

GENERAL EDUCATION JOURNAL; Vol. 4; 1 Issue 2; Pages 68-75;
September 2015; Published By Mount Meru University Research Unit

**Article Title: *Re-Evaluating the Procedural Issues of the Sequential Explanatory
Design (A Mixed Method Design)***

Author: Sophia K. Wachira
Date Received: 12/08/2015
Date Published: 01/09/2015
Journal Name: General Education Journal, Vol. 4 Issue 2
e-ISSN: 2467-4656
Publisher: Mount Meru University
Email: enquiry@mmu.ac.tz
City: Arusha
Country: Tanzania

About the Author

Sophia K. Wachira is a Doctoral Student (Catholic University of Eastern Africa, Kenya);
flonya151@gmail.com

Abstract

This paper focuses on some procedural issues related to the Mixed Methods sequential explanatory design which has had a contested history of inquiry and divergent views of its appropriateness by researchers. It also seeks to discuss the current state of this debate and the rationale for its selection in a mixed method study. This paper takes a divergent view and critically analyzes the mixed method sequential Explanatory design. The design is considered the most conventional of the mixed methods designs. The paper will also discuss the rationale on the priority or weight given to the quantitative and qualitative data collection and analysis. The issue of the sequence of data collection and analysis, the stage or stages in the research process at which the quantitative and qualitative data are connected and the results integrated will be discussed. The article provided a methodological overview of priority, implementation and mixing in the sequential explanatory design and also outlines the steps for graphically representing the procedures in a mixed method sequential explanatory model. The Follow-up explanations variant and Participant-selection variant for the sequential explanatory model differ in the connection of the two phases, with one focusing on which results to be examined in more detail and the other on the appropriate participants to be selected. This creates a gap on which quantitative results need further explanation and the selection criteria of the sample. This article will attempt a solution to this state of affairs. The paper will therefore attempt to close the gaps in order to eliminate the divergent views on its appropriateness by researchers.

Key Words: Procedural issues, Sequential Explanatory Design, Qualitative, Quantitative, Participant-Selection, Follow-up Explanations Variant

Introduction

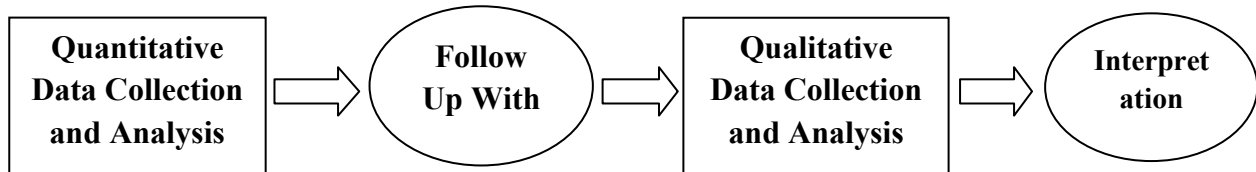
When investigating any phenomenon, a mixed method approach combines and integrates quantitative and qualitative approaches to research methods and enhances understanding of their search findings (Gay & Airasian, 2000; Tashakkori & Teddlie, 2003). While there are both advantages and disadvantages to using a mixed method approach, Tashakkori and Teddlie postulate that through using mixed-methods, researchers can build a study based on the strengths of both research methods, which may provide a more complete picture of a research phenomenon or problem. Furthermore, according to Greene and Caracell (1998) mixed methods design can yield richer, more valid, and more reliable findings than evaluations based on either the qualitative or quantitative methodologies. Hanson, Creswell, Plano-Clark, Petska, and Creswell (2005) maintain that both forms of data allow researchers to simultaneously generalize results from a sample to a population and to gain a deeper understanding of the phenomenon of interest. Collecting and analyzing both numbers and words in a single study allows the research to mirror the way in which people tend to understand the world around them. By combining both inductive and deductive thinking the researcher tends to base knowledge claims on pragmatic grounds (Creswell & Plano-Clark, 2011). This article focuses on one of the major mixed method designs: The sequential Explanatory design.

Explanatory Sequential Design

This design occurs in two distinct interactive phases. It starts with the collection and analysis of quantitative data, which has the priority for addressing the study's questions. This first phase is followed by the subsequent collection and analysis of qualitative data. The second, qualitative phase of the study is designed so that it follows from the results of the first, quantitative phase. Quantitative results lead to emergence of new questions which are used to purposefully select best participants for qualitative study. Consequently, the overall purpose is that qualitative data helps to explain or build upon initial quantitative results that need further exploration. Quantitative results lead to

emergence of new questions which are used to purposefully select best participants for qualitative study.

Procedure for Conducting Explanatory Design



First, the researcher collects and analyzes quantitative data. In the follow-up phase, the researcher identifies specific quantitative results that need additional explanation. He/she then designs a qualitative study based on the Interpretation of the combined results. These results helped to shape the qualitative research questions, sampling, and data collection.

Purposes for the Explanatory Design

In Explanatory design, qualitative data is used to help explain quantitative results that need further exploration. Quantitative results are also used to purposefully select best participants for the qualitative study.

Rationale

It is advisable to choose this design if researcher and research problem are quantitatively oriented and also if participants are available for second data collection. The researcher must also have time to conduct two phases of the study. The design also comes in handy when the researcher has limited resources and need to collect and analyze one data type at a time. If new questions emerge from quantitative results than there is need to follow it up with qualitative study to answer the questions.

Common variants of Explanatory Research Design

The design has two variants; Follow-up explanations variant and Participant-selection variant. Although both models have an initial quantitative phase followed by a qualitative

phase, they differ in the connection of the two phases, with one focusing on results to be examined in more detail and the other on the appropriate participants to be selected.

Follow-up explanations variant

The follow-up explanations model is used when a researcher needs qualitative data to explain or expand on quantitative results (Creswell, Plano, Clark, et al., 2003). In this model, the researcher identifies specific quantitative findings that need additional explanation, such as statistical differences among groups, individuals who scored at extreme levels, or unexpected results. The researcher then collects qualitative data from participants who can best help explain these findings. In this model, the primary emphasis is usually on the quantitative aspects

Participant Selection Model

In this model, investigators need to specify criteria for the selection of participants for the qualitative phase of the research. Options include the use of demographic characteristics, groups used in comparisons during the quantitative phase, and individuals who vary on select predictor.

Strengths of Explanatory Design

The Explanatory Design is considered the most straightforward of the mixed methods designs. The advantages of this design include the following: Its two-phase structure makes it straightforward to implement, because the researcher conducts the two methods in separate phases and collects only one type of data at a time. This means that single researchers can conduct this design; a research team is not required to carry out the design. The final report can be written in two phases, making it straightforward to write and providing a clear delineation for readers. This design appeals to quantitative researchers, because it often begins with a strong quantitative orientation.

Challenges in Using the Explanatory Design.

Although the Explanatory Design is straightforward, researchers choosing this approach still face challenges specific to this design: This design requires a lengthy amount of time for implementing the two phases. Researchers should recognize that the qualitative phase (depending on the emphasis) will take more time than the quantitative phase, but that the qualitative phase can be limited to a few participants. Still, adequate time must be budgeted for the qualitative phase. The researcher must decide whether to use the same individuals for both phases, to use individuals from the same sample for both phases, or to draw participants from the same population for the two phases. It can be difficult to secure internal review board approval for this design because the researcher cannot specify how participants will be selected for the second phase until the initial findings are obtained. For the follow-up explanations model: The researcher must decide which quantitative results need to be further explained. Although this cannot be determined precisely until after the quantitative phase is complete, options, such as selecting significant results and strong predictors, can be discussed and weighed as the study is being planned.

Procedural Issues of concern

This design has several procedural issues that raise questions that need attention of any mixed method researcher. The first is on the sample and sampling procedure. Should the researcher use same or different group of people in both phases? , Further, Should the participants in the qualitative study be those who participated in the quantitative study or different, and are the sample sizes equal or unequal considering that qualitative study uses larger samples than quantitative study? The decision on what quantitative results to follow up are not specified. Should the researcher use the unclear, unexpected, significant/non-significant results or outliers or extreme cases? Which criteria should be used to select participants for qualitative study? Should researcher use the Individuals who volunteer to participate in interviews or should there be a systematic approach based on quantitative results and select participants best able to fit in qualitative study? The following suggestions could be considered to address the

above. First suggestion is to consider Separating IRB for each phase. State the follow up phase as tentative and from the start; inform participants the possibility of second data collection. In the selection of the qualitative sample, ensure that participants are representative of different groups and that they have extreme scores and that the Participants differed in their scores on significant predictors. In the Interpretation of combined results, the researcher should ensure that the conclusion is about whether the follow up qualitative data provide a better understanding of the research problem than simply the quantitative results. The researcher should consider that the Follow-up explanation variant and the Participation-selection variant need quantitative results to help select best participants and also that priority is placed on the qualitative phase which comes second.

Conclusion

Mixed methods research underscores the fact that there is a best world view to use in a research context. However, researchers can employ multiple world views and honor each because in whichever case, qualitative and quantitative paradigms are closely related. In spite of the weaknesses of the Explanatory Sequential Design, It can be employed scientifically to yield dependable and valid answers which will help researchers to answer research questions validly, objectively, accurately and as economically as possible.

References

- Best J. W. and Kahn J. V. (2006). *Research in education, 10th edition*. Pearson Education Inc.: New York.
- Bordens, K. S., & Abbott, B. B. (2008). *Research design and methods: A process approach (Seventh Edition)*. San Francisco: McGraw Hill
- Creswell, J. W. (2003). *Qualitative inquiry and research design: choosing among five traditions*. Thousand Oaks: Sage Publications.
- Creswell, J. W. and Clark, V. L. P. (2007). *Designing and conducting mixed methods research*. Thousand Oaks: Sage Publications.
- Gall, M. D., Gall, J. P. and Borg, W. R. (2007) *Educational research: an introduction, 8th edition*. New York: Pearson Education Inc.
- Gay, L. R., Mills, G. E. and Airasian P. (2009) *Educational research: competencies for analysis and applications, 9th edition*. New Jersey: Pearson Education
- Heppner, P. P., Wampold, B. E. & Kivlighan D. M. (2008). *Research design in counseling, 3rd edition*; Thomson Brooks/Cole: London.
- John W. Creswell (2014) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 4th edition*
- Kerlinger, F.N. (2000). *Foundations of behavioral research*. London: Rinehart and Winston
- Kothari C. R. (2004). *Research methodology - methods and techniques*. New Dheli: New Age International Publishers.