

Mixed Research Design

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Abstract

Mixed methods research is systematic, theoretical, analysis of the method for conducting research that includes collecting data, analysis, interpretation of data and also integrating qualitative and quantitative data grounded by a certain principles. This approach to research is used when this integration provides a better understanding of the research problem than either of each alone the field of mixed methods has only explored a research problem. Mixed methods research is a concept that was originated in social sciences but have recently expanded into the health and medical sciences which includes fields such like nursing, family medicine, social work, mental health, pharmacy, allied health, and others. In the last decade, its procedures have been developed and refined to suit a wide variety of research questions.

Keywords: *Mixed methods, Qualitative methods, Quantitative methods, Research design, Mixed methods design*

INTRODUCTION

Mixed research method defined as a method, it focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies [1]. Its central premise is that the use of quantitative and qualitative approaches, in combination, provides a better understanding of research problems than either approach alone [2].

MEANING OF MIXED RESEARCH METHODS

"Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative approaches (e.g., use of qualitative and quantitative

viewpoints, data collection, analysis, inference techniques) for the purpose of breadth and depth of understanding and corroboration [3].

Timing: Before you select which design you want to use, make sure you consider the timeline of your study, and when you want your strands of qualitative and quantitative research to occur [4].

Concurrent: Qualitative and quantitative data collection happens at the same time.

Sequential: The researcher implements the strands in two distinct phases.

Multiple phase: In this phase the researcher utilize both concurrent and sequential data collection and analysis over a longer period of time [5, 6].

Purpose of the study Research questions

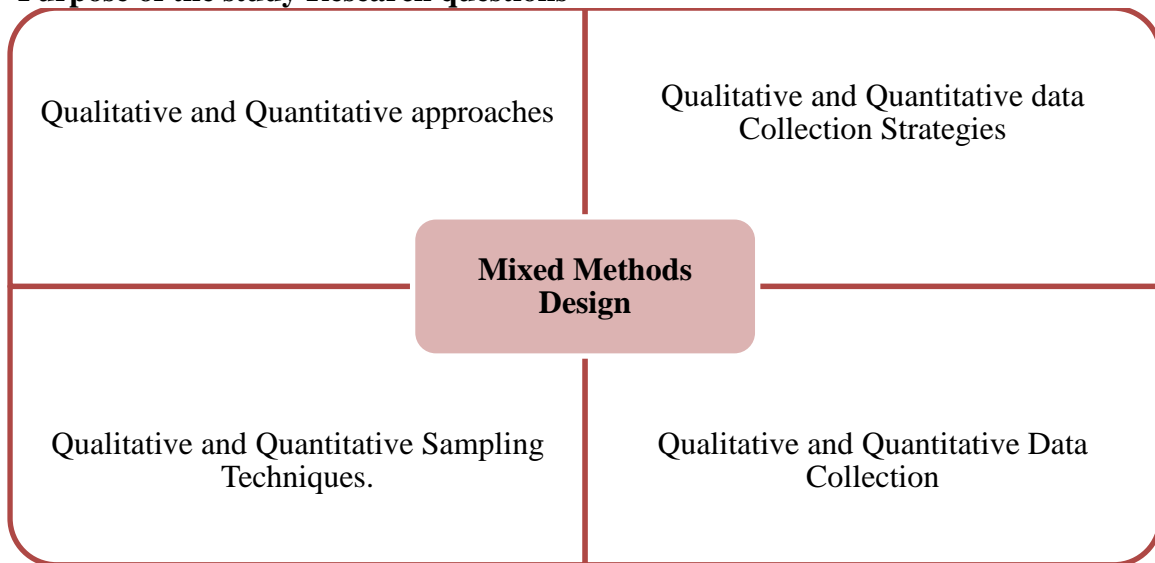


Figure 1: Diagrammatic Presentation of Mixed Methods Research Design.

MIXED METHODS DESIGNS

Convergent Parallel: Quantitative data and qualitative data were analysis at same and then compared the result for better understanding.

Explanatory Sequential: The data collected were first analysis by quantitative data and followed by qualitative design and compared the result.

Embedded: Quantitative and qualitative data were collected and analysis at the same time.

Transformative: Qualitative and quantitative data collection and analysis can occur concurrently or sequentially, in this design it allows the researcher to work within a specific theoretical framework.

Multiphase: In this phase, before a mixed methods study is conducted, separate quantitative and qualitative studies are conducted to gat5her data.

BASIC CHARACTERISTICS

1. Design is combination of qualitative and quantitative data collection.
2. There is no time limitation.
3. Design is based on the strong rational discussion and purpose and benefits.
4. Flexibility in analyzing data.

USE MIXED METHODS

1. To explain and interpret.
2. To explore a phenomenon.
3. To develop and test a new instrument.
4. To serve a theoretical perspective.
5. To complement the strengths of a single design.
6. To overcome the weaknesses of a single design.
7. To address a question at different levels.
8. To address a theoretical perspective at different levels.

APPLICATION OF MIXED RESEARCH

Mixed method research is particularly suited:

1. Researcher needs to know in debt of the design and its necessary to learn first about the variables of the study.
2. When one wants to studies quantitative and qualitative approach into the research methodology of single study.
3. When researcher wants to select the design, both quantitative and qualitative research is emphasize in equal priority.
4. When one wants to continuously study at single method from different angles, and to clarify potential contraindication.
5. When one wants to elaborate, clarify, or finding from other methods.

- When one wants to gather information of large sample at same time.

ADVANTAGES OF MIXED RESEARCH DESIGN

- It is easy to describe and to report.
- It is helpful in designing and validity instrument.
- It can be useful when unexpected results arise from a prior data.
- The study can be drawn with single research design.
- Information of large sample can be collected.

- Helpful in designing reliability and validating an instrument.
- One can be done with their own interest.

DISADVANTAGES OF MIXED RESEARCH DESIGN

- Time consume.
- Large sample may arise error.
- It can be difficult to decide when to proceed in a sequential design.
- Some designs generate unequal evidence.
- Research avoids major challenges of the design.

Table 1: Six Mixed Methods Design Strategies

Sr. No.	Design	Description
1.	Sequential Exploratory Design	This type of research design characterized by two phases, initial qualitative phase and followed by quantitative phase data collection and analysis the data.
2.	Sequential Explanatory Design	This method has two phases design where the quantitative data is collected first and followed by qualitative phase.
3.	Sequential Transformative Design	This also has two phases but it help to guide the theoretical phenomenon of data collection. At the end of the study during interpretation the result of the study will coordinated to each other.
4.	Concurrent Triangulation Design	In this design, it is combination of more than one method in same study that is qualitative or quantitative.
5.	Concurrent Nested (Embedded Design)	In this design the method of data collection is different the data were collected according to their priority while the other approach is place one inside.
6.	Concurrent Transformative design	In this method involves data concurrent data collection of both quantitative and qualitative data. It is guided by theoretical perspective in the purpose or research question of the study.

CHARACTERISTICS & PROPERTIES OF MIXED DESIGNS

Sequential Exploratory

Characterized: An Initial phase qualitative data collection and analysis c followed by quantitative phase of data collection and analysis.

Purpose: This study is useful when developing and testing a new instrument.

Sequential Exploratory

Characterized: Data collection and analysis of quantitative data followed by qualitative data.

Purpose: Use qualitative data collection from there result s assist in explaining and interpreting the finding of quantitative study.

Sequential Transformative

Characterized by: Collection and analysis either qualitative or quantitative data first. The result is coordinated in the interpretation phase.

Purpose: Both methods are used to know the weakness and strength of one other.

Concurrent Triangulation

Characterized: This type of data is

collected at same time Two or more methods used to confirm cross validate of data findings happen at same time.

Purpose: Generally, both methods are used to overcome a weakness in using one method with the strength of another.

Concurrent Nested

Characterized: Priority has given to one of the methods and guides the design where another is embedded.

Purpose: Address a different question to seek information from different levels.

Concurrent Transformative

Characterized: The use of a theoretical perspective in the purpose of research study.

Purpose: To evaluate theoretical perspective at different levels of analysis.

TYPES OF MIXED METHOD RESEARCH DESIGNS

Before selecting the research design it is very important to know the concept of the study the specific research questions, strengths and weakness of each design.

Sequential Explanatory Design

The priority is given to quantitative data. In this type of design the collected data were analyzed by quantitative data followed by qualitative data.

Advantages

- It is easy to use because the steps were clearly separated.
- The design is easy to implement, easy to describe and the results were easy to report.

Disadvantages

- Data collection requires more time to complete because of two phase.

Example: The researcher observed a survey related on people's perceptions on side effect and advantages of using a survey and follows up interview with a few individuals who participated in the survey to learn in more detail about their survey responses.

Sequential exploratory design

In this design the priority is given to qualitative aspect of the study, so initial has given to qualitative data collection and analysis of data has done and followed by quantitative data collection and analysis.

Advantages

- It helps to test a new instrument.
- To generalize qualitative into different samples in order to determine the chosen samples.
- It is easy to implement because the steps were clear and easy to follow.

Disadvantages

- The collection of data will consume more time because of given two separate phases.
- The data may be sometime difficult to build from the qualitative analysis.

Example: The researcher reported a study on knowledge and attitude regarding nutritional information among people by starting with in-store interviews and then uses an analysis of the information to develop a survey instrument that is administered later to a sample from a population.

Concurrent Triangulation

It is the combination of both qualitative and quantitative data collection, but in this cases only one data collection phases is used and analysis are conducted separately yet concurrently. It involves the multiple data source for the validity of data usually it has given equal priority.

Advantages

- Results compared, integrated and interpreted.
- Data collection takes less time.
- Provide substantiated findings and well-validated.

Disadvantages

- Sometime it can be problem to compare the result of two analysis using data of different forms.
- It requires lots of effort and dept in

knowledge, expertise to adequately use two separate methods at the same time

- Data collection is conducted concurrently so that the results of one method cannot be integrated in the method.

Example: The researcher collect data to asses people’s self –reported environment hygiene practices and also observes those practices in their natural environment. By comparing the two types of data , the researcher can see if there is a match between what people think they are doing and what they are actually doing un term of environment hygiene practice.

Concurrent Nested

In this design only one data collection phase is used, during which superior method weather qualitative or qualitative method is embed to the other less priority method qualitative or quantitative respectively. In this study the embedded method arise different question than the dominant method or seeks information from different levels.

Advantages

- To gain border and in depth knowledge regarding the topic.
- It gives chances to study both qualitative and quantitative data.
- It gives the chances to collect two different data simultaneously reducing time and resources.

Disadvantages

- During the analysis time both types of data needs o be transformed in some extend, which can be difficult.
- If there is different between two methods, which may lead to error when interpreting the results.

Example: The researcher reported a study to assess mother’s knowledge and risk

perceptions about toddler modification of food by using survey instrument that mixes qualitative and quantitative and both forms of data are integrated and analyzed.

MIXED METHOD IN NURSING RESEARCH

Mixed methods research is the combination of qualitative and quantitative methods within a single study, which help to analyze the study in depth with better understanding. The study provides a guide to the design, conduct, and reporting of mixed methods research and helps to take the mystery out of trying to understand the method and outcome of this type of research. Mixed methods research which gives several advantages to nurse because the goal of time for research design will help very familiar with the concept and also collecting the data will widens the perspective on the phenomenon of their own interest.

CONCLUSION

Mixed method obtain describe the methodology of data collection. It has multiple phases which brought richness to the examination of the phenomenon that in single methodology because both type of qualitative and quantitative data are collected simultaneously. The findings from each level will analysis into one overall interpretation.

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