DEVELOPMENT RESEARCH METHODS

Week 5, Lesson 2: An overview of Mixed Methods Research

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What we will cover in today's lecture

1. What is Mixed Methods research
2. Types of mixed methods strategies and visual models
3. Mixed methods research
   - Literature review
   - Theory use
   - Procedures for choosing a mixed methods strategy.
   - Data collection procedures
   - Mixed methods sampling
4. Report presentation structure

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Pragmatism as the philosophical base for Mixed Methods research- Recap

1. Not committed to any one system of philosophy and reality.
2. Individual researchers have a freedom of choice.
3. Pragmatists do not see the world as an absolute unity. Many approaches for collecting and analyzing data rather than subscribing to only one way.
4. Use both quantitative and qualitative data for a better understanding of the research problem.
5. Look to ‘what’ and ‘how’ questions to research.
6. Include a theoretical lens reflective of social justice and political aims.
7. External world independent of the mind.
8. Opens the door to multiple methods, different worldviews, and different assumptions.

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What is Mixed Methods research?

- Researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study.
- The "third wave" or third research movement, a movement that moves past the paradigm wars by offering a logical and practical.
- Logic of inquiry includes the use of induction, deduction, and abduction.
- The fundamental principle is to collect multiple data using different strategies, approaches, and methods.

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What is Mixed Method Approach?

	Mixed method approach
Philosophical assumptions	• Pragmatic knowledge claims
Strategies of inquiry	• Sequential, concurrent and transformative
Methods	• Both open-and close-ended questions, • Both emerging and predetermined approaches • Both quantitative and qualitative data and analysis
Practices of research as the researcher	• Collects both quantitative and qualitative data • Develops a rationale for mixing • Integrates the data at different stages of inquiry • Presents visual pictures of the procedures in the study • Employs the practices of both qualitative and quantitative research.

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TYPES OF MIXED METHODS STRATEGIES AND VISUAL MODELS

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Aspects to consider in planning a mixed methods design

Timing	Weighting	Mixing	Theorizing
No Sequence concurrent	Equal	Integrating	Explicit
Sequential-Qualitative first	Qualitative	Connecting	
Sequential-Quantitative first	Quantitative	Embedding	Implicit

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Planning mixed methods procedures

Timing

- Need to consider the **timing** of qualitative and quantitative data collection.
- In phases (**sequentially**) or gathered at the same time (**concurrently**).

Weighting

- **Weight** or priority given to quantitative or qualitative research in a particular study.
- Weight might be **equal**, but it might emphasize **one or the other**.
- Depends on **interest of the researcher, the audience for the study** and the **points of emphasis** in the study.

Mixing

- Quantitative and qualitative data are **merged** or **combined**.
- Three strategies: **Integrating, Connecting, Embedding**.

Theorizing or Transforming Perspectives

- A **theory** from the social sciences (e.g., adoption theory, leadership theory) or a **broad theoretical lens**, such as an advocacy/participatory lens.
- Theories may be made **explicit or implicit**.
- Theories **shape** the types of questions asked, data collection procedures.

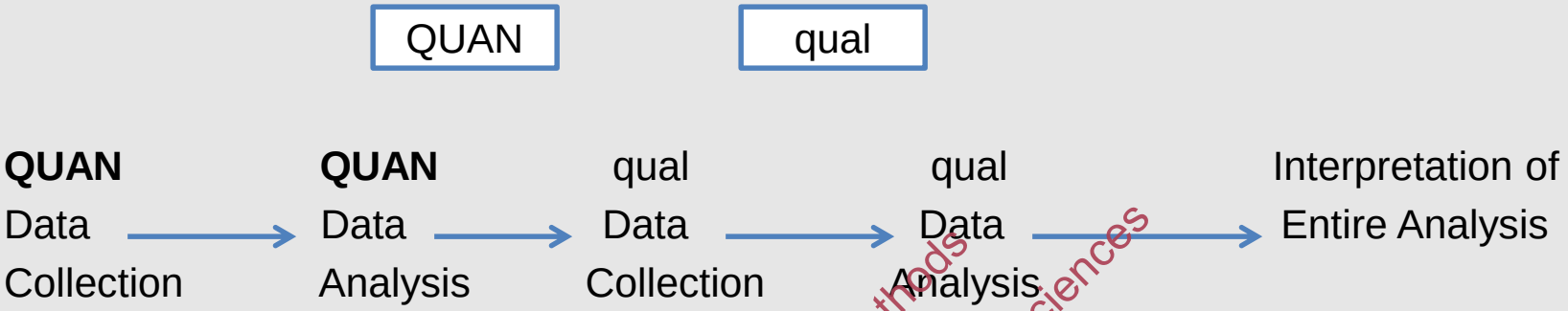
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Mixed methods visual models-

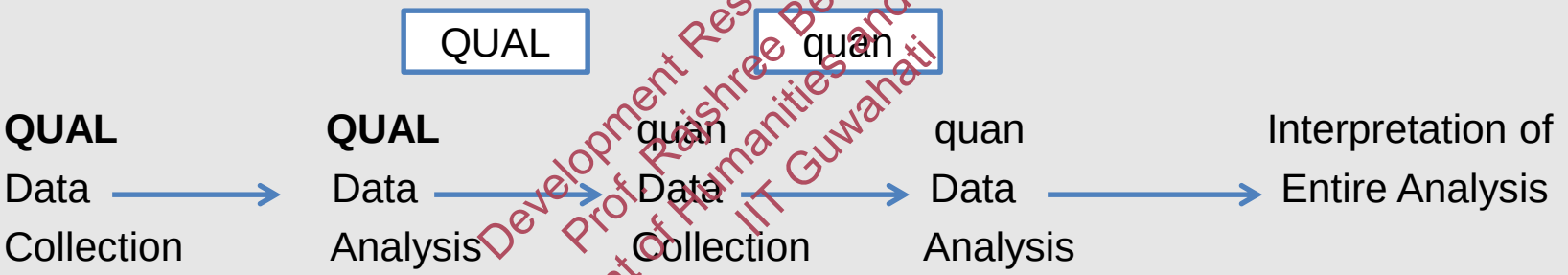
1. Sequential Designs

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Sequential Explanatory Design (a)



Sequential Exploratory Design (b)



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Sequential Transformative Design (c)

QUAL → quan
Social science theory, qualitative theory, advocacy worldview

QUAN → qual
Social science theory, qualitative theory, advocacy worldview

Mixed methods notation

- A **+** indicates a simultaneous or concurrent form of data collection, with both quantitative and qualitative data collection at the same time.
- A → indicates a sequential form of data collection, with one form (e.g., qualitative data) building on the other (e.g., quantitative data).
- Capitalization indicates that an approach or method is emphasized.
- "Quan" and "Qual" stand for quantitative and qualitative, respectively.
- A QUAN/qual notation indicates that the qualitative methods are embedded within a quantitative design.
- Boxes highlight the quantitative and qualitative data collection and analysis. (note: notations adapated from Morse (1991), Tashakkori and Teddlie (1998) and Creswell and Plano Clark (2007).

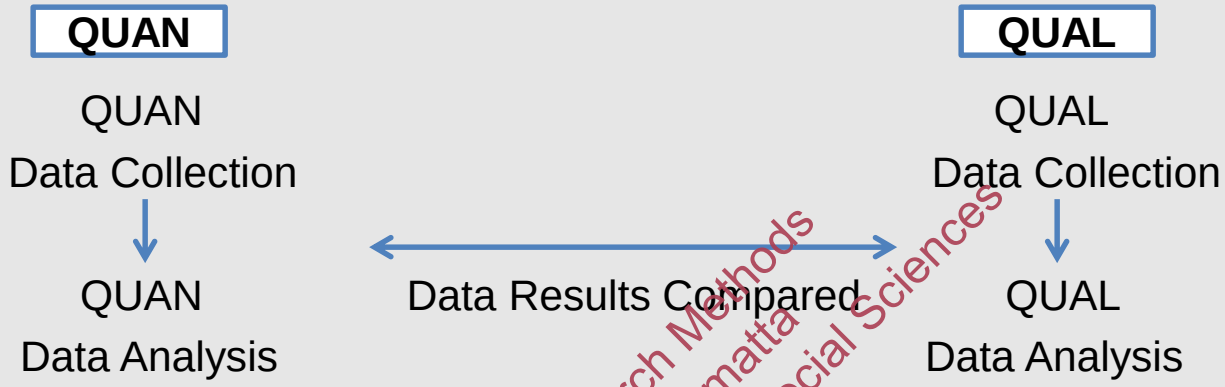
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Mixed methods visual models-

2. Concurrent Designs

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Concurrent Triangulation Design (a)



Concurrent Embedded Design (b)



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Concurrent Transformation Design (c)

QUAN + QUAL
Social science theory, qualitative theory, advocacy worldview

qual

QUAN
Social science theory, qualitative theory, advocacy worldview

Mixed methods strategies-1

Sequential Explanatory Strategy

- Characterized by the collection and analysis of quantitative data followed by qualitative data.
- Used to explain quantitative results by collecting and analyzing qualitative data.
- Straightforward nature.

Sequential Exploratory Strategy

- First phase of qualitative data followed by quantitative data.
- Use quantitative data to assist in the interpretation of qualitative findings.
- Focus is to explore a phenomenon.
- Three-phase approach.

Sequential Transformative Strategy

- A two-phase project with a theoretical lens. Usage of either method in the first phase.
- A theoretical perspective to guide the study.
- Able to give voice to diverse perspectives, or better understand a phenomenon or process.

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Mixed methods strategies-2

Concurrent triangulation Strategy

- Collecting both the data forms and then trace convergence, differences, or some combination.
- Data collection is concurrent, happening in one phase of the research study.

Concurrent Embedded Strategy

- Secondary method is embedded within the predominant method.
- Employed to utilize different methods to study different groups or levels.
- Example: quantitative data addresses outcomes fro the treatment, while qualitative data explores the processes experienced by individuals.

Concurrent Transformative Strategy

- Guided by the use of a specific theoretical perspective as well as the concurrent data collection.
- Theoretical perspective is the driving force of methodological choices.
- Example: the design may have one method embedded in the other to give a voice to diverse participants.

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Mixed methods introduction

1. Employ either the quantitative or qualitative approach (or some combination).
2. Emphasis in the direction of either quantitative or qualitative research in writing an introduction.
3. Need exists to both understand the relationship among variables in a situation and explore the topic in further depth.
4. Introduction may emphasize a quantitative approach if the first phase of a project uses quantitative research.

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Mixed methods purpose statement-guidelines

1. Begin with signaling words, such as "The purpose of" or "The intent of."
2. Indicate the overall intent of the study from a content perspective.
3. Indicate the type of mixed methods design used, such as sequential, concurrent or transformational.
4. Discuss the **reasons** for combining both quantitative and qualitative data.
5. Include the characteristics of a good qualitative purpose statement.
6. Include the characteristics of a good quantitative purpose statement.
7. Consider adding information about the specific types of both qualitative and quantitative data collection.

Reasons

- Better understand a research problem by converging.
- Explore participant views with the intent of supporting with quantitative research.
- Obtain statistical, quantitative results from a sample following up with qualitative results.
- Best convey the trends and voices of marginalized groups or individuals.

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A concurrent mixed method purpose statement- An example

A study of student and parent attitudes toward parental savings for the post secondary education of their children.

Purpose statement:

In an effort to shed light on parental saving, this article examines parental saving behaviors. Using student and parent data from a longitudinal study employing multiple surveys over a three-year period, logistic regression was used to identify the factors most strongly associated with parental savings for post secondary education. In addition, insights gained from the interviews of a small subsample of students and parents who were interviewed five times during the three-year period are used to further examine parental savings.

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A sequential mixed method purpose statement- An example

A study of the use of wireless iBook laptop computers in three teacher education methods courses.

Purpose statement:

The purpose of this sequential, mixed methods study was to first explore and generate themes about student use of iBook laptops in three teacher education classes using field observations and face-to-face interviews. Based on these themes, the second phase was to develop an instrument and to survey students about the laptop use on several dimensions. The rationale for using both qualitative and quantitative data was that a useful survey of student experience could best be developed only after a preliminary exploration of student use.

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A transformative concurrent mixed method purpose statement- An example

Purpose statement:

A study is conducted to contribute to the general understanding of how perceptions of fairness are formed and how gender equality is conceptualized by Swedish women and men. The aim of the article is to study the importance of time use, individual resources, distributive justice and gender ideology for perceptions of fairness and understandings of gender equality. Two Swedish studies are used to do this, a survey study and a qualitative interview study.

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A mixed methods proposal format-an example

1. Introduction

a) The research problem

b) Past research on the problem

c) Deficiencies in past research and one deficiency related to the need to collect both quantitative and qualitative data

d) The audiences that will profit from the study

2. Purpose

a) The purpose or study aim of the project and reasons for a mixed methods study

b) The research questions and hypothesis (quantitative questions or hypotheses, qualitative questions, mixed methods questions)

c) Philosophical foundations for using mixed methods research

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A mixed methods proposal format-an example-2

3. Methods

a) A definition of mixed methods research
b) The type of design used and its definition
c) Challenges in using this design and how they will be addressed
d) Examples of use of the type of design
e) Reference and inclusion of a visual diagram
f) Quantitative data collection and analysis
g) Qualitative data collection and analysis
h) Mixed methods data analysis procedures
i) Validity approaches in both quantitative and qualitative research

4. Researcher's resources and skills

5. Potential ethical issues

6. Timeline for completing the study

7. References and appendices with instruments, protocols, visuals.

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Mixed methods research questions and hypotheses

1. Both qualitative and quantitative research questions (or hypotheses) in order to narrow and focus the purpose statement.

2. Attention should be given to the order of the research questions and hypotheses.

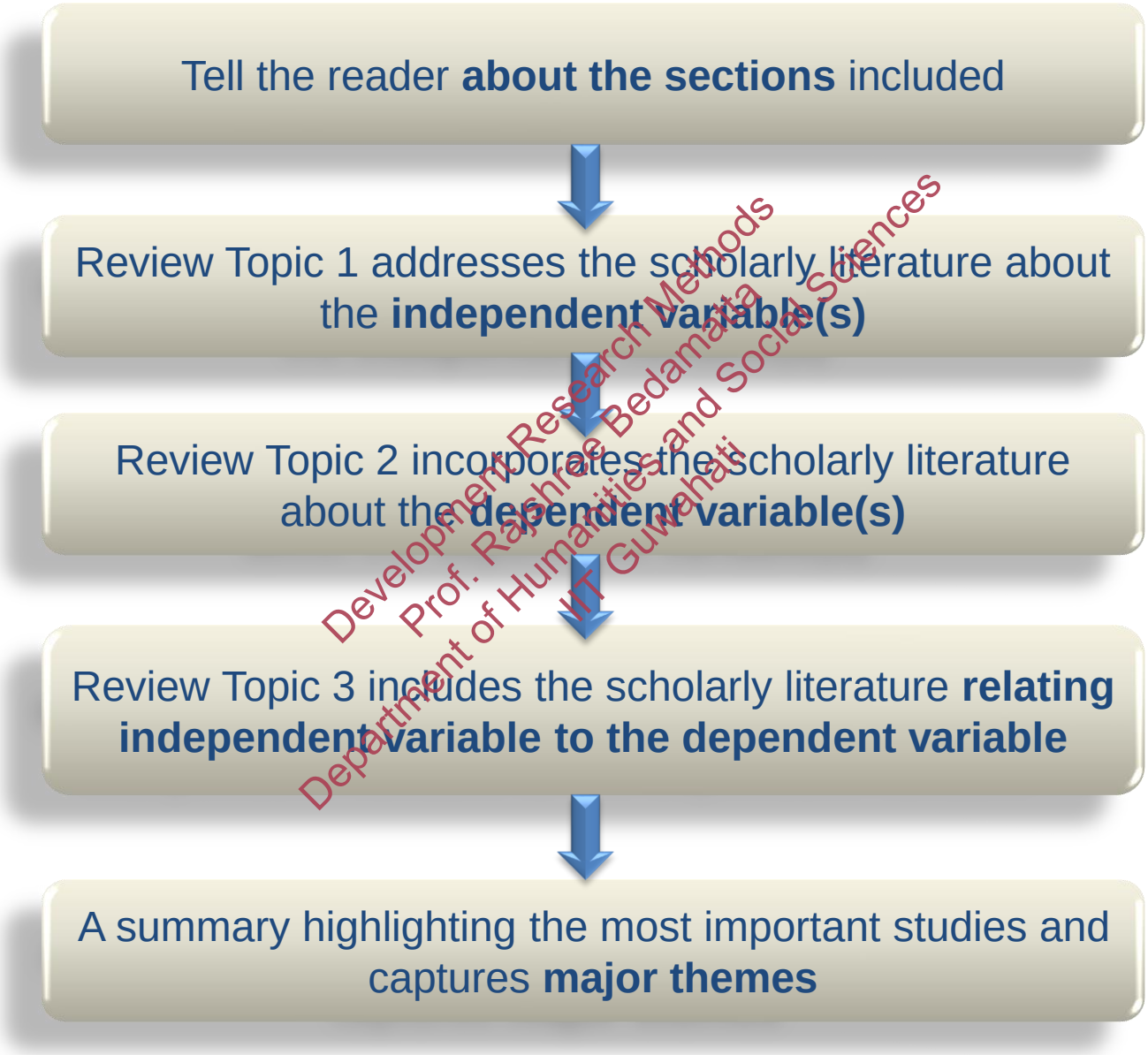
3. Include a mixed methods research question directly addressing the mixing of the quantitative and qualitative strands of the research.

4. Consider **different ways** in which all types of research questions can be written into a mixed methods study.

- Write separate quantitative questions or hypotheses and qualitative questions.
- Write separate quantitative questions or hypotheses and qualitative questions and follow them with a mixed methods question.
- Write only a mixed methods question that reflects the procedure or content.

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Mixed methods literature review



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Mixed methods theory use

1. Include theory deductively or inductively.

- Deductively as in quantitative theory testing and verification or inductively as in an emerging qualitative theory or pattern.

2. A framework of social science or a health science theory.

- To be tested in either a quantitative or qualitative approach to inquiry.

3. Transformative design as a distinct form.

- Gave primacy to value-based, action-oriented research.
- Mixing the value commitments of different traditions, the use of diverse methods, and a focus on action solutions.
- Integration of transformative methodology into all phases of research process.

4. Use of theoretical perspectives

- Gendered, feminist; cultural/racial/ethnic; lifestyle; critical and class and social status.

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Theory in a transformative-emancipatory mixed methods study- An example

- Issues in an urban, predominantly African American HIV/AIDS community were studied.
  - The language of participants with HIV/AIDS within the participants' social context was examined.
  - 75 open-ended ethnographic interviews were conducted to identify "language themes".
  - 40semi-structured interviews addressing demographics, daily routine, drug use, knowledge of HIV/AIDS risks, etc.
  - Following the qualitative data, concepts and questions to refine follow-up questions, including the design of a quantitative post intervention instrument were used.
  - Empowerment approaches in evaluation can be useful.

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Transformative-emancipatory questions for mixed methods researchers throughout the research process-1

1. Defining the problem and searching the literature.
• Did you deliberately search the literature for concerns of diverse groups and issues of discrimination and oppression?
• Did the problem statement arise from the community of concern?
• Did your mixed methods approach arise from spending quality time with these communities?
2. Identifying the research design.
• Does your research design deny treatment to any groups and respect ethical considerations or participation?
3. Identifying data sources and selecting participants.
• Are the participants of groups associated with discrimination and oppression?
• Are the participants appropriately labeled?
• Is there a recognition of diversity within the target population?

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Transformative-emancipatory questions for mixed methods researchers throughout the research process-2

- What can be done to improve the inclusiveness of the sample to increase the probability that traditionally marginalized groups are adequately and accurately represented?

4. Identifying or constructing data collection instruments and methods.

- Will the data collection process and outcomes benefit the community being studied?
- Will the research findings be credible to that community?
- Will communication with that community be effective?
- Will the data collection open up avenues for participation in the social change process?

5. Analyzing, interpreting, and reporting and using results.

- Will the results raise new hypotheses?
- Will the research examine subgroups (i.e., multilevel analyses) to analyze the differential impact on diverse groups?
- Will the results help understand and elucidate power relationships?
- Will the results facilitate social change?

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Choosing a mixed methods strategy

Identify one of the six approaches as the **primary design** for the proposed study

Consider the amount of **time** you have to collect data

Where time is a constraint, think about an **embedded model of design**

Consider using the **explanatory sequential approach**

Study published articles that use different approaches and determine which one you are going to use

Introduce your design to your advisor to have a **working model** for the approach planned

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Data collection procedures

1. Identify the type of data to be collected.

- Be specific about both the quantitative and qualitative type of data to be collected.

2. Convey rigorous sampling procedures in a proposed study.

- Quantitative data involves random sampling, while qualitative data uses purposeful sampling.

3. Include detailed procedures in your visual model.

- **Example:** a discussion of the approach used might include describing the use of survey data collection followed by both descriptive and inferential data analysis in the first phase. This is followed by qualitative observations and coding and thematic analysis within an ethnographic design in the second phase.

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A typology of mixed methods sampling

Basic strategies	Involve combining quantitative and qualitative sampling (e.g., stratified purposeful sampling, purposive random sampling).
Sequential sampling	Sampling from the first phase or strand informs the second phase or strand.
Concurrent sampling	Quantitative probability and qualitative purposeful sampling are combined as independent sampling procedures or jointly (e.g., a survey with both closed-ended and open-ended responses.)
Multilevel sampling	Sampling occurs in two or more levels or units of analysis.
Combination of foregoing strategies	Sampling using any combination of the foregoing strategies.

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Data analysis and validation procedures

Data transformation

- Quantifying the qualitative data.
- Involves creating codes and themes qualitatively.

Explore outliers

- An analysis of quantitative data in the first phase yields outlier cases.
- Follow-up qualitative interviews.

Instrument development

- Qualitative data collection involves obtaining themes and specific statements.
- Create a survey instrument.
- Validate the instrument.

Examine multiple levels

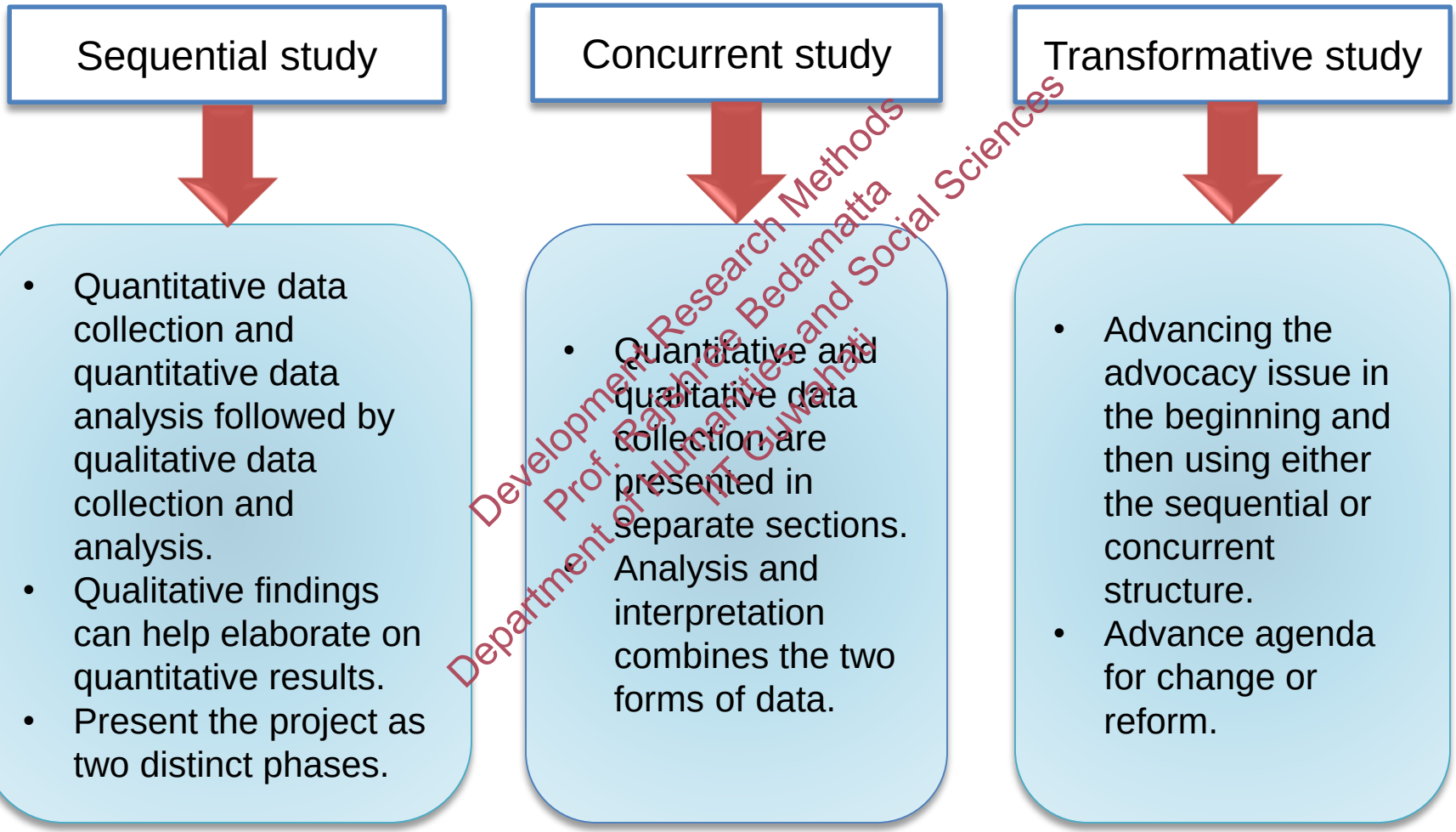
Gather quantitative results at one level.
Collect qualitative interviews at the same time.

Create a matrix

- Combine information from both the quantitative and qualitative data collection.
- Presents an analysis of the combined qualitative and quantitative data.

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Report presentation structure



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Examples of mixed methods procedures- A sequential strategy of inquiry

- A two phase explanatory sequential mixed methods study of two types of teacher workplace commitment- organizational commitment and commitment to student learning in 63 urban elementary and middle schools.

Phase 1: a quantitative study that looked at statistical relationships between teacher commitment and organizational antecedents and outcomes in elementary and middle schools.

Phase 2: looked within specific schools, **using qualitative /case study methods** to better understand the dynamics of teacher commitment.

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Examples of mixed methods procedures- A concurrent strategy of inquiry

- A study examining the factors associated with parental savings for children attending higher education campuses.

Using student and parent data from a **longitudinal study** employing multiple surveys over a three-year period, **logistic regression** was used to identify the factors associated with parental saving form post secondary education.

Interviews were used to gain insights from a small sub-sample of students and parents are used to further examine parental savings.

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Examples of mixed methods procedures- A transformative strategy of inquiry

- A study examining whether theories of patriarchy apply to South Asian women (from India, Pakistan and Bangladesh) living in East London.

Discussion presented **how feminist methodologies** informed her study. Research also involved putting the researcher into the process of production.

Mixed methods study helped to expose the lives of women and have a **transformative effect** in which the "women benefitted from the research project."

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References used for this lecture

- John W. Cresswell, " Research Design, Qualitative, Quantitative and Mixed Methods Approaches", 2014, Sage Publications.
- R. Burke Johnson and Anthony J. Onwuegbuzie, "Mixed Methods Research: A Research Paradigm Whose Time Has Come" 2004, Vol.33, No.7, American Educational Research Association.

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For a comprehensive literature on the topics covered in this lecture it is also suggested that students go through the reference list of the above cited papers.