



THINK PIECE

Mixed Methods as Methodological Innovations: Problems and Prospects

Steve Miller

Loyola University, Chicago, United States

One of the most recent methodological innovations has been in the area of what is now referred to as Mixed Methodology (hereafter MM). The most serious and comprehensive volume in this area is probably, *The Handbook of Mixed Methods in Social and Behavioral Research* (Tashakkori & Teddlie, 2003). The Handbook is a sophisticated compilation of various authors who explore the many dimensions of this emerging field. It is not my intention to review the volume, but rather to make the claim that MM still has a host of methodological issues that must be clarified before the potential development of this area can take their place as being relevant to the social and behavioural sciences. What I would like to do, then, is offer some ideas which can become the basis of further debate. The intent is to present an overview and summary of what I consider to be the major problems that still exist in the area of MM.

To begin with a quick overview for those who are not familiar with the strategies of MM: the basic assumption is that if one can combine at least two different strategies, techniques or designs to a given research problem, the findings of such an enterprise will go beyond the use of only one approach. MM employs a variety of terms that attempt to characterize its uniqueness and define basic approaches. For example, it is assumed that the researcher will employ both a quantitative and qualitative strategy in the exploration of the research question. However, the direction of the exploration can be concurrent or sequential, that is, for the first, the researcher utilizes two parallel approaches to examine the research question or hypothesis, while in the sequential approach one makes a conscious decision to use one or the other approach first. Thus, in the sequential design, there is a distinction made between Quan or Qual Dominant. To give a brief example: the researcher chooses to utilize the traditional Quan strategy of confirmatory research with the testing of one or more hypotheses followed by some form of qualitative analysis. There are, of course, a variety of methodological strategies here and Tashakkori and Teddlie (2003, Chapter 26) take the reader through a rather complex maze of possibilities. It is worth noting that all of these strategies and designs are directed toward what they label 'inference quality.' That is, whatever approach the researcher finally decides upon, the aim is always directed towards a claim that the final 'inference(s)' is/are more powerful than would be the case if only one strategy were employed. What I would like to do now is to further explore a variety of issues concerned with this issue.

Correspondence: S. Miller, Psychology Dept., Loyola University Chicago, 6430 North Kenmore Ave., Chicago, IL 60626, USA. Email: smille4@luc.edu

Logic-of-Choice

An area within MM that has not been adequately addressed is how one *chooses* to proceed with a given MM design. There are two aspects here which I will call the external and the internal; the latter being the more important. The external refers to how a researcher, having formulated a given research question and deciding to utilize MM, decides how to proceed. There are two possibilities: the first is that one simply chooses from the MM designs possible (perhaps randomly) and argues that whatever is chosen will still yield useable sets of data; the second is that there are reasons for choosing a given approach. While the first is possible but not plausible, the second, it would seem, must be guided by previous training and preference for a specific way to proceed. For example, if the researcher has been trained in quantitative methods, she would probably (given a sequential strategy) prefer a Quan-dominant approach, and for one trained predominantly in qualitative methods, Qual-dominant would be the preference. For concurrent designs, the question of choice could remain open. Whatever choice is made, the more salient issue is whether one is committed to the equality of the approaches. That is, if I choose a Quan-dominant strategy (in a sequential design), I must in some way still believe that both approaches will be equally useful in producing data that will strengthen the inference process over and above simply choosing one method. If this assumption is not made, then the external logic-of-choice issue is one based on a given preference, and the other method serves only in an ancillary way. At least, then, in a sequential design for MM, the 'second' method cannot serve or have the same weight as the first in promoting inference quality. However, what the exact role of the other method should be has not been clarified in the MM literature. A related issue is whether some choice of approach, design or strategy automatically excludes the possibility of MM. For example, if I am committed to a confirmatory hypothesis testing model, the very fact that I am engaged in research of this kind is sufficient (perhaps even necessary) for not pursuing MM – after all, if I test a hypothesis and then draw an appropriate inference, what more can/needs to be said.

This brings us to what I have labelled the 'internal' dimension of the logic-of-choice issue. I use the term internal because I am referring to the identification of a process (or processes) by which the researcher can justify the use of a given approach by appeal to some set of rules. This is a crucial issue for MM because without it one is relegated to 'external' issues only. The internal dimension attempts to see if a rationale can be provided for knowing how and why to apply a given MM approach. It is not simply declaring that you will utilize one in your research but a justification for doing so. This aspect of MM has hardly been addressed but here are some initial inquiries which look promising. For example, Miller (2003) has argued that there needs to be an explicit commitment to a Quan or Qual perspective and that, for him, Quan is the paradigm of choice simply because the basic assumptions have been clearly systematized. Thus, overall, the quantitative approaches dealing with sampling strategies, hypothesis testing, and statistical techniques, and so on, are clearly articulated, reproducible and independently evaluated. A researcher with a Qual perspective will attempt to make a similar case.

Miller also extends the logic of the Quan-dominant approach by showing under what conditions the qualitative analysis may proceed. He calls these conditions 'placeholder effects' and they work as follows: assume a hypothesis confirmation model utilizing two-way Analysis of Variance and that there is a statistically significant Main Effect. This Main Effect then becomes the relevant 'placeholder effect' for further qualitative inquiry, either between various groups or one particular group. What specific form the qualitative analysis should take must, in turn, be justified by the researcher. Other issues dealt with by Miller are qualitative validity and reliability and inference quality. Along these lines, see Gatta (2003) and Gatta and Miller (2006). Gatta, for instance, has developed the beginnings of a sophisticated quantitative model whereby, for social survey data, rules are formulated in which the qualitative data must exactly match the underlying quantitative assumptions. Gatta calls such rules 'epistemological link' between the two approaches.

Some additional 'internal' issues still remain. One is to determine if the chosen strategy is to be judged as 'successful.' That is, what standard must be applied – or can be applied – to judge that the selection of a given MM strategy has been the 'correct' one? In other words, the issue is one of comparability – knowing what standard of comparison to utilize.

There is no simple solution to this issue of ‘comparability’ because any claim that a MM strategy had been ‘successful’ would require a fourfold comparison. For instance a Quan-dominant would have to be compared with a similar Qual-dominant study plus, if one were to logically extend it, one quantitative and one qualitative study with no MM elements, all directed, of course, to the same research question. This situation would place impossible demands on the researcher, or for that matter, a particular research community. Likewise replications of MM studies are to my knowledge non-existent.

Another problem with MM designs is the lack of what I will call a ‘defeasibility criterion.’ By this I mean[,] the very nature of a MM design implies that the strategies taken together compliment one another in such a way that their combined effects are clearly discernible. But how is one to determine this? It seems that (in sequential – one approach dominant strategies) that one emphasis must serve as a ‘supportive’ or ‘clarifying’ function of the other. However, when and how it does is not clear. For instance, returning to Miller’s (2003) analysis, the ‘placeholder effect’ already determines that a hypothesis has been shown to be statistically significant and the remaining role of the qualitative analysis must be one of further ‘interpretation’ or ‘clarification.’ Nonetheless, the qualitative portion is being conducted under its own assumptions, and so there is no clear-cut way of assessing whether or not it is providing a ‘correct’ deeper interpretation of the quantitative findings. Or put differently, is it possible to apply any defeasibility to MM designs?

I am not necessarily supporting here a return to the so-called Paradigm Wars (Smith, 1983; Smith & Heshusius, 1986) where one simply dismisses the plausibility of MM approaches by arguing (often vaguely) that one ought not to mix them because they are based on different epistemological and ontological assumptions. I believe there is now a plausible literature (Morse, 2003) attesting to the fact that many of the assumptions of quantitative and qualitative analysis are not mutually exclusive. My focus here, rather, is to assume that MM is here to stay but before it can accomplish what it is purportedly able to do, a series of further questions must be addressed.

The Pragmatic Turn

There have been recent attempts (Maxcy, 2003) to show that MM is ‘correct’ because it can be identified with the philosophy of pragmatism. The argument is that whatever MM designs or strategies are selected, the litmus test of their acceptability and validity is their compatibility with the principles of pragmatism. At times, this connection comes down to a rather generous interpretation of Dewey and Peirce that are then condensed into some version of a ‘workability’ criterion. There is nothing wrong in arguing that whatever procedural rules one employs in an MM design are sufficient to justify the particular findings; it is just that these criteria are often unknown in some systematic way. It is not the case that such criteria are beyond development, only that at the present they have either gone unrecognized, or recognized and deflected, under the guise of ‘pragmatism.’ In effect, at present, anything is justifiable within the MM umbrella, since the criterion(ia) for workability can assume a large range of possibilities. There is also the fundamental philosophical point about pragmatism, as an epistemological theory, that the workability or success criterion may simply prove to be false, there is no guarantee that if the particular MM design ‘works’ it is therefore true (Schmitt, 1995).

Of course, if one lays criticism on MM in this way, one should also suggest some alternative epistemological stance. One that comes to mind is simply to declare that MM are compatible with the view of minimal realism, i.e., such methods are in principle, capable of ‘corresponding’ to actual states-of-affairs in the world (Trout, 1998). Indeed, if the claims of MM are valid, then such research approaches may actually strengthen the minimal realism position in the sense that a deeper or more comprehensive description of ‘reality’ has been captured. My own inclination for some type of foundational grounding of MM lies in the epistemological framework of reliabilism. Very generally, reliabilism holds that a belief (whatever it may be, e.g. a methodological one) is justified if it is produced by a process (or processes) that generally yield truth-like statements (Goldman, 1986, 1992, 1999:129-130). Other takes on this theme can be found in Miller and Fredericks (2002a, b). Although the term reliabilism is similar to the research notion of ‘reliability,’ its focus is different. By way of analogy, reliabilism shares some common elements with reliability in the sense that a reliable belief can be counted on to continue to be reliable over time and (perhaps) in different contexts. However reliability, while a possibly necessary condition for knowledge production, is not sufficient because

reliable indicators can be mistaken (although if highly reliable not so likely). Reliabilism, then, is more akin to the research idea of *validity* in that if we can demonstrate some form of it, let us say construct or discriminant validity, the process which leads us to this is most likely a process that supports our beliefs in a strong way. For MM, reliabilism would be a doctrine which argues that the various forms of MM are the very ones that are capable of producing reliable beliefs.

In passing, yet another issue related to the above considerations is worth mentioning. If MM must confront epistemological concerns, then it must somewhere examine ontological ones. Ontology is simply the other side of the epistemological research coin. The so-called paradigm wars attempted in rather crude fashion to address the ontological by stating quantitative approaches are reflective of an underlying knowable reality and qualitative ones are not. Without re-entering this fray once again, I merely want to say that MM presents an interesting case for ontological reflection. As Miller and Fredericks (2006) argue, MM approaches and techniques are rather unique for it is positing some type of reality, but what it is, is problematic. As Miller and Fredericks put it, there is a need to clarify exactly what kinds of ‘ontological commitments’ we are making when any or all MM strategies are utilized. Like the above epistemological notions of pragmatism and reliabilism, quick solutions evade us. A possible moderate stance here might be Miller’s (2003), where he argues that the Quan-dominant approach is better suited to suggesting an objective reality, with the Qual dimension serving in an ancillary, but important, role. Indeed the qualitative, under the placeholder condition, actually gives us clarifying (and ‘true’) views of social reality, which are presupposed by the assumptions of the Qual-dominant view. But this is only one view that needs to be addressed by MM.

Future of MM

This brief review has attempted to highlight some of the major issues presently confronting MM as a unique methodological innovation. Many of these issues simply need to be addressed in a more systematic way by researchers in this area. MM does hold the promise of opening up to social and behavioural research new ways of addressing a wide range of interesting problems. Their strength lies in the possibility that there may be a variety of avenues to tap into a social reality that is multi-layered, or at least one that presents a variety of dimensions. I will conclude by suggesting a few questions concerning MM that can hopefully serve as the basis of further reflection and debate:

1. Are present methodological innovations in both quantitative and qualitative research sufficient to exclude the need for MM strategies?
2. What specific methodological *rules* need to be worked out to assess the ‘success’ of two different MM designs directed toward the same research question?
3. How can one tell if the ‘inference quality’ of a given MM approach is enhanced? Is this even logically possible?
4. Can MM support social policy formulation, implementation, and evaluation?
5. Is the idea of ‘place-holder’ effects, as developed here, redundant for actual research practice?
6. Can MM be ideologically free?

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