

Thinking about research: theoretical perspectives, ethics and scholarship

Jan Illing

KEY MESSAGES

- Research is concerned with critical or scientific enquiry. It differs from audit, as research is concerned with discovering the right thing to do, and audit, with ensuring that it is done right. Evaluation aims to assess the worth or value of something.
- Theoretical perspectives provide the framework for research and inform the basic assumptions that guide the research. A theoretical perspective encompasses important elements: ontology, epistemology and methodology.
- Can research combine qualitative and quantitative research methods? One perspective is that the ontological and epistemological assumptions of these approaches are incompatible, and therefore it is not feasible to combine methods.
An opposing view sees the two approaches as compatible, and combined approaches become feasible
- Researchers are expected to minimise the risk of harm or discomfort to people. Harm from educational or social research is more likely to take the form of psychological distress than physical injury. Research that aims to be published requires an ethical review.

Introduction

Quantitative, qualitative, positivism, post-positivism, post-modern, naturalistic, interpretivism, constructionism, participatory, grounded theory, ethnography, phenomenology, hermeneutics, conversation analysis and narrative. A plethora of research approaches and methods; words that may leave the novice researcher feeling rather overwhelmed; that it's all 'too heavy'.

To make matters worse, authors will often confuse the use of terms, (1,2) sometimes relabelling research approaches (3) themselves. Without a map to organise and sort the labels into meaningful groups it can be quite a challenge to make any sense of these theoretical concepts at all. This chapter aims to provide such a map and will focus on the fundamental theoretical concepts associated with research and practical issues for the researcher to consider before starting out on their project.

What Is Research?

Research has been defined as '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'. (4) This definition may sound straightforward, in that most researchers would agree that they are involved in a critical inquiry of something, but some would argue that their aim is not to establish facts but to increase or change understanding about something.

How does research differ from audit?

Research is concerned with discovering the right thing to do, and audit, with ensuring that it is done right. (5) Following this definition, audit focuses on what is given and asks questions about the given, while research has the freedom to ask questions about the given, including 'Is this the best or only way to do something?'

How does research differ from evaluation?

According to Clarke, (6) what differentiates evaluation from research is the question of purpose. 'An evaluation is action oriented. It is conducted to determine the value or impact of a policy, programme, practice, intervention or service, with a view to making recommendations for change'. Robson (7) states that 'to evaluate is to assess the worth or value of something'. Following this definition, evaluation is about setting out to make a judgement. Going back to our definition of research, there is no mention of research leading to judgement, but to the discovery of findings by critical inquiry. Evaluation research is part of research, but in evaluation the aim involves assessing the worth of something.

Theoretical Frameworks in Education and the Social Sciences

Kneebone (8) published a personal view about his attempt to engage with the education and social science literature. He wrote, 'At first and to my great surprise I found this literature almost impenetrable, of course it was peppered with unfamiliar words ... I had the disquieting sensation of moving into alien territory, where familiar landmarks had disappeared'. Kneebone came to the realisation that all his medical training had been based within one view of science, the positivist paradigm, and that this was a very narrow and limited view. He ended with a plea to include an exploration of what the humanities have to offer the medical curriculum, and also with explicit guidance on how to gain access to this world. The aim of this chapter is to make this other 'world' penetrable.

The focus of this section is to present some of the frameworks within which quantitative and qualitative research is conducted in education and the social sciences. Quantitative research in education and social science is typically represented by

the social survey and experimental methods, whereas qualitative research uses techniques such as observation and interview. Deciding on which method to choose is integral to the research question being posed, but each type of approach signals to the reader the framework within which the research is expected to be read and judged.

In the past, the scientific method applied to the study of the natural sciences was considered appropriate and desirable for the study of education and the social sciences. Early textbooks focused on the scientific method, and other methods such as participant observation were deemed less scientific and weak by comparison, and consequently of lower status. From the 1970s, the debate over the appropriateness of the natural science model for social sciences enquiry gained momentum. Arguments centred on the differences in focus: people in education and the social sciences, and objects in the natural sciences. There was an increase in philosophical ideas and debate on the key issue of whether scientific method was appropriate for the study of people. The terms 'qualitative' and 'quantitative' signified more than different methods of collecting data, they indicated different assumptions about research in the social world.

The debate may have gathered momentum following Kuhn's(9) work on the history of science. Of particular importance is Kuhn's idea of a *paradigm*: a set of beliefs and dictats that influence what should be studied, how the research should be conducted and how the results should be interpreted. Here, a paradigm is a set of basic beliefs or assumptions about the social world. It can be compared to viewing the social world through a particular lens and encompasses ontology, epistemology, theory and methods. Paradigms cannot be proven but rely on argument, persuasion and usefulness. A paradigm is defined as 'a conceptual or methodological model underlying the theories and practices of a science or discipline at a particular time; (hence) a generally accepted world view'.(4)

Apart from positivism, all the other paradigms discussed below are still in their formative stages of development, hence some of the changes in nomenclature referred to above. So from this point on I shall refer to theoretical perspectives rather than paradigms. Each perspective has important consequences for the research that follows in terms of procedure and interpretation of findings, and suggests to the reader how the research should be read and in which framework it sits.

Theoretical Perspectives in Research

Theoretical perspectives are taken here to mean the philosophical stances that lie behind the research methodology. The theoretical perspectives are the starting point from which assumptions about the research are based; they influence how the study is conducted, the researcher's role and the type of knowledge that is produced. Each perspective will also have a particular set of criteria to be used in evaluating a piece of research. There has been a great deal written about the different perspectives, and much of it has focused narrowly on only one perspective without guiding the reader on where each perspective sits in relation to others. What is offered here is an overview in which I will cover the conventional positivist and post-positivist perspectives, and then other, more emergent, perspectives. For more detailed exposition, see Guba and Lincoln,(1,10) Heron and Reason,(11) and Crotty.(12)

Each theoretical perspective takes a particular *ontological* and *epistemological* position that informs the resulting research methods. *Ontology* is the study of being, and is concerned with the nature of existence and the structure of reality. It raises questions about the nature and form of reality and what can be known about it. In the social world is there a 'real' and single reality? Are there multiple realities dependent on whose view is taken? *Epistemology* focuses on the nature of the relationship between the researcher and what is to be known. The epistemological question is dependent on the answer to the ontological question. For example, when reality is assumed to be 'real', then what can be known about it can be independent of any relationship between the researcher and the subject of enquiry, and knowledge can be said to be objective. Therefore, the concept of objectivity in research assumes the existence of a 'real' world. However, if the answer to the ontological question is that reality is socially constructed and there is no 'real' version, then the answer to the epistemological question becomes subjective, as each researcher has his or her own version of reality and there is no true version, only a socially constructed reality. The methodological approach taken comes secondary to the answers to the ontological and epistemological questions (and focuses on the methods by which knowledge can be acquired on the subject of enquiry). If a 'real' reality is assumed, then this implies that the researcher can collect objective data and the ability to control variables becomes feasible (see Box 20.1).

Positivism

Positivism has been the dominant perspective in the physical and social sciences, going back to the Enlightenment in the seventeenth century, and is identified with quantitative methods. Positivism is linked to empirical science, offering assurances that knowledge is unambiguous, accurate and certain. 'Positive' comes from '*something that is posited*', a science that is firmly grounded, not something that is arrived at from speculation. Auguste Comte (1798–1857) is attributed as the founder of positivism, although the ideas on establishing scientific laws from observation and experiment are reported much earlier in the work of Francis Bacon (1561–1626). What is posited in positivist science is what is scientifically observed following use of the scientific method. Comte's positivism bids us to look for regular characteristics, constant relationships to facts and to laws that can be scientifically established using the scientific method of observation, experimentation and comparison. The 'verification principle', which became a central tenet of positivism, is attributed to Ludwig Wittgenstein (1889–1951). The verification principle focuses on the importance of verifying statements via the experience of the scientific method. Today, positivism is still linked to empirical science. The confidence in science is reflected in the belief that science is both accurate and certain, in contrast to values, opinions and feelings, which are empirically unverifiable and of no interest to positivism.

Ontology, epistemology and methodology

The ontology of positivism is realism. Reality is assumed to exist and the aim is to explain the social world in terms of laws, often including cause and effect. The epistemology of positivism is objectivism. Positivism maintains that objects in the world have meaning both prior to and independently of any consciousness of them. Positivism maintains that there are 'facts' that can be accurately collected about the social world, which are independent of individual interpretation and are 'true'. Researchers can be objective in the collection and interpretation of data. It is assumed that the researcher is capable of investigating the object of study without influencing it or being influenced by it. This differs from our subjective understanding, which constitutes a different form of knowledge from knowledge made up of scientific facts.

Positivist methodology is usually deductive and the aim is often concerned with the prediction and control of phenomena, and involves testing hypotheses to support or disprove a theory. Research procedures need to be followed rigorously to prevent values and biases from affecting the data. Methods are reported in detail to enable others to repeat the study and show that the results are reproducible by others. The methods used are mainly quantitative, involving experimental or manipulative research designs. Results are generally reported using statistics to show that any differences are beyond mere chance. The aim is to generalise findings to a larger population than the study sample.

For positivists (and post-positivists), the important aspects of research are:

- the aim
- testing hypotheses
- cause and effect
- generalisability
- adding to existing knowledge
- research rigour, in particular validity and reliability.

These are the main areas where research rooted in other perspectives is attacked. Quality is assessed by internal (findings are congruent with reality) and external (findings are generalisable) validity, and reliability (findings are stable) and objectivity (researcher has not influenced findings).

Knowledge, values and ethics

Knowledge from positivist research is built up like building blocks, by adding new knowledge to old. Knowledge is viewed to identify patterns and determine where new knowledge fits with existing old knowledge, and frequently aims to form rules and laws such as cause and effect. While the reporting of scientific knowledge is acceptable, criticisms focus on claiming that scientific knowledge is the only valid form of knowledge and that it is completely objective and accurate. Ethics and values are important for all types of research although treated differently by them.⁽¹⁾ Values are excluded in positivism. Positivism claims to be value-free as a result of its epistemological position that research can be objective if rigour is applied. Positivists view values as confounding variables that need to be controlled and excluded from the study. The methodology is designed to isolate and remove subjectivity and bias. Research ethics, although of importance in positivism, is largely viewed as something external to the research itself. Ethics is seen as something that would be applied to the research, possibly by an external research ethics body or a professional body that may advise on the professional conduct of researchers.

The positivist researcher

The researcher is often in the role of 'expert'. The researcher takes on the role of independent observer, who is impartial to the study findings and reports them objectively, using them to inform decisions and recommendations. Positivists maintain that research is a specialist activity that needs to be carried out by trained and qualified 'scientists'. The novice researcher is trained in quantitative methods, research design and measurement. The aim is to be objective and any personal bias has no part in the research.

Is there conflict with other perspectives?

Proponents of positivism take a *reductionist* stance, in that it is assumed that at some point in the future a structure will be identified on which questions of difference can be considered and explained. This position assumes that the other perspectives are measurable or can be measurable by the same standards and therefore comparison can be made. There is much disagreement about this from proponents of critical theory and constructivism. Positivists would see action research as a contamination of both the research process and research findings.

Post-Positivism

Post-positivism emerged following a realisation that the scientific method could not be applied to all scientific theory and much of what was accepted as 'fact' was theory and had not been observed at all or the act of observation had changed the subject. The work of the physicist Heisenberg (1901–1976) highlights this. He claimed that it was impossible to determine the position and momentum of a subatomic particle with any real accuracy, as the very act of observing it changed it. Popper (1902–1994) introduced the principle of *falsification*, where the emphasis moves from proving a theory is correct to being unable through repeat testing to prove it is wrong. Popper maintained that no theory could ever be proven, only disproved, and if a theory or hypothesis was not open to refutation from experimentation or observation, then the claims or theories made were not truly scientific.

Kuhn (1922–1996) identified a disparity between Aristotelian and Newtonian physics and noted that the differences were so extreme that a revolution in scientific thinking must have occurred. Kuhn questioned the objectivity and value neutrality of the scientific method and findings that could not be explained within the positivist paradigm, which led him to question the adequacy of the paradigm and call for a 'paradigm shift' and a shift in the way scientists view reality. The post-positivist perspective is less absolute; probability has replaced certainty; a level of objectivity has replaced absolute objectivity; and ap-

proximate truth has replaced absolute truth.

Ontology, epistemology and methodology

The ontology of post-positivism is critical realism. Like positivism, reality is assumed to exist, but unlike positivism, reality cannot be truly 'known'. Access to reality is imperfect due to weaknesses in the human as researcher and the complexity of the enquiry. Post-positivist epistemology is objectivist; objectivity is the ideal, but the data are subject to critical review. The post-positivist perspective acknowledges that no matter how much rigour is applied to the scientific method, research outcomes are never totally objective or certain, and claims are tempered. Emphasis is placed on collecting more than one type of data (triangulation) and on the falsification of hypotheses rather than confirmation. Post-positivism aims to address some of the problems of positivist research by collecting data in natural settings and collecting the insider views. Aims are achieved by using both quantitative and qualitative methods. Like positivism, quality is assessed by internal validity (the findings are congruent with reality), external validity (the findings are generalisable), reliability (the findings are stable) and objectivity (the researcher or the study procedure has not influenced the findings).

Knowledge, values and ethics

Knowledge consists of hypotheses that thus far have not been falsified and is made up of facts and laws that are probably 'true'. But as with positivism, knowledge is built by adding new knowledge to old to fit into existing patterns and form generalisations or rules such as cause and effect. As in positivism, post-positivist values are excluded and claim to be value neutral. Values are perceived as confounding variables that need to be excluded from the study. Research ethics is again an area of importance but is viewed as something largely external to the research itself.

The post-positivist researcher

The post-positivist researcher is more often in the role of 'expert', and the aim of the study is to provide an explanation and, when possible, prediction and control of phenomena. Again the researcher takes on the role of independent enquirer, who is impartial to the study findings and reports them objectively, using them to inform decisions and recommendations. Positivists maintain that research is a specialist activity that needs to be carried out by trained and qualified 'scientists'. The novice researcher is trained in the same way as the positivist researcher, but with the addition of qualitative methods, so that more detail is added to the meaning of the data, and data are no longer 'context stripped' but put in context. The minority and the individual voice is presented as well as the majority voice.

Is there conflict with other perspectives?

Proponents of this perspective take the same reductionist stance as positivism. It is assumed that at some point in the future a structure will be identified upon which questions of difference can be considered and explained. This position assumes that the other perspectives are measurable by the same standards and therefore comparison can be made. There is much disagreement about this from proponents of critical theory and constructivism.

Critical Theory and Related Ideological Positions

In contrast to positivist or post-positivist perspectives oriented to understanding or explaining the world, critical theory is oriented towards critiquing and changing society as a whole. Critical theory is used here as a blanket term, which includes, among others, the feminist and Marxist perspectives.

Feminist research starts with criticism of science, stating that it is incomplete and reflects a male distortion of the social world. Although it is more accurate to talk of feminisms, as there is not one unified body of thought, Tong(13) categorises seven forms of feminism. However, there is agreement that society has marginalised women and that this is reflected in research practice. Science perpetuates the myth of the superiority of men to women. Gender, as a significant issue in dealing with explanations of social phenomena, has largely been absent. The feminist perspective maintains that perpetuating a male view of science narrows ideas and limits understanding of the social world, and that if the male viewpoint was not dominant, a different research model would be dominant. Positivist research has stressed the importance of emotional separateness of researchers from their research participants to maintain objectivity. The feminist perspective maintains that research is a two-way process and detachment and objectivity are impossible. It does not acknowledge how the researcher is affected by the research and how the researcher's own biography becomes a fundamental part of the research process.(14)

The Marxist perspective, like the feminist, is not merely seeking to understand and accept the status quo, but to challenge, to recognise conflict and oppression, and to bring about change. Marx perceived a basic conflict between capital and labour between the bourgeoisie and the proletariat, and believed similar class struggles were part of earlier society. Marx maintained that economic forces determine how we think. Thoughts and consciousness come from our social being, itself the result of economic forces. Marx maintained that those who held economic power also held the intellectual power. The ruling classes ruled as thinkers, producers of ideas, and regulated the production and distribution of ideas.(15) He described an oppression that penetrated deep into human life, resulting in the alienation from work and finally from others. The proposed solution was for the proletariat to emancipate itself in a revolt, destroying their inhuman existence and all other inhuman conditions in society.

Ontology, epistemology and methodology

The ontology of critical theory is historical realism. Reality is assumed to be capture-able, but has been shaped over time by

social, cultural, gender, ethnic, political and economic factors, and changed into a reality that 'has set' over time. The epistemology is transactional and subjectivist: the researcher and the object of the research are assumed to be linked by the values of the researcher and relevant others who influence the study. Findings or knowledge are value dependent; they are mediated by the values of the researcher and the relevant others. It is the epistemological position that sets it apart from positivism and post-positivism. Methods require a dialogue between investigator and the subjects of enquiry. The aim of the research is to critique and change factors that constrain and exploit individuals. Quality is assessed by the historical context of the study, that is, whether it takes account of social factors of the studied situation and the extent to which the study acts to remove a lack of knowledge, and acts as a stimulus for action in the sense of bringing about a change in the existing structure.

Knowledge, values and ethics

Knowledge is made up of historical or structural insights that will transform with time. Transformations occur following informed insight. Knowledge grows and changes with historical revision as ignorance is eroded. Generalisations occur when the mix of social demographics, circumstances and values are similar. Values play a central role in critical theory and are important in shaping research outcomes. Excluding values would go against the interests of any minority or powerless group who were part of the study. The aim is to give the weak and powerless groups a platform and let their voice be heard along with any others who may be more dominant. Unlike the positivist and post-positivist perspectives, ethics is more internal than external to the research study. The critical theorist takes more of a moral standpoint in revealing full details about the study to ensure the study participant can be fully informed prior to consent and with no deception.

The critical theorist researcher

In critical theory, the researcher takes on the role of facilitator, raising not only their own level of consciousness about the object of study but also that of others. The researcher may facilitate change in the study group by providing greater insight into their situation and provide a stimulus for members of the community to take control of their future and initiate action and change. The novice critical theory researcher must first be 'resocialised' from previous exposure to the positivism. This involves conscious re-educating about positivism and post-positivism and its limitations. New researchers need to understand the perspective differences and understand both quantitative and qualitative methods so that they can understand how the perspectives differ and how the research is conducted. New researchers also need to understand the role that social issues have in the research context and structure and uphold the values of empowerment and altruism in their work.

Is there conflict with other perspectives?

Critical theory and constructionism (see below) agree that they are in conflict with positivist and post-positivist perspectives. The epistemological position of critical theory sets it apart from the positivist and post-positivist perspective; research can be value-free or it cannot; and a single model could not support both tenets.

Constructivism

Guba and Lincoln's(1) constructivism is a broad eclectic framework that embraces interpretive, phenomenology and hermeneutic perspectives (see Box 20.2). Space does not permit me to cover each of these, and for more detail I recommend Guba and Lincoln,(10) Crotty(12) and Schwandt.(16) Constructivism is the view that knowledge, and therefore all meaning, is not discovered but socially constructed. Meaning is not created but constructed out of the world that is already there, and objects in that world. The world and its objects may have no intrinsic meaning, but they are partners in the generation of meaning. Crotty(12) states that constructivism mirrors intentionality (meaning reaching out into directedness) in that consciousness is directed towards an object such that the object becomes shaped by consciousness and what comes to the fore is the interaction between subject and object. From this, meaning is born. The acceptance of intentionality therefore means the rejection of both objectivism and subjectivism.

It is accepted, even by the positivists, that social realities are socially constructed. The difference between constructivists and positivists is that the former maintain that all meaningful reality is socially constructed. A table may have a real existence irrespective of whether anyone is consciously aware of it. However, it exists as a table only if it is recognised as a table by our consciousness. The table is also constructed through social life, and our culture informs how we see these objects and in some cases whether to see them at all. Throughout our lives we learn about the social and natural worlds and interpret them, not as separate worlds but as one human world. Schwandt(16) draws the distinction between constructivism, meaning that the individual mind constructs the meaning, and constructionism, meaning the society or culture the individual belongs to has constructed the meaning. This highlights the depth of human social constructions.

Ontology, epistemology and methodology

The ontology of constructivism is relativism; this assumes multiple and sometimes conflicting realities that are socially and experientially based and dependent on individuals for their form and content. There is no 'real' world that pre-exists and is independent of human consciousness. People could therefore inhabit very different worlds based on different sets of meaning. Constructions change as their associated realities change and become more informed rather than 'true'. The ontological position of constructivism is crucial in terms of separating it from other perspectives. The answer to the epistemological question of 'How do I know what I know?' is that reality is subjective. The researcher and the research object are assumed to be related, such that the research findings or knowledge are created from the relationship between the researcher and the subject of study. It is the epistemological position of constructivism that sets it apart from positivism and post-positivism. Guba and Lincoln(17) maintain that the enquiry methodology is a two-way process of listening to the constructions of both the researcher and the research participant. The optimum process of developing joint constructions is via 'hermeneutic-dialectic',

meaning that the researcher compares and contrasts different constructions to achieve a consensus. For Guba and Lincoln, the researcher cannot and should not be separated from the research participant, and hence the research outcomes are a joint construction of the research process. The aim of the research is understanding or reconstruction of the constructions that are held by the subjects and the researcher about the study topic. Two sets of criteria are used to assess quality: *trustworthiness* (which parallels internal validity), *transferability* (which parallels external validity), *dependability* (paralleling reliability) and *confirmability* (paralleling objectivity) make up the first set. These criteria are analogous to those used to judge quality in positivist research. The second set consists of authenticity criteria of fairness: *ontological authenticity* (develops and enhances personal constructions), *educative authenticity* (leads to improved understanding of others), *catalytic authenticity* (provides the stimulus to action) and *tactical authenticity* (the research empowers action) [see Guba and Lincoln(17)]. The second set of criteria share some common ground with critical theory.

Knowledge, values and ethics

Knowledge consists of constructions about which there is relative consensus. Multiple constructions can coexist and be of equal weight, depending on interpretation and factors that influence interpretation such as social, political and gender issues. For constructivism, values play a central role in creating and shaping the research outcomes. Constructivism views the role of researcher as the producer and facilitator of the research and acknowledges their central role in the research process. The role of ethics, like values, is central to constructivism. The researchers' role is to recognise their own constructs and values and, as in critical theory, inform the study participants fully about the research prior to taking consent, work towards uncovering the constructs of the study participants and work towards improving constructs. The methodology involves close personal interactions and as a result may raise some difficulties with confidentiality and anonymity (Box 20.2).(19)

Constructivist as researcher

The researcher takes on the role of participant or facilitator. Increasingly, constructivists aim to involve research participants to take an active part in the study, that is, by suggesting questions and outlets for research findings. The researcher is both facilitator and participant, who uncovers the constructs of self and others and reconstructs the 'multivoice' into more informed constructs. Change is facilitated when the reconstructions are formed and participants are stimulated to act on them. As in critical theory, the new researcher must first be 'resocialised' from previous exposure to the dominant perspective of positivism. Again this involves re-educating about positivism and post-positivism and the limitations of these perspectives. New researchers need to understand how this perspective differs from others, and be trained in quantitative and qualitative research methods to be able to understand how the research is conducted within this perspective.

Is there conflict with other perspectives?

The ontological stances of constructivism and critical theory are in conflict with the positivist and post-positivist perspectives. Either there is a 'real' reality or there is not; it is value-free or it is not. The concept of reconciling both of these positions in one system seems impossible.

Participatory Action Research

Participatory action research is a form of action research that involves practitioners as both subjects and co-researchers. It is based on the proposition put forward by Kurt Lewin (1890–1947) that causal inferences about human behaviour are more likely to be valid if the relevant humans participate in building and testing them. Participatory action research arose partly out of recognition that a gap often exists between the completion and publication of high-quality research and the implementation of findings. Researchers do their job and wait for the findings to be acted on by someone else. The view espoused by participatory action research is that it is important for the advancement of science to devise strategies in which research and action are closely linked. Participatory action research involves research participants in the research process working alongside the researcher from the first steps of designing the study through to research outcomes.(19) The participatory perspective was added by Heron and Reason(11) to Guba and Lincoln's(1) lists of the major paradigms that frame research, and was later included by Guba and Lincoln themselves.(17) The participatory perspective underpins forms of action research.

Ontology, epistemology and methodology

The ontology of participatory action research is subjective-objective. Heron and Reason explain this: 'When I hold your hand, my tactual imaging both subjectively shapes you and objectively meets you. To encounter being or a being is both to imagine it in my way and to know that it is there'.(11) In the participatory perspective, the mind is actively participating in a primordial reality, such that what emerges as reality is the result of an interaction and how the mind has engaged with it. The epistemological position

of participatory action research is that the knower participates in the knowing in at least four different ways:

- *experiential* knowing – by direct encounter with feedback from the real world in real time
- *presentational* knowing – the artistic rehearsal process through which we craft new practices
- *propositional* knowing – knowing in conceptual terms that something is the case
- *practical* knowing – knowing how to do something.

The methodology is a collaborative form of action enquiry and is explained in terms of knowing:

people collaborate to define the questions they wish to explore and the methodology for that exploration (propositional knowing); together or separately they apply this methodology in the world of their practice (practical knowing); which leads to new forms of encoun-

ter with their world (experiential knowing); and they find ways to represent this experience in significant patterns (presentational knowing) which feeds into a revised propositional understanding of the originating questions.(11)

Heron and Reason argue that cooperative enquiry has two participatory principles: first, that the research outcome is grounded in the researcher's own experiential knowledge, and second, that research participants have a right to participate in research that is about them. They argue that researchers are also research participants and vice versa, and the co-researchers are also the co-subjects. These two principles do not apply within constructivism (where there is no identified epistemological role for experiential knowing); researchers are not also subjects and the findings are grounded in the experiential knowing of others. Heron and Reason argue that participatory research differs from other forms of qualitative research in that research participants inform the research design and inform how knowledge is generated about them. They also argue that the purpose of research within the participatory perspective is closer to the purposes of critical theory – 'the critic and transformation of social, political, economic, ethnic and gender structures that constrain and exploit humankind' – than constructivist, where the aim is about 'understanding and reconstruction'. The aim therefore is to create a situation in which participants give and receive valid information and are committed to the outputs of the study.

Social scientists are frequently faced with the dilemma of rigour or relevance. From the participatory action research perspective the aim is to define the standards of appropriate rigour and then meet them without loss to the relevance of the study. Validity is enhanced by the research process of participation and cycling several times through the four forms of knowledge in order to enrich congruence in articulating a subject-object reality.

Generalisations do occur, but they remain within local contexts, such as describing the thematic patterns in one context and suggesting how they might apply in a similar context, but would require a further study to confirm their relevance.

Knowledge, values and ethics

Knowledge is the result of collaboration and is built up from this collaborative relationship. Participatory action research emphasises the importance of a 'living knowledge' that is linked to practical knowing (how to do something) that comes from being grounded

in the situation within which an action occurs. Participatory action research maintains that research subjects have a basic human right to be engaged in research that intends to gather knowledge about them. The roles of values and ethics are embedded into the study; the subjects are also the researchers and the researchers also the subjects.

The participatory action research researcher

The research voice is the result of 'aware self-reflective action'. The participatory action research researcher takes on the role of collaborator engaged with the practitioners and may need training to understand the relevant issues involved in the research. The researcher can act as research trainer to the practitioners to facilitate the research process. The novice researcher needs to acquire facilitator skills to work alongside their co-researchers. The researcher needs to acknowledge the skills and knowledge of the practitioners in the working partnership and, where appropriate, use this knowledge to understand the ongoing research. Participatory action research researchers need to be trained in both qualitative and quantitative research methods.

Is there conflict with other perspectives?

Participatory action research relates closely to both critical theory and constructivism but uses the same type of measurement and standards as positivism and post-positivism. Arguably, the movement towards action research has come about as a result of non-utilisation of research findings and a desire to conduct research that will result in recommendations being implemented.

Reconciling and Combining Research Frameworks

The type of framework in which a piece of research is conducted has implications for how the research is conducted, who has control of the study, how quality is assessed, how values and ethics are viewed, and, ultimately, the type of knowledge that is produced and what is done with that knowledge. The researcher's role differs depending on the perspective influencing the study.

Guba and Lincoln(10) point out that: 'Within the last decade the borders and boundary lines between these paradigms and perspectives have begun to blur'. Rather than theoretical perspectives working in competition, they are more often combined into one study to inform the arguments of another perspective. It is more useful to identify how the enquiry perspectives are similar and how they differ. Perspectives can be blended together into two main groups: first, the positivist and post-positivist, who share important elements; and second, the critical theory, constructivist and participatory perspectives, which also share important elements. However, these two main groups are not easily combined into one model as their assumptions about reality and objectivity are contradictory.

Positivism has been the dominant research perspective for many centuries. However, in more recent years the superior status of quantitative research approaches within education and the social sciences has been challenged. Criticisms of quantitative approaches have included arguments about 'context stripping' (taking data out of context and thereby removing much of the associated meaning), that the focus is on the majority or dominant view and important messages from the minority are ignored, and that even in well-controlled experiments researchers and subjects can influence each other and bias the results. In 1994, Guba and Lincoln reported that the dominant perspective was the post-positivist perspective. Post-positivists tend to have power and influence in numerous professional decision-making processes, namely, research funding, journal publica-

tions and committees for promotion. Proponents of critical theory and constructivism have gained ground and recognition over the past 30 or so years, with more journal publications, journals and qualitative research. Participatory action research is also emerging as a perspective. In 2005, Guba and Lincoln acknowledged that 'the number of qualitative texts, research papers, workshops, and training materials has exploded', and pointed out the distinct turn towards the emerging perspectives.

Writers such as Guba and Lincoln suggest that the use of a particular method implies commitment to a particular perspective and its associated ontology and epistemology. This position assumes that a methodology is necessarily indicative of particular assumptions about knowledge. This position is challenged by Bryman, (20) who suggests:

if we accept that there is no perfect correspondence between research strategy and matters of epistemology and ontology the notion that a method is inherently or necessarily indicative of certain wider assumptions about knowledge and the nature of social reality begins to founder.

Bryman argues that research methods are more 'free-floating' in terms of ontology and epistemology than is often proposed. Bryan quotes the work of Platt, who conducted historical research on American sociology and reported no clear association between positivism and the social survey. Platt stated:

research methods may on the level of theory, when theory is consciously involved at all, reflect intellectual *bricolage* or *post hoc* justifications rather than the consistent working through of carefully chosen fundamental assumptions ... in many cases general theoretical/methodological stances are just stances: slogans, hopes, aspirations, not guidelines with clear implications that are followed in practice [Platt 1996, quoted in Bryman(20)].

Bryman continues that the link from methodology to certain assumptions is not absolute and suggests that research that combines both qualitative and quantitative approaches in one study illustrates

that these research methods can be autonomous. Patton(21) concurs with the views of Bryman, commenting first on the parallel status of qualitative

to quantitative research and on the increased use of multiple methods.

Signs of détente and pragmatism now abound. Methodological tolerance, flexibility, eclecticism, and concern for appropriateness rather than orthodoxy now characterize the practice, literature and discussions

of evaluation. Several developments seem to me to explain the withering of the methodological paradigms debate. (21)

Patton goes on to list several developments that explain the change towards combined methods. For example, the importance of methodological appropriateness rather than paradigm orthodoxy, that the strengths and weaknesses of both qualitative and quantitative approaches are better understood, advances in methodological sophistication, support for methodological eclecticism and increased advocacy for combining approaches (see Box 20.3). Maxwell (22) discusses the use of quantifying qualitative themes, moving away from the use of vague terms such as 'some' and even conducting statistical analysis on the number of themes reported (23).

The work on realistic evaluation by Pawson and Tilly (24,p24) is of interest as they report that realistic evaluation sits between positivism and constructivism, that social reality that cannot be measured directly (due to the weakness of the human researcher and because it is processed individuals) but can be known indirectly. This approach is close to the post-positive ontology but with a pluralist epistemology: "one can imagine the attractions of a perspective which combines the rigour of experimentation with the practical nous on policy making of the pragmatists, with the empathy for the views of the stakeholders of the constructivist". The perspective of the constructivists is valued by acknowledging that access to the phenomenon being studied is imperfect and plural due to the human researcher and the research subject but is criticised for limiting the findings of a study only to the sample studied, Participants such as doctors share structural similarities such as working in the NHS, the grade of doctor and the specialty. All of which will share common contextual features: "Constructivism suffers from...the inability to grasp those structural and institutional features of society which are in some respects independent of the individuals' reasoning and desires. The social world (and thus policies and programs) consists of more than the sum of people's beliefs, hopes and expectations" (p23). A realist synthesis is effectively a qualitative approach to a literature review in that it seeks to identify patterns and themes in the data that provide a deeper understanding about why interventions work but also in what context and what triggers the outcome. The process of identifying the relevant literature starts very systematically but ends iteratively searching for evidence that will help to confirm or refute a theory to explain the findings and shares many similarities with grounded theory (discussed below).

The competing theoretical perspectives associated with *grounded theory* make for an interesting example. Grounded theory methods were based on the work of Glaser and Strauss.(25) Glaser applied his positivistic methodological training from Columbia University to the development of qualitative data analysis, while Strauss brought symbolic interactionism following Blumer, from his training at the University of Chicago. Hence, Glaser brought epistemological assumptions and methodological terms, and Strauss brought the study of process and meaning.(26) Charmaz *et al.* (1,26,27) place grounded theory in the post-positivist perspective. Charmaz argues that Glaser's position comes close to a traditional positivist stance with assumptions of an objective, external reality and a researcher who remains neutral and discovers data. The position of Strauss and Corbin is considered post-positive as they propose giving a voice to the respondents. Yet Strauss and Corbin(28) comment on the study by Orona, which is constructivist in stance, as 'a textbook' example, suggesting Strauss has a constructivist stance, which Bryman reports is evident in Strauss's earlier work.(20) Charmaz suggests that researchers can develop a constructivist ground theory by seeking the meaning of both respondents and researchers and by looking more for beliefs and values as well as acts and facts. Bryant and Charmaz (29) viewed the positivist stance as a weakness and repositioned grounded theory within social constructivism.

This example highlights that the linkage of perspective to methodology is not always clear, and if certain changes are made to the methodology, then

it can become compatible with another theoretical perspective.

Box 20.4 illustrates how two contrasting research perspectives can illuminate the same research area, and provides a summary of two papers by O’Caithain *et al.*(30) and Stapleton *et al.*(31) These abstracts show quantitative and qualitative methods both being used within the same study and highlight some of the differences behind the qualitative and quantitative traditions.

It is possible to identify the post-positivist stance of the quantitative study, which attempted to control variables while manipulating others. There was concern with numbers and measurement and reporting findings in terms of statistical differences. There was also concern about using the ‘correct’ measurement, and fears were expressed about contamination of the intervention by earlier exposure to the leaflets.

The qualitative study referred to grounded theory, which originates from symbolic interactionism,(32) leans towards critical realism, with the researcher seeking the meaning in the data. However, grounded theory acknowledges that reality cannot be known but is interpreted, shifting towards relativism [Strausserian approach(33)], and shares a constructivist epistemology. The qualitative study was less concerned with numbers and measurement and more concerned with gaining a wider range of views and identifying all of the issues related to the intervention from many viewpoints. Observed behaviour was used to identify how the intervention was implemented, and findings were generated from observer notes. Analysis was conducted by looking for common themes in the data. The quantitative study reported that the intervention was not effective, and the qualitative study explained why.

Having an understanding of what each perspective is aiming to achieve can increase our understanding and provide an appreciation of the different types of knowledge produced rather than viewing one approach as superior to others. The theoretical perspectives of research are helpful as they form a backdrop to a study (grand theories). However, grand theories remain theoretical and cannot not be used to explain the data that is produced - such theories are termed mid-range theories. Our use and understanding of theoretical perspectives in research is still developing. Methodologies that were once based in one perspective have been transposed to another and perspectives that have been in conflict have been combined.

Practical Considerations When Starting Research

The research question

Most researchers have little problem identifying the general field in which they wish to conduct their research, but have more difficulty finding a focus and pinning down a research question. Punch(34) makes a distinction between general research questions and specific research questions and offers the following hierarchy. This can be illustrated using the study by O’Caithain *et al.*(30) which can be summarised as follows (see *also* Box 20.4).

Research area	<i>Maternity care</i>
Research topic	<i>Informed choice</i>
General research question(s)	<i>Does informed choice change behaviour?</i>
Specific research question(s)	<i>To assess the effects of leaflets on promoting informed choice in women using maternity services</i>
Data collection question(s)	<i>Do women who receive the intervention answer ‘yes’ more often to the question</i>
	<i>‘Have you had enough information to make choice on ...?’</i>
	<i>Do the women who receive the intervention report greater satisfaction with antenatal information</i>
	<i>Do the women report being</i>

given at least one leaflet?

Novice researchers sometimes confuse data collection questions and research questions.(35) A research question is the question that the research is attempting to answer, whereas the data collection question is asked to collect data that will be used to answer the research question.

Coming up with a research topic is about following your interests (it is difficult to sustain interest if it is not there from the start). Looking around, listening or experiencing something or being aware of current issues are all sources of inspiration. Think about what is known and what is not known about something. O'Leary,(2) in her book for novice researchers, suggests the use of concept maps to help identify an area of interest. Once identified, the general area of interest needs to be narrowed down. A good research question needs to be feasible; this relates to the research expertise and resources available and, indeed, whether the question is capable of being answered at all. This last point involves checking with those who have more expertise in research and knowledge of the field of study.

Bell,(36) in her guide, advises that a good first step is to simply talk over your research ideas with a colleague. Gaining another perspective early on can be very valuable. A good research question not only gives the research focus and direction, but also sets boundaries. Boundaries are particularly important for novice researchers, who have more difficulty estimating how much research time is required to undertake a study and may need to limit both the size and the focus more than anticipated. Defining the terms used within the research question identifies the criteria of concern and by exclusion sets some boundaries on the study. Specifying a research question involves identifying the concepts or variables of interest and, where possible, identifying suitable indicators for the variables of interest. It is important to check that any assumptions made by the question are correct. Getting to the stage of identifying a good research question involves exploration of the topic in the literature to gain knowledge on what is already known (although for some study designs familiarity with the literature may come later, so that the researcher does not limit his or her view of the research area) and where the gaps are, or asking questions in a new context. Deciding on whether you need to frame your question as a hypothesis depends on the theoretical perspective the research will be framed in, and on the type of question being asked. Research within the positivist and post-positivist perspectives are more likely to contain a hypothesis, but the key question is whether the research question forms a testable statement about the relationship of one or more variables to others. Research that is exploratory or framed within the new perspectives is unlikely to start with a hypothesis. The research question should be a pointer to the methods to be used and indicate what type of data will be needed to answer the question.

The research proposal

All research should start with a proposal, also referred to as a *protocol*. Again, like the application for ethical review, it can be helpful for novice researchers to see another research protocol first to identify what is required.(34) A proposal is a plan of action, a communication on which approval to commence the study is given, and is a contract between the researcher and supervisor, university, any funding source and ethics committee.(35) The proposal describes the research background, including relevant literature, the research question, methods, and details about recruitment of the intended sample and how the data will be analysed. All applications for ethics review will also need a proposal. The protocol starts with the relevant literature by 'setting a scene' or 'telling a story' of what is known, how the knowledge built up to form our current understanding. The research question follows; this should extend that understanding.

Ideally, the background literature should present the context of the study, what is known already and what is needed – ideally this will match your study aim, but it could provide part of a much larger question. Literature searches are mainly conducted online using databases such as Medline, Education databases and Ovid, and key articles selected following searches on keywords or authors. Punch(34) reports that two common criticisms of literature reviews in dissertations are that they are not thematic, tending to be chronological or presented serially, and they are not properly integrated with the study. These criticisms can be addressed by creating a conceptual framework into which the literature can be organised.

The research question should suggest the types of method needed to collect the data required to answer the question. The two studies presented in the O'Caithain paper had the research question: 'To assess the effects of leaflets on promoting choice in women using maternity services'. The question suggests measurement in the use of the term 'assess', the leaflets were defined as '10 pairs of Informed Choice leaflets', the women were defined as 'women reaching 28 weeks gestation' and so on. 'Effects' were measured using a questionnaire. Assessment came in the design of comparing a control group with the women who received the leaflets. For the qualitative part of the study the research question was: 'To examine the use of evidence-based leaflets on informed choice in maternity services'. The term 'examine' suggests 'look at' rather than 'measure', and again the leaflets and maternity service were defined. Outcome measures were views and responses from the expectant mothers and the staff. Exactly how the methods are arrived at will be influenced not only by the research question, but also by the interest and expertise of the researcher, supervisor and team.

The protocol should include details about who will be recruited into the study and from where, how recruitment will take place and the numbers involved (this may require a power calculation for research designs). This should be followed by a detailed description of the research procedure. A plan or flow diagram will be useful if the procedure is complex. Details of how the data will be collected and analysed, and any planned statistical tests, should be included, and a timeline or gantt chart is useful to work out when each activity is planned to start and finish. A breakdown of the costs involved in the study for staff and research activities, among others, is also needed, as well as plans for the dissemination of findings(2,34,37,38) (see Box 20.5).

What is ethics?

Ethics is concerned with rules of conduct and principles relating to moral behaviour. Researchers are responsible for ethical decisions from formulation through to the dissemination of research. As discussed above, the type of research framework influences how ethics is regarded in the study, as well as appreciating other 'realities' and empowering voices otherwise not heard. All types of study involve making ethical decisions about what is right for the research participant, as well as considering the interests of the researcher, the funding body and the study itself. Ethical decisions are based on the values of the researchers and the research community, and those who hold access to the data the researchers hope to gather. Although there are codes of ethics covering all types of professional research, it is not possible to provide a list of rules that should be applied to every study as each piece of research will be individual and will require different solutions.

The emergence of research ethics came about after the end of the Second World War, when details of horrific medical experiments came to light during the Nuremberg trials. The Nuremberg Code (1947) was published two years later, followed by the Declaration of Helsinki (1964) and the World Medical Association (39) (which amended the declaration of Helsinki), which established ethical principles for research involving humans.

Social research has proceeded in two ways:

- deontological approaches to morality (Immanuel Kant 1724–1804)
- consequentialism (Jeremy Bentham 1748–1832).

Deontological approaches to ethics follow a set of principles that guide research. One such principle is that of 'informed consent', which was enshrined in the Nuremberg Code. Informed consent includes providing all relevant information about the study and what taking part will involve, including risks. The research subject must be able to comprehend the information and be competent to make a decision about involvement, and agreement to take part should be voluntary, free of coercion or influence. This also involves taking steps to ensure the participant is protected from any consequences of being in the study by ensuring that the research protects the identity of the participant. Deontological approaches reject the notion that what is morally right can be considered by assessing consequences.

Consequentialism is not concerned with whether an act is morally right, but with the consequences of the act. For research this translates to potential ethical dilemmas that the researcher may have to respond to and the consequences of their actions. Classic utilitarianism is a form of consequentialism. Classic utilitarianism is consequentialist rather than deontologist because it denies that moral 'rightness' depends on anything except the consequences of an act. The consequences, not the intention, of an action determine its merit. Critics of consequentialism have commented on the difficulty of anticipating all the potential outcomes that might result from an act. Important areas to be considered are:

- informed consent
- confidentiality
- anonymity.

Informed consent has two components: the research participants need to understand what taking part will involve; and agreement to take part needs to be voluntary. Generally, consent will be obtained by asking the research participant to confirm their consent by signing a consent form, by giving recorded verbal consent or by returning a questionnaire. Gaining consent may involve gaining approval from many more people than those directly involved in the study, that is, the host care organisation, in order to access patients. Consent needs to be voluntary, free from coercion, manipulation and any threat. There is also some evidence that response rates improve as interviewees are given more details about what the study involves.(40) Gaining consent can provide an important part in negotiating the researcher's relationship with participants. This should involve participants being told about any risks of taking part and having the opportunity to ask questions about the study.

Consent to take part in research may be given on the basis that the information obtained about the participants will only be used by the researcher and only in particular ways. The information is offered to the researcher in confidence. Beauchamp and Childless(38) argue that the right to privacy rests on the principle of respect for autonomy. On this basis people have the right to decide who knows what about them. Research should uphold this principle. Confidentiality means protecting the identity of those who agree to take part in research, maintaining the data in a form such that the identity of the participant is protected. This implies keeping names and data separated by using a code that is only accessible to the researchers, and reporting data in a format that does not lead to individuals being readily identifiable. For example, it may involve removing or changing details to protect individuals who would otherwise be identifiable because of their unique characteristics or experiences.

Anonymity goes further than confidentiality, as the researchers do not collect named data at all. This means the researcher cannot identify which respondent gave the data (e.g. postal survey). This type of data allows participants to make any negative comments more freely without fears or concerns that anything they do report might be attributed to them with unknown consequences. For researchers, this might be difficult or impossible to achieve if the methods involve interviewing, and problematic if they wish to send reminders only to those who have not already agreed to participate. For a full discussion on ethics in research, see Israel and Hay(40) and Punch,(41) and for ethical dilemmas in qualitative research, see Welland and Pugsley.(42).

Returning to our example, ethics questions that may have been addressed before the Stapleton *et al.* study was carried out include:

- Will the midwives and expectant mothers be given all the information they require to give their informed consent?
- Is there any pressure or coercion to take part?
- How will consent be taken?

- How will confidentiality of the interaction of midwife and mother be assured?
- How will collected data be anonymised, particularly with reference to the use of quotes?
- Who will have access to the data?
- Have the researchers anticipated all that could go wrong? How would they respond if they did?

In conclusion, researchers are expected to minimise the risk of harm or discomfort to people, to conduct research in a manner that upholds certain principles such as informed consent and to consider any consequences or harm that may result from the research. Harm from educational or social research is more likely to take the form of psychological distress than physical injury. Conversely, many researchers aim to provide benefit by conducting research that empowers participants, such as in feminist research.

Statutory ethical review

Israel and Hay(40) commented that novice researchers rarely seriously consider the ethical implications of their research and that it is only when compelled to respond to the research ethics committee requirements that any detailed consideration is given to ethical issues. It is at this point that the novice researcher may confront considerable ethical difficulties. The formal mechanism can offer the opportunity to consider ethical issues, and this process can be helped by adapting tools that are available as guidance. Novice researchers may falsely anticipate that gaining approval for a study necessitates conforming to certain procedures, that is, written consent and providing a written participant information sheet, even when their study may not require such documentation, effectively making the study more difficult to conduct.

In the UK, it is necessary to make an application to the Integrated Research Application System (IRAS) for ethical review before starting research, if the research involves NHS patients or clients or prisoners (43). The Integrated Research Application System (IRAS) was set up as a single system for applying for the permissions and approvals for health and social care / community care research in the UK. The system enables information about the project to be put into one application instead of duplicating information in separate application forms. The system uses filters to ensure that the correct permissions and approvals are requested depending on the type of data collected.

The IRAS captures the information needed approvals from the following bodies:

- Administration of Radioactive Substances Advisory Committee (ARSAC)
- Gene Therapy Advisory Committee (GTAC)
- Medicines and Healthcare products Regulatory Agency (MHRA)
- Ministry of Justice
- NHS / HSC R&D offices
- NRES/ NHS / HSC Research Ethics Committees
- National Information Governance Board (NIGB)
- National Offender Management Service (NOMS)
- Social Care Research Ethics Committee

Ethical review is one of a series of safeguards intended to protect individuals, and these are described in the 'Governance arrangements for research ethics committees' (44). The primary function of the Research Ethics Committee, when considering a proposed study, is to protect the rights, safety, dignity and well-being of all actual or potential participants. Completing the IRAS form for the first time may seem rather daunting. I suggest that you gain sight of a couple of successful applications first – having a worked example can be helpful. The number of additional supporting documents (i.e. the protocol, contact letters, consent forms, any questionnaires, etc.) may seem burdensome because they are required upfront rather than developed at each stage of progress. However, this is all documentation required to proceed with the study. There are some advantages in preparing supporting documents early and getting feedback on them. The IRES regulations state that the time from receiving a valid application to notification of final opinion from the committee must not exceed 60 days. The biggest hold-up is the time taken for applicants to respond to the questions raised by the committee. All applicants are invited to attend the committee meeting. This can be very useful, as it provides the opportunity for the committee to ask questions and clarify points that have not been fully understood. This can speed up the process by reducing the need to ask further questions later.

In 2007 (45,46) papers were published expressing concern about the need for medical education research to require full ethical review, particularly with regard to students projects, Concern focused on the new process of requiring ethical review being so onerous as to compromised postgraduate clinical research (46), however concern also focused on medical education projects maintaining that students projects were delayed and over burdened by a lack of clarity and suffered from contradictory opinions as to what constituted 'research' and therefore required ethical review. In 2011 there was a change in the IRES regulations and there is no longer a requirement to seek ethical review for a study that is focused only the NHS staff, however R&D approval (discussed below) is still required.

In addition to ethical review, an application must also be made for research management and governance approval (this is usually referred to as R&D approval) to each NHS organisation in which the research will be carried out. This has now been integrated within IRAS and for each site a Site Specific Information (SSI) form is completed. SSI forms provide local information specific to a particular NHS site. The applicant needs to generate an SSI Form for each study site. The SSI form asks two main questions: is the site suitable and is the principle investigator qualified to do the research. The system is in the process of being an electronic application system. Parts of the system are already fully electronic and the rest is moving towards this. The NIHR Coordinated System for gaining NHS permission (CSP) in England and the multicentre review system in

Scotland (NHS Research Scotland) only receive applications made through IRAS. Some R&D offices set a time limit for responding to applications, but not all, and there is no standard time limit set unlike IRAS and therefore R&D approval could take longer than IRAS...

Ethical approval of research in medical education

In 2001, Morrison and Prideaux(47) asked whether research in medical education should be exempt from the ethical considerations that govern other research involving humans. The authors argued that it may be ethically wrong not to evaluate educational interventions, but then questioned at what point evaluation becomes research. They suggested that the crucial point is if the study is aimed at producing generalisable results with the intention of publishing in refereed literature. It is at this point that ethical approval must be gained and the following statement now makes this very clear. This journal conforms to contemporary standards on ethical publication. It requires evidence of approval by an appropriate human research ethics committee for all papers that report research involving human subjects.(48) However, with regard to journals accepting research from an international community, this requires accepting local standards of ethical review, which will mean accepting a variable ethical standard.(42) There has been a debate about the appropriate place to review educational research. This stemmed from a recognition that educational research does not incur the same level of potential risks as biomedical research, and from a concern that ethics committees that were originally established to review biomedical research may not fully comprehend educational research.(48,49) This concern has already been realised from educational research submitted to statutory ethics committees who reclassified the study as audit and therefore not requiring ethical review.(48) There are problems when submitting research classed as audit rather than research to journals, as there is no ethical review of the study. Possible solutions to the problem include gaining retrospective ethical consent and having studies reclassified as research(50); embedding consent into the delivery of the curriculum; and providing independent evidence that participants gave informed consent to data collection and that risk of harm to the participants was unlikely.(48,50) Another way of avoiding this problem would be by ensuring that researchers from the field of educational research are members of statutory ethics committees or by setting up alternative ethics committees within faculties to monitor educational research.(47,49,50)

Scholarship

Boyer(51) discussed the trend towards a singular view of scholarship as research and publication, and proposes reconsidering the priorities of the professoriate by broadening the definition of scholarly work. He argues that the definition of scholarship should be wider and proposes three additional areas of endeavour that should be viewed as scholarship, in addition to the discovery of new knowledge. These are:

- the integration of knowledge, by placing isolated research into a larger context and making connections within or between disciplines
- the teaching of knowledge, stimulating others to become active learners and encouraging students to be critical, creative thinkers, with the capacity to go on learning after their college days are over
- the application of knowledge – how theory and practice vitally interact to inform each other.

Discovery of new knowledge

This chapter has focused on scholarship as discovery of new knowledge. The first section explained how the framework in which the research is set influences the type of knowledge that is created and how it should be evaluated. Power is still held by the post-positive perspective, although over the past 10 years or so there have been more studies from the new perspectives and more that are informed from more than one perspective. The critical theorists inform us that other knowledge has been dominated by evidence from positivism and post-positivism perspectives, which has been influenced by men in positions of power, but that other forms of knowledge are valid. The two studies used to illustrate a quantitative and qualitative approach highlight the importance of using different approaches to the discovery of new knowledge.

Integration of knowledge

Integration of knowledge can be achieved by collaboration across disciplines in primary research, but equally important is the appraisal of existing knowledge to evaluate progress in a particular field or inform another. Unless literature reviews are conducted in a standardised way, they run the risk of being subjective and biased. To address these weaknesses, there has been increased interest in conducting literature reviews in a systematic way.

A systematic literature review is conducted using a transparent process such that the reader could replicate the study and arrive at the same findings. Far greater precision is required in a systematic review, which requires definitions of terms used, clearly written research questions, publication of the search strategy used, including search terms and databases used, and the incorporation of a complete list of inclusion and exclusion criteria. Papers initially selected by the search but excluded from the review are also listed with reasons for exclusion.(52,53)

Teaching of knowledge

Scholarship in teaching is the legacy of handing on knowledge to the next generation. Scholarship is said to occur when it is public, open to evaluation and presented in a format that others can build on.(54) However, while a clinical teacher may be informed about contemporary research in their area of clinical expertise, this is less common with regard to education, where change is more opinion than evidence led.(37)

Best evidence medical education (BEME)(55) is a collaboration of individuals and institutions that support the need to develop a systematic approach to the review of evidence about clinical teaching. The website shares information about completed and ongoing systematic reviews. Mennin and McGrew(56) stress that research in teaching and learning as applied to the clinical setting is in the early stages of development. BEME and the recent work on scholarship in teaching represents an opportunity for medical education to become more evidence based.

Application of knowledge

The application of knowledge is a crucial part of scholarship; otherwise research becomes an end in itself. There has been recognition that there is a delay from research findings to implementation, which evidence-based medicine in particular has tried to address.(57) The participatory action research perspective recognises the delay in implementing research findings and has resolved this problem by making the research part of the change programme.(19)

Implementation is the end point of research, but as Boyer(51) reminds us, this is only until new issues arise and are fed back into research and the cycle begins again.

Conclusions

Theoretical perspectives determine the assumptions that are made about reality and what can be known. Positivism became the dominant perspective after the Enlightenment, but following the realisation that all research did not fit into this paradigm, a shift in thinking occurred. This brought about a new way of thinking about social science, and new and competing theoretical perspectives emerged.

The arguments against combining qualitative and quantitative research centre on the acceptance that research strategies are committed to particular theoretical perspectives(2) or the view that they are autonomous.(20) A growth in the preparedness to view research methods as techniques for data collection and a movement away from concerns about ontology and epistemology has resulted in more research using a combination of both qualitative and quantitative research methods.(21)

Getting started in research involves identifying a good research question. After this, consideration needs to be given to the type of data that need to be collected to answer the question. A plan or proposal needs to set out how the research will be conducted, with milestones. Consideration needs to be given to ethical questions that affect the research and how these can be dealt with. Educational scholarship brings it all together. New knowledge is created, integrated and applied. And through dissemination, discussion and critical appraisal, new questions are generated. This in turn leads to the formulation of new research questions and the circle of scholarly enquiry is complete.

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Further Reading

Introduction to research

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BOX 20.1 ‘Heavy’ words

- **Epistemology**: the theory of knowledge, its origins and nature, and the limits of knowledge.
- **Ontology**: the study of being. It is concerned with the nature of existence and the structure of reality. With regard to social enquiry, this is often taken to mean the assumptions that a particular theoretical perspective makes about the nature of social reality.
- **Methodology**: the research design or plan that shapes the methods to be used in the study. The methodology provides a rationale for the choice of methods used in a study.
- **Methods**: the techniques used for data collection.
- **Theoretical perspective**: the philosophical stance that lies behind the methodology.

BOX 20.2 Focus on: Hermeneutics

The word 'hermeneutics' derives from the name of the Greek god Hermes, the messenger and

interpreter of the gods. Hermeneutics is a branch of philosophy concerned with the understanding and the interpretation of texts, although the concept of 'text' has, in recent years, been extended beyond the written word to speech, performances, works of art and even events.

A hermeneutic defines a method for interpretation, or a specific theory of interpretation. In contemporary usage it has been widely used to denote the study of the general principles of biblical interpretation. Hermeneutics assumes that the text remains as written, painted or recorded but that its interpretation changes with time and across contexts.

In critical hermeneutics the interpreter constructs the context as another form of text, which can then, of itself, be critically analysed so that the meaning construction can be understood as an interpretive act. In this way, the hermeneutic interpreter is simply creating another text on a text, and this recursive creation is potentially infinite. Every meaning is constructed, even through the very constructive act of seeking to deconstruct, and the process whereby that textual interpretation occurs must be self-critically reflected upon.(18)

BOX 20.3 How to: Combine qualitative and quantitative research

- **Triangulation:** use qualitative research to cross check finding from quantitative findings or vice versa.
- **Provide hypotheses:** use qualitative research to identify hypotheses that can be tested using quantitative research.
- **Aid measurement:** use qualitative research to inform survey questions.
- **Screening:** use quantitative research to screen for people with specific characteristics for in-depth qualitative study.
- **Fill gaps:** one methodology will not provide all of the needed information.
- **Snapshot versus process:** quantitative research will provide a single snapshot of the social, whereas qualitative research provides information on process.
- **Where two types of data are required:** sometimes both data about meaning and data about a set of issues are required.
- **Quantification:** use qualitative research to identify problems and quantitative research to quantify the problem.
- **Explaining the relationship between variables:** quantitative research frequently needs to explain the relationship between variables; this can be explored further by a follow-up qualitative study.
- **Exploring the micro and macro:** use of both methodologies allows a study to explore the different levels of a problem.
- **Solving a problem:** a different research strategy to the one already employed to explore unexpected or puzzling outcomes.

See Bryman(20) for further details.

BOX 20.4 Comparison of two linked studies

Quantitative study

O'Cathain A, Walters SJ, Nicholl JP, Thomas KJ and Kirkham M (2002) Use of evidence based leaflets to promote informed choice in maternity care: randomised controlled trial in everyday practice. *British Medical Journal*. **324**: 643–6.

This study was a randomised controlled trial with the aim of assessing the effect of leaflets on promoting informed choice in women using maternity services. The sample was clearly defined as women reaching 28 weeks' gestation before the intervention took place. Outcomes were assessed using a postal questionnaire. Various means were used to test the validity of the questionnaire, and a power calculation was used to identify the sample size needed to detect a 10% difference between the intervention and the control groups. Results included response rates (reported in numbers and percentages) and further analysis to identify any differences that could be related to age, social class, parity, pain relief and type of delivery. There was an attempt to examine confounding factors that would bias results, such as having been given the leaflets on another occasion prior to the start of the study.

The conclusion was that the evidence-based leaflets were not effective in promoting informed choice in the women. The authors reported on the limitation of the study and expressed concerns over their measurement of informed choice and the power of the study to detect a difference. Authors referred to the qualitative findings below for further explanation.

Qualitative study

Stapleton H, Kirkham M and Thomas G (2002) Qualitative study of evidence based leaflets in maternity care. *British Medical Journal*. **324**: 639.

The stated aim was to examine the use of evidence-based leaflets on informed choice in maternity services. The design involved both non-participant observation of antenatal consultations, and in-depth interviews with both the expectant mothers and the health professionals. The sample was initially opportunistic (depending on which staff were doing the clinic and which women agreed to be involved) but progressed to be more selective to ensure that women from all childbearing ages, social class, minority groups and current and past obstetric histories were represented. Observations were used to help identify how the leaflets were used, and field notes made on the setting, actions, words and non-verbal cues. Semi-structured interviews were conducted using an interview guide. A grounded theory approach was used (25,31) so as the interview progressed, interviewees were selected to help confirm or refute emerging theory, until no new information was gathered (theoretical saturation). Validity and reliability were said to be ensured by using several researchers and experts, to 'guard against any researcher dominating the analytical process'. Results were reported in terms of emerging themes, and quotes were used to illustrate them.

The qualitative study revealed that time pressures and competing demands within the clinical setting undermined the intervention. The observations revealed that health professionals rarely differentiated the leaflets from other information that they offered or discussed them. The interviews identified that the women confused the leaflets with other information they had been given or denied having received them. The midwives reported that hierarchical power structures resulted in obstetricians defining the choices possible, resulting in informed compliance rather than informed choice.

[BOX 20.5 How to: Write a research protocol](#)

Title

Clear title – could repeat research question (aim)

Relevant background literature

What has already been done in this area. Search the relevant databases as well as journals, books and policy documents- if relevant. Write up in themes (if meaningful) or chronologically if the topic changed and developed following key points in time. What is missing, what new research should be conducted. Add any relevant educational or clinical theory that is relevant to this area of study. Include all references at the end of the document.

Research question

Clearly worded question (aim). Keep it feasible, think realistically about the available resources you have e.g. time, staff and level of expertise. Set boundaries for study. Define what you mean by the terms used. You might include a secondary research question (something of a lower order which you would also like to explore). You might include objectives – questions that are driven by data collection that help you to answer the research question.

Methods

- study design (e.g. randomised trial, grounded theory)
- sample
 - sampling strategy (e.g. opportunistic, purposive)
 - define target sample, i.e. demographic details, how selected and recruited to study
 - sample size (reason for size, is it informed by power calculation)
- data collection procedures
- details of any instruments to be used
 - references to existing tools
 - details about validity, reliability
 - outline stepwise procedures including pre-testing and piloting of tools
- data collection methods (e.g. via postal questionnaire, field notes, interviews)

Data analysis

- details of how data will be analysed (e.g. statistical tests, type of qualitative analysis)
- computer programs to be used in analysis

How will quality issues be addressed

- details of randomisation, piloting of questionnaires

Ethical considerations and how these will be responded to

- state if approval from ethics committee has been received or is in progress

Plans for dissemination of findings

References (e.g. from literature review, methods, instruments, etc.)

Appendices

- costings
- research instruments (e.g. questionnaire, interview schedule, consent forms)

- flow chart summarising study plan with a timeline.