

## **Types of Mixed Methods Design**

A mixed methods research design, which is a complex approach, combines both qualitative and quantitative data in a single study. This design can be particularly functional for exploring complex research design. Moreover, a mixed methods design is necessary to examine the relationships between different variables. Mixed research combines qualitative and quantitative methods to provide a richer understanding of research questions.

The common types of the mixed methods research are as follows:

SL NO.	TYPES
1	Convergent Parallel Design
2	Explanatory Sequential Design
3	Exploratory Sequential Design
4	Embedded Design
5	Transformative Design
6	Multiphase Design

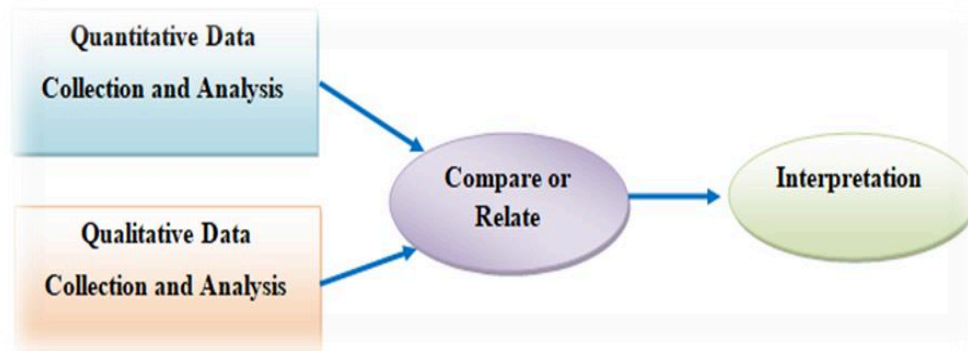
### **Parallel Design**

Creswell (2014) outlines that convergent is mixed methods strategy in which a researcher collects both quantitative and qualitative data, analyzes them separately, and then compares the results to make out if the findings substantiate or disconfirm each other. The intent of the convergent design is to obtain different but complementary data on the same topic (Morse, 1991) in order to best understand the research problem

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**Figure 1**

*Convergent parallel design (Adapted from Creswell & Clark, 2011)*



### **Purposes**

Purposes of the convergent parallel design are to obtain a more complete understanding from two databases, corroborate results from different methods and compare multiple levels within a system.

### **Strengths**

This design is intuitive and efficient. It combines the advantages of each form of data with the potentialities of generalizability and information.

### **Challenges**

Convergent design requires substantial effort and expertise. There are issues related to the samples and sample sizes. It is difficult to converge two sets of different data. How to resolve discrepant results is difficult.

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### Explanatory Sequential Design

Creswell (2014) maintains that explanatory is a mixed methods approach that involves a two- phase project in which the researcher accumulates quantitative data in the first stage, analyzes the outcomes, and then uses the outcomes to plan or construct into the second qualitative stage.

#### Figure 2

*Explanatory sequential design (Adapted from Creswell & Clark, 2011)*



#### *Purposes*

Objectives of the explanatory design are to use qualitative data to help explain quantitative results that need further exploration, and use quantitative results to purposefully select best participants for qualitative study.

#### *Strengths*

Strengths of this design involve appealing to quantitative researchers. It is straightforward to implement two phases. It lends itself to emergent approaches.

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### *Challenges*

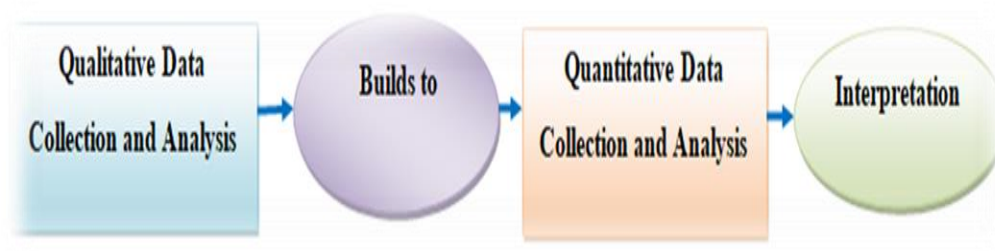
Explanatory design involves two phases that require lengthy time to implement. It needs to decide what results to follow up. It must decide criteria for selecting participants. It needs to contact participants for a second round of data collection.

### **Exploratory Sequential Design**

In this design, at first, the qualitative data are collected and analyzed, and later quantitative data are collected and tested (Schoonenboom & Johnson, 2017; Shorten & Smith, 2017). Quantitative measures or instruments are built up after the qualitative findings (Terrell, 2012; Wisdom & Creswell, 2013).

### **Figure 3**

*Exploratory Sequential Design* (Adapted from Creswell & Clark, 2011)



### *Purposes*

Purposes for the exploratory design are to first explore variables, theories, hypotheses that are not known, develop an instrument or typology that is not available and assess whether qualitative themes generalize to a population or not.

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### *Strengths*

It is straightforward to design, implement, and report. Quantitative component can make the qualitative approach more acceptable to quantitative-biased audiences. Researchers produce a product, such as an instrument. It lends itself to emergent approaches.

### *Challenges*

Exploratory design involves two phases that require prolonged time to implement. Deciding the qualitative findings to use for a quantitative phase is challenging. It has a challenge to set procedures for developing a valid and reliable instrument.

### **Embedded Design**

In an embedded design, one technique of enquiry is done in a supportive secondary function which facilitates researchers and readers to construct a sense of the study in its sum. It inquires expansion, supporting, enrichment, illustration and elucidation of the results from one method using the outcomes from the other approach. This design holds its strength to unite the advantages of both the quantitative data and the qualitative data (Creswell, 2012)

### **Figure 4**

*Embedded design (Adapted from Creswell & Clark, 2011)*



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### ***Purpose***

Purpose for the embedded design is to address different questions that call for different. Methods, enhance an experiment such as by improving recruitment procedures, examine the intervention process and explain reactions to the participation.

### ***Strengths***

This design may require less time and fewer resources. It improves the larger design with supplemental data. It fits a team approach well and may be able to publish results separately. It keeps appealing to those accustomed to traditional designs.

### ***Challenges***

Embedded design needs expertise in primary design and mixed methods. It must specify a decide when to collect supplemental data. Results are difficult to integrate. It must consider treatment biasness if qualitative data are collected during experiment

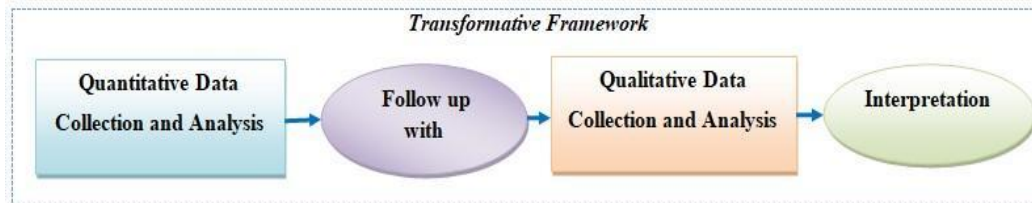
### **Transformative Mixed methods Design**

Transformative mixed methods design is a research design that entails collecting and analyzing data using both qualitative and quantitative methods with the purpose of achieving a transformative understanding of the research question, it is based on the idea that the research process itself can be transformative, and that the research findings can have a transformative effect on the individuals or society being studied. The strength of this design is that it is value-oriented and ideological (Greene 2007).

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**Figure 5**

*Transformative mixed methods design (Adapted from Creswell & Clark, 2011)*



### ***Purposes***

The purposes of the transformative mixed methods designs are to explore a phenomenon from multiple perspectives and capture a fuller range of experiences and perspectives, challenge dominant paradigms or develop new theories or practices based on a more comprehensive understanding of a phenomenon, shed light on issues of social justice and advocate for change in policies or practices that are harmful or inequitable, facilitate dialogue and collaboration between researchers and stakeholders, such as community members, policy makers, or practitioners. It is a flexible and adaptive research approach that can be used to address complex and multifaceted research questions and promote social change.

### ***Strengths***

It is a research approach that combines qualitative and quantitative methods in a way that aims at transforming or challenging existing theories, practices, or viewpoints. It is a relatively new approach that has been applied in a variety of disciplines. Its strengths lie in providing comprehensive understanding of complex phenomena, challenging dominant paradigms and promoting social justice, facilitating dialogue and collaboration

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between researchers and stakeholders, and offering flexibility and adaptability: It is a flexible approach that can be adapted to fit the needs of different research questions and contexts. It allows researchers to be creative and to tailor their research design to the specific needs of their study.

### *Challenges*

Although it is a powerful and innovative approach, it poses the challenges like complexity in nature, limited availability of resources, lack of familiarity, and ethical considerations. Researchers must be mindful of these issues and take appropriate measures to protect the welfare of participants.

### **Multi-Phase Mixed Design**

It is a research design that takes on collecting and analyzing data using both qualitative and quantitative methods in multiple phases. Its goal is to provide a more complete and accurate understanding of the research question by collecting and analyzing data from both qualitative and quantitative sources in multiple phases. It is to address a set of incremental research questions that all advance one programmatic research object (Creswell & Clark, 2011).

### **Figure 6**

*Multi-phase mixed design (Adapted from Creswell & Clark, 2011)*



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### ***Purposes***

Purposes of this design are to explore and understand complex phenomena, answer research questions that require both qualitative and quantitative data, collect and analyze both types of data in a structured way, validate findings and increase reliability, adapt and refine the research design and explore complex phenomena and answer research questions that require multiple methods and perspectives.

### ***Strengths***

The strengths of the multi-phase design are triangulation of their results, flexibility in gaining new information, richness of data, opportunities for iteration, and a deeper understanding of the research.

### ***Challenges***

Using the mixed methods design undergoes the challenges like complexity in combining data, limited availability of resources, ethical considerations, time consuming in data collection and analysis, and challenges in data analysis.

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### Reference

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