

## Mixed-methods: An Advanced Approach to Receive an Academic Degree

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### Abstract

The application of mixed-methods approach to receive an academic degree is on the increase nowadays and has drawn interest of the present day researchers. Achieving a degree through a mixed-methods study can be a very fruitful endeavor indeed for the research students. Excellent core handbooks, example studies and ongoing formalization of the approach aid in delivering successful work. Yet, the chosen methodological path may also bring up some specific hurdles in course of the research work. This paper aims to discuss introduction of mixed-methods, most common mixed-methods design, strengths and challenges associated with the method for students who want to accomplish their research work using mixed methodology. Hence, the article has applied the Literature Review Methodology to prove the dynamics and importance of the mixed-methods to apply, for the academic researchers, who pursue an advanced level of research work. The author has applied mixed-methods to do a PhD, and the findings have been cited if and when required. For students, an understanding of these challenges is a first step towards overcoming them, and achieving conscious competence. Intended the audience for this paper is students who want to do or doing mixed-methods studies. Despite this being an innovative method in the domain of research work, there are very few who dare to implement, for, it needs more time, rigorous study, persistence and thinking.

**KEYWORDS:** Mixed-methods, Quantitative Method, Qualitative Method, Academic Degree

### Introduction

The mixed-methods is, probably, a unique and one of the best approaches to go on with a research work, basically for the sake of receiving an academic degree. Certain inevitable aspects such as the human values and ethics cannot be solely objectified or tested, solidified and made visible, and therefore, there is a need to also incorporate the qualitative aspect to have a satisfactory result in a research work. This article places emphasis on both quantitative and qualitative research content so as to achieve a balanced end result. The mixed-methods would be of great asset to the candidates willing to do an advanced level of research work, such as that of a doctorate level.

The challenges these researchers face are numerous and varied (Stockman, 2015). As a teaching and learning community, we are well aware of finance and resource issues (Neumann, 2003), psychological adjustment hurdles (Beeler, 1991), difficulties in negotiating multiple roles (Byers, 2014), or the effects of social (dis)engagement in the scholarly community (Spaulding & Rockinson-Szapkiw, 2012), to name only a few examples of potential obstacles. A potential academic research always seeks to contribute something to the academia that clicks into the minds of the geniuses with queries and questions for further research works.

## Materials and Methods

For the present study, the researcher has chosen to utilize the Literature Review (LR) methodology to prove the dynamics and importance of mixed-methods in achieving an academic degree.

### Mixed-methods Research

Mixed-methods advocate the use of both inductive and deductive research logic which is a great strength in itself. Having an inductive-deductive cycle, the research enables researchers to equally undertake theory generation and hypothesis testing in a single study without compromising one for the other. With matching deductive-inductive dichotomies, researchers can provide better inferences when studying the phenomenon of interest. In fact, it is essential that we move to more sophisticated research designs, multiple data sources, and analysis that create divergent views and findings (Jogulu and Pansiri 2011).

There is a prevailing perception that mixing methods is fairly new, though many older instances can be found even dating back to the 1920s and 30s (De Lisle, 2011). In the last two decades mixed-methods have steadily developed its own typology, terminology and notation system, despite some remaining controversies (Teddlie and Tashakkori 2009). There is excellent core literature available on mixed-methods research, such as Teddlie & Tashakkori (2009), or Creswell & Plano Clark (2011), and also in domain-specific publications, for example by Johnson & Christensen (2008) for business students, or Watkins & Gioia (2015) for social work.

Recently, a third methodology known as mixed-methods has begun to gain researchers' confidence. The mixed-methods approach is also referred to as the third path (Gorard, and Taylor, 2004). The third research paradigm and the third methodological movement (Teddlie and Tashakkori, 2009) is widely used and recognized by various scholars. Mixed-methods, being the third research paradigm, are known to be a profoundly comprehensive technique for research in social sciences through integration of thematic and statistical data. Divergent findings created through differing data collection and analysis techniques appear to lead to greater depth and breadth in overall results, from which researchers can make more accurate inferences with increased credibility (Stockman, 2015).

Before undertaking mixed-methods research, an investigator must clarify the rationale and purpose for data mixing, determine data prioritization, identify appropriate implementation sequencing, and pinpoint where and how data integration will occur (Creswell et al., 2004; Creswell & Plano Clark, 2007; Punch, 1998).

Mixed-methods design rigorously integrates statistical and thematic data to expand and enhance the findings furthermore, data analysis using mixed-methods will amalgamate statistics and thematic approaches (Jack, and Raturi, 2006) and to better understand and explain a social phenomenon (Gubi, Arlbjørn, and Johansen 2003). On this occasion, mixed-methods have complementary strengths and no overlapping weaknesses. For example, "hard" data generated through questionnaire administration are unlikely to capture the soft-core views and experiences in social settings (Parkhe, 1993). Therefore, by undertaking mixed-methods we avoid such occurrences.

By employing mixed-methods, researchers are possibly reducing over-reliance on statistical data to explain a social occurrence and experiences which are mostly subjective

in nature. It is acknowledged that whilst validity and reliability are predominantly derived from quantitative research, qualitative studies provide meaningful in-depth insights through subjective interpretations of experiences that provide plausible answers in relation to social phenomena. The consistency between the experiences of participants in relation to their social settings and life course, which are statistically described in questionnaires, is matched with their subjective interpretations and explanations of those experiences in interviews and focus group discussions. Therefore, mixing of the data collection techniques will only enhance the findings so that the researchers can make inferences with confidence (Jogulu, 2011).

Morgan, (2007) says that mixed-methods research can be juxtaposed to the quantitative and qualitative approaches along three issues that are central to social research methodology: (i) the underlying logic that guides a research design in relation to how theory is connected to data, (ii) the relationship between the researcher and the research process, and (iii) the inferences made from research results, that is whether results are context-dependent or generalisable. Based on these issues, Morgan offers an organizing framework which illustrates how the pragmatic approach translated into mixed-methods research can contribute to social science methodology.

In relation to the first issue, the goal of abductive reasoning is to search for useful points of connection between inductive and deductive reasoning in order to uncover ‘the best set of explanations for understanding one’s results’ (Johnson, Buehring, Cassell, and Symon, 2006). This can provide room for a more ‘holistic triangulation’ by examining ‘the same phenomenon under study from multiple perspectives but also to enrich our understanding by allowing for new or deeper dimensions to emerge’ (Jick, 1979). In relation to the second issue, Morgan (2007) argues that ‘inter subjectivity represents the pragmatic response to issues of incommensurability’: Rather than treating incommensurability as an all-or-nothing barrier between mutual understanding, pragmatists treat issues of inter subjectivity as a key element of social life. From a methodological point of view, this suggests a “reflexive” orientation where we pay more attention to the social processes that produce both consensus and conflict within our field.

### **Mixed-methods Designs**

Before undertaking mixed-methods research, the researcher must clarify the rationale and purpose for data mixing, determine data prioritization, identify appropriate implementation sequencing, and pinpoint where and how data integration will occur (Creswell, 2014; Creswell & Plano Clark, 2014).

Morse (1991) originally developed the standard notation system that describes data prioritization and methodological sequencing. This notation system, now in widespread use among mixed-methods researchers, prescribes the use of capital letters (either QUAN or QUAL) to indicate the dominant method, while lowercase letters indicate the secondary method (i.e., either quan or qual). It is important to note that four-letter abbreviations are used in each case to promote the “equal stature” of both quantitative and qualitative methods (Creswell and Plano Clark, 2014). How the mixed-methods study is conducted is represented either by a plus sign (+) for concurrent implementation of methods or a single-headed arrow (→) for sequential implementation. Plano Clark expanded the notation system to include “methods that are embedded within other methods” (Plano Clark, 2005).

According to (Creswell, Fetters, and Ivankova, 2004) there are three key parameters that define the purpose, content, and structure of mixed-methods strategies: implementation, priority, and integration. Implementation of quantitative and qualitative methods involves data collection in a sequential or concurrent manner, with priority given to one method over the other or both having equal status. A mixed-methods research design requires that the two types of data should be mixed or integrated at one or several stages during the research process depending on whether one follows a sequential or concurrent strategy.

There are numerous ways to conduct mixed-methods research. The four major typologies according to Creswell and Plano Clark (2011) are the Triangulation Design, the Embedded Design, the Exploratory Design, and the Explanatory Design. Each design has a distinct purpose, an inherent theoretical drive (Morse, 1991) an explicit emphasis on the data, a prescribed sequencing for implementing data collection and analysis, and a typical pattern for data integration. Each design also carries its own strengths and challenges.

According to the mixed-methods research, there are five purposes for combining qualitative and quantitative research methods in a single study (Greene et al, 1989) these are triangulation, complementarity, development, initiation, and expansion.

The primary consideration about which design to use stems from its fit with the research problem and corresponding research questions (Creswell & Plano Clark, 2007; Johnson & Onwuegbuzie, 2004). A researcher should also consider his/her skill set and academic preparation, especially if carrying out the study as the sole investigator (e.g., dissertation research). Alternatively, the researcher should assess his/her ability to assemble a team with the necessary expertise to conduct mixed-methods research. Feasibility is another key factor when undertaking mixed-methods research, as it generally requires more time and financial resources. A final, yet important, consideration is whether mixed-methods research is accepted by the intended audience or primary consumer (e.g., dissertation committee) (Creswell & Plano Clark, 2007).

### **Strengths Associated with Mixed-methods Research**

In general, the major strength of mixed-methods research is that the shortcomings of either quantitative or qualitative research as a mono-method can be offset by the strengths of the other. For example, quotes, pictures, or narrative resulting from qualitative inquiry can supplement statistics to convey meaning and offer additional insight, whereas numbers generated from quantitative research can augment pictures and words to add precision, scope, and generalizability. With greater methodological flexibility, a deeper, more comprehensive understanding is possible, undergirded by more credible evidence resulting from convergence and corroboration (Johnson & Onwuegbuzie, 2004).

Mixed-methods will help to learn and master the art of multiple ways of collecting, analyzing and interpreting data that are more holistic in order to understand research problems. Most importantly, these research skills are invaluable for providing academic researchers who wish to take up academic roles in universities with adequate knowledge for effective teaching and supervisory skills. As scholars we should, at least, aim to have a minimum degree of knowledge and experience of quantitative and qualitative research methods (Jogulu and Pansiri, 2011).

Bryman (2006) advocates that mixed-methods allow for multiple purposes. In an explanatory study, for example, a researcher may be interested in furthering understanding about unexpected findings, outliers, or clusters, giving voice to

respondents, or achieving greater completeness by augmenting “dry” quantitative results with more vivid, illustrative quotes from respondents.

Morgan, (2007) says that mixed-methods research takes a dialectical position which seeks synergistic benefits from integrating in a complementary way positivist and interpretive paradigms, quantitative and qualitative methods. The underlying assumption is that mixing-methods results in stronger research but also represents an ethical stance towards conducting research by placing emphasis on ‘plurality of interests, voices, and perspectives’ (Greene, and Caracelli 1997).

According to Stockman (2015) mixed-methods offer a wealth of opportunity for students to grow as independent, self-sufficient researchers. It should not be discouraged simply to avoid a steep learning curve. With an understanding of those challenges in advance, and effective mentoring, mixed-methods can be a very worthwhile and successful endeavor. Therefore, a central tenet of mixed-methods research is that sole use of a single method will not adequately address a given research problem. Both methods, in complement to each other, are viewed as necessary to achieve more comprehensive understanding.

### **Challenges Associated With Mixed-methods Research**

Pursuing a degree through mixed-methods research means particular challenges will occur on the way. Facing challenges and overcoming them enables personal growth, and allows the student to successfully continue on the path towards achieving an academic degree (Stockman, 2015).

Mixed-methods research requires an advanced skill set with a strong foundation in both quantitative and qualitative methods. Some experts recommend undertaking mixed-methods research only after gaining sufficient experience with both methodological approaches separately. Given the prerequisite skills, mixed-methods research can be especially difficult for the lone researcher without access to a research team. In general, mixed-methods research is also considered more burdensome in terms of labor, time, and resources (Creswell and Plano 2007).

Aside from logistical considerations, there are other common roadblocks as well. Mixed-methods researchers may encounter resistance from methodological purists who strive to uphold the epistemological tenets of either quantitative or qualitative research (Johnson and Onwuegbuzie, 2004). Faculty members serving on dissertation committees, in particular, may take a cautionary stance given their responsibility of ensuring the quality and rigor of research projects conducted by students who are typically novice researchers. In addition, because faculty members typically received specialized training in either form of inquiry, but rarely both, they may not be comfortable or believe themselves sufficiently experienced to guide students’ research endeavors and serve as mentors (Kundon, 2001).

Time is of the essence in a mixed-methods study anyway, as the overall duration of execution in collection and analysis will probably be longer than usual. Also, these activities may require travel and additional financing (Halcomb and Andrew, 2009).

### **Conclusion**

The focus of this paper is, in fact, on the advantages of mixed-methods for the academic candidates, who seek to work on the research activities that are innovative, creative, dynamic, participatory and holistic. The concept of mixed-methods is more a shift from rigidity to flexibility, from single and individualistic to pluralistic thinking, from center to



the periphery etc. This needs more time, more effort and more thinking, and the researcher has done everything possible to create this content based on her own research findings (Mishra, 2018). This paper highlights various advantages for adopting mixed-methods, including the benefits gained from multiple data types and variation in data analysis techniques, suggesting an optimal research design for future studies.

The challenges for the students applied mixed-methods are to some extent shared by all students, and also in part by other mixed-methods researchers. However, certain difficulties may arise through the particularity of the chosen methodological approach in pursuit of a doctoral degree. These difficulties and challenges in no way can be solved unless the researcher becomes more creative and the one who supervises him breaks the shackles of old framed structure that does not allow to expand the horizon of study.

A sense of ownership over all components of research, and pride to excel in pursuit of their topic on all levels, should override the challenge of developing skills. Next to this, the analysis is profoundly aided by handling the data directly, rather than merely reviewing results afterwards. Lastly, the an advanced research study is always about more than the research results, but the learning curve of young scholars to become free, critical, self-sufficient academics (Stockman, 2015). Firstly, the popularity of mixed-methods research and perceived novelty may bring certain assumptions into effect, which is a danger to the quality of the study. Next to this, the many research design choices can be quite overwhelming, yet rather vital to the overall success. Some choices may also lead to conflicts with or within the supervisory team, or more generally towards the established ways of the domain(s) involved. This can be related to the paradigm problems.

Though these are challenging moments, they are also great learning opportunities. Through overcoming them, the high standards of a doctoral qualification may be achieved, as the postgraduate student evolves towards becoming an effective academic and practitioner of mixed-methods research. An awareness of the challenges, and increasing independence in addressing support systems and coping mechanisms will enable the student to profit more fully through mixed-methods to obtain doctoral degrees. A researcher's aim should not only be to achieve a degree, but also to see if the method applied is practical, timely, and so far dynamic. Innovative and dynamic researchers prefer to choose to apply missed-methods which eventually produce a unique taste and food for the thought.

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