Research design and research paradigms should be led by research questions: a mixed methods approach

Franci Cronje, November 2014

This paper will motivate the stance that research should be situated within a particular paradigm of thinking to avoid such an inquiry to remain on a non-academic technical level. It is, however, argued that although researchers should be familiar with arguments originating from the various paradigmatic stances, that paradigms and philosophies should not lead the initial enquiry but should rather inform results obtained. Plainly stated, research should not be steered by a chosen paradigm. Plowright (2011) successfully argues that the implementation of a paradigm should only come into play with the interpretation of results and should not steer the direction that the research might take. A paradigm should rather be employed to explain, to act as a lens for understanding, to consolidate and synthesise the results that a certain methodology produced.

Although Plowright makes a plausible case that 'methodology determines the philosophy you might employ to explain your approach to undertaking research' and that 'theories are constructed after an event' (2011: 181) I would additionally argue that a researcher needs to intimately know the definitions and dynamics of various paradigms and their historical approaches before setting out on the path of answering a research question. The paradigms and theories that would concern a researcher before embarking on gathering data would be informed by the literature consulted in constructing the theoretical context as part of Plowright's (2011) five contexts (professional, organisational, policy, national and theoretical) that guide the formulation of the research question.

The majority of traditional research methodology texts philosophise paradigms in research context as a standard starting point for research methodology. Babbie defines paradigms as 'the fundamental models or frames of reference we use to organize our observations and reasoning' (2006: 31). These angles

of thought are indicative to the position that the researcher assumes in the explanation of results and guides synthesis and framing of conclusions. A paradigm is also described as the 'lens' through which a person perceives, describes and makes sense of an experience. The benefit of acknowledging the existence and subjectivity of a paradigm is, according to Babbie (2006) that firstly one can better understand other individuals' actions who might act out of another paradigm, and secondly, that the researcher can consciously step out of his or her own paradigm to be able to better understand or experience another point of view.

Traditional research methodology prescribes that in order to define the initial purpose for a study, the researcher needs to be able to consider a conceptual direction that the question needs to take. Babbie (in Bitzer 2013) describes four possibilities namely to explore, describe, explain or to include elements of all three the above intentions. This basic decision would then situate the research into either one of the dominant paradigms, mainly regarded by purists as mutually exclusive.

Furthermore, conventionalist approaches prescribe that a researcher should situate a research question in a positivist- or an anti-positivist viewpoint or paradigm. The former, originating in naturalist scientific enquiry has been attacked by the anti-positivists for its absolutist stance of measurability and reductionist nature (Cohen, Manion & Morrison 2007). The mechanistic approach of positivism inherently belies the complexity of nature and relativity and rather disingenuously 'defines life in measurable terms rather than inner experience, and excludes notions of choice, freedom, individuality, and moral responsibility, regarding the universe as a living organism rather than as a machine (Cohen et al 2007: 17).

Cohen et al refer to the sharp critique of Habermas (of the Frankfurt School of critical theory) that positivism has been elevated in research circles almost to religious status, reducing its epistemology to a one-dimensional 'western' dominated view whereby human behaviour is reduced to robotic and technical (2007). It however, seems simplistic to measure human behaviour in a positivist approach. The anti-positivist movement, in contrast, addresses

positivism's dehumanisation in fields of 'social and cultural milieux, it sets out to study and understand the person as a whole' (Buhler and Allen in Cohen et al 2007: 19). Anti-positivism, shortly, concerns itself in all three relevant schools of thought (phenomenology, ethnomethodology and symbolic interactionism) with the complex ways humans understand and react to all multimodal stimuli encountered continuously throughout life experiences.

In view of the explanation of positivist versus anti-positivist stance, it follows that the normative research paradigm ascribes to a positive stance with the belief that 'human behaviour is essentially rule-governed' (Cohen et al 2007: 21) while the anti-positivist view lies within the interpretive paradigm. The latter, then, concerns itself with individual qualitative description of behaviour in order to understand behaviour and action instead of measuring quantitatively in a theoretical way, as would be appropriate in the normative paradigm.

An important distinction between the two paradigms concerning my own interest would be that the normative paradigm describes a reactive response in contrast to the interpretive approach that focuses on proactive 'future-oriented' actions (Cohen et al 2007: 21). It becomes plausible that research concerned with pragmatic interventions such as the one I plan to study would use both these paradigms to explain two aspects of the research stages.

In the heated 'paradigm wars' between qualitative- and quantitatively inclined researchers Bryman (2007) illustrates the treacherous nature when stepping into this terrain. While some proponents find qualitative and quantitative investigation mutually exclusive, the school of thought arguing for a more inclusive approach to the use of mixed methods has emerged. Out of the truce between these two disciplines, ironically, was born yet another paradigm. Maybe this is an indicator that research cannot function without a particular paradigm. The rise of pragmatism and the subsequent centralising of the research question then filled the void left by the argument that neither of the original paradigms suffices.

Recent stances for the use of mixed methods within research design argue that it is not only useful to consider mixed methods when working within the domain of social research, but that it is actually highly desirable to not limit oneself to one paradigm and its methodology. Denscombe (2007) refers to Johnson & Onwuegbuzie (2004) and Tashakkori & Teddlie (1998, 2003) who all prescribe strongly to the view that the use of either the positivist quantitative paradigm or the interpretivist qualitative paradigm should not be mutually exclusive and that the approach should be guided by what would service the research question best in every individual stage of the research.

Although Plowright acknowledges distinctly that his idea regarding the use of a mixed method approach is surely not new (he also refers to Tashakkori & Teddlie as well as Creswell & Plano Clark (in Plowright 2011), he takes the argument to overlook qualitative and quantitative methodological silo's one step further in his 2011 publication *Using Mixed Methods* by introducing the model Frameworks for an Integrated Methodology (FraIM) that enables researchers to take 'a fresh look at the way we think about social and educational research' (2011: 3). This model allows a researcher of a small social research project to use a framework that is seen as a 'basic structure' to fill with content suitable to the specific project. The starting point is always the research question and more distinctly, *what is it that you would like to know,* instead limiting a finding by choosing a paradigm upfront.

By choosing the particular context (professional, organisational, policy, national and theoretical) should place the main research question within the researcher's bigger picture and would clarify and narrow the scope of the specific topic. Setting this contextual scene, I assume, would also set an implicit framework for limitations and delimitations of the study.

Setting such a context enables the researcher to reflect on the professional environment and the personal viewpoint from where the approached. What, for instance, is the researcher's relationship and previous knowledge of the particular topic? Context is also given to the organisational 'culture' in which the research will be conducted as well as the policy environment guiding decisions within which the investigation is situated. Even broader speaking,

this same context provides necessary detail about the national environment, and lastly, the theoretical context that a literature review informs (Plowright 2011). The exciting aspect of setting this context is that the frame would produce the rationale and design for the study embarked upon.

The next step in the FraIM methodology would be to decide on the number and detail of cases used. The concept of cases is defined as 'the wide range and variety of data sources that are used in research' (Plowright 2011: 14). A researcher therefore chooses the data sources that would answer the research question after being informed by the context *before* deciding on the methods required collecting the data. Only at the point of analysing either the numerical or narrative data, or a combination of both, will the researcher use a particular paradigm in order to understand or position, and synthesise the various sets of results obtained. The choice of whichever paradigm to use should be dictated by the research question because, 'methods are tools for the answering of research questions and not vice versa' (Erzberger and Kelle 2003 in Bryman 2007: 118).

Although Babbie does not directly prescribe that paradigms should be used to only understand results after research has been done, one can deduct it from his description of the contrast between Spencer and Marx's views. He comments that 'These fundamental viewpoints *shape* (my emphasis) the kinds of observations we are likely to make, the sorts of facts we seek to discover, and the conclusions we draw from those facts' (2006: 35). This implies that the paradigm can therefore be used as a tool for understanding a certain phenomenon or set of results when research has been completed.

I argue that mixed methods research is particularly important when researching inductively, and as Teddlie and Tashakkori aptly put it, 'Mixed methods research can answer research questions that the other methodologies cannot' (in Bryman 2007: 118). Centralising the research question (Plowright 2011; Creswell 2009) would also enable the researcher to plan data collection and analysis methods when literature informed the theoretical context (Plowright 2011). This would be helpful not only to consider the 'full range of possibilities of data collection and to organize these methods'

(Creswell 2009: 15) but also to be guided by successful methodology described in empirical literature relevant to the planned study.

My own research will investigate models of Academic Professional Development (APD) in higher education and the evaluation of individual instruments used in these models reported on by other researchers. With this in mind and initial discussions with staff, a set of instruments needs to be devised and implemented out of these existing models. After implementation of this devised intervention however, the effectiveness and success will need to be measured and interpreted. Only thereafter can new interventions be designed. The planned research, although inductively working towards an understanding of individual APD instruments and in which combination it will be most beneficial for my chosen context, will have to be implemented in a sequential mixed methods approach (Creswell 2009). Additionally, the methodological strategy of the FraIM approach to an integrated paradigmatic framework for research (Plowright 2011) will allow this research to interpret results in all these stages, in the appropriate paradigms.

Conclusion

In this paper I argued that it is essential that a student forms a sound understanding of the importance and limitations of paradigms and subsequent implications within the specific area of interest when embarking upon a research project. Even when the research question is centralised in research planning to open up the possibilities of data collection, analysis and synthesis as described in Plowright's FraIM methodology (2011) when he argues for the implementation of a pragmatic paradigm (Creswell 2009; Plowright 2011) in mixed methods research and as such, the logic of using paradigms to understand the research results instead of letting the paradigm dictate the outcome. Although methods should be informed by the research question, a researcher would need to be properly informed regarding methods of data selection, collection and analysis, sampling, integration of data and understanding of results with the help of the appropriate paradigm at the onset. The FraIM approach allows such knowledge to be gathered as part of the research question when research is initiated. A researcher would survey

the appropriate literature in order to build the theoretical context or conceptual framework. By knowing which research methods were most productive in related studies, a researcher can plan the proposed study to have a rich and meaningful outcome (and answer the posed research questions in the best possible manner).

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