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Steps in Conducting a Scholarly Mixed Methods Study

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Abstract for DBER Group Discussion on 2013-11-14

Presenter(s), Department(s):

John Creswell

Professor

Department of Educational Psychology

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Title:

Steps in Conducting a Scholarly Mixed Methods Study

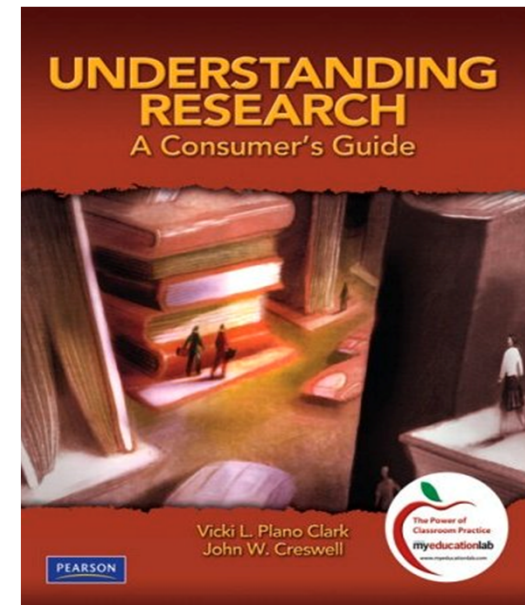
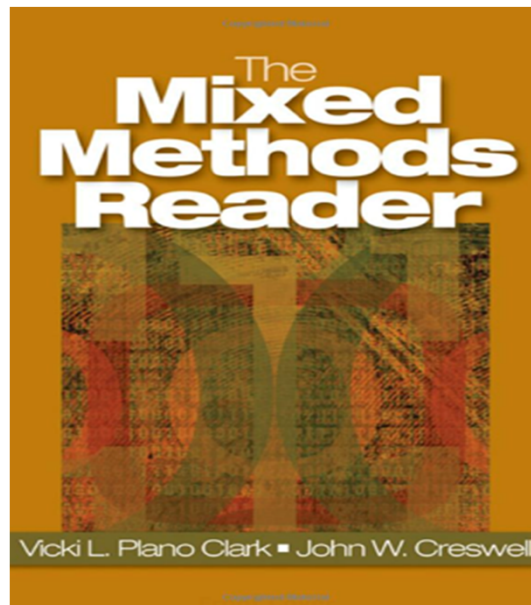
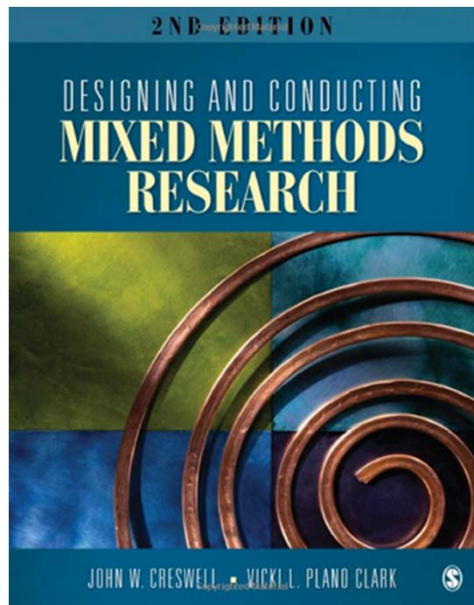
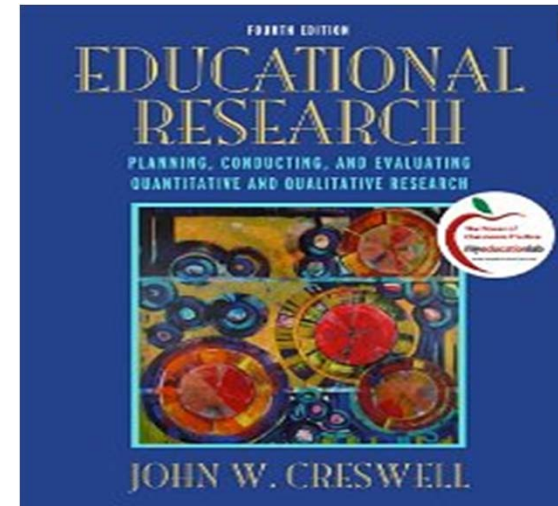
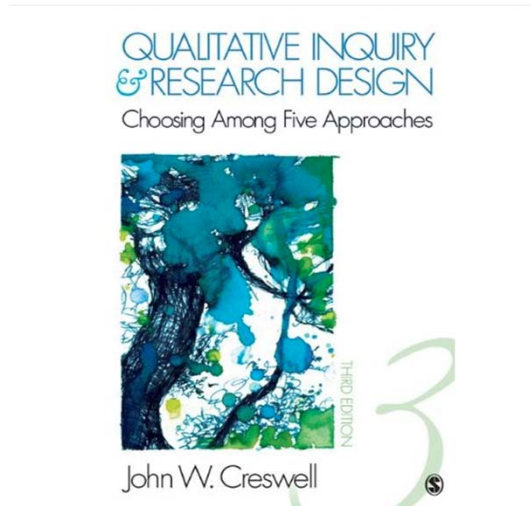
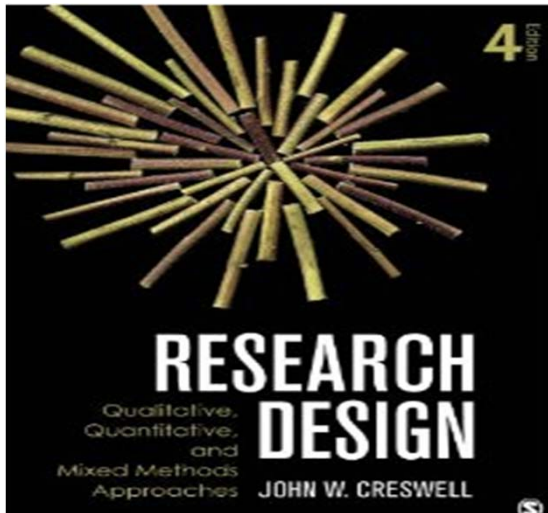
Abstract:

Mixed methods research is a rapidly expanding methodology in the social and human sciences in the US and around the world. In this presentation I will first define mixed methods research (combining both quantitative and qualitative methods of research) and discuss what it is and what it is not. Then I will review a brief history of its development, and why it is important today. I will discuss several of the scientific developments in mixed methods that have occurred over the last ten years, such as the specification of types of designs, the formation of mixed methods questions, and the use of innovative approaches to jointly display quantitative and qualitative results. Finally, I will talk about the future of this methodology - where it is headed and some important worldwide developments that have encouraged mixed methods research.

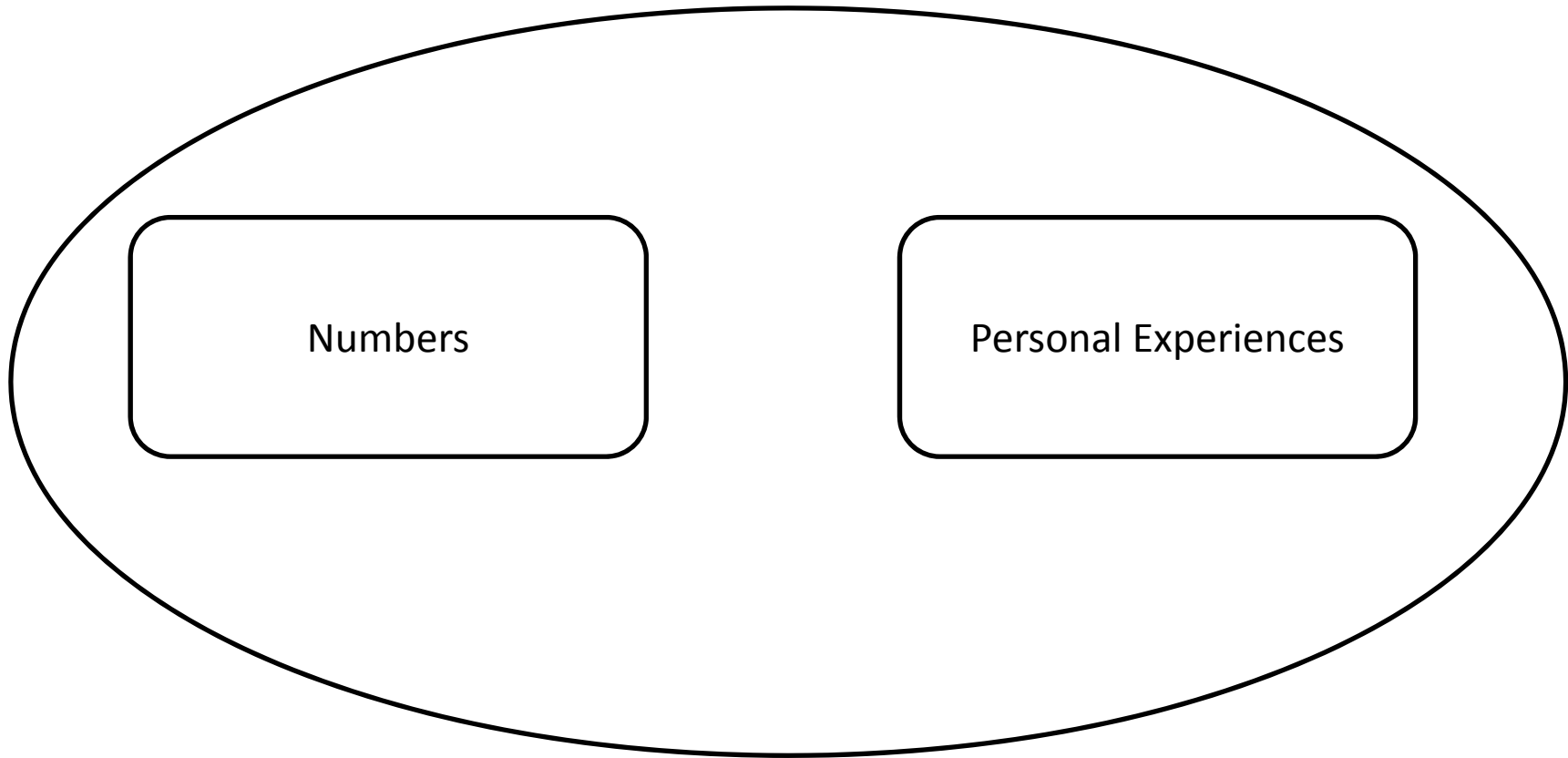
Steps in Conducting a Scholarly Mixed Methods Study

John W. Creswell

University of Nebraska-Lincoln



How We Make Sense



A Mixed Methods Approach

A Simple Idea

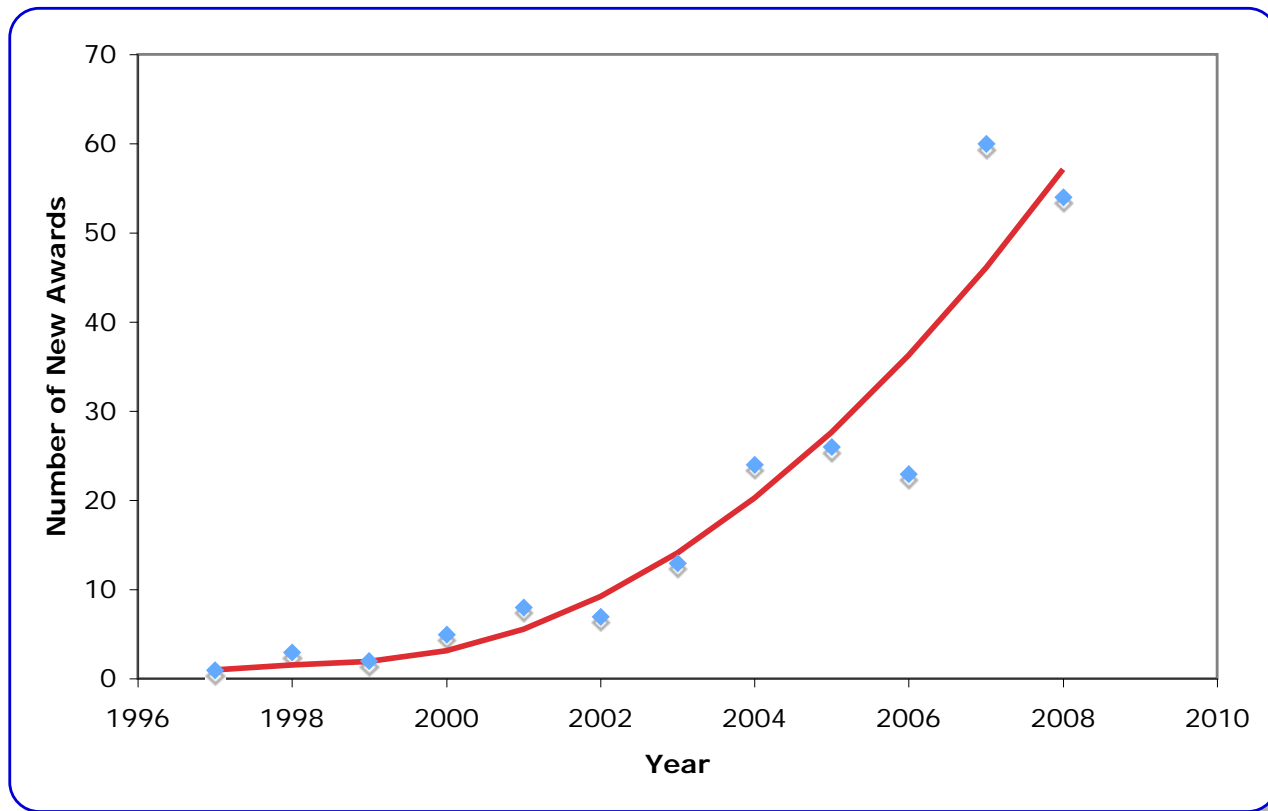
Let's use quantitative and qualitative data (or quantitative research and qualitative research) together to gain a more complete understanding of our research questions.

Mixed methods is a research approach, popular in the social, behavioral, and health sciences, in which researchers collect, analyze, and integrate both quantitative and qualitative data in a single study or in a sustained long-term program of inquiry to address their research questions.

POPULARITY - FEDERAL FUNDING

5

New NIH funding awards that self-identify as mixed methods ($N = 226$) (1997-2008)



Source: CRISP database;
Plano Clark (2010)

DISSERTATIONS

Table 1

Number of Dissertations and Theses with "Mixed Methods" in the Title

Year Range	Number
2005-2009	2524
2000-2004	532
1995-1999	100
1990-1994	26
1985-1989	17
1980-1984	3

Note: The number represents the number of dissertations and theses which contained the words "mixed methods" in the citation and abstract. This search was conducted using the search engine "proquest" (Proquest Search Engine, 2009).

Haines, C., 2011 unpublished dissertation, University of Nebraska-Lincoln

Mixed Methods Social Science Articles

How to Conduct a Mixed Methods Study: Recent Trends in a Rapidly Growing Literature

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Keywords

qualitative versus quantitative, multimethod research, research design, methodology, formal models

Abstract

The present article selectively reviews the large number of recent studies that have been described as based on mixed methods. I begin by discussing a body of work that has emerged to promote mixed methods research across the social sciences. I then review and critique empirical research in each of two general approaches to mixed methods: mixed data-studies in which combine two or more kinds of data; and mixed collection studies, which combine two or more analytical strategies, data-analysis studies, which combine two or more analytical strategies, or explore quantitative data with qualitative methods, or explore quantitative data with qualitative techniques. I argue that, although mixed methods research is by no means new, empirical studies today combine methods in more diverse and, at times, innovative ways. Nevertheless, important methodological tensions will likely surface as the research becomes more self-reflexive.

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GUEST EDITORIAL

Qualitative and Mixed Methods in Social Work Knowledge Development

Deborah K. Padgett

Providing guidelines on qualitative and mixed methods in social work knowledge development is a daunting task. Quantitative methods also require careful consideration, but they rarely entail the degree of epistemological self-searching and ongoing consequential decision making that qualitative methods demand. As a reviewer of qualitative studies for academic journals and federal funders, and as the recipient of many such reviews (some quite negative), I have learned some lessons along the way. This editorial offers a few suggestions arising from these experiences that I hope will be of assistance to those interested in conducting qualitative research.

Qualitative methods have been contributing to

more concretely specifiable. This editorial hews closer to the postpositivist end but will hopefully resonate with social work researchers all along the continuum: who wish to make their own contributions to knowledge. I will make seven points—both exhortations and recommendations:

1. The burden of proof is heavier but doable.
2. Choose an approach and stick with it.
3. Theories and concepts matter.
4. Social justice values do not have to be sidelined.
5. Research designs should be detailed and specific.
6. Writing the report: balancing description

Geo-Narrative: Extending Geographic Information Systems for Narrative Analysis in Qualitative and Mixed-Method Research*

Introduction to the Special Issue

Qualitative and Mixed Methods Research in Cross-Cultural Psychology

Alison Karasz

Albert Einstein College of Medicine

Journal of Cross-Cultural
Psychology
Volume 40 Number 6
November 2009 909-916
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10.1177/0022022109349172
<http://jccp.sagepub.com>

It has been unlikely that the *Journal of Cross-Cultural Psychology* would have an interest in a special issue devoted to qualitative and mixed methods research in social and health sciences. Signs of a growing interest in qualitative and mixed methods research in the United States National Institutes of Health (NIH) and the American Psychological Association's new journal *Qualitative Psychology* have

Designing A Mixed Methods Study In Primary Care

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ABSTRACT

BACKGROUND Mixed methods or multimethod research holds potential for rigorous, methodologically sound investigations in primary care. The objective of this study was to use criteria from the literature to evaluate 5 mixed methods studies in primary care and to advance 3 models useful for designing such investigations.

METHODS We first identified criteria from the social and behavioral sciences to analyze mixed methods studies in primary care research. We then used the criteria to evaluate 5 mixed methods investigations published in primary care research journals.

RESULTS Of the 5 studies analyzed, 3 included a rationale for mixing based on the need to develop a quantitative instrument from qualitative data or to converge information to best understand the research topic. Quantitative data collection involved structured interview, observational checklists, and chart audits that were analyzed using descriptive and inferential statistical procedures. Qualitative data consisted of semistructured interviews and field observations that were analyzed using coding to develop themes and categories. The studies showed diverse forms of priority: equal priority, qualitative priority, and quantitative priority. Data collection involved quantitative and qualitative data gathered both concurrently and sequentially. The integration of the quantitative and qualitative data in these studies occurred between data analysis from one phase and data collection from a subsequent phase, while analyzing the data, and when reporting the results.

DISCUSSION We recommend instrument-building, triangulation, and data transformation models for mixed methods designs as useful frameworks to add rigor to investigations in primary care. We also discuss the limitations of our study and the need for future research.

Ann Fam Med 2004;2(7):12. DOI: 10.1377/afm.104

INTRODUCTION

With an expanded use of qualitative research in health services investigations, mixed methods or multimethod research holds potential for rigorous, methodologically sound studies in primary care. Mixed methods investigations involve integrating quantitative and qualitative data collection and analysis in a single study or a program of inquiry.¹ This form of research is more than simply collecting both quantitative and qualitative data; it indicates that data will be integrated, related, or mixed at some stage of the research process. The underlying logic of mixing is that neither quantitative nor qualitative methods are sufficient in themselves to capture the trends and details of the situation. When used in combination, both quantitative and qualitative data yield a more complete analysis, and they complement each other.

The concept of mixed methods research is not new to primary care. Almost 15 years ago, authors introduced the importance of integrating quantitative and qualitative research in a single study or program of inquiry.²⁻⁴ More recently, investigation emphasized that quantitative and qualitative methods can be mixed, such as in collecting qualitative data before quantitative

Conflicts of interest: none reported.

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Impact of clinical information-retrieval technology on physicians: A literature review of quantitative, qualitative and mixed methods studies

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KEYWORDS

Information-retrieval;
 Computerized practice
 guidelines;
 Databases;
 Electronic resources;
 Information services;
 Information systems

Summary

Purpose: This paper appraises empirical studies examining the impact of clinical information-retrieval technology on physicians and medical students.
Methods: The world literature was reviewed up to February 2004. Two reviewers independently identified studies by scrutinising 3368 and 3249 references from bibliographic databases. Additional studies were retrieved by hand searches, and by searching ISI Web of Science for citations of articles. Six hundred and five paper-based articles were assessed for relevance. Of those, 40 (6.6%) were independently appraised by two reviewers for relevance and methodological quality. These articles were quantitative, qualitative or of mixed methods, and 26 (4.3%) were retained for further analysis. For each retained article, two teams used content analysis to review extracted textual material (quantitative results and qualitative findings).
Results: Observational studies suggest that nearly one-third of searches using information retrieval technology may have a positive impact on practice. The

Mixed Methods Health Science Articles

Journal of Psychiatric and Mental Health Nursing, 2011



Mixed methods research in mental health nursing

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Keywords: complex problems, mental health nursing, mixed methods research, psychiatric nursing, purpose statement, research design

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Accessible summary

- This paper contributes to better understanding of mixed methods application in mental health nursing and should therefore be of interest for researchers and mental health nurses involved in designing and conducting mixed methods research.
- Few mental health nurses use the term 'mixed methods' in the titles of their research. This paper helps to clarify the ways in which mental health researchers and nurses design and title mixed methods studies.
- This paper gives an outline of the types of mixed methods studies which can be designed to aid in the understanding of complex mental health problems.

Abstract

methods of exploration

Using mixed methods research in medical education: basic guidelines for researchers

Ronen T. Schreiber^a & Virginia A. Reed^b

CONTEXT Mixed methods research involves the collection, analysis and integration of both qualitative and quantitative data in a single study. The benefits of a mixed methods approach are particularly evident when studying complex questions or complex situations and circumstances, which is often the case in medical education research. Basic guidelines for when to use mixed methods research and how to design a mixed methods study in medical education research are not readily available.

OBJECTIVES The purpose of this paper is to identify the barriers to providing an overview

of mixed methods research, research design models relevant for medical education research, examples of such research designs, model-based educational research, and basic guidelines for medical education researchers interested in mixed methods research.

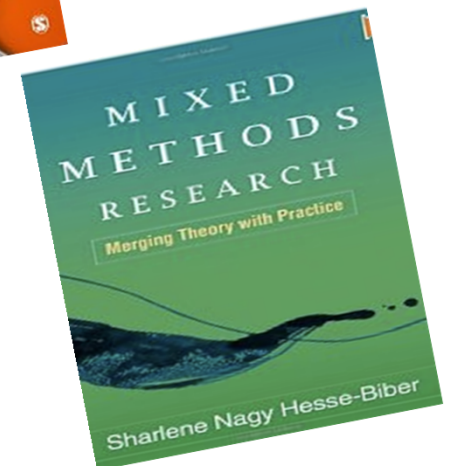
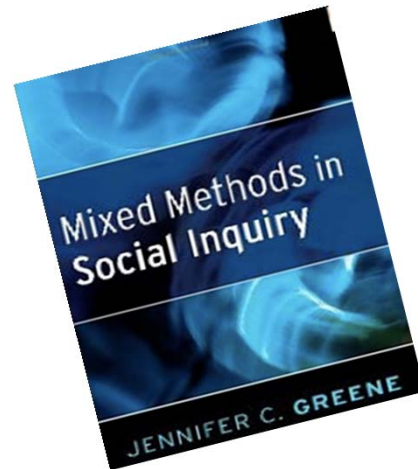
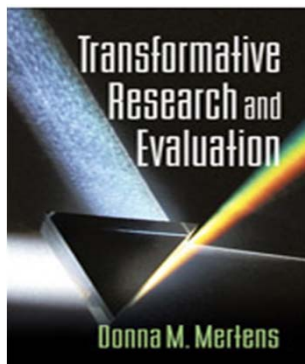
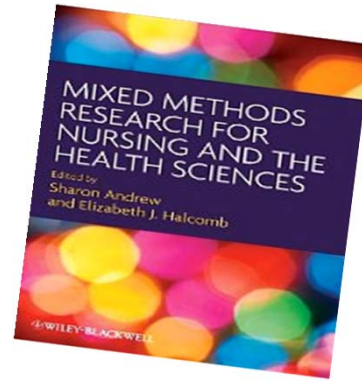
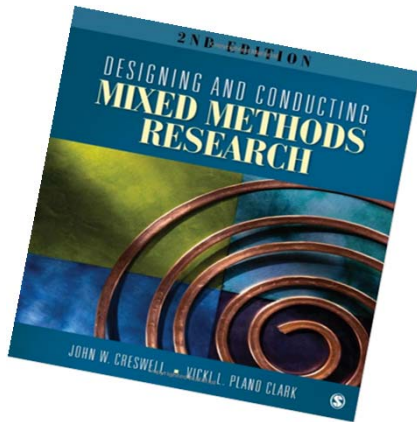
CONCLUSIONS Mixed methods may prove superior to increasing the integrity and applicability of findings when studying new or complex situations and to researchers in medical education research. They deserve an increased presence and recognition in medical education research.

Medical Education 2010; 44: 617-619
 doi:10.1111/j.1365-2214.2010.01100.x

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Select Mixed Methods Books





When did mixed methods develop in the social sciences and health/behavioral sciences? (1985-90)

Jennifer Greene – USA- University of Illinois – evaluator

John Hunter and Allen Brewer – USA - Northwestern and Boston College – sociologists

Alan Bryman - England – management

John Creswell – USA – education

Nigel and Jane Fielding – sociologist in UK

Jan Morse – nursing in Canada

If you walked into my office, with the idea of conducting a mixed methods study, I would take you through a series of questions to help you design your project.



I will take the steps out of order of what you typically see in a research project, but we will put them in order at the end.

Question 1. Do you have a mixed methods study? (or simply a quantitative study or a qualitative study)

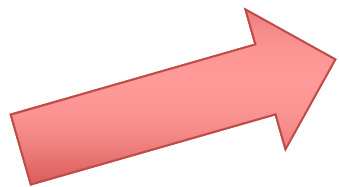
What I am looking for (core characteristics of a mixed methods study):

1. Do you have a quantitative database? (closed-ended)
2. Do you have a qualitative database? (open-ended)
3. Do you plan on bringing the two databases together? (integration)
4. What procedures (design) will you use?

What I am NOT looking for:

- Keeping the databases separate
- The collection of BOTH quantitative and qualitative data (not content analysis)
- Multiple forms of quantitative data or multiple forms of qualitative data (multi-method)
- Only the transformation of qualitative data into quantitative (in analysis)
- Only formative/summative evaluation
- Only adding in qualitative data into an experiment
- Doing mixed methods because it is trendy

Question 2. Does your research problem or question merit a mixed methods study?



They say, choose your method based on your problem.

When is mixed methods suitable for a problem or question?

- When qualitative research or quantitative research is insufficient to fully understand the problem

Other types of problems, when:

- We need to explore before we administer instruments
- We need to explain our statistical results by talking to people
- We need to see if our quantitative results and our qualitative results match
- We need to enhance our experiments by talking with people
- We need to develop new instruments by gathering qualitative data

Question 3: What is the overall intent of your study?

My goal:

- To learn whether you are quantitatively- or qualitatively-oriented by the way you state your intent

K
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Quantitative	Qualitative
factors	explore
determinants	generate
relationship	develop
causes	create
influences	meaning
effects	personal experiences

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Your Keywords:

1. Will help me think about what mixed methods design you will likely use
2. Will help me think about your discipline field background that you bring to mixed methods
3. Will help me think about what skills you have to begin conducting a mixed methods study

Examples of General Intent Statements

- “This article reports on the study conducted to understand students’ persistence in the Distributed Doctoral Program in Educational Leadership in Higher Education (ELHE) offered by the University of Nebraska-Lincoln (UNL).” (Ivankova & Stick, 2007)
- “We conducted an interview-based study of terminally ill individuals who were receiving palliative care.” (Kutner, Steiner, Corbett, et al., 1999)
- “...to understand patients’ experiences of transitions from hospital to a homeless shelter and determine aspects of these experiences associated with perceived quality of these transitions.” (Greysen, Allen, Lucas, et al., 2012)

Question 4: What quantitative and qualitative data will you collect to address this intent?

I will ask you to list your quantitative and qualitative data sources:

	Quantitative Data	Qualitative Data
Site and sample?		
How many?		
Types of data to collect		
Specific instruments/protocols		
Types of scales/questions		

I will ask you to list your quantitative and qualitative data analysis steps:

	Quantitative Analysis	Qualitative Analysis
Getting data ready for analysis		
Preliminary analysis		
Steps in analysis (including statistics, themes)		

List Multiple Types of Quantitative and Qualitative Data to be Collected and Analyzed

QUANTITATIVE RESEARCH

- **Quantitative data collection**(closed-ended)
 - Instruments
 - Behavioral checklists
 - Records
- **Quantitative data analysis**
 - Use numeric data,
 - For description
 - For comparing groups
 - For relating variables

QUALITATIVE RESEARCH

- **Qualitative data collection** (open-ended)
 - Interviews
 - Observations
 - Documents
 - Audio-visual materials
- **Qualitative data analysis**
 - Use text and image data,
 - For coding
 - For theme development
 - For relating themes

Are These Procedures Realistic and Feasible?

- Time
- Economically
- Skills
- Useful for stakeholders

Question 5. Why are you collecting both quantitative and qualitative data?

Basic reasons for using mixed methods (called the rationale in mixed methods):

- Need different, multiple perspectives, or more complete understandings
- Need to confirm our quantitative measures with qualitative experiences
- Need to explain quantitative results
- Need better contextualized instruments, measures, or interventions to reach certain populations
- Need to enhance our experiments
- Need to gather trend data and individual perspectives from community members
- Need to evaluate the success of a program by using a needs assessment AND a test of the success of the program

Questions 6. Do you plan on using a theory? Do you plan on advancing your philosophical stance?

Frame the study within theory/philosophy:

Paradigm/Worldview (epistemology, ontology, axiology, methodology)



Theoretical lens
(e.g., feminist, racial, social science theories)



Methodological approach (e.g., ethnography, experiment, mixed methods)



Methods of data collection (e.g., interviews, checklists, instruments)

Adapted from Crotty M. (1998)

Further questions about philosophy:

- What is a philosophy?
- Which philosophies are typically used as the foundation in mixed methods research?

Philosophies to consider in mixed methods:

- Pragmatism
- Transformative worldview
- Critical realism
- Dialectic pluralism

- Multiple worldviews/paradigms
- Match worldview to design
- Worldview comes from your scholarly community

Further questions about theory:

- What is a theory?
- How do you find a theory?
- How will you use it in your mixed methods study?

Question 7. What mixed methods design will you use?

Parsimonious set of designs: Basic and Advanced

Basic Designs

- Convergent Design
- Explanatory Sequential Design
- Exploratory Sequential Design

Advanced Designs

- Intervention Design
- Transformative Design
- Multiphase Design

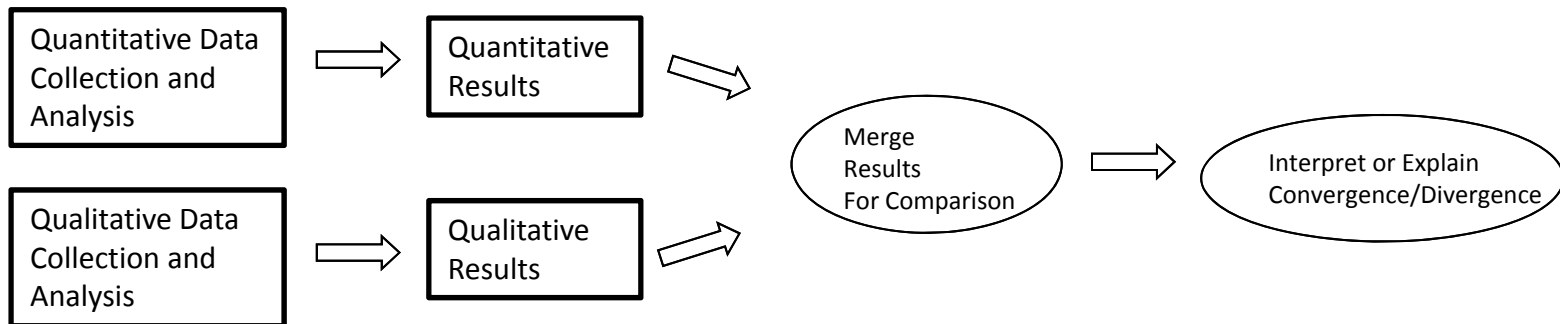
Advanced Designs

Basic
Designs

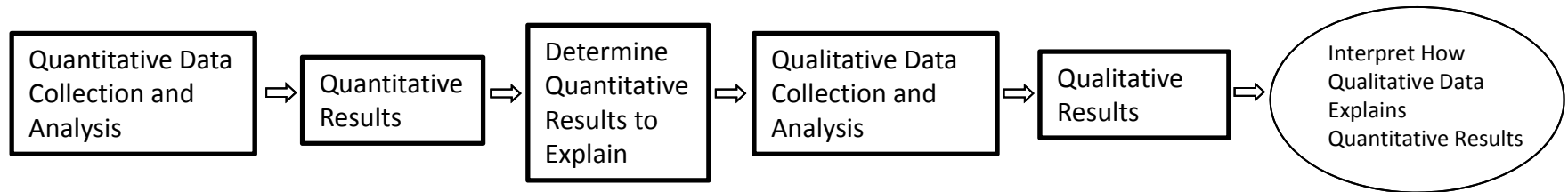


Basic mixed methods designs

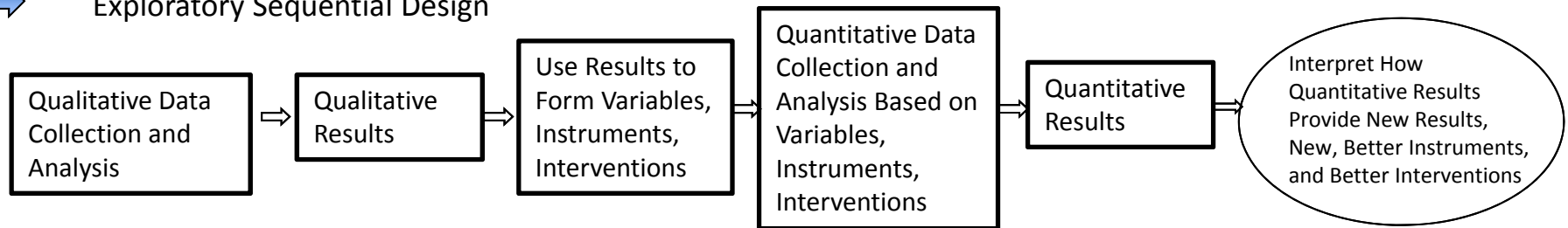
→ Convergent Parallel Design



→ Explanatory Sequential Design



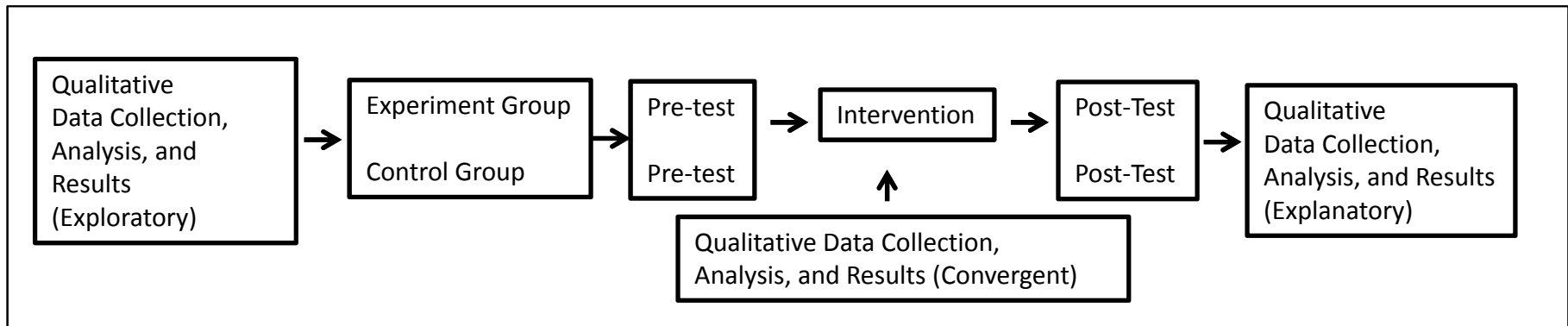
→ Exploratory Sequential Design



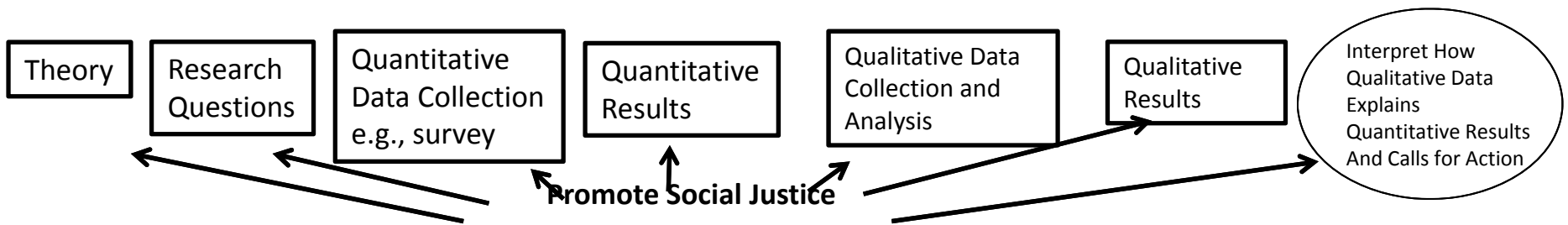
Advanced mixed methods designs

Intervention Mixed Methods Design

Experimental Study

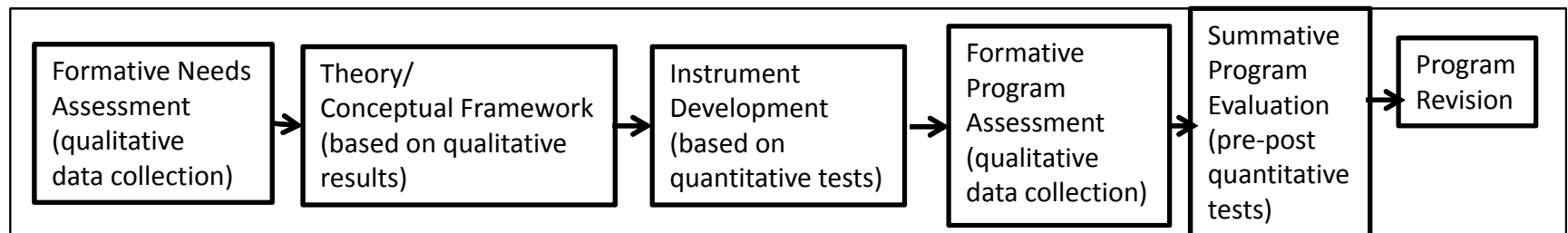


Social Justice Design (using an Explanatory Sequential Design example)



Multistage Evaluation Design (using an Exploratory Sequential Design example)

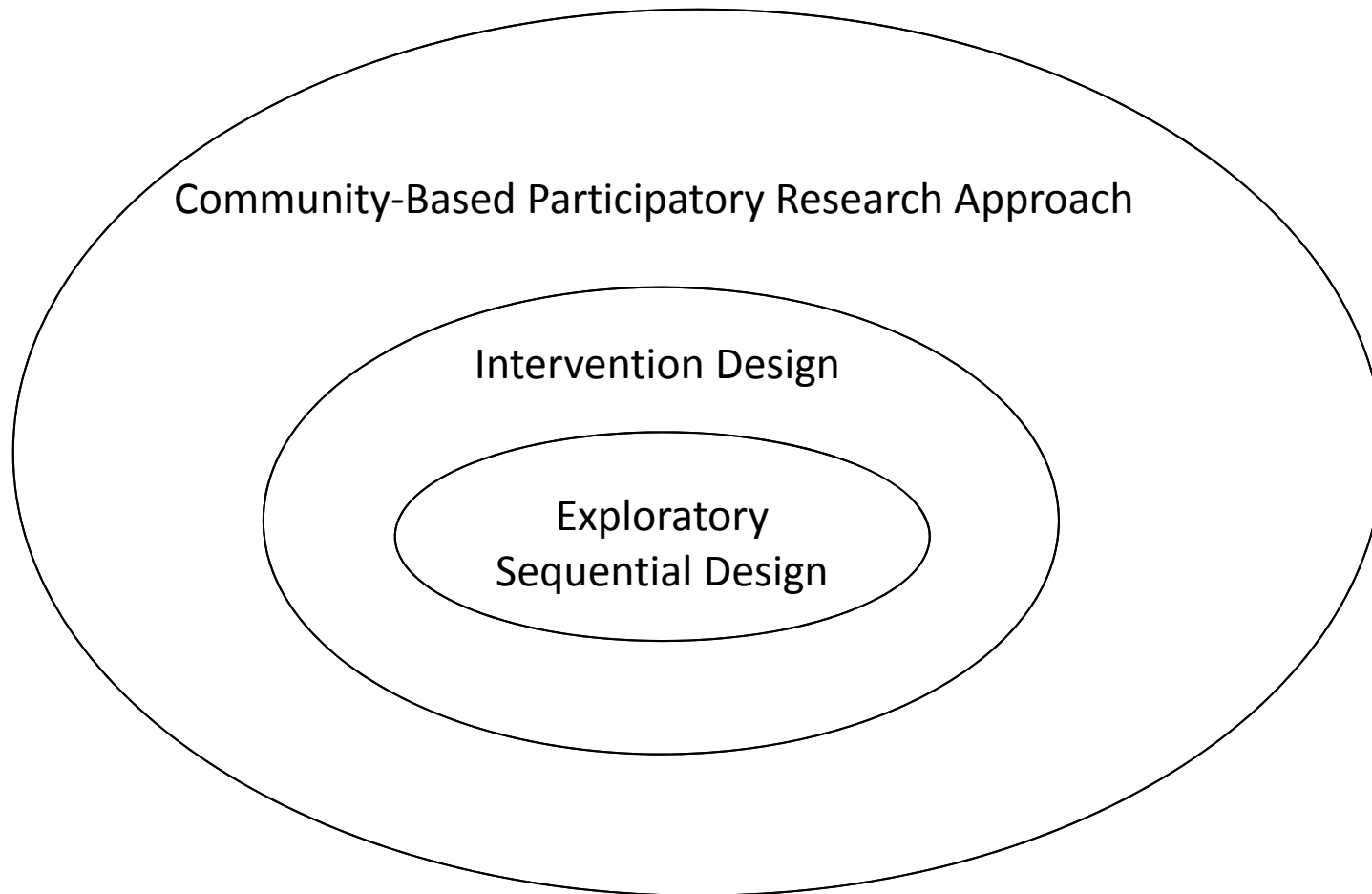
Single Program Objective



How do you choose your design?

- First select your basic design, then add if you have an advanced design
- Consider your scholarly community: quantitative or qualitative? (how to begin your study)
- Consider your skills: quantitatively-strong or qualitatively-strong (what will be emphasized)
- Consider your resources (collect at one time or space out)
- Consider the complexity of the design (what is the easiest? the hardest?)

Advanced Design: Betancourt et al. R 24 project examining the use of a family strength intervention with community input with refugees in Boston



Question 8. Can you draw a diagram of your design?

Convergent Design Wittink et al. (2006)

Procedures:

- Select 48 participants who self-identify as depressed.
- Survey measures: ratings of depression status, demographics, other health measures.

Procedures:

- Descriptive statistics
- Group comparisons

QUAN data collection

Products:

- Numerical item scores

QUAN data analysis

Products:

- Classification of whether depression ratings converge
- Means, SDs
- Significance

Procedures:

- Select same 48 participants.
- Conduct semistructured interviews.

QUAL data collection

Products:

- Transcripts

QUAL data analysis

Products:

- Four major themes
- Typology of patient perceptions

Merge the results

Procedures:

- Cross-tabulate qualitatively derived groups with quantitative variables.

Products:

- Matrix relating qualitative themes to quantitative variables

Interpretation

Procedures:

- Consider how merged results produce a better understanding.

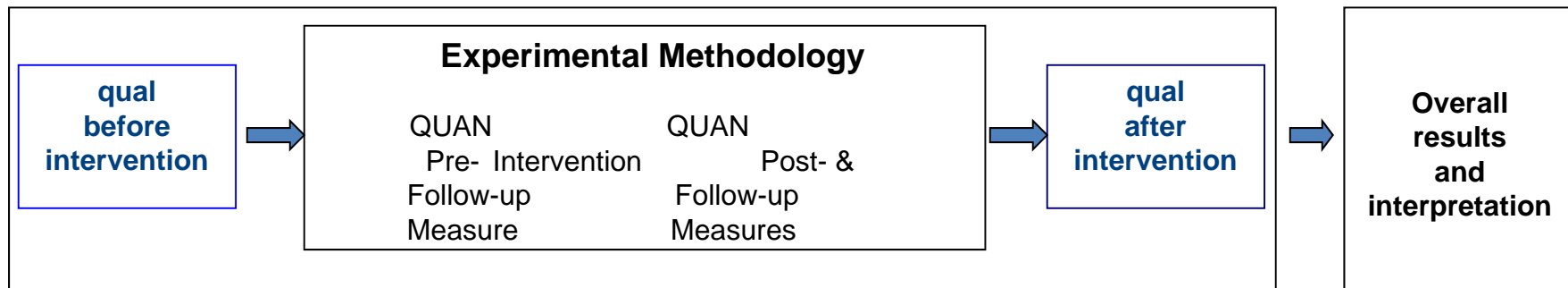
Products:

- Discussion

Source: based on Wittink et al.(2006)

Intervention Design (Rogers, Day, Randall,, & Bentall , 2003, study to improve the management of anti-psychotic medication)

Flow of the experiment



- on-
- one semi-structured interviews
- Thematic analysis

- Products:
- Transcripts
 - Developed intervention treatment

- Procedures:
- Three groups: control group, compliance Intervention group, alliance intervention group – group comparisons
 - Outcome measures: 1) attitudes toward medication 2) adherence to treatment 3) avoidance of relapse
 - DAI measure completed 3 times (pre, post, & follow up)

- Products:
- Numerical item scores
 - Change scores
 - Test statistics

- Procedures:
- One-on-one semi-structured interviews – exiting the trial, participants from two experimental conditions;
 - Thematic analysis

- Products:
- Transcripts
 - Themes and quotes

- Discuss treatment effectiveness
- Discuss themes in context of interventions and outcomes

- Products:
- Discuss

Question 9. Can you write a good purpose statement (or study aim) that fits your design?

How to write a mixed methods study aim:

- **This mixed methods study will address [overall content aim]. A convergent parallel mixed methods design will be used, and it is a type of design in which qualitative and quantitative data are collected in parallel, analyzed separately, and then merged. In this study, [quantitative data] will be used to test the theory of [the theory] that predicts that [independent variables] will [positively, negatively] influence the [dependent variables] for [participants] at [the site]. The [type of qualitative data] will explore [the central phenomenon] for [participants] at [the site]. The reason for collecting both quantitative and qualitative data is to [the mixing reason].**
- Intent
- Design
- Data Collection
- Rationale

Question 10. Can you write research questions for your mixed methods study?

Write 3 types of questions:

- Quantitative questions or hypotheses
- Qualitative questions
- A mixed methods question

Basic design mixed methods questions:

Convergent Design

- To what extent do the quantitative and qualitative results converge?

Explanatory Design

- In what ways do the qualitative data help to explain the quantitative results?

Exploratory Design

- In what ways do the quantitative results generalize the qualitative findings?

Advanced design mixed methods questions:

- Intervention Design
 - How do the qualitative findings provide an enhanced understanding of the quantitative results?
- Transformative Social Justice Design
 - How do the qualitative findings provide an enhanced understanding of the quantitative results in order to explore inequalities?
 - How to the different phases in the project to address the overall research goal?
- Multistage Design

Now place these steps in order for a good mixed methods project:

- Problem
- Theory and/or philosophy
- Purpose (study aim)
- Rationale for gathering both quantitative and qualitative data
- Research questions (quantitative, qualitative, mixed)
- Types of data/analysis
- Definition of mixed methods
- Type of mixed methods design
- Diagram of the design

Steps in Conducting a Scholarly Mixed Methods Study

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