

# Mixing Research Methods

An approach to letting the evolving research question drive a PBRN line of investigation

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## Overview

- I. Introduction
- II. Qualitative Methods
  - Quantitative and qualitative inquiry differences
  - Traditions
  - Decisions that drive study approach
- III. Mixed Methods
  - Overview and history
  - Approaches and Designs
- IV. Example line of inquiry and spinoff studies
- V. Cross-disciplinary process

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## Quantitative and Qualitative features

Feature	Quantitative	Qualitative
Role of researcher	Detached, objective	Engaged
Purpose	Test hypothesis	Describe; Develop theory
Data collection methods	A priori, structured	Flexible, iterative
Data analysis	Deductive, statistical	Inductive, iterative leading to more data collection and revision of question
Type of data	Numbers	Predominately Words
Product	Status of hypothesis	Text

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### Qualitative Methods - Traditions

Tradition	Purpose	Methods	Allied Discipline
Ethnography	Cultural description	Intensive fieldwork	Anthropology
Phenomenology	Explore lived experience	Analysis of cases to formulate meaning	Philosophy Psychology
Biography	Meaning of experience as recorded through story	Interviews and documents exploring the life of an individual	Literature Literary Criticism
Grounded Theory	Theory development, provide an explanation	Constant comparative method	Sociology

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### Decisions that drive a study

Epistemology – the theory of knowledge  
Philosophical / theoretical perspective  
Study design  
Specific methods

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### Mixed Methods

General consensus that no longer a quantitative vs. qualitative methods – both are necessary.

Scope of mixing methods

- within study
- within line of inquiry
- within broad topic area

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## Mixed Methods

Attack the research problem with an arsenal of methods that have non-overlapping weaknesses in addition to complementary strengths.

J Brewer & A Hunter *Foundations of multimethod research: Synthesizing styles*. Sage 2006. page 4.

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## Approaches to mixing methods

### Sequential studies

Quantitative → Qualitative  
Qualitative → Quantitative

### Mixed methods in same study

Dominant/ Less Dominant  
Secondary method plays a small role

### Concurrent

Both Quantitative and Qualitative data collected & analyzed in a complementary manner

Stange KC, Miller WL, Crabtree BF, O'Connor PJ, Zyzanski SJ. Multimethod research: Approaches for integrating qualitative and quantitative methods. *J Gen Int Med*. 1994; 9:278-282.

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## Approaches to mixing methods

Data transformation – convert data of one type to the other can be analyzed together.

Typology development – one type of data used to develop a typology that is used to drive analysis with other type of data.

Extreme case analysis – pursue data collection or analysis of data of the other type with the intent of refining the initial explanation for the extreme case.

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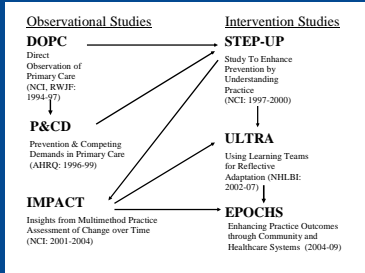
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## Example line of inquiry



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## Direct Observation of Primary Care

- Cross-sectional observation of 84 family practices & 4454 patient visits to 138 physicians in Ohio
- Direct Observation  
Davis Observation Code  
Checklists
- Medical Record Reviews
- Patient Exit questionnaire
- Billing Data
- Practice Environment Checklist
- Ethnographic Fieldnotes

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## Prevention & Competing Demands

- In-depth multimethod comparative case study of 18 family practices & 1,600 visits to 56 clinicians in Nebraska
- Longer direct observation of practice environment recorded in checklists and field notes (4-8 weeks of observation)
- Direct observation of 30 encounters/clinician recorded in checklists and field notes
- Chart audits of patients who were observed
- Interviews of all clinicians, most staff, some community members

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## Study To Enhance Prevention by Understanding Practice (STEP-UP)

- Randomized clinical trial of 80 family practices in Ohio
- Multimethod assessment (MAP) of values, structures, and processes
- Patient survey and medical record review to assess preventive service delivery at 6 month intervals
- Practice-individualized intervention

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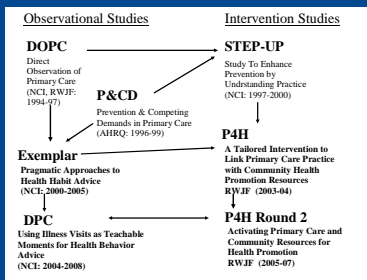
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## Spinoff studies




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## A Typology of Collaboration

- Multidisciplinary
- Interdisciplinary
- Transdisciplinary

Crabtree BF, Miller WL, Adison RB, Gilchrist VJ, Kuzel A. *Exploring Collaborative Research in Primary Care*. Thousand Oaks, California: Sage Publications, 1994.

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## Multidisciplinary Research

- Multiple disciplines
- Each contributes their piece to solving a problem
- Like an edited book or separate presentations by multiple experts

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## Interdisciplinary Research

- A conversation *between* and *among* disciplines
- Working together on solving a common problem
- Like a collaborative health care team

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## Transdisciplinary Research

- A sustained conversation *across* and *beyond* disciplinary boundaries
- Creates a new shared language
- Such as the emergence of family systems medicine

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## 6 Stages of Collaboration

- Acceptance / validation
- Shared expectations
- Declaring group process
- Action consensus
- Common space
- Sustained common action

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## Benefits

- Including multiple disciplines facilitates creativity and learning
- Ability to better match the evolving research question and methods
- Allows pursuit of multiple lines of inquiry
- Process data informs results and future studies
- Sharing work can increase scholarly productivity and audiences for findings
- Fosters both innovation and rigor
- Fun and potentially transforming

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## Pitfalls

- Developing needed relationships takes time and energy
- Design and analyses are continually being reinvented
- Requires highly skilled and flexible data collectors and analysts

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## Transdisciplinary, Multimethod Research

- Tailors the methods to the (evolving) question
- Develops relationships
- Well-suited for PBRN studies

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## Resources

Tashakkori A. Teddlie C. Mixed Methodology. Sage  
Thousand Oaks CA, 1998.

Brewer J., Hunter A. Foundations of Multimethod  
Research. Sage. Thousand Oaks CA, 2006.

Creswell JW. Research Design: Qualitative, quantitative  
and mixed methods approaches. 2<sup>nd</sup> Ed. Sage.  
Thousand Oaks CA, 2003.

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