RE-THINKING MIXED METHODS RESEARCH APPROACH FOR BETTER EDUCATIONAL RESEARCH, POLICY AND PRACTICE

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Abstract
T*he need to re-think mixed methods research for the betterment educational research ,policy and practice is due to the observed limitations in both quantitative and qualitative researches to produce generally acceptable research finding , broaden, deeper and better knowledge of educational issues. Mixed methods research although not without challenges enable researchers to conceptually and analytically integrate qualitative and quantitative research data to explore diverse perspective and uncover relationships that exist between the intricate layers of our multifaceted research questions, hence boosting the validity and reliability research finding, expand and strengthen research conclusions. Moreover MMR approach are generic, it can therefore contribute to the final literature used for educational policies and practices. In this article, the author explain the failures of the classical research models, the rise of mixed method research, and its possible uses, strengths and weaknesses, theoretical foundation and its design as well as it implications for the improvement of educational research, policy and practice.*

Keywords: Quantitative, Qualitative, Mixed method, Research design.

Introduction

To guarantee good research in both quality and efficiency in the collection of primary and secondary data, it is necessary to adapt a model in order to achieve the best possible result. Mono method is associated with the use of one research approach for a given study. On the other hand , the mixed method is characterized by the utilization of two or more approaches of research and in most cases it refers to the use of quantitative and qualitative methodologies. Mixing methods (MM) is about using both qualitative and quantitative techniques and connecting them in an analytically meaningful way. The multi-method is characterized by the use of many approaches, however there exists a differences between the mixed and multi-method even though the two uses two or more approaches. The method is characterized by the creation of a single data set on the other hand the multi-method approach is usually divided into segments that produce a specific dataset.

Mono method is used when the research is focused either on quantitative or qualitative data gathering. Mixed methods -quantitative and qualitative methods

used within the same research in order to achieve different aims and off-set the constraints of the use of single method. A mixed methods study combines quantitative and qualitative data collection and analysis in one study, individually these approaches can answer different questions, so combining them can providethe researcher with more in-depth finding. In general, quantitative data is better at answering questions like what is the effect? And qualitative data can show how and why the results. Summarily,

- Mixed methods research is a hybrid of quantitative research and qualitative research methodology;
- Researchers use the mixed approach to leverage the benefits of each research method;
- Mixed methods often yield more detailed findings, although they are limited by timelines and inadequate resources.

The Failure of Classical Research Models

The emergence of new developments in natural sciences such as Einstein's "Theory of Relativity" and Heisenberg's "Uncertainty Principle" which undermine the foundations of positivism, also led the shaping of an alternative paradigm. According to this new paradigm called post-positivism / interpretive paradigm; reality is complicated, not simple. Systems cannot be classified in a hierarchical order from simple to complex, and the universe cannot be understood mechanically. Having emerged based on this paradigm, qualitative research is grounded on a constructivist, postmodern and post-positivist philosophy. The cause-effect relationship cannot be mentioned in qualitative research methodology. There is the mutual causality, intuition and deep understanding. Since each research is specific to itself and the group being applied, no concern is raised regarding the generalization of information. In this research method, theory and concept are reconstructed each time.

Qualitative research argues that the researcher's own feelings and thoughts' not affecting the research process, in other words objectivity, is not possible. Accordingly, the identification of the problem and the focus of the study are also subjective. Therefore, the researcher's attitude, opinion and value judgments will naturally be a part of the research. Thus, qualitative research is defined as the research in which a qualitative process that uses qualitative data collection methods such as observation, interview and document analysis is followed to identify and explore perceptions and events in a realistic and holistic manner in the natural environment (Yıldırım & Şimşek, 1999).

Considering these basic arguments which quantitative and qualitative research methods are based on, it can be seen that the two research methods show significant differences and even their perspectives on the same subjects are completely opposite. These research methods of two different paradigms are supported by different epistemological, ontological and axiological philosophies (Johnson & Onwuegbuzie, 2004; Bergman, 2011).

Origin of Mixed Method Research

Researchers, not adopting a single quantitative or qualitative research approach alone, see their own side as the ideal paradigm. While the paradigm wars that arose in 90s were continuing among these two methodologies, mixed-method research emerged as a third research method which involved the use of both quantitative and qualitative research methods for research problems that cannot be answered by a mono-method perspective. Both of the paradigms are important and useful for mixed method research (Johnson & Onwuegbuzie, 2004). Mixed-method researchers believe that this hybrid method can serve as a bridge by eliminating the distinction/contradiction between the two paradigms (Onwuegbuzie & Leech, 2005). (Johnson & Onwuegbuzie, 2004).

Therefore, the mixed method researcher is expected to master the two research methods.

According to Johnson & Turner (2003), to master the strengths and weaknesses of quantitative and qualitative research methods is the basic principle of the mixed method. It is maintained that mixed method research based on pragmatist and transformative paradigms balances the limitations inherent in the nature of qualitative and quantitative methods (Firat, Yurdakul & Ersoy, 2014). It emerges as a good way to find answers to the research problem when a single research method is not sufficient. The idea that the combination of quantitative and qualitative methods, instead of using a single method, will provide a better understanding of the research problem is the basic assumption of mixed method research (Creswell, 2012). The mixed method is now used increasingly in research studies in educational sciences. At the end of the 19th century, the first representatives of mixed-method researchers used different data collection and data analysis methods without mixing them with a methodological basis. Since the 1990s, the second generation (Brannen, Bryman, Creswell, Teddlie, Tashakkari et al.) has made a major contribution to the success of the mixed method research with their studies to demonstrate the taxonomy, jargon and application process of mixed method research (Bergman, 2011). After these studies, the mixed method started to be accepted as a separate approach with its own rules at the beginning of the new millennium.

According to Creswell (Fetters & Molina-Azorin, 2017), mixed-method research has gained momentum in 2003 when the first manual on the mixed methodology of Tashakkori and Teddlie was published. Creswell also published the first edition of the Journal of Mixed Methods Research (2007), followed by the best practices by the National Institutes of Health, and finally, mixed method research standards

Undoubtedly, what has fueled the interest has been the increasing complexity of research problems, and the desire for an understanding that is both deep and broad (afforded by qualitative and quantitative data respectively). The increasing importance of the link between research and policy has also played its part, as has the greater availability of data provided by the internet, which enables multiple data sets

to be integrated in different ways, providing a richer and more informed picture of social phenomena.

Tashakkori and Teddlie (2010b) argue that these help to distinguish Mixed Method from mono or multi method approaches and suggest that four of these characteristics are particularly relevant to the notion of putting the 'human' back in 'human' research methodology that they view as especially relevant to social and behavioral research. They suggest that the researcher shares concerns that link with the notion of humans as essentially 'everyday problem solvers' while using research knowledge and expertise in ways everyday problem solvers do not, and they use some educational examples to illustrate this idea. The four distinguishing characteristics they highlight in this connection are the strong focus on the research question in determining the methods used in any given study, the emphasis on adopting diversity in methods, methodological eclecticism, and an iterative, cyclical approach to the research and analysis

He goes on to propose three questions that should underpin the choice of research design:

1. What knowledge claims are being made by the researcher (including a theoretical perspective)?
2. What strategies of inquiry will inform the procedures?
3. What methods of data collection and analysis will be used?

These three questions are seen as helpful starting points in making an informed decision about whether a MM approach is deemed appropriate. Creswell et al. (2011) provide an elaborated discussion of the role and nature of MM enquiry in a major review of the use of MM approaches in health-related research. This defines MM in terms of five features as follows:

focusing on research questions that call for real-life contextual understandings, multi-level perspectives, and cultural influences;

employing rigorous quantitative research assessing magnitude and frequency of constructs and rigorous qualitative research exploring the meaning and understanding of constructs;

utilizing multiple methods (e.g., intervention trials and in-depth interviews);

intentionally integrating or combining these methods to draw on the strengths of each; and

framing the investigation within philosophical and theoretical positions.

It is suggested that the three broad questions and this more elaborated set of five features outlined by Creswell (2003, 2011) provide a basis for those designing educational research to examine the quality and appropriateness of a MM design to address its stated research purposes and questions.

Creswell (2003) compared four main knowledge positions or paradigms: post-positivism, constructivism (often combined with interpretivism), advocacy/participatory and pragmatism.

Strengths and Weaknesses of Mixed Method Research

Mixing methods offers a wonderful opportunity to examine "dogs that don't bark." These are cases where our statistical model predicts that we should see the phenomenon that we are investigating, but we do not see it. Like Sherlock Holmes in "The Hound of the Baskervilles," these dogs that don't bark can provide valuable information about causal processes. Mixed methods allow them to evaluate the assumptions and predictions of their models.Mixed method research is considered to be a good solution when the research problem requires concurrent or sequential use of quantitative and qualitative methods. According to Bergman (2011), a study in which mixed method is applied correctly,

1. has epistemological and ontological foundations.
2. has a correctly-constructed research question and a theoretical framework.
3. has a clear sampling method.
4. has interpretations and methods to help quantitative and qualitative research.

In a study with all these features, it is thought that the research problem is more suitable for the use of the mixed method and it is more powerful than the studies employing a single research method. However, knowing the strengths and weaknesses of mixed-method research prior to the study will enable researchers to be prepared for possible problems that will interfere with the process and disrupt the research. Johnson and Onwuegbuzie (2004) also emphasized that mixed method research has strengths and weaknesses. Accordingly, with the use of mixed method research, it is provided that the results obtained through a method are supported by another one, and this makes the research study stronger. Furthermore, because the researcher is not limited to a single research method, the mixed method can allow a broader and more comprehensive research problem to be answered.

On the other hand, different types of mixed method research may have their own inherent limitations. The researcher can find solutions to a situation in which the method he / she uses is weak for research problem by emphasizing the strengths of another method that he / she will use. Thus, the points that might be overlooked when a single method is used can be understood and comprehended better. Besides all these strengths, mixed method research also has some limitations or weaknesses. In particular, in cases where the quantitative and qualitative methods in the mixed method research are conducted simultaneously, a single researcher may find it difficult to carry out the process in a healthy way. In this regard, the researcher or the researcher group must have mastered both methodologies. If this requirement is not met, the method (quantitative or qualitative) processes in which the researcher or the researcher group has a higher competence will be treated correctly, while the execution of the other method processes will be disrupted. It should be kept in mind that mixed method research is more expensive and time consuming than the studies with a single research method. If the researchers' budget is limited or they do not have enough time to carry out the study, the situation will prevent the quality of the mixed method research process (Johnson & Onwuegbuzie, 2004). In addition to those

strengths and weaknesses, it is admitted that there are still some discussions on the mixed method terminology. The first one is related to the concept of "mixed".

Paradigm Rationales for Undertaking Mixed Methods Research Design

Mixed methodology finds its roots in the work of Campbell and Fiske(1959) from which Derzin (1970) later developed the concept of triangulation. In it initial meaning triangulation stood for convergence or confirmation of findings across different methods. Following this pioneering work Greene et al (1989, 1997a, 1997b) advanced five rationales or purposes for why researchers should use mixed methodologies. As early as 1989, Greene *et al*. (cited by Johnson and Onwuegbuzie, 2004) suggested five main rationales for conducting mixed methods research:

1. Triangulation – the confirmation of results by different methods.
2. Complementarity – results from one method are used to enhance, elaborate or clarify results from another method.
3. Initiation – where new insights are obtained which will stimulate new research questions.
4. Development – results from one method shape another method.
5. Expansion – expanding the breadth and the range of the research by using different methods for different lines of enquiry.

Four objectives are pursued in mixed methods research (Ponce, 2014; Caruth, 2013; Creswell & Plano Clark, 2011):

i. Combining or integrating quantitative and qualitative methods toward the best possible approach to the research problem.
ii. Generate quantitative and qualitative data toward a clear and deep understanding of the research problem being addressed.
iii. Generate quantitative and qualitative data from the same research problem allows the researcher greater certainty in inferences, conclusions or statements which formulate its findings.
iv. Make more research by using the strengths from one research model to off set methodological shortcomings from the other. This produces more reliable research.

Characteristics of MM Research

Nine defining characteristics of MM research have been proposed by Tashakkori and Teddlie (2010a, 2010b). These defining characteristics provide a useful basis for informing, describing and evaluating MM designs.

1. Methodological eclecticism
2. Paradigm pluralism
3. Emphasis on diversity at all levels of the research enterprise
4. Emphasis on continua rather than a set of dichotomies
5. Iterative, cyclical approach to research
6. Focus on the research question (or research problem) in determining the methods

used within any given study

7. Set of basic "signature" research designs and analytical processes
8. Tendency toward balance and compromise that is implicit within the "third methodological community"
9. Reliance on visual representations (e.g., figures, diagrams) and a common notational system

Classification of Mixed Method Studies

An important issue for researchers who will use mixed method research is to determine the type of the mixed method appropriate for their study. The first comprehensive study on the classification of mixed method studies was carried out by Greene, Caracelli and Graham (1989). In this study, a classification system consisting of six types was developed by examining articles.

According to Johnson and Onwuegbuzie (2004), a researcher using the mixed research method has to decide on the dominancy (which one will be more dominant, quantitative or qualitative?) and the time of implementation (will quantitative and qualitative methods be applied together or sequentially?). Therefore, the classification of mixed research types is made by taking these two points into consideration. Johnson and Onwuegbuzie (2004) identified nine types of mixed method in their classification based on the dominancy and the implementation time.

This classification is shown in Figure 1. The researchers used the symbols developed by Morse (1991) during this classification process. According to this, the symbol "+" means that both qualitative and quantitative studies are carried out simultaneously, while the symbol "→" means that two studies are conducted in a sequential order. According to Johnson and Onwuegbuzie using Classification of mixed method studies according to Johnson & Onwuegbuzie (2004)there is a total of nine mixed methods to be classified according to the implementation time and dominancy. However, it is not expected that a researcher carrying out a mixed method study will always stick to this table. It is an important principle of the mixed method that the mixed method researcher is creative by adhering to the general principles. In their study of the classification of mixed research methods, Leech and Onwuegbuzie (2009) benefited from the level of mixing in addition to the emphasis approach and application time. Classification of mixed method studies according to Leech & Onwuegbuzie (2009) Creswell (2012), one of the prominent figures in the studies conducted on the classification of mixed-method studies, emphasized the importance of these four issues in order to determine the type of a mixed study:

1. Deciding on which one of the quantitative and qualitative research methods will be prioritized or more dominant: Which type of data is given more importance and emphasis is crucial. In some cases, however, quantitative and qualitative data sets might be equally important.
2. The sequence of quantitative and qualitative data: It is necessary to determine whether two data types are collected simultaneously or sequentially. If they are collected at different times, it should be noted which one was collected first.

3. Data analysis process of the researcher: It is the determination of whether the data are combined in a single analysis or the analyses are done separately.
4. To determine in which part of the research the data is mixed: The operation of mixing can be performed during data collection, analysis, or the interpretation phase.

It is necessary to determine which of these four cases occurs. Creswell (2012) maintains that the type of mixed method studies can be determined taking the issues above into consideration. Below are the six types of mixed-method proposed by him.

1. The convergent parallel design
2. The explanatory sequential design
3. The exploratory sequential design
4. The embedded design
5. The transformative design
6. The multiphase design

The first four types mentioned above are the most widely used types of mixed method research, while the use and consequent popularity of the last two methods are increasing day by day (Creswell & Plano Clark, 2011; cited in Creswell, 2012). The aforementioned six types of mixed method research and their principles are summarized .

The convergent parallel design

The purpose of this type of research is to collect and combine quantitative and qualitative data simultaneously and report the findings of the analysis to understand the research problem better. Based on this, it can be ensured that one of the collected data set can compensate the weaknesses of the other, finding a more comprehensive response to the research problem. In parallel method, the researcher examines the situation whether the results are supporting each other or creating contradictions by analysing the quantitative and qualitative data sets separately. The direct comparison of the results from the two datasets in this way allows the data sources to be converged. Another important issue related to this method is that the researcher cares equally about quantitative and qualitative methods. In short, this method is mainly based on the simultaneous collection of quantitative and qualitative data sets, equal attention towards both methods and determination of the consistency-inconsistency status of the results derived from the analysis.

The explanatory sequential design

It may not be possible to collect quantitative and qualitative data at the same time due to the research problem. In such cases, it will be necessary to collect quantitative and qualitative data in order. In this type of research, firstly, quantitative data are collected. In the next step, the qualitative data collection process is started to explain the results obtained from the quantitative data. In this research type, quantitative data collection and analysis process has priority. The data collection and analysis processes at each step with the qualitative data collected at the next stage are reported

separately and respectively. The purpose of the qualitative data collection and analysis process is to present the results obtained from the quantitative data in a more pure and detailed manner. It is an important advantage of this method that the quantitative and qualitative parts are separated from each other in a clear way.

The exploratory sequential design

In the cases which requires the collection of quantitative and qualitative data sequentially, this is the method type in which the qualitative data is collected first and then the quantitative data is collected to explain the relationship among the qualitative data. This method can be used to discover a phenomenon, identify themes, and develop a data collection tool. In this kind of research, the qualitative method is emphasized more than the quantitative method. This might emerge as the most important and comprehensive problem in the research being open-ended or as a more detailed interpretation of the results of qualitative data analysis.

The embedded design

Although it shows similar characteristics with both parallel and sequential methods, it differs in terms of the purpose of use of either quantitative or qualitative method. The difference is that one of a set of quantitative or qualitative data collected simultaneously or sequentially is used to support the other. In the literature, the use of qualitative data is mostly intended to support the data obtained from quantitative research. In the sequential use of the embedded method, in the first stage, due to the fact that the required information cannot be fully obtained from the basic source within the scope of the research problem, it is possible to utilize the secondary source. Combining the strengths of quantitative and qualitative methods is seen as a significant advantage of this type

Mixed Method Research Process

There are several stages to follow in mixed method research. These stages are shaped according to the purpose of research, its sample and scope (Fırat, Yurdakul & Ersoy, 2014). Figure 4 shows the mixed method research process adapted from Johnson and Onwuegbuzie (2004). Stages of mixed method researches according to Johnson & Onwuegbuzie (2004)

- Determine Research Questions
- Determine whether a Mixed Design Appropriate
- Select the Mixed Method or Mixed Model Research Design
- Collect the Data
- Analize the Data
- Interpret the Data
- Legitimate the Data
- Draw Conclusions and Write the Final Report

When the above mixed method research process is examined, it is seen that the first step is to determine the research question which is the basis of the research.

According to the structure of this research question, it is decided in the next stage whether the research requires the use of mixed methods. If it is decided to use a mixed method, the type to be used in the next step will need to be determined. After making this decision, the data will be collected and the analysis of these data will be carried out properly. After the interpretation of the results obtained at the end of the data analysis, final reporting will be carried out in detail.

Challenges of Mixed Methods Research

Mixed methods are not without their drawbacks, Conducting or evaluating mixed methods research can present a number of challenges for researchers and practitioners. These challenges can range from the need for more time, resources, skills, or expertise to plan, implement, and report the research, to ethical, practical, or theoretical issues related to the sampling, data collection, data analysis, or data integration. Additionally, conflicting or incompatible assumptions, paradigms, or frameworks that underlie the qualitative and quantitative approaches can create tensions or dilemmas for the researcher or the audience.

To ensure the success of the research, a clear and coherent rationale, purpose, or question for the use of mixed methods must be established, as well as a transparent and consistent reporting of the methods, results, and implications of the research to communicate the value and credibility of the research. An obvious one being the resources and skills required – one researcher may not be skilled in both qualitative and quantitative methods and may have to call on the expertise of someone else, or another team, which will increase the cost.

Data Collection in Mixed Studies

Data collection constitutes the phase of developing mixed methods research. The fundamental principle is to collect data respecting the rules of each research model in the design and developing of a mixed methods study. What is quantitative is quantitative and what is qualitative is qualitative. Keeping each research approach aligned within their paradigm or model strengthens the rigor of each approach and the validity of the mixed study.

A Define the research problem**.**

The research problem consists of situations, phenomena, processes or persons who are the focus of study. In mixed studies, research problems have the tendency to be complex because they include objective and subjective elements to be addressed with a combination of approaches. There are two styles when presenting the research problem:

- Write the problem by way of composite question where the objective and subjective aspects are highlighted. For example; which candidate for governor people prefer and why?
- Write the problem by way of simple question and leave the objective and

subjective aspects to the research questions. For example; what radio station do those aged 20 to 30 prefer?

b. Write the research questions.

Research questions decompose the problem into manageable units to be studied. In mixed methods studies quantitative and qualitative questions are used. A common practice in mixed methods studies is always designing questions beginning with what, how, when and where. This is accepted because it is easier to answer questions when contrasting with the survey data. For example; what is the social issue that most worries Nigerians? Two styles dominate in drafting research questions in mixed studies:

- Write research questions for each research approach. In other words, write four to five questions for the qualitative component and the same amount for the quantitative component. In this format, each research approach answers its research questions. Those who favor this format argue that it provides much more specificity to the research because each component has its own questions.
- Write research questions to guide the entire study. In this format, the full study aims to answer these research questions. In other words, the quantitative and qualitative components of the study are designed to generate quantitative and qualitative data to answer the research questions.

c. Select the research design.

The principle key in selecting the design is to understand the quantitative and qualitative research to use them appropriately in a mixed methods study. It is very difficult to conduct a mixed methods study without understanding the models of quantitative and qualitative research.

- The problem and research questions have to connect with the mixed research design. For example, studies of exploration or explanation. Studies of this nature can be carried out with sequential phase studies. If the research questions put greater emphasis on one component of research, it can probably be done as acomplementary design using parallel phases. If the research questions put equal weight on quantitative and qualitative models, then it could be answered either with aconvergence ortriangulation design using parallel phases. The research questions are fundamental in determining what and how the approaches of quantitative and qualitative research were used.
- Specify what to combine, integrate or complement and why. The argument for using mixed methods is to enter into complex problems. To accomplish this, you can combine quantitative and qualitative models to examine the objective and subjective aspects of the problem. It is possible to combine the research questions with instruments and data collection techniques to generate quantitative and qualitative data that allow a deeper description of the research topic from a mono- methodological or a single quantitative or qualitative perspective study.

There must always be a logic that allows explaining what and why the research questions were combined. This logic must be based on the relationship between the research aims and how this allows the achievement and success of the study. Nothing

can be a whim of the researcher at the time of combining or integrating quantitative and qualitative approaches.

d. Write the study title. Titles should reflect three components; the research topic, the study population and research design. An example of a title could be: Factors that influence people to visit a mall: Exploratory mixed study in sequential phases (Creswell & Plano Clark, 2011).

e. Select the sample. In mixed research methods two types of sampling dominate (Ponce, 2011):

- Primary sampling (adhere to the established). Consists of selecting the sample according to the parameters of the respective models of quantitative and qualitative research. The researcher selects samples and does not deviate from these.
- Alternate sampling (deviating from the established) in mixed studies, three phenomena occur which force the researcher to deviate from the research plan; encounter quantitative and qualitative data that contradict, discover methodological gaps in the study due to the nature of combining approaches, as would be discovered in the interview process (in the qualitative phase) that the questionnaire used (in the quantitative phase) does not address the whole issue or new issues emerge that it is necessary to study. When these situations occur, the researcher has two options, accept these as limitations of the study or deviates from the original research plan to compensate for them. To address and resolve these situations the researcher must employ the strategy known as alternate sampling; by selecting additional samples. Alternate sampling in mixed studies are criterion samples, as in qualitative studies, or the selection of samples that allow answering the research questions of the study.

f. Develop tools and research techniques.
As the sampling, the development of tools and techniques for data collection must adhere to the criteria established by the quantitative and qualitative models. An important element in this task is to ensure that the tools and techniques of data collection are aligned to the research objectives; generate the quantitative and qualitative data to answer the research questions, generate quantitative and qualitative data to understand clearly and deeply the research problem, produce quantitative and qualitative data of the same phenomenon under research.

g. Address individual authorities to conduct the study.
In conducting the study, follow channels or procedures and comply with the provisions of the agency or institution where the study is to be conducted.

Analysis of Mixed Data

Analyzing data is to extract meaning, implicit or explicit, of the information collected in the study. Analyzing data is a three step process; encode and describe the information to understand the messages that may be there, analyze and interpret information to make it clean data and communicate findings and identify the most

effective way to convey the findings. In mixed studies three types of data analysis are used; analysis of quantitative data, qualitative data analysis and analysis of mixed data. The analysis of mixed data consists of organizing and combining quantitative and qualitative data to achieve one or more of the following objectives related to the research topic:

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- Quantitizing of qualitative coding information
- Create and compare groups
- Aggregate your data
- Quantitative evaluation of themes
- Visualize qualitative and quantitative data
- Collect relevant insights and develop new therories

Writing the Mixed Methods Research Report

There is no universally accepted way of how to write the mixed methods research report. Below are presented several recommendations on mixed methods research reports, especially in theses and dissertations: The reader must understand quickly how . The objective is to convey the feeling that two studies are presented in a single report. This challenge is evident in the writing of Chapters I, III, IV and V.

I. In presenting the research problem in Chapter I, it must clearly establish the complexity of the problem and justification for a mixed methods study. The problem maybe complex, however for a mixed methods study the objective and subjective criteria must be categorically established. The other challenge in presenting the research problem lies in the way the research questions are presented to coordinate the study. The challenge here is whether research questions are presented to guide the entire study, or make mixed research questions to guide the quantitative and qualitative phases of the study. The selected style to present the questions facilitates in articulating how these are connected with the mixed research design and guide the study. The clarity and precision of Chapter I facilitates the development of the remaining chapters of the report. Another consideration when presenting the research problem is whether the study deviated from the initial research design. The explanation of the emerging design is done in a section entitled"methodologicalconsiderations." This section may explain details such as the selection of emerging samples, changing measuring instruments or other methodological decisions that led to

deviate from the initial research plan. This section should not be confused with the sections of boundaries and limitations of quantitative studies.

ii. In Chapter III the challenge is to present, in a consistent manner, the combination or integration of qualitative and quantitative approaches as a mixed research design. Our recommendation is to present the chapter corresponding to the type of study presented; sequential phases or parallel phases so that the reader can understand the development of the line of study. For example, if the study is sequential phases, then fully explain phase I and later phase II revealing to the reader how each phase is connected with the other and thus constitutes a combined study. Avoid presenting each approach as if it were a separate chapter of another.

iii. Organize and present the findings of the study in a way that allows answering the research questions. The clarity of the presentation of the findings is greatly facilitated by the selected strategy to communicate information. For example, if tables or graphs to summarize data or integration are used. Tables are an excellent strategy in mixed studies to summarize and integrate quantitative and qualitative data visually or on different aspects of the same problem. The goal in presenting data should be to communicate these clearly and accurately where quantitative and qualitative data facilitate answering the research questions.

iv. The wording of the report should contain language that handles each research model. In other words, the presentation of the quantitative phase must conform to the technical language of the quantitative model and the qualitative phase model has to conform to the technical language of qualitative model. This is critical so the mixed method researcher demonstrates understanding, dominance and respect of the respective models rules and practices.

The Use of Mixed Method Research in Educational Research, Policy and Practice

In the last two decades, the committed believers of mixed method research, even claiming that "mono-method research is the biggest threat to advancement of the social sciences" (Onwuegbuzie & Leech, 2005, p. 375), began to see this multiple perspective as a distinct advantage in educational research and superior to the ones employing either a quantitative or quantitative research design. Besides, these scholars also believed that mixed method research could better enlighten the research matters in educational research which has historically faced with controversies in inquiring the complexities of educational phenomena (Walters, 2009). As mentioned before, one of the most important issues in mixed-method research is the fact that researchers should master the principles of both qualitative and quantitative data and how to mix them. For this reason, the first issue educational researchers must be aware and careful about is the notion of "principled mixing", that is aggregating the strengths of both methods and minimizing the weaknesses of both to better explore a research phenomenon in the field of education.

Mixed Method Research and Future Directions

Mixed-method research has increased its popularity in the 90s, and since the beginning of 2000s, it has started to be accepted as a third paradigm with the works of the scholars of the field. One of the important contributions to this field is the publication of the journal "Journal of Mixed Methods Research" in 2007. In the fourth issue of the journal in 2017, an article of the previous editors of the journal on the current situation and future of the field was published (Fetters & Molina-Azorin, 2017). In this study, previous editors such as Creswell, Tashakkori etc. shared their opinions on the most important role that should be taken by the researchers in the field, the challenges they might face and what kind of responsibilities researchers in the mixed method field should take. According to this, the most important developments in the field are the emergence of a multi disciplinary and international community which is methodologically competent in mixed method research, the creation and active work of different working groups, the development of big data and the progress in the software world.

When their opinions related to the controversial issues in the field are examined, Creswell maintained that the question of whether the mixed method is a methodology that includes analysis and interpretation starting from data collection, or a methodology covering all the research stages, is still the most important question that researchers answer differently. According to Freshwater, the difficulties and debates already involved in data integration, association, and aggregation in mixed-method research will become more troubled with the development of large data. However, Freshwater also believes this issue will be an opportunity related with the discussion on the implementation of the data.

The next topic concerns the recommendations of former editors for those who are already learning mixed method research. For Creswell, first, about 30 books written by experts about the mixed method should be read by new researchers. Another remarkable point according to Creswell is the increase in the number of researchers who consider themselves as experts in the mixed method research, but include independent analysis of quantitative and qualitative data in their research. Creswell argues that such research is a starting point for the mixed method, whereas in mixed-method research, the important thing is the integration of quantitative and qualitative data sets. Tashakkori recommends new researchers in the field to use the mixed method only when the research explicitly requires it. According to Tashakkori, the freedom of the investigator and the allowance for the emergence of his own design is an important advantage of the mixed method. Therefore, he stated that the researchers should not carry out their researches within the pre-determined limits and that each mixed method research may require a different method than the ones planned in the process

Conclusion

Mixed-method research proposes to use quantitative and qualitative research methods in combination with a pragmatist perspective when the research problem requires. In such cases, the mixed method claims that deeper and richer answers can be found in the research problem than when a single research method is used. This innovative paradigm brought by mixed method requires new perspectives towards science and scientific knowledge. From the 2000s onwards, studies related with its methodological basis have played an important role in making the method as a third paradigm (method or approach according to some scientists).

From this process until now, especially for mixed method research, it is noteworthy that the studies differed significantly in terms of their classification, research process and so on according to the researcher. Researchers often state that they definitely did not determine the final lines and that the mixed method researcher should be creative since they believe that using their creativity in accordance with the purpose and development of the study is one of the important features of mixed method research. Conclusively, the organization of an efficient and quality mixed methods approach will surely lead to a well-articulated educational research finding, paving the way to sound educational policy formulation and last longing educational practices.

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