

Mixed Methods: In Search of a Paradigm

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ABSTRACT

The growth of mixed methods research has been accompanied by a debate over the rationale for combining what has previously been regarded as incompatible methodologies. The debate has focused on what paradigms are involved in mixed methods research. Four dominant paradigms are identified, namely postpositivism, constructivism, transformative and pragmatism and three approaches to incorporating these in mixed methods research outlined. Of these a single paradigm is proposed as the most appropriate approach. Existing single paradigms, however, do not provide an adequate rationale for mixed methods research. Both transformative and pragmatic paradigms have serious limitations. A realist perspective, it is argued, overcomes these limitations and provides a satisfactory paradigm for mixed methods research.

Key words: Mixed-methods, paradigm, research methods

INTRODUCTION

Mixed methods research has been established as a third methodological movement over the past twenty years, complementing the existing traditions of quantitative and qualitative movements (Tashakkori & Teddlie, 2003, Teddlie & Tashakkori, 2009). This development has been accompanied by a search for an appropriate paradigm to provide a legitimation for the use of mixed methods comparable to the paradigms that have been widely accepted as justifying the use of quantitative and qualitative methods separately.

The term 'mixed methods' has come to be used to refer to the use of two or more methods in a research project yielding both qualitative and quantitative data (e.g. Cresswell & Plano Clark, 2007; Greene, 2007; Teddlie & Tashakkori, 2009). Combinations of methods which yield data of the same kind are referred to as multimethods (Teddlie & Tashakkori, 2009). Multimethods do not have the same paradigmatic problem as do mixed methods since they can adopt the paradigm appropriate to the single type of data being collected.

The paradigm problem for mixed methods arises because of the so called 'paradigm wars' of the 1970s and 80s where the positivist paradigm of quantitative research came under attack from social scientists supporting qualitative research and proposing constructivism (or variants thereof) as an alternative paradigm (Reichhardt & Rallis, 1994).

What has consequently been seen as a problem for mixed methods researchers is finding a rationale for combining qualitative and quantitative data in the face of seemingly incompatible paradigms

underpinning them. Indeed it has been claimed that mixed methods are not possible due to the incompatibility of the paradigms underlying them (e.g. Guba & Lincoln, 1994).

To deal with this problem a range of alternative approaches have been developed (Tashakkori & Teddlie, 2003; Cresswell & Plano Clark, 2007). These approaches can be classified into three basic categories: a-paradigmatic stance, multiple paradigm approach and the single paradigm approach. The first of these simply ignores paradigmatic issues altogether; the second asserts that alternative paradigms are not incompatible and can be used in the one research project and the third claims that both quantitative and qualitative research can be accommodated under a single paradigm.

In this paper it will be argued that a single paradigm can indeed provide a justification for mixed methods. Existing single paradigm approaches will be outlined and evaluated and an alternative presented. It will be further argued that constructivism is not the single paradigm underpinning qualitative research nor is it even the dominant one.

Adoption of a single paradigm for all methods will enable integration of research findings and dispense with the unhelpful conflict that has plagued social research.

PARADIGM ISSUES

Paradigms play an important role in the mixed methods literature for reasons outlined above. The term has been adapted from Kuhn (1962, 1970) but as Morgan (2007) points out it has been given at least four different meanings in this literature. These have been identified as a world view; an epistemological stance; as shared beliefs among a community of researchers and as model examples of research. Although Morgan (2007) argues that the third of these is closest to what Kuhn defined as a paradigm he does acknowledge that the second meaning, namely a paradigm as an epistemological stance has been the most commonly used meaning in discussions of social science methodology.

It is, however, the first of these meanings that has been adopted by some of the major writers in the field. Teddlie & Tashakkori (2009, p84) define a paradigm as "a worldview, together with the various philosophical assumptions associated with that point of view." Likewise Creswell & Plano Clark (2007, p21) refer to a paradigm as a worldview. Similarly Greene (2007) uses the term "mental model" in much the same way as a worldview.

According to these authors a worldview consists of stances adopted on each of the elements (Cresswell & Plano Clark, 2007) or dimensions of contrast (Teddlie & Tashakkori, 2009) comprising ontology, epistemology, axiology and methodology. Using these dimensions Cresswell & Plano Clark (2007) identify four world views and Teddlie & Tashakkori (2009) identify five, the only difference being the separation of positivism and postpositivism by Teddlie & Tashakkori but not by Cresswell & Plano Clark. There are so few differences between positivism and postpositivism that treating them as distinct world views is hardly warranted. Indeed postpositivism modifies some of the excesses of positivism such as the claim that research must be value free, so that it can be regarded as the successor of positivism.

The four commonly agreed worldviews are then postpositivism, constructivism, transformative and pragmatism. Of these only the transformative and pragmatism worldviews are seen to be compatible with mixed methods research. Positivism and its successor postpositivism are closely identified with quantitative research and constructivism with qualitative research, making neither particularly suitable for mixed methods research.

Harrits (2011) has proposed two further paradigms for mixed methods research, which he refers to as 'nested analysis' and 'praxeological knowledge'. His use of the term paradigm does not, however,

correspond with the 'worldview' use adopted by the authors discussed above, but rather, corresponds more closely with Morgan's (2007) fourth use, namely as model examples of research. Under this usage of the term there would be very many paradigms in mixed methods research alone, giving the term a much more specific meaning than that generally used in the literature on mixed methods.

PARADIGM OPTIONS IN MIXED METHODS RESEARCH

There are three possible positions mixed methods researchers can take to adopting a paradigm to underpin their research. These are the a-paradigmatic stance, the multiple paradigm stance and the single paradigm stance (The original six stances of Teddlie & Tashakkori, 2003) have been reduced to three by grouping several under the multiple paradigm stance).

The a-paradigmatic stance sidesteps the paradigm issue by ignoring it. Teddlie & Tashakkori (2003) cite Patton's (1990) claim that methodology is independent of the epistemology that gave rise to it. This can be true only in a very general sense in that, say, empiricism mandates some kind of observational method but it does not specify any particular method. It is, however, at the point of interpretation of the information gained by using a research method that epistemology plays a role. It is difficult to see a constructivist, for example, conducting a survey and analyzing the data using a multiple regression analysis. Epistemology and methodology are related in that the epistemological position adopted constrains the type of data considered to be worth collecting and in the way that data is to be interpreted.

The paradigmatic stance adopted by a researcher may not be made explicit. Indeed, in most cases researchers get on with the research without regard to their paradigmatic position, which is left implicit. This does not mean that they don't have one. Only that they don't articulate it in their research papers.

This means that the a-paradigmatic stance supported by Patton can't be sustained as a viable approach to justifying mixed methods research since no research is paradigm free.

The multiple paradigm stance claims that researchers can draw on more than one paradigm in their research. This takes three forms outlined by Teddlie & Tashakkori (2003), namely the complementary strengths thesis, the dialectical thesis and the multiple paradigms thesis.

The complementary strengths thesis keeps the methods separate so as to draw on the strengths of each (Morse, 2003). The dialectical thesis (Greene, 2007; Greene & Caracelli, 2003) claims that insights can be gained from mixing 'mental models' where a 'mental model' is "the set of assumptions, understandings, predispositions, and values and beliefs with which all social inquirers approach their work" (Greene, 2007, p12). The multiple paradigm thesis (Cresswell & Plano-Clark, 2007) contends that the mixed-methods design determines the appropriateness of paradigm choice. That is, that some paradigms are appropriate for some designs but not others. The researcher needs to then choose the paradigm most suited to the research design being implemented.

A problem with these approaches is that it is not made clear which paradigms are to be mixed and how the mixing is to be done. This is particularly so with paradigms for which there has been a history of antagonism and for which claims of incompatibility have been made. So, for example, mixing postpositivism and constructivism in the one study would seem to be problematic given their contradictory ontological and epistemological assumptions.

The third paradigmatic position that can be taken by mixed methods researchers is the single paradigm approach. In this stance, researchers adopt a single paradigm that encompasses both

qualitative and quantitative research methods. Two such paradigms have been identified as contenders for this approach, namely pragmatism and the transformative approach. The former has been advocated by a number of mixed methods researchers (e.g. Johnson & Onwuegbuzie, 2004; Maxcy, 2003; Morgan, 2007) and the latter by Mertens (2003). This approach at least in principle overcomes the problem inherent in the multiple paradigm approach of the difficulties involved in attempting to integrate paradigms based on fundamentally different assumptions.

SINGLE PARADIGM OPTIONS FOR MIXED METHODS RESEARCH

Pragmatism has gained considerable support as a stance for mixed methods researchers (Feilzer, 2010; Johnson & Onwuegbuzie, 2004; Maxcy, 2003; Morgan, 2007). It is oriented 'toward solving practical problems in the "real world" (Feilzer, 2010, p8) rather than on assumptions about the nature of knowledge. It is derived from the writings of Peirce, Dewey and James in the 19th and early 20th centuries and Rorty in the late 20th century.

The early formulations of pragmatism by James and Dewey were criticized by Russell (1910, 1945) on a number of grounds, but particularly on the difficulty of determining what 'works'. While this criticism was leveled at James' pragmatic theory of truth it is relevant to the use of pragmatism in mixed methods research because it assumes that the usefulness of any particular mixed methods design can be known in advance of it being used. The choice of a mixed methods research design is based on a number of considerations including the research questions and the purpose of the research. The question of whether a mixed methods design 'works' or not can only be decided once the research product is completed and the findings interpreted. Pragmatism does not enter into the choice of mixed methods nor justify its use.

The transformative – emancipatory paradigm proposed by Mertens (2003) as a paradigm for mixed methods research places "central importance on the lives and experiences of marginalized groups such as women, ethnic/racial minorities, members of the gay and lesbian communities, people with disabilities, and those who are poor." (Mertens, 2003, p139-140). This focus of the paradigm limits its application to only a small range of social scientific research. As Tashakkori and Teddlie (2003b, p680) point out "the transformative – emancipatory orientation might be better conceptualized as a purpose of a research project."

Neither of these paradigms can encompass the wide range of mixed methods research currently employed. As Bergman (2011, p101) points out "...it is time to bring in a second generation of theoretical considerations about the shape and reasons for mixed methods research." What is needed is a paradigm that does not limit the range of topics to be researched, nor the methods that can legitimately be used to conduct research and can accommodate the mixing of qualitative and quantitative methods in use.

A candidate for such a paradigm is the realist perspective used in the evaluation field by Pawson & Tilly (1997) and by Henry, Julnes & Mark (1998) and extended to other areas by Sayer (2000). Whilst realism is an ontological position usually associated with positivism and postpositivism it is by no means confined to these positions as these applications have shown.

Pawson & Tilly (1997) developed what they called a 'scientific realist' approach to evaluation in which mixed methods play a prominent role in the conduct of evaluation.

Henry, Julnes & Mark (1998) developed an 'emergent realist' paradigm for evaluation in which they argue that the objectives of their approach "will often best be served by a combination of quantitative and qualitative methods." (p19).

Sayer (2000) uses Bhaskar's (1975) approach of 'critical realism' to develop a paradigm for social science. This approach according to Sayer is compatible with a wide range of research methods including both qualitative and quantitative.

What these approaches have in common is a version of realism that recognizes the complexity of social phenomena by enabling a role for values and interpretive meaning while at the same time accepting explanation as a legitimate goal of social research.

CONCLUSION

Paradigm issues are a major concern in mixed methods research. Choice of an appropriate paradigm is seen as a necessary step to justify the use of mixed methods. Yet there is still disagreement over what constitutes an appropriate paradigm or paradigms.

Three approaches to paradigm choice have been identified here, namely the a-paradigmatic approach, the multiple paradigm approach and the single paradigm. Of these it has been argued that the single paradigm stance is the only defensible approach. However, existing single paradigms do not provide a satisfactory basis for all mixed methods research. Pragmatism fails to give a coherent rationale for mixed methods due to its lack of a clear definition of 'what works'. The transformative-emancipatory paradigm is limited to a small subset of all social research and for this reason cannot be considered as a paradigm for mixed methods.

A realist approach has been suggested as an alternative single paradigm. This approach has been applied widely in the field of program evaluation as well as in other areas of social research. It does not suffer from the limitations of the pragmatism and transformative paradigms discussed above, and supports the use of mixed methods. It has the potential with further development to provide a much-needed paradigm for mixed methods research.

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