Mixed Methods Research: The Five Ps Framework

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Abstract: Mixed methods research (MMR) is often referred to as the third methodological movement and has witnessed a rapid rise in popularity in the last 10 years. Prominent authorities in the field now refer to the MM research community which has developed its own philosophical, theoretical, methodological, analytical and practical foundations and constructs for the conduct of MMR. This paper provides a brief overview of some of the more common definitions of mixed methods research and methodology before introducing the conceptual framework of the Five Ps of mixed methods research. The Five P framework will be used to structure an exploration of some of the key challenges facing those who choose the innovative path of mixed methods research and some of the key areas for capacity building. The Five Ps include: Paradigms; Pragmatism; Praxis; Proficiency; and Publishing. This Five Ps framework will be mapped against the contemporary landscape of the MMR movement as developed by some of the most prominent mixed methodologists within the MMR community. These include: the overlapping components of an emerging map of MMR (Teddlie and Tashakkori 2010) and the domains of MMR (Creswell 2010). The Five Ps framework can provide those wishing to embark into mixed methods research with the essential components of a mixed methods starter kit, inclusive of a contemporary checklist of contentious issues, risks and traps that require consideration. Tashakkori and Teddlie (2010b: 29) refer to the need for MM researchers to become "methodological connoisseur[s]" whilst Cameron (2011: 263) calls for the need to build "methodological trilingualism" in those wishing to engage in MMR. Both these capacities require advanced research skill levels and competencies. As a consequence the framework also offers higher degree supervisors and educators with a pedagogic tool for guiding and teaching mixed methods.

Keywords: mixed methods research; paradigms; pragmatism; publishing; teaching research methods

1. Introduction

Mixed method research is a growing area of methodological choice for many academics and researchers from across a variety of discipline areas. Tashakkori and Teddlie (2010b: 803-804) refers to the MM community which has:

> … gone through a relatively rapid growth spurt…it has acquired a formal methodology that did not exist before and is subscribed to by an emerging community of practitioners and methodologists across the disciplines. In the process of developing a distinct identity, as compared with other major research communities of researchers in the social and human sciences, mixed methods has been adopted as the de facto third alternative, or "third methodological movement"'.

The definition of MMR remains are contested area. Johnson, Onwuegbuzie and Turner (2007) asked 21 researchers for a definition of MM and received 19 responses. These definitions were diverse and were differentiated in terms of what was being mixed, the stage in the research process were the mixing occurred, the extend of the mixing, the purpose of the mixing and the drive behind the research. There are limitations as to the extent at which this paper can delve into these definitional debates and as a result definitions utilised by prominent mixed methodologists have been chosen for this paper.

The *Journal of Mixed Methods* (2006), in its call for papers defines mixed methods as 'research in which the investigator collects, analyses, mixes, and draws inferences from both quantitative and qualitative data in a single study or a program of inquiry'. A more comprehensive definition is provided by Creswell and Plano Clark (2007: 5) who define mixed methods as follows:

> Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems that either approach alone.

Teddlie and Tashakkori (2010: 5) define the methodology of MM as: "The broad inquiry logic that guides the selection of specific methods and that is informed by conceptual positions common to mixed methods practitioners (e.g., the rejection of "either-or" choices at all levels of the research

process). For us, this definition of methodology distinguishes the MMR approach to conducting research from that practiced in either the QUAN or QUAL approach".

This paper will explore the challenges of undertaking mixed methods research through a conceptual framework referred to as the Five Ps of mixed methods research. The Five Ps tend to cover the key categories of challenges that arise from mixed methods research designs. They include philosophical considerations and approaches, as well as methodological choices and processes, competencies, practicalities and political considerations. The Five Ps are aligned against two frameworks for mapping the contemporary MMR landscape before a more detailed discussion on each of the Five Ps is progressed. The paper concludes with options for developing research capacity in MMR.

The five Ps of mixed methods research

Several mixed methods proponents acknowledge the controversies/crises/challenges that face those embarking on mixed methods research (Mingers 2001; Tashakkori and Teddlie 2003; Onwuegbuzie and Collins 2007). Mingers (2001) described in detail four types of barriers to multimethod research however he also argues these are not insurmountable. The barriers identified are: philosophical; cultural; psychological (cognitive); and practical. Tashakkori and Teddlie (2003: 672) identified six continuing points of controversy in mixed methods design and expanded this in 2010 to nine important issues or controversies in contemporary MMR (Tashakkori and Teddlie 2010a). Onwuegbuzie and Collins (2007: 304) refer to four major crises to mixed methods research and indicate how each if these crises can inform considerations of sampling design. The four crises are: representation; legitimation; integration; and politics. This paper acknowledges these issues and seeks to provide a practical framework for addressing aspects of these issues that can be utilised as a pedagogic tool to guide mixed method practitioners especially the novice mixed methods researcher.

Brannen (2005) refered to the 'three Ps' when she detailed the rationales behind the choice of research method in general. The Brannen three Ps include: paradigms; pragmatics and; politics. This paper has built on from this by expanding the Ps and by focusing upon mixed methods research as opposed to research methods in general. The conceptual framework of the Five Ps will now be explored as a means by which to tease out some of the challenges mixed methods research provides for those wishing to be more comprehensive and innovative in their approaches to research through the adoption of mixed methods. The Five Ps framework includes; Paradigms; Pragmatism; Praxis; Proficiency and; Publishing. Table 1 below overviews the framework in terms of the key issues and challenges that arise from the Five Ps and aligns these with the learning objectives for teaching mixed methods developed by Bazeley (2003).

Table 1: The five Ps of Mixed Methods Research (MMR)

Five Ps	Issues & Challenges	Bazeley's (2003) Learning Objectives
Paradigms P1	*Criticism:* From paradigmatic purists and claims of eclecticism. *Challenge:* Need to document and argue paradigmatic stance in MMR.	· Have sufficient understanding of the philosophical bases of research to determine if and how apparent paradigmatic differences in approach might influence their work and be resolved.
Pragmatism P2	*Criticism:* Epistemological relativism and short-sighted practicalism. *Challenge:* Become informed about the key debates and source MMR literature in the chosen field. Rigorously defend the stance and choices made at the interface between philosophy and methods.	· Be familiar with key literature and debates in mixed methods, and with exemplars of a variety of mixed methods approaches to research; · Learn to take risks, but also to justify choices made.
Praxis P3	*Criticism:* Problems related to methodological and data integration. *Challenge:* Informed choices, utilisation and	· Be able to determine the appropriateness of a selected method or methods, based on the question(s) being asked (be question-driven in their choice of methods), and be able to determine whether mixing methods provides a cost-effective advantage over use of a single method;

Five Ps	Issues & Challenges	Bazeley's (2003) Learning Objectives
	application of MMR designs, methods and data analysis.	· Have knowledge of the variety, rules and implications of different sampling methods, and of alternative approaches to dealing with 'error' or deviance from the norm; · Be prepared to recognise and admit what is not known, and seek advice · Develop skills in working collaboratively with researchers using different approaches or methods.
Proficiency P4	*Criticism:* Superficial claims of utilising MM and the need to be proficient in both QUAL and QUANT methods. *Challenge:* Become skilled and competent in both chosen QUAL and QUANT methods and data analysis, as well as skilled and competent in mixed methods and integrated data analysis.	· Have well developed skills in carrying out research using at least one major methodological approach, but also a comprehensive understanding of a range of approaches and methods (if they didn't already), particularly to understand the principles underlying those methods; · Have an ability to interpret data meaningfully, and to ask questions of the data, rather than to simply follow a formula; · Know and understand how software can be used to assist analysis tasks.
Publishing P5	*Issues & challenges:* Political nature of reporting and publishing MMR in academic and discipline based literature such as: disciplinary traditions; levels of acceptance of MMR within disciplines and; reporting MMR in its entirety given word length limitations.	· Develop new ways of thinking about the presentation of research results, especially where the methods used and information gained does not neatly fit a conventional format.

In describing the structure of the second edition of the seminal work on MMR, the *Handbook of Mixed Methods in Social & Behavioral Research,* Tashakkori and Teddlie (2010a) describe the contemporary MMR landscape through components of an emerging map of MMR. This map is made up of three overlapping areas: conceptual orientations; issues regarding methods and methodology; and contemporary applications of MMR. Key issues and developments in the MMR field can be grouped under one of these three areas. The Five Ps have been mapped against these three main areas and are depicted in Figure 1.
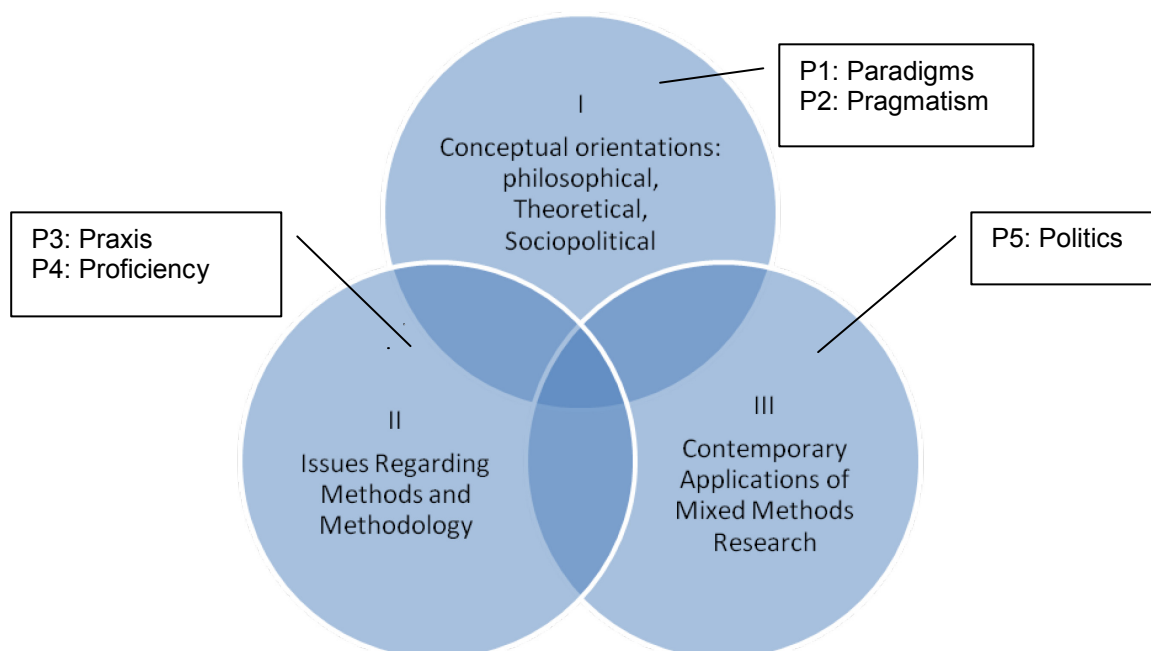

Figure 1: Aligning the five Ps with the map of MMR (Source: Adapted from Teddlie and Tashakkori (2010: 3))

In addition to this emerging map of MMR, Creswell (2010) has also developed a framework for analysing the key developments, issues and priorities of the MMR movement. The framework is a series of five MMR domains which include: the essence of MMR; the philosophical domain; the procedural domain; adoption and use of MMR domain; and the political domain. Again the Five Ps have been aligned and mapped across these domains as presented in Table 2.

Table 2: Aligning the 5 Ps with the domains of MMR

Domain	Domain Description	Five Ps Framework
Essence of MMR	**Nature of MM:** Definitions Bilingual language Incorporating MM into existing designs	**P3: Praxis**
Philosophical	**Philosophical and theoretical issues:** Combining philosophical positions, worldviews & paradigms Philosophical foundations of MM Use of qualitative theoretical lens in MM False distinction between QUAL and QUANT Thinking in a MM way- mental models	**P1: Paradigms** **P2: Pragmatism**
Procedures	**Techniques of MM:** Unusual method blends Joint QUAL & QUANT displays Transforming QUAL data into counts Notation for designs Visual diagrams for designs Software applications Integration & mixing issues Rationale for MMR Validity Ethics	P4: Proficiency
Adoption and use	**Adoption and use of MM:** **Fields & disciplines using it** **Team approaches** **Linking mixed methods to discipline techniques** **Teaching MM to students** **Writing up & reporting**	**P3: Praxis**
Political	**Politicization of MM:** Funding of MMR Deconstructing MM Justifying MM	**P5: Politics (of publishing MMR)**

Source: Adapted from Creswell (2010: 47-9).

Novice MM researchers and those more experienced researchers wishing to utilise MM in their respective research studies will not be expected to be fully versed in all aspects of the MMR landscape as depicted in Figure 1 and Table 2, however the Five Ps will provide a very sound "starting block".

The following discussion provides an overview of each of the Five Ps and the key criticisms and challenges each presents to those wishing to engage in fully informed MMR.

1.1 Paradigms

Methodological choice does not exist within a philosophical void and Brannen (2005: 7) views the choice of method/s as being driven by philosophical (ontological and epistemological) assumptions. One of the first tasks a researcher needs to undertake is to position themselves paradigmatically. This in itself presents the mixed method researcher with some challenges. This section of the paper will examine the sets of assumptions that make up a paradigm followed by an overview of the paradigm wars and the history of mixed methods. This provides the philosophical background and a historical context to the Five P framework for mixed methods research being presented.

There are many definitions of a paradigm and three are offered here. 'A paradigm is a way of looking at the world. It is composed of certain philosophical assumptions that guide and direct thinking and action' (Mertens 2005: 7). Neuman (2006:81) refers to paradigm as 'A general organizing framework for theory and research that includes basic assumptions, key issues, models of quality research, and methods for seeking answers'. Denzin and Lincoln (2008: 22) describe paradigm as follows, "The net that contains the researcher's epistemological, ontological, and methodological premises may be termed a paradigm...All research is interpretive; it is guided by the researcher's set of beliefs and feelings about the world and how it should be understood and studied".

Inconsistency is evident across the literature on how paradigms are dichotomised, polarised, labelled, and at what level of abstraction they are discussed. Nonetheless, there are sufficient levels of common ground to enable the drawing of parallels and connections between these, and the labels assigned to them. It is very important that the paradigm(s) upon which a research proposal and design is based are fully understood and made explicit in the research itself (Maxwell 2005: 36; Mertens 2005: 7; Neuman 2006: 81). This is not necessarily a matter of free choice and may require the researcher to examine some previously unexamined assumptions or personal theories (Maxwell 2005: 37; Mertens 2005: 7).

The debates surrounding research paradigms have a long history and were particularly active in the 1980s. Some commentaries on the debate contend that the struggle for primacy of one paradigm over others is irrelevant as each paradigm is an alternate offering with its own merits (Guba 1990: 27). Creswell (1994: 176) identifies several schools of thought in the paradigm debate or so-called 'paradigm wars'. At one end of the debate are the 'purists' who assert paradigms and methods should not be mixed. Another school of thought is identified as the 'situationalists' who contend that certain methods can be used in specific situations. In direct opposition to the 'purists' are the pragmatists who argued against a false dichotomy between the qualitative and quantitative research paradigms and advocate for the efficient use of both approaches.

It is interesting to note the language that has been expressed around this evolution of mixed methods. For example Buchanan & Bryman (2007: 486) in reference to organisational research, conclude that:

> *The paradigm wars of the 1980s have thus turned to paradigm soup, and organisational research today reflects the paradigm diversity of the social sciences in general. It is not surprising that this epistemological eclecticism has involved the development of novel terminology; innovative research methods; non traditional forms of evidence; and fresh approaches to conceptualization, analysis, and theory building.*

Tashakkori and Teddlie call mixed methods the 'third methodological movement' (2003: ix) whilst Mingers (2003) refers to the ceasefire of the paradigm wars being announced. Johnson and Onwuegbuzie (2004: 14) state that mixed methods research is a 'research paradigm whose time has come', while Cameron and Miller (2007) use the metaphor of the phoenix to illustrate the emergence of mixed methods as the third methodological movement, arising from the ashes of the paradigm wars. Cameron (2008) takes this analogy further by asking whether the phoenix has landed in terms of research conducted within management research.

Teddlie and Tashakkori (2010) have produced an expansive list of paradigmatic stances taken within MMR. These include the; a-paradigmatic stance; substantive theory stance; complementary strengths stance; multiple paradigms; dialectic stance; and single paradigm stance. A brief description of each of these stances in listed in Table 3.

Another perspective on paradigmatic choice in MMR has been devised by Greene and Caracelli (2003) who refer to the interface between philosophy and methodology and attempt to advance the conceptual mixed methods paradigm debate. The authors have delineated between several different stances on the mixing of paradigms in mixed methods research. The four stances exist along two dimensions, the first dimension takes the position that: paradigms do matter significantly when making inquiry decisions. There are two stances related to this dimension: dialectic and the new paradigm. The second dimension takes the position that: paradigms are not critically important in the making of inquiry decisions. The two stances related to this are: pragmatic or context driven and concept driven (Greene and Caracelli 2003: 96).

Table 3: Paradigmatic stances in MMR

Paradigmatic Stances	Position taken
a-paradigmatic stance	**For many applied studies in real world settings, paradigms are unimportant**
Substantive theory stance	**Theoretical orientations relevant to the research being undertaken (eg critical race theory, attribution theory) are more important than philosophical paradigms**
Complementary strengths stance	**MMR is possible only if the different methods are kept as separate as feasibly possible so that the strength of each paradigm is maintained**
Multiple paradigms	**Multiple paradigms may serve as the foundation for MMR. In some MMR designs a single paradigm does not apply**
Dialectic stance	**Assumes all paradigms offer something and that multiple paradigms in a single study contributes to a better understanding of the phenomenon being studied**
Single paradigm stance	**Initially formulated to provide the philosophical foundation for MMR-sometimes referred to as the "alternate paradigm stance' (Greene 2007). Examples include: pragmatism; critical realism and; transformative paradigm**

Source: Adapted from Teddlie and Tashakkori (2010: 14-16).

The Greene and Caracelli (2003) and Teddlie and Tashakkori (2010) frameworks for paradigm stances in mixed methods research provide an excellent starting point and launch pad for those choosing to engage in mixed methods research and needing to position their research approach paradigmatically. Whatever the approach taken, mixed methods researchers need to acknowledge the paradigm debate and rigorously defend their paradigmatic choices/stance.

A common stance taken in MMR is that of pragmatism or what Teddlie and Tashakkori (2010) have referred to as an example of a single paradigm stance. The second P in the Five Ps framework is pragmatism however the framework does not advocate an either-or approach to paradigmatic positioning. Pragmatism here in the Five Ps framework refers to becoming informed about the key debates in the MMR literature in the chosen field and rigorously defending the stance and choices made at the interface between philosophy and methods. Pragmatism here refers to the interface/bridge between philosophy and methods.

1.2 Pragmatism

The second of the Five Ps of mixed methods research is pragmatism. Pragmatism in its simplest sense is a practical approach to a problem and has strong associations with mixed methods research. Pragmatism can be considered a bridge between paradigm and methodology or what Greene and Caracelli (2003) refer to as a particular stance at the interface between philosophy and methodology.

Historically, pragmatism can be traced to an early period from 1860-1930 and the neopragmatic era from 1960 to present (Maxcy 2003). Many mixed methods researchers and theorists draw strong associations with mixed methodology and pragmatism (Bazeley 2003; Greene & Caracelli 1997 & 2003; Maxcy 2003; Tashakkori & Teddlie 2003; Johnson and Onwuegbuzie 2004). Johnson and Onwuegbuzie (2004: 17) summarise the philosophical position of mixed method researchers when they make the following statement:

> *We agree with others in the mixed methods research movement that consideration and discussion of pragmatism by research methodologists and empirical researchers will be productive because it offers an immediate and useful middle position philosophically and methodologically; it offers a practical and outcome-orientated method of inquiry that is based on action and leads, iteratively, to further action and the elimination of doubt; and it offers a method for selecting methodological mixes that can help researchers better answer many of their research questions.*

Patton (2002) identifies as a pragmatist, stating the aims of doing so as a means to sensitising researchers and evaluators to methodological biases that accumulate from their own socialisation experiences within their respective discipline areas. He offers a pragmatic approach as a means of promoting methodological appropriateness to enable researchers to increase their methodological flexibility and adaptability. This position is epitomised in the following:

> *My pragmatic stance aims to supersede one-sided paradigm allegiance by increasing the concrete and practical methodological options available to researchers and evaluators. Such pragmatism means judging the quality of a study by its intended purposes, available resources, procedures followed, and results obtained, all within a particular context and for a specific audience (Patton 2002: 71-2).*

Pragmatism has a strong philosophical foothold in the mixed methods or methodological pluralism camps. This can present challenges for the mixed methods researcher in terms of claims that pragmatism is eclectic. It is very important for the mixed methods researcher to acknowledge these criticisms and rigourously defend pragmatic approaches and choices. The work of Rossman and Wilson (1994) and Morgan (1996) may be useful in this respect. Work by Greene and Caracelli (2003) referred to in the previous section of this paper makes a good starting point as well. They state that there are two very important implications for mixed methods researchers. The first refers to a concern by Greene and Caracelli (2003: 107) that by attending too little to philosophical ideas and traditions will mean that mixed methods researchers will be 'insufficiently reflective and their practice is insufficiently unproblematized'. These authors acknowledge and clearly state that 'paradigms, mental models, or some other representations of philosophical beliefs and values *should* matter in mixed methods inquiry' (Greene and Caracelli 2003: 107). The second implication is framed as a suggestion by the authors that it is time to reframe the key issues from the role of paradigms in mixed methods research to issues about the legitimacy of practical inquiry decisions. They conclude by advocating for:

> *The importance of context, substantive theory, practical resource constraints and opportunities, and political dimensions of social research as equally important bases for practice decisions…It is time to balance the philosophical, conceptual, practical, and political considerations so relevant to our inquiry (Greene & Caracelli 2003: 108).*

The second edition of the Handbook of Mixed Methods in Social & Behavioral Research (Tashakkori and Teddlie 2010a) has several chapters dedicated to philosophical issues of MMR and in particular pragmatism (Biesta 2010; Greene and Hall 2010; Johnson and Gray 2010). Biesta (2010: 114) argues after a careful analysis of pragmatism and the philosophical foundations of MMR that "although pragmatism is unable to provide the philosophical foundation for mixed methods research, it has some important things to offer particularly in helping mixed methods researchers to ask better and more precise questions about the philosophical implications and justifications of their designs". Biesta concludes that Deweyan pragmatism has made a major contribution through eradicating the epistemological dualism of objectivity/subjectivity (2010: 113). Johnson and Gray (2010: 87) in their exploration of the history of philosophical and theoretical issues in MMR make the following statement, "During the emergence of MM as a third methodological paradigm (along with QUAN and QUAL), MM has struggled somewhat with to develop a corresponding philosophical paradigm. Many or perhaps most leaders in the field are advocating some form of philosophical pragmatism". For Greene and Hall (2010) pragmatism results in a problem solving, action- oriented inquiry process based on commitment to democratic values and progress.

Tashakkori and Teddlie (2010b: 16) pose a question "What are the methodological principles that bind practitioners of MMR together regardless of differences on other issues?" In answering this question they believe there are 2 methodological principles to MMR that distinguish it from other research approaches:

- Rejection of the either-or at all levels of the research process
- Subscription to the iterative, cyclical approach to research

This embodies the discussion of pragmatism as the bridge between philosophy and methodology and also brings us to the third of the Five Ps, praxis.

1.3 Praxis

Once a researcher has positioned themselves paradigmatically and entered the interface between philosophy and methodology then process issues come into play. Praxis is the practical application of theory and represents the third P of the Five Ps framework of mixed methods research. The mixed methods researcher needs to be knowledgeable, informed and familiar with the growing body of literature that forms mixed methods as a third methodological movement. They must also become familiar with discipline based mixed methods research and literature. The most important issues in this respect is the praxis related to methodological and data integration in mixed methods research.

Kelle and Erzberger (2004:172) advocate for the frontier between qualitative and quantitative research as not needing to be so impenetrable, asserting that models that integrate quantitative and qualitative methods are developed mostly at an abstract methodological level. These authors see this as a fundamental shortcoming of these models, in that '...they frequently attempt to formulate methodological rules for methodological integration without formulating a relation to any theoretical ideas about the nature of the subject area under investigation.' (Kelle & Erzberger 2004: 176). Flick (2002: 261) supports this argument, claiming problems that arise due to combining quantitative and qualitative methods are yet to be satisfactorily resolved. He views this attempt at integration as problematic, as it is restricted to the level of research design, or what Kelle and Erzberger (2004:176) refer to as methodological rules for integration.

Natasi, Hitchcock and Brown (2010: 318) refer to integration in reference to MMR research designs and research design typologies. They identify themes which reflect an integrated perspective in relation to "precursors and basic design criteria: types of methods/data mixed, timing of mixing, breadth of mixing, rationale for mixing, and researcher orientation". Greene (2007: 125) describes integrated MMR designs as those in which "methods intentionally interact with one another during the course of the study [and as a result] offer more varied and differentiated design possibilities".

Bazeley (2010: 432) focuses upon the challenge of integration in MMR and argues for the assumption that the integration of data and data analysis is acceptable and necessary. Nonetheless, she goes on to assert that the level of this integration in many MM studies still remains underdeveloped. Bazeley (2010: 432) defines integration in MMR:

> *Integration can be said to occur to the extent that different data elements and various strategies for analysis of those elements are combined throughout a study in such a way as to become interdependent in reaching a common theoretical or research goal, thereby producing findings that are greater than the sum of the parts.*

In terms of Praxis the challenges for MM researchers is the tackling of the issue of integration in terms of research designs, methods and data analysis. Tashakkori and Teddlie (2003: 672) have identified six continuing points of controversy in mixed methods research. One of these is design issues in mixed methods research. The methodological and analytical issues related to the praxis of mixed methods involves choices the mixed methods researcher needs to make in reference to:

- Research design and typology
- Sampling
- Data collection strategies
- Data analysis
- Inferences and inference quality.

One of the main concerns Bryman (2008) has of mixed methods research is that it is often insufficiently justified. This remains one of the key challenges for mixed methods researchers. These methodological choices are important and need to be justified and demonstrate methodological congruence. To aid this process Morse (2010: 351) advocates 5 checks when presenting a MMR design or the writing up of a MMR study along with what she refers to as an "armchair walkthrough" to ensure that the MM researcher has considered all optional designs and methodological choices. The five checks include stating the following in terms of the chosen MMR design:

- Theoretical drive: Inductive or deductive
- Core component: QUAL or QUAN
- Supplemental component(s); qual or quan
- Pacing: Simultaneous or sequential
- Point of interface: Analytic or results narrative

For the researcher who is embarking on mixed methods research the key issues here are in relation to the praxis of mixed methods approaches and research designs. This involves: consideration about how to apply a mixed method research design; choosing the right mixed method research design or typology; formulating the integration of methodologies; designing the integration of data and data analysis and; attention to inferences and inference quality. Once these very important praxis issues have been made then it is the proficiency or competence of the researcher that comes to the fore.

1.4 Proficiency

Research competency and proficiency also becomes a challenge for those utilising mixed methods as mixed methods researchers not only need to be competent in both qualitative and quantitative methods but must be informed and practiced in mixed methodologies. This represents the fourth P in the Five P mixed methods framework. Bazeley (2003) refers to the skills required of the mixed methods practitioner:

> *Assuming a goal of developing proficiency in carrying out a mixed methods study, students should have background knowledge of, and ideally experience in, gathering both text and numeric data, and in working analytically with both text and numeric data (i.e. both statistical methods and interpretive analysis of unstructured data). While it is necessary for those coming into mixed methods to have a background in both qualitative and quantitative approaches, it is important that they gain that background in a non-prejudicial way, i.e. that they do not see each of these approaches as exclusive and opposed.*

Teddlie & Tashakkori (2003: 45) referred to the need for mixed methods researchers to be 'methodologically bilingual': skilled in both quantitative and qualitative research methods. Cameron (2011: 263-4) calls for the need to teach for "methodological trilingualism" in future MM researchers:

> *Not only do they need strong grounding in their chosen quantitative and qualitative methodologies and associated paradigms but they also need to be cognisant, knowledgeable and fluent in the theoretical foundations of mixed methods, the specific mixed method methodological issues (research designs and typologies, mixed methods sampling, data priority, implementation and integration,) and the quality frameworks that have been developed for mixed methods.*

In a discussion on the practical issues related to current MMR, Tashakkori and Teddlie (2010b: 29) refer to the notion of a "connoisseur of methods" which they determine is usually developed through "the process of applying research tools, which individuals had acquired from a patchwork of graduate and undergraduate coursework and prior experiences, to answer complex questions or problems that could not be addressed properly within the QUAN or QUAL traditions alone".

McMillan and Schumacher (2006: 401) draw attention to both the advantages and disadvantages of using mixed methods, listing three disadvantages. The first of these disadvantages is the researcher's need to be proficient and competent in both qualitative and quantitative methods (note the discussion above in reference to "methodologically bilingual"; "methodological trilingualism"; and "connoisseur of methods"). The second disadvantage is the extensive data collection and resources needed to undertake a mixed method study. The last refers to a tendency to use mixed methods labels liberally to studies that only mix methods superficially.

The study by Bryman (2008) of published social science journal articles from 1994-2003 that utilised mixed methods found that just under half of those that used mixed methods did so by presenting the qualitative and quantitative data in parallel and only 18% of the articles genuinely integrated the two sets of findings. The studies by Hurmerinta-Peltomaki and Nummela (2006) and Cameron (2008) found similar findings. Hurmerinta-Peltomaki and Nummela (2006) analysed mixed methods in International Business journal articles from 2000-2003 and found that the majority of these (60%) used both qualitative and quantitative data collection but analysed these within their own tradition (i.e. quantitative data analysed using quantitative methods and qualitative data analysed using qualitative methods). Cameron (2008) reviewed conference papers from the 2007 conference of the Australian and New Zealand Academy of Management (ANZAM) (n=281). The majority of mixed method type papers were in the classification (n=22 or 78%) that analysed qualitative data qualitatively and analysed quantitative data quantitatively. The results of these studies points to an over reliance of mixed methods research types which maintain the quantitative qualitative divide and the non use of more integrated mixed method designs.

A major challenge for mixed methods researchers relates to the levels of integration between qualitative and quantitative methods that such research achieves or claims to achieve. Integration at the level of data analysis is an important aspect of becoming proficient in MMR. Tashakkori and Teddlie (2010b: 25-26) identified three trends in relation to analysis issues in MMR: MMR data analysis as a separate and distinct issue; a dramatic increase in data analysis processes unique to MMR; and new MMR analyses that borrow/adapt existing procedures in the QUANT and QUAL

traditions. In terms of the second trend Tashakkori and Teddlie (2010b: 820) have identified distinct new analytical techniques

1.5 Publishing

The publishing of mixed methods research is also an issue that needs attention. Despite a small but growing section of academic publishing that is focused on mixed methods the publishing of mixed methods represents the last P of the Five Ps of mixed methods and includes its own set of challenges and issues.

Brannen (2005: 10-11) refers to politics in her three Ps that describes the political researcher and identifies feminist, social justice, disability and new childhood studies as areas of research that she considers political. Brannen (2005: 26) does however refer to issues in mixed methods and in reference to publishing makes the salient point that:

> *…academic journals tend to be organized around disciplines and may favour particular types of research….Some researchers using mixed methods may for such reasons report their qualitative and quantitative data separately. Researchers presenting evidence based on both qualitative and quantitative methods but drawing upon one set of evidence and under reporting the other may risk criticism for not fully exploiting the possibilities for the analysis of both sets of data.*

Tashakkori and Teddlie (2010b: 820) noted the link between the MMR and qualitative research communities in terms of their respective positions outside the mainstream in certain disciplines:

> *Undoubtedly, the MMR and QUAL communities are both outside the mainstream in certain fields still dominated by postpositivism, such as psychology in the United States…in these highly QUAN-oriented journals, the only way that QUAL research was introduced has been through mixed methods research. Politically, there is an assumed kinship between the QUAL and MMR communities in trying to introduce methodological diversity into highly traditional QUAN disciplines.*

This paper argues that the last of the Five Ps is related to politics but not as Brannen has described it. Here the last of the Five Ps refers to the politics of publishing mixed methods and represents the last challenge to those engaged in mixed methods research.

Studies that utilise mixed methods approaches may face problems in being published due to dominant paradigmatic views expressed within discipline fields (Welch & Welch 2004; Hurmerinta-Peltomaki and Nummela 2006). Some journals explicitly exclude certain methodological approaches, whereas others imply methodological preferences. In a lot of respects decisions about where to submit mixed methods research for publication is determined by the level of acceptance within disciplines and specific publications themselves.

Stange, Crabtree and Miller (2006: 29) note the progress being made in the field of family medicine towards the acceptance, use and benefits of using mixed methods research. Even so they conclude that:

> *…the dramatic advances in the scope and sophistication of conducting mixed methods research have not been met with parallel progress in ways of disseminating the results of mixed methods studies. From our point of view, a major dilemma is that the results of multimethod studies often are segregated in different publications that reach limited and often nonclinical audiences… Thus, different fields only come to know part of the research—reminiscent of the story of the 4 blind men each feeling a different part of the elephant and thus unable to develop a coherent idea of the whole.*

They go on to offer a set of five solutions to this problem:

1. Publish quantitative and qualitative papers in separate journals, but with clear references and links to the other article(s).

2. Publish concurrent or sequential quantitative and qualitative papers in the same journal.

3. Publish an integrated single article that describes both methods and findings and draws overarching lessons, with or without appendices that provide study details.

4. Copublish separate qualitative and quantitative papers accompanied by a third paper that draws overarching lessons from analyses across the 2 methods.

5. Develop an online discussion of readers and invited commentators to foster cross-disciplinary communities of knowledge (Stange, Crabtree and Miller 2006).

Dahlberg, Wittnik and Gallo (2010) also provide a very practical and detailed account of how MM researchers can write for funding and publication and provide structural advice on the distinct task of writing up MMR and MM research proposals.

2. Conclusion

Mixed methods researchers need to be versatile and innovative with a repertoire of research skills that exceeds those needed for single mode research. They need to explicitly state their philosophical foundations and paradigmatic stance before rigorously defending their methodological choices and demonstrate a sound knowledge base of mixed methods research designs and methodological considerations. They need to demonstrate proficiency and competence in both the quantitative and qualitative methods chosen as well as proficiency and competency in applying the rules of integration to methods and data analysis. They are also required to become cognisant of the politics of publishing in a new and emerging methodological movement without debasing or underreporting the essence of their mixed methods studies. The Five Ps framework can provide those wishing to embark into mixed methods research with the essential components of a mixed methods starter kit, inclusive of a contemporary checklist of contentious issues, risks and traps that require consideration. Tashakkori and Teddlie (2010b: 29) refer to the need for MM researchers to become "methodological connoisseur[s]" whilst Cameron (2011: 263) calls for the need for "methodological trilingualism" in those wishing to engage in MMR. Both these capacities require advanced research skill levels and competencies. As a consequence the framework also offers higher degree supervisors and educators with a guiding framework for building mixed methods research capacity. It is hoped the Five Ps framework for mixed methods research will provide a pedagogic tool for guiding the teaching of mixed methods research and will continue to be developed. It is envisaged this development may lead to a more comprehensive framework and supplementary curriculum development for higher degree research students.

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