

# Critical Review: The Role of Mixed Methods in Education Research

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## Abstract

The critique of the article was based on; the issue/problem research addressed and why, methodology and the key findings. Mixed methods research is a combination of both qualitative and quantitative data collection and analysis, where quantitative data has closed ended questions. On the other hand qualitative data consists of open ended information gathered through interviews. Therefore this paper explores the role of mixed methods in research.

Mixed methods research is defined as an approach in relation to research question that call for real life contextual factors in terms of socio cultural aspects that may enable a researcher to understand a given community in reference to the study of interest by having the investigation of study being done within philosophical and theoretical positions (Johnson, Onwuegbuzie, & Turner, 2007).

## What issue is outlined in this article?

According to the above mentioned article, mixed method is becoming an increasingly approach, the method applies to a variety of fields like sociology, psychology, health sciences and even education. The methodological pluralism is a key feature of mixed methods as it provides a broader perspective compared to a mono method.

In her article *"Mixing methods in a qualitatively driven way"* Jennifer Mason concurs that mixed method enables one's mind to be creative as it goes beyond the micro-macro divide hence extending the logic of qualitative explanation, to me using one method could limit us from more information that we would otherwise have gathered from using more methods, referred to as mixed methods (Bryman, 2006). Chances are that we are able to be more creative when we use mixed methods in exploring our research work and hence "think outside the box" (Mason, 2006).

The reference article mentions that mixed methods research bridge the micro and macro environment alongside the use of a diversity in various fields which enhances reliability of research findings. Just like Mason, the mixed method enables one's mind to be creative as it goes beyond the micro-macro divide hence extending the logic of qualitative explanation, this implies that one method could limit us from more information that we would otherwise have gathered from using more methods, referred to as mixed methods (Bryman, 2006). Chances are that we are able to be more creative when we use mixed methods in exploring our research work and hence "think outside the box" (Mason, 2006).

A study on Pathways to malaria persistence in remote central Vietnam: a mixed-method study of health care and the community' (Morrow et al., 2009) used an Exploratory sequential design where by its 'formative stage' applied qualitative techniques such as observations, focus group discussions and semi-structured interviews from which results were used to guide development of quantitative tools in the 'assessment stage'. Triangulation of findings included in-depth qualitative information supported by quantitative figures in this particular study, the advantage of mixing methods in this study facilitated collaboration between malaria experts and social scientists, which allowed the team to propose non-biological pathways to malaria persistence. Similarly Mason et al suggests that triangulation is important in exploring the phenomena under study as it incorporates the epistemological aspect of research among others in the final findings and it should therefore be considered an outcome other than the process of mixed methods (Ellis, Alexander, Cronin, Dickinson, Fielding, Slaney and Thomas, 2006).

## Why mixed methods?

Mixed methods have been questioned in terms of compatibility of the quantitative and qualitative being used together in a given research, furthermore mixed method is considered to be a much more superior method and it could or should not be used in the context of the same study since there are different epistemological and ontological assumptions in regards to different paradigms and methods. In as much as there have been these debates, "pacifists" have stated that the two methods (quantitative and qualitative) are compatible (Mason, 2006). It is important to consider other reasons for combining qualitative and quantitative methods since using a single method could be inadequate in social research since realities of life and experience are multidimensional. A study using one method could be bias if for example I conclude that in a given area most mothers do not go for hospital delivery because of the distance to the facilities are far. This is because the researcher will only be thinking of the population in numbers and distance covered and ignoring other confounding factors like the attitude of the health workers keeping the mothers away if I was to include interviews in the research. For this

reason its important mixed methods in research has tremendously increased in use to enable a clearer understanding of issues compared to using a single method (Bryman,2007) .

With reference to Azorin *et al* article, mixed method is more advantageous to use if at all it will best address the research problem and the research question (s), this means that it is not obvious that mixed methods do automatically out do mono methods. On the other hand, using mixed methods is advantageous since in a way during analysis we use terms like most, few, some all and even none when dealing with qualitative data. These terms refer to numbers which is the basis of quantitative method. Furthermore, both qualitative and quantitative methods are only different in terms of traditional methods of data analysis otherwise there is enormous similarity in terms of underlying philosophies, paradigms and even the data collection methods (Gorard, 2001).

Diverse philosophical positions like post-positivist and social constructivist, world views, pragmatic and transformative perspectives often relate to one or more theoretical frameworks from social, behavioral or biological sciences to inform the study (Green,2007).

O'Leary (2004) puts forward the argument that what was relatively simple to define thirty or forty years ago has become far more complex in recent times with the number of research methods increasing dramatically. It has been suggested, however, that the "exact nature of the definition of research is influenced by the researcher's theoretical framework" (Mertens, 2005).

Quantitative method is testing objective theories by examining relationships among variables. Philosophically and methodologically built or *designed* around the ability to infer from a sample to a larger population. These are explored through the following ways: Surveys Provides numeric descriptions of trends, attitudes or opinions of a population by studying a sample of that population. Experiments determines if a specific treatment influences an outcome, it involves true experiments, with random assignment of subjects, to treatment conditions, or quasi-experiments that use non-randomized designs. Exploring and understanding the meaning individuals or groups ascribe to a social or human problem (Coffey and Atkinson, 1996).

Qualitative Research is fundamentally an interpretive enterprise that is context-dependent. the research is philosophically and methodologically built or *designed* around the ability to interpret (comprehend/understand) a phenomenon and this inter-subjective (i.e., shared) understanding serves as a proxy for "objectivity" through; ethnography, grounded theory, case studies, phenomenology and narrative research (Chamberlayne, Bornat and Wengraf,2000).

More recent research paradigm originating form multimethods study by integrating qualitative and quantitative approaches whereby many authors provide views on strategies for data collection and analysis in the context of mixed methods.

## **Methods**

### **Sampling**

A sequential mixed methods study with two stages was undertaken to identify mixed methods articles and determine their main characteristics. In the first phase, a qualitative stage was used in the manual search strategy for the purpose of determining whether each article represented a non-empirical, quantitative, qualitative or mixed methods study. This content analysis involved using all information presented in each article (title, abstract, keywords, introduction, literature review, methods, results, discussion and conclusions).

### **Data collection**

In reference to the article being reviewed, an electronic online word search and a manual search was used in the investigation of the meaning of mixed methods. Both qualitative and quantitative methods were used. The manual search was done search was conducted through the SMJ and JOB website specifically Wiley Inter Science data base and the ORM journal website that is SAGE publishing. Where phrases such as "mixed methods", "mixed method", "multi-methods" and "multi-method" were used. Through systematic review, integrated experience and options of mixed methods are shared. From this one can get to understand the influence of conceptual orientation on conduct and interpretation of mixed studies (Ozawa and Pongpirul, 2013).

An electronic search strategy may provide a biased sample of mixed methods studies in the sense that by no means all authors of articles reporting mixed methods research foreground the fact that the findings reported derive from a combination of quantitative and qualitative research, or do not do so in terms of the key words that drove the online search strategy. Moreover, apart from identifying mixed methods studies, the manual search strategy can be used to classify the articles in two main groups, non-empirical and empirical articles, and, additionally, the group of empirical studies can be further divided into three types: quantitative, qualitative and mixed methods articles (Bryman,2006)

### **Data analysis**

Content analysis involving the use of all information presented in each article in terms of the title, abstract, keywords, introduction, literature review, methods, results, discussion and conclusions was done. Tables were

created from the initial data that had been collected. Columns were in terms of journal and year of each article, the articles were then categorized into the journal title, year, volume and issue number, number of total articles, number of non-empirical articles, number of quantitative articles, number of qualitative articles and number of mixed methods articles. This was then followed by descriptive statistics.

The article however does not give references or compare their analysis to other related studies.

### Key findings

The study results show that mixed methods in research is commonly used, Mixed methods research is best depending on the type of study in terms of the study problem, and if it will be feasible. The researcher is best placed if he/she can write the research questions that are both qualitative and quantitative and review to decide on the data collection type. Assessing the relative weight and implementation strategy for each method is wise Creswell (1999).

It's important to predetermine and plan for the use of mixed methods at the beginning of a research process so that procedures are implemented as planned. Researchers need to identify an approach to design which could be typology or dynamic and match the design to the research problem, purpose and the questions of the study. Combining methods (qualitative and quantitative) could be challenging hence the researcher is advised to be explicit when it comes to the reasons for using mixed methods (Greene, Caracelli and Graham, 1989).

The article therefore agrees with the 'paradigm of choices' which rejects the methodological orthodoxy in favour of methodological appropriateness as the criterion for judging methodological quality and so different methods are appropriate for different situations depending on the relevancy (patton, 1990).

The recommendation of the article is that in future there is still much to be learnt in analyzing the contribution of mixed methods towards improvement of several methodological aspects like validity.

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