Linking aims, paradigm and method in nursing research

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Abstract

Aim To explore the use of paradigms as ontological and philosophical guides for conducting PhD research.

Background A paradigm can help to bridge the aims of a study and the methods to achieve them. However, choosing a paradigm can be challenging for doctoral researchers: there can be ambiguity about which paradigm is suitable for a particular research question and there is a lack of guidance on how to shape the research process for a chosen paradigm.

Discussion The authors discuss three paradigms used in PhD nursing research: post-positivism, interpretivism and pragmatism. They compare each paradigm in relation to its ontology, epistemology and methodology, and present three examples of PhD nursing research studies to illustrate how research can be conducted using these paradigms in the context of the research aims and methods. The commonalities and differences between the paradigms and their uses are highlighted.

Conclusion Creativity and flexibility are important when deciding on a paradigm. However, consistency and transparency are also needed to ensure the quality and rigour necessary for conducting nursing research.

Implications for research/practice When choosing a suitable paradigm, the researcher should ensure that the ontology, epistemology and methodology of the paradigm are manifest in the methods and research strategies employed.

Keywords Paradigm, post-positivism, interpretivism, pragmatism

Introduction

CONDUCTING RESEARCH for a PhD requires a rigorous and systematic approach. However, use of a paradigm can help create a bridge between the aims of a study and the methods by which to achieve those aims. A paradigm is made up of:

- Ontology – beliefs about reality.
- Epistemology – the relationship between the researcher and what can be known.
- Methodology – how to carry out the research relative to the question and context (Denzin and Lincoln 2005).

Using a paradigm can be beneficial for ensuring philosophical and ontological congruity of the research. However, the researcher needs to ensure that his or her aims, paradigms and methods are also epistemologically and ontologically integrated.

A paradigm is a set of basic beliefs or a frame of reference that explains how individuals perceive the nature of the world and their places in it (Guba and Lincoln 1994). In research, understanding that the choice of paradigm and the means of choosing it influence all aspects of the research process and are central to the discussion of aims, paradigm and method. Weaver and Olson (2006) perceived a paradigm as a way of linking the need for knowledge (aims) with the means of producing that knowledge (methods). Creswell (2009) argued that this 'bridge' between methods and aims represents the researcher's world view and in turn shapes the methods used in research.

There are numerous sources that define paradigms and their components (Parahoo 2006, Denzin and Lincoln 2008, Creswell 2009). Understanding the process of choosing a paradigm, along with the differences and, where they exist, the similarities in paradigms is important if the researcher is to define and justify his or her

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approach to any given piece of research (Weaver and Oloson 2006).

The authors will each present their PhD research studies to illustrate the decision-making process by which a researcher can select a paradigm based on the aims of the research, then use it to help guide the research methods. In each example, the authors explain and justify the relationship between research aims, paradigm and methods.

The clinical role of lecturers in nursing

Aims The first example of PhD research was conducted by the third author, Pauline Meskell (PM). The author wanted to investigate stakeholders' perceptions of lecturers' clinical roles in terms of expectations, factors that help and hinder the roles, and future development. PM wanted to explore differences relating to these expectations and establish the level of support for policy suggestions in relation to the roles, so she could determine a model for best practice.

Paradigm Research into policy issues is concerned with identifying a set of specific plans for action (Popper 1976, 1992a, 1992b). Policymakers need theories that offer courses of action rather than theories that simply explain phenomena, because they need to choose policies that are likely to be successful (Pratt 2003, Swann 2003). Therefore, in policy research, the investigator should not adopt an approach in which all points of view are equally valid, but instead try to find a preferred option (Popper 1992a, Pratt 2003).

The interpretivist approach is limited in its ability to identify patterns and commonalities and in the quantification of data. PM did not consider an 'interpretivist' approach suitable because she did not want to focus on individual perspectives, rather on consensus of opinion about identified issues. She considered post-positivism to be the most suitable paradigm for this focus because it had the best capacity compared with positivism, constructivism, interpretivism or critical theory/advocacy to investigate the research problem. Post-positivism acknowledges the fallibility of all measurement, and emphasises the importance of multiple measures and observation. It also highlights the advantage of 'triangulation', which is a combination of two or more theories, data sources, methods or investigators, in the study of a single phenomenon in an effort to enrich, explain and analyse data, and to reduce bias.

Pragmatism is a philosophical view that a theory or concept should be evaluated in terms of how it works and its consequences as the standard for action and thought. PM also considered 'pragmatism' to be a viable option because there are many parallels between post-positivism and pragmatism, each having roots in the 'realist' tradition, which is concerned with the notion reality is multilateral, complex, mutifaceted and shaped by experience. Both traditions put forward the theory that we construct our own worldview based on our perception of it.

Post-positivist and pragmatic researchers argue that there is no best approach to developing knowledge, and no reason to assume that qualitative and quantitative methods are incompatible. PM chose post-positivism because it is better established than pragmatism, which is still arguably in a developmental stage. In addition, there is a tradition of using a post-positivistic paradigm to research policy and evidence and that using multiple measures of investigation can help to identify the limitations and circumstances within which policies work (Popper 1992a, 1992b, Pratt 2003).

Research in the post-positivist paradigm reflects the positivist emphasis on well-defined concepts and variables, controlled conditions, precise instrumentation and empirical testing (Guba and Lincoln 1994, Creswell 2009). However, concepts differ in that post-positivists advocate a realist perspective of science, with unobservables acknowledged to have existence and be capable of explaining the functioning of observable phenomena (Bronowski 1956, Popper 1959, Kuhn 1962). Post-positivism has been defined as the search for 'warranted assertability' as opposed to 'truth' (Lather 1990, Phillips 1990). From an ontological perspective, reality is assumed to exist, but only to be 'imperfectly apprehendable' (Denzin and Lincoln 2000). Post-positivists accept that the outcome of investigation is an estimation of the truth rather than the truth itself (Popper 1992a). They also acknowledge that it is not possible to achieve a state of total objectivity, but instead strive to be as objective or neutral as possible (Cook and Campbell 1979, Clark 1998).

Method Post-positivists contend that claims about knowledge must be subjected to wide critical examination to help to expose reality as closely as possible (Guba and Lincoln 1994). Objectivity is valued for its role in explanation and prediction (Smith 1990, Gortner 1993), an aspect that is crucial in policy research. Research questions can be approached qualitatively, quantitatively and from several perspectives. The differing perspectives define the research goals and decide the types of methods used for implementation and analysis (Coward 1990, Creswell 2009).

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In this research, PM used a sequential exploratory mixed-method design. An initial descriptive exploratory qualitative phase involved a focus group and individual interviews with stakeholders. In the second phase, PM used results from phase one to inform the development of a questionnaire for the first round of a three-round Delphi policy study. The aim was to explore policy suggestions relating to the clinical role and the level of support of stakeholders for identified issues.

Post-positivist research methodologies are not confined to studying that which can be directly observed or assumed (Denzin and Lincoln 2000). Emphasis is placed on 'critical multiplism', which is a form of methodological pluralism that gives way to the use of qualitative and quantitative methods. It is based on the notion that critical appraisal is essential to look at the subject area from as many differing perspectives as possible in order to arrive at a fair conclusion. Emphasis is also placed on the use of triangulation as a methodological tool (Shadish 1993, Creswell 2009). Critical multiplism involves using multiple data sources to minimise bias and to be as objective as possible (Popper 1959, Kuhn 1962, Guba 1990).

PM's study involved a combination of quantitative and qualitative methodologies, three data sources (individual interviews, focus group interviews and a three-round Delphi policy study) and four different stakeholder groups – educationalists, clinicians, policy makers and students – in the study of a single phenomenon. While it was outside the scope of the study to employ critical multiplism in its purest sense, use of triangulation ensured that the study adhered to the methodology of post-positivism.

The role of the clinical skills laboratory in preparing nursing students for the real world of practice

Aims Catherine Houghton (CH), wished to explore the role of the clinical skills laboratory (CSL) in preparing nursing students for clinical practice. The CSL is a safe learning environment, often set up to replicate the reality of clinical practice, whereby nursing students learn and practice clinical skills. Specifically, she wanted to investigate the teaching and assessment strategies used in the CSL, and how they were perceived. She also wanted to identify the factors that help or hinder students' learning and implementation of clinical skills in practice. In this way, the role of the CSL could then be clarified, highlighting actual and potential strategies that can prepare nursing students for clinical practice.

Paradigm CH did not want to control the CSL environment or the way in which students learned and practised their clinical skills, so did not consider a post-positivist paradigm suitable. She considered pragmatism because of its flexibility, but believed that interpretivism was more suitable for the aims of this research: to explore the role they play in the education of nursing students, CSLs needed to be described by those who have experienced them. Furthermore, CSLs are relatively new structures in Ireland and CH believed that their role could be clarified and understood through interpretivism, and how they function in the real world could be illustrated.

Interpretivism originated from the traditions of hermeneutics and phenomenology (Blaikie 1993). In interpretivism, understanding is embedded in social interaction and our interpretation of the world (Blaikie 1993, Todres and Holloway 2006). Rather than finding the truth, interpretation is about the opening up of possibilities (Blaikie 1993). Interpretivists argue that meaning is unique and interpretation is essential if movement is to be made beyond the data (Nandhakumar and Jones 1997, Graneheim and Lundman 2004, Rapport 2005).

Interpretivism is located in a relativist ontology, because more than one truth exists and reality is socially and experientially based (Guba 1990). Therefore, reality differs for everyone. Interpretivism acknowledges a subjectivist epistemology and the researcher needs to be aware of the impact his or her perceptions can have on the research.

CH aimed to understand a phenomenon, with emphasis on the social and experiential nature of nurse education and student learning. Acknowledging that student learning in the CSL and the clinical setting is multifaceted, she required a paradigm that focused on relativism.

Method The methods used in interpretive research aim to capture subjective participants' experiences (Sandelowski 1998, Williams 2000, Taylor and Callahan 2005, Shah and Corley 2006). Interpreting data is about developing a deeper understanding of phenomena, and the experiences and self-awareness of the researcher become part of the data (Koch 1999, Shah and Corley 2006). This need for developing a deeper understanding implies that qualitative methodologies are most appropriate when conducting research using an interpretivist paradigm.

This research used a design that involved multiple qualitative case studies. CH selected five sites from the 13 higher education institutes that offer the bachelor of nursing degree

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programme in the Republic of Ireland. Data were collected using semi-structured interviews, non-participant observation in the clinical setting and documentary analysis. These methods, in keeping with interpretivism, were more concerned with achieving an empathetic understanding than testing laws of human behaviour (Neuman 2003).

Interpretivism acknowledges its subjectivity and the researcher needs to be aware of the impact his or her perceptions can have on research when using it. As a result, CH's study benefitted from using reflexivity. This acknowledges that the investigators' beliefs and values affect research, particularly in the philosophical and methodological approach to the study (Abramson 1992, Carolan 2003, Baker 2006, Lathlean 2010). Reflexivity helped CH to develop the self-awareness that is necessary for interpretivist qualitative research (Koch and Harrington 1998, Carolan 2003, Furman 2004, Dowling 2006).

In interpretivism, understanding is embedded in a person's interpretation of the world (Blaikie 1993, Todres and Holloway 2006). CH decided to conduct the analysis by applying the strategies developed by Miles and Huberman (1994) to Morse's (1994) analysis framework. This application of strategies allowed the author the deep exploration needed for interpretivist understanding of the data.

Residential care staff's experience, understanding and use of psychosocial interventions with people with dementia

Aims This study, carried out by Andrew Hunter (AH), used grounded theory to understand practices, knowledge and needs relating to the use of pyschosocial interventions (PSIs) with people with dementia. Writers such as Creswell (2009) advocated that research logically flows from aims to paradigm to method, so AH will present this method with the paradigm, in keeping with the view that the paradigm position adopted in classic grounded theory (CGT) should fit with the nature of the data collected (Glaser 1998).

Method to paradigm AH decided on method and area before reviewing the paradigm options and identifying the one best suited to the study. The approach to research outlined by Glaser and Strauss (1967) and Glaser (1978, 1992, 1998) endeavours to place the emergence of theory rather than its verification at the heart of sociological research. To achieve this aim, Glaser and Strauss (1967) stressed the need for theory to arise directly from the empirical data. It should be noted that grounded theory is a non-linear research approach in which application of the research method along with the paradigm can overlap and cycle, meaning the research analysis can dictate the paradigm rather than paradigm dictating the approach to methods and analysis.

A review of the paradigm options (including post-positivism and interpretivism) indicated that the most suitable paradigm for this study was pragmatism. Rorty (1991) viewed knowledge derived from pragmatic inquiry to be a framework for understanding, the usefulness and application of which depends on the area of inquiry and the person using it. Pragmatism is at odds with traditional views of research, in which a hierarchy of approaches produces 'truths' that are given weight by methodology. Pragmatism allows the researcher to emphasise the area of interest and what works, using whatever epistemological and methodological approaches suit the context of the research without engaging in rhetorical wrestling (Boham 1999, Gibson 2008, Leigh Star 2008).

Glaser (1978, 1992) talked of CGT being methodologically flexible and of being open to different theoretical perspectives during data analysis, but the attractive simplicity of this approach fails to address the need for epistemological clarity. Pragmatism demands that the researcher uses those methods and data that address the question and produce meaningful results for the participants (Bryant 2009, Gibson 2008, Leigh Star 2008). In this pragmatist reading, the process of theoretical sensitivity, that is the ongoing process of reflecting on the data from a range of theoretical perspectives as outlined by Glaser (1978), gains a methodological strength that maintains awareness of the data, the relationships between researcher and participants, and the researcher's conceptual perspective.

CGT is intended to help researchers understand the area of inquiry and to help develop the theory relating to that inquiry.

By systematically collecting and simultaneously conceptually analysing empirical data, the researcher can use CGT to create theory that is broadly applicable to the area of interest. The aim is to produce clear categories that when considered conceptually create theory that helps to explain the processes being studied.

Pragmatism does not favour any single belief or set of beliefs about reality. Some theorists argue that discussions of the nature of truth range from linguistic wrestling to irrelevancies (Rorty 1991, Bryant 2009).

The world exists in the realist and relativist spheres but pragmatism indicates the need to focus on the desired outcome of the research, not the process (Dewey 1998, Peirce 1998 and Rorty 1991).

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Epistemologically, the researcher and participants will engage in whatever manner addresses the research question so a pluralism of approaches is favoured. In this sense, pragmatism mirrors mixed-methods approaches that allow triangulation of data types and styles of collection (with the associated different researcher-participant relationships of these styles) to meet the research needs at the time (Morgan 2007). As a consequence, pragmatism takes place in the research context and all findings or theory must be considered in this context.

Methodologically, pragmatism is often, but not exclusively, used in mixed-methods research where quantitative and qualitative methods are likely to be applied to address the question. This openness to getting the job done using the correct tools is in keeping with what Denzin and Lincoln (2008) called 'bricolage' – a borrowed term from the French anthropologist Claude Levi-Strauss who used it to refer to the construction or synthesis of work using whatever means are at hand (Levi-Strauss 1968). In this case, AH created research output by applying a range of methods in reaction to the complexities of the field.

Conclusion

We have used three examples from PhD nursing research to illustrate how a paradigm can create the link between aims and methods in research. The three chosen paradigms were similar in their acknowledgement of the possible existence of more than one truth. This ontological stance was appropriate for the broader purpose of these studies. Each study focused on the exploration of a contemporary phenomenon with an emphasis on real-world research. All valued the perceptions of individuals immersed in

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the phenomena and used qualitative methods to gain insight into their experiences. The outcome for each of the research studies emphasised the impact and improvement of nursing education and clinical practice.

However, it was the aims of these studies that determined the final selection of the paradigms by the individual researchers. In the first study, post-positivism helped with the use of mixed methodology in the evaluation of policy issues. In the second study, interpretivism assisted an exploration into the experiences and perspectives of those involved in nurse education, and students' learning and implementation of clinical skills. In the third example, pragmatism allowed data analysis to inform sampling, which allowed for the development of theory based on deep understanding of staff's experience and use of PSIs.

It is important to acknowledge creativity and flexibility when deciding on a paradigm. However, this paper aimed to emphasise the importance of consistency and transparency once a paradigm has been selected.

On choosing a suitable paradigm, the researcher must ensure that the ontology, epistemology and methodology of the paradigm are manifest in the methods and research strategies employed. This consistency and transparency will ensure the quality and rigour necessary for conducting nursing research.

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Conflict of interest
None declared

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