). The conceptual framework around which the research is constructed emerges gradually (inductive method). Credibility and trustworthiness (building confidence in the accuracy of the data). Internal validity (thick description, rich, dense data through triangulation). Transferability, relatability, and translatability of findings across similar settings. Voluntary participation based on informed consent. Anonymity of participants and confidentiality of information divulged. Protection of research participants against potentially harmful consequences. Protection of privacy. Giving voice and ownership to the research participants.</p>	<p>6. What are the quality criteria of 'good' research?</p> <p>7. What ethical issues need to be considered?</p>	<p>design is pre-determined (deductive method). External validity (the data are accurate and also valid in relation to other contexts). Reliability (concerned with the consistency of measure). Generalizability (the research results also apply to other settings). Statistical significance. Voluntary participation based on informed consent. Anonymity of participants and confidentiality of information divulged. Protection of research participants against harmful consequences (risk assessment).</p>
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(Adapted from Burton et al., 2010: 61– 62)

discernible or definitive conclusion: for the positivist, however, comparability is all important. (Table 2.1 outlines the two extremes of what can be seen as competing research paradigms.)

Clearly, these two different approaches are both applicable to educational leadership, with the purposes to which the outcomes of the research are to be put being the main determinant. However, it might be more appropriate to 'mix and match' research strategies, methodologies and methods to meet the needs of the topic. Furthermore, it is probably true to say that most researchers engaged in work on educational leadership and management issues would use either surveys, interviews or a mixture of the two as their preferred method of collecting data and case studies as their methodological approach. Note also that many interview-based surveys will focus on the lives and careers of leaders and so could also be classified as using a biographical methodology. However ethnography in its fullest sense, which 'aims to ascertain the understanding that leaders (and their followers) have of leadership and the factors that shape

that understanding' (Gronn and Ribbins, 1996: 458), is little used because of the emphasis placed on direct and systematic observation, which is a very time-consuming activity that requires frequent and sustained access to the sometimes esoteric and ethically problematic world of schools and because ethnographic researchers will need to immerse themselves in the life of an organization and use multiple methods for gathering data.

Paradigms and the development of a framework for research

A further layer of complexity is added when researchers seek to address which paradigm they will adopt. Briggs et al. (2012: 16) argue that this process is based on how researchers make sense of information and transform it into research data by drawing on their epistemological assumptions. In this sense a paradigm is the set of beliefs which a researcher will employ in order to understand the evidence they have obtained: this will then influence their approach to the research. Bryman offers a clear definition here when he observes that a paradigm is:

... a cluster of beliefs and dictates which for a scientist in a particular discipline influence what should be studied how research should be done, and how results should be interpreted. (2004: 453)

Scott and Morrison (2006: 170) suggest that a range of paradigms have been developed in the field of educational research and they discuss four of these in some detail:

- *Positivism*, where it is suggested that facts can be collected and collated to either confirm or reject a theory or hypothesis conclusively.
- *Phenomenology*, which places a strong emphasis on interpreting the meaning of phenomena and focuses on human action and its interpretation.
- *Critical theory*, which focuses on values and accepts that the researcher can never be a neutral 'scientific' observer since their very presence changes the phenomena or situation being observed.
- *Postmodernism*, which is a further rejection of the scientific approach with its attempt at universal generalizations, argues instead that there can never be one universal truth since all data are interpreted differently by different observers.

We may recognize, however, that there is significant overlap between all such paradigms apart from the 'hard-line' positivist approach which deals only with verifiable empirical data that will result in universal conclusions. In the end, the most important thing for leadership research in practice is to place that research in some kind of wider framework, and it is the issue of the type of knowledge that researchers are seeking that may relate most

closely to the kind of project they choose to undertake. For instance, a researcher might profitably ask whether they are concerned with:

- *instrumentalism*, which tries to disseminate a knowledge of practice and associated skills through training and consultancy from a positive standpoint within the prevailing ideology;
- *reflexive action*, which attempts to develop and share practitioners' own practice knowledge through a self-critical analysis of their work in order to improve their practice, either within the prevailing ideology or according to an alternative ideology;
- *conceptual research*, which challenges and extends knowledge, or;
- *evaluative research*, which seeks to measure the impact of an approach or series of actions (see also Wallace and Poulson, 2003).

A researcher's consideration of which framework fits with the research is critical, not only because it will help them to reflect on which paradigm they fit within but also because it will help them in very practical ways in terms of determining the kinds of question they will ask. Therefore, an instrumentalist researcher will ask which strategies and tactics are being employed by leaders in a school or other educational establishment, but an evaluative researcher will be concerned with questions such as how the impact of leadership in the school is measured. Once again of course you will note that these two approaches are not mutually exclusive in the sense that a researcher would need to examine and evaluate leadership approaches, since there is no point in disseminating leadership practice when its efficacy in improving the work environment, student outcomes and so on has not been examined. There are, however, some in the research community who would look upon evaluation as a type of second-order research which does not have the status of more fundamental approaches to knowledge discovery or examination, but it is often the case that leadership researchers are especially interested in evaluation since they are seeking to examine their own or others' practice in order to improve the education system. For this reason, we will focus on evaluation in more detail later in the chapter.

Research strategy

Overall, the main point we must emphasize here is that your philosophical approach will determine your preferred research strategy. For example, the phenomenological strategy described by Denscombe (2003) focuses much more on people's interpretations of events, hence giving rise to *multiple realities* that may be shared by groups of people. In contrast, Trochim's (2002) post-positivist strategy (which by the way rejects the central tenets of positivism) argues that 'the goal of social science is to hold steadfastly to the goal of

getting it right about reality, even though we can never achieve that goal' (in other words, arguing for a single but provisional *shared reality* that most people will subscribe to).

Borg and Gall (1989), two of the best known writers on educational research over the last generation, place themselves firmly in the scientific, positivist tradition of educational research by citing the 'chain of reasoning' approach outlined by Krathwohl (1985). Here the research design is conceptualized as a series of links in a chain, each of which must be perfect in order to guarantee the integrity of the overall research design. Using this approach Borg and Gall posit that the test of a knowledge claim has two parts: first, to test whether the knowledge claim is true of the particular situation which the researcher has chosen to observe, and second, to test whether the knowledge claim is likely to hold true in other situations (Borg and Gall, 1989: 325). For them the definition of a research design is thus: 'a process of creating an empirical test to support or refute a knowledge claim' (ibid.: 324). They also go on to suggest nine steps in the production of a robust research approach:

1. Conclusions from previous study.
2. Explanation, rationale, theory, or point of view.
3. Questions, hypotheses, predictions, models.
4. Design of the study.
5. Gathering the data.
6. Summarizing the data.
7. Determining the statistical significance of the results.
8. Conclusions.
9. Beginning of the next study.

This scientific approach to research has many proponents and is often, for obvious reasons, favoured by those with a background in mathematics, the 'hard' sciences and engineering who have both the skills and mindset to be able to carry out such methods. However, there have long been opponents of the positivistic approach in social sciences such as education. Cziko (1989: 17), for example, argued that 'the phenomena studied in the social and behavioural sciences are essentially unpredictable and indeterminate', thus leading to a rejection of ever finding universal laws, a belief that led Cziko to the conclusion that educational research should limit itself to 'describe, appreciate, interpret, and explain social and individual behaviour' (ibid.: 23). Nearly a decade later, Thomas also offered a swinging attack on positivism in educational enquiry, arguing that it is 'formulaic' and 'follows a predictable rut and often leads to uninteresting findings' (1998: 141). This led Thomas to argue for a shift away from a research tradition driven by a desire to 'know what' towards one which would embrace the desire to 'know how' since, he suggested, 'methods of educational research are no more than the technology of consolidation – the

cogs and axles of a description of the existing world' and that their use 'merely reinforces the consensual paradigm' (ibid.:153). It is interesting to note that this shift from the 'know how' to the 'know what' approaches seems to mirror the changing balance between school effectiveness and improvement research that took place in the 1980s and 1990s, where the focus gradually moved away from attempts to prove that different approaches to school management could make a difference in outcomes which were dominated by statistical methods, and concentrated on the analysis and exemplification of the actual ways in which schools could operate differently in order to produce those improved outcomes which often employed qualitative methods.

It is unlikely that such 'paradigm wars' will ever reach the point of establishing a firm and lasting peace, but social science researchers have gradually come to accept a 'logic in use' approach which has had its proponents since the 1960s (Kaplan, 1964) and which suggests a 'legitimate complementarity of paradigms' (Salomon, 1991: 10). Such mixed-method or blended approaches have a particular appeal for those who are engaged in educational leadership research who often possess a pragmatic mindset since it is usually true that they would wish to gather both rich case study evidence whilst at the same time making more generalizable findings about leadership across a system of education. These blended approaches have gained further credibility by appearing to lend themselves to recent school effectiveness research especially well (Creemers, Kyriakides and Sammons, 2010) and there are now a number of major texts that provide guidance on mixed-methods research (see, for instance, Plano Clark and Cresswell, 2008; Teddlie and Tashakkori, 2008; Tashakkori and Teddlie, 2010).

The relationship between research and evaluation

We have already pointed out that evaluation is often a popular approach for those engaged in educational leadership research. This is because evaluation processes enable educational institutions to analyze their strengths and weaknesses in a systematic way which can lead to greater effectiveness and ensure good outcomes in accountability processes such as external inspections. We have also argued elsewhere that if such an evaluation is to be accurate researchers need to measure the stage of development against original aims or targets in order to establish how far the individual or group has progressed (Burton and Brundrett, 2005: 187). Evaluation may take place as a discrete, one-off, activity in the form of an individual piece of research, or it may form continual feedback about progress towards the achievement of long-term strategic targets so that there is a learning, feedback and evaluation loop that informs learning and teaching. One of the greatest supporters of school self-evaluation research is MacBeath (1999) who argues that the purposes of evaluation may be varied and might encompass:

organizational development;
 improved teaching;
 improved learning;
 political reasons;
 accountability reasons;
 professional development reasons.

All of the above issues are undoubtedly central to the enterprise of education, and in an era when accountability processes are increasingly pervasive across many education systems it is of little surprise that much leadership research, whether for in-school purposes, for personal professional development, or for academic or nationally-funded research projects, focuses on such issues. Nonetheless, as we have indicated earlier, evaluation is a contested concept which may appear to be neutral but in practice can be used in many different ways, some of which will challenge our conceptions about our own professionalism and the quality of the teaching that occurs within a school, FE or HE institution (Coleman, 2005: 153). For this reason evaluation may appear to be an objective process, but in fact it can be value laden and reveal many insights about an organization or individuals which may be challenging, controversial, and even dangerous to the organization involved. For instance, evaluation may reveal inadequacies in administration or teaching that can be traced to individuals who may, ultimately, be subject to capability or competence procedures, thus making the process appear threatening and hostile to those members of staff with whom a leader must work.

Equally, we need to be aware that some things are much easier to evaluate than others, which means that we tend to evaluate items that are susceptible to quantifiable analysis (such as examination or assessment successes) or the effects on outcomes associated with curriculum innovations. This is partly because anything that produces quantifiable outcomes has an appeal to the evaluator in that it can be analyzed with clarity, often using simple mathematical models (Burton and Brundrett, 2005: 188). However, we must also remember that there are many things that cannot easily be measured in a quantifiable way such as developments in socialization skills, and improvements in behaviour, attitude and motivation.

Perhaps it is for the reasons outlined above that some members of the research community would tend to avoid evaluative research altogether, or would at least view it as less significant or meritorious than other types of research which attempt to produce new knowledge. This has meant that evaluation has often been a neglected area in research methods in the UK, but the notion of research-informed practitioners and the increasing focus on educational improvement have meant that the topic cannot be ignored and we must seek more rigorous approaches to this important issue. Thus, despite

these caveats, it is generally accepted that evaluation is a form of *applied* research (Coleman, 2005: 156). Indeed, Walliman (2005) argues that evaluation should be considered a distinct research approach with two strands:

- *Systems analysis*, which focuses on a holistic approach being taken to the examination of a complex situation (such as classroom or organizational dynamics), which is progressively deconstructed into manageable elements.
- *Responsive evaluation*, which focuses on the analysis of the impact of specific initiatives (such as an innovation in the curriculum or a new leadership structure).

In this way evaluation falls within the positivist paradigm, although some forms of evaluation may justifiably employ qualitative approaches such as interviews or even ethnography within a case study in order to gather rich data on a complex topic (Burton, Brundrett and Jones, 2010: 68). MacBeath et al. (2000) take what is in some ways a simpler view and characterize most evaluation methods as ‘asking’, which can be accomplished through:

- interviews;
- questionnaires;
- log or diary writing;
- observation and work shadowing;
- focus group discussions.

Evaluation therefore crosses the boundaries between quantitative and qualitative methods, and the main guiding principles on the methods employed should be ease of use and fitness for purpose.

Summary

The overlapping terms ‘methodology’ and ‘paradigm’ can often cause confusion for researchers, but it remains the case that there are those in the academic community who would still take a fundamentalist view and insist that only one approach to research is capable of offering appropriate ways of analyzing educational institutions. For positivists the security offered by an objective viewpoint based on the scientific and experimental method is the only way to gain an objective analysis of phenomena. For interpretivists such objectivity is impossible, since the social world of education is incapable of the reduction required by the scientific approach and the rich data that can be gained from qualitative approaches are the only way to provide access to the complexities of educational life. However, it is probably true to say that most of those engaged in leadership research would take a pragmatic view of research, and are prepared to mix and match approaches in order to utilize

what they would see as a robust research approach which will be fit for purpose. Indeed, leaders are often most concerned with finding out what does and does not work, and this requires them to focus on applied research in the form of evaluation studies which may generally fall within a positivist tradition, but which do not exclude the use of qualitative research tools focused on individual institutions or groups of institutions. This can sometimes result in leadership researchers being criticized for their failure to focus on the development of fundamental knowledge, but leadership researchers must remain firm in their belief that the improvement of outcomes is important in itself.

Further reading

Alvesson, M. and Skoldberg, K. (2000) *Reflexive Methodology: New Vistas for Qualitative Research*. London: Sage.

Crotty, M. (1998) *The Foundations of Social Research*. London: Sage.

Denzin, N.K. and Lincoln, Y. (1998) *The Landscape of Qualitative Research*. Thousand Oaks, CA: Sage.

Frankfort-Nachmias, C. and Nachmias, D. (1996) *Research Methods in Education* (3rd edition). London: Arnold.

Sarantakos, S. (1998) *Social Research*. London: Macmillan.

Useful websites

AERA (American Education Research Association) www.aera.net/

BERA (British Educational Research Association) <http://bera.ac.uk>

CERUK (Current Educational Research in the UK) www.ceruk.ac.uk/ceruk/

ICSEI (International Congress for School Effectiveness and Improvement) www.edu.icsei/index.html