

Qualitative, Quantitative and Mixed Methods Approaches to Research and Inquiry

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Purpose

- Introduce everyone to the foundation knowledge of qualitative, quantitative and mixed methods research; useful to understanding the designs and methods series being offered this Fall and Spring
- Provide basic overview of how the research process integrates with different qualitative, quantitative, and mixed designs and methods a researcher may consider using.

Instructions

- As we proceed through this presentation, please identify areas where you would like a more intensive or focused development session offered.
- At the end of the session we will discuss what additional offerings and refinements you might desire.

Objectives

- Define quantitative, qualitative, and mixed methods research approaches.
- Differentiate these approaches based upon:
 - Philosophical assumptions
 - Paradigm stances
 - Interpretive theory, framework or “lens” of the researcher

Objectives (continued)

- Describe the research process:
 - Design
 - Data collection
 - Data analysis
 - Data results
 - Interpretation of findings
 - Presentation of findings
- Discuss how the research question drives the selection of each approach
- Describe how the research process relates to each approach

Outline for each approach

- Definition of the approach
- Overview of the overarching problem or needs that the approach is intended to address
- Context of research methodology – why it is chosen
- Literature or other contextual information
- Types of research questions suited to the approach

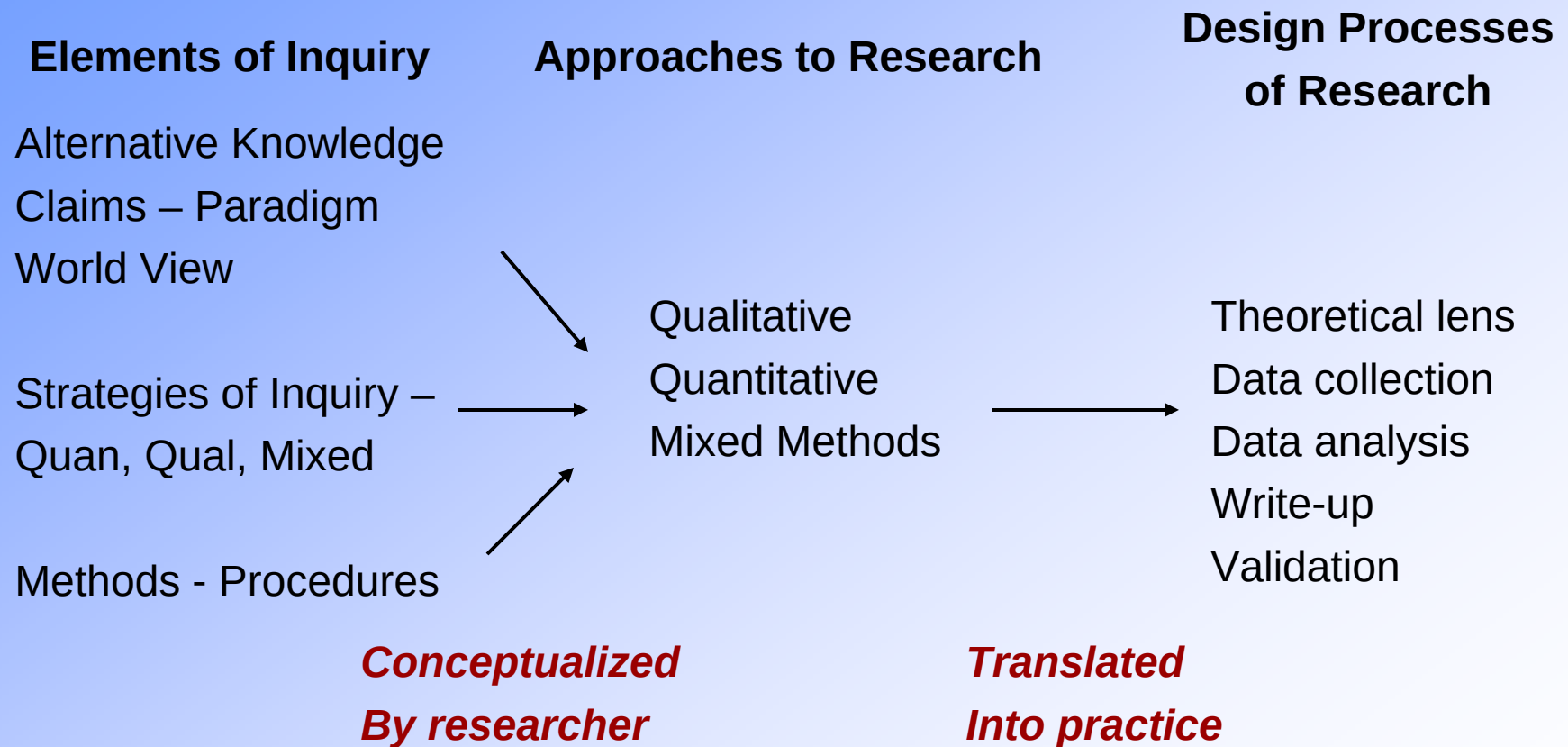
Outline for each approach

- Common study designs used with the approach
- Usual procedures followed to conduct this methodology
- Limitations to this methodology
- Practical tips on implementing this methodology

Describe what you see.



Knowledge Claims, Strategies of Inquiry, and Methods Leading to Approaches and the Design Process



Adapted from Creswell, J.W. (2003) *Chapter 1: A framework for design*, in Research design: qualitative, quantitative and mixed methods. Sage Publications, Thousand Oaks, CA.

Paradigm Worldview

- A **world view** (or **worldview**) is a framework of ideas and beliefs through which an individual interprets the world and interacts with it; a *wide world perception*.
- Definition: *a basic set of beliefs that guide action*. (Guba, 1990 p. 17)

Guba, E.G. (1990) The alternative paradigm dialog. In E.G. Guba (ed.), The paradigm dialog (pp.17-30) Newbury Park, CA: Sage.

Paradigm Worldview

What is your worldview?

- Your worldview is a basic set of beliefs and assumptions that guide your inquiries
- These assumptions include:
 - the nature of reality (ontology),
 - how we gain knowledge about what we know (epistemology),
 - the role of values (axiology),
 - the process of research (methodology), and
 - the language of research (rhetoric)

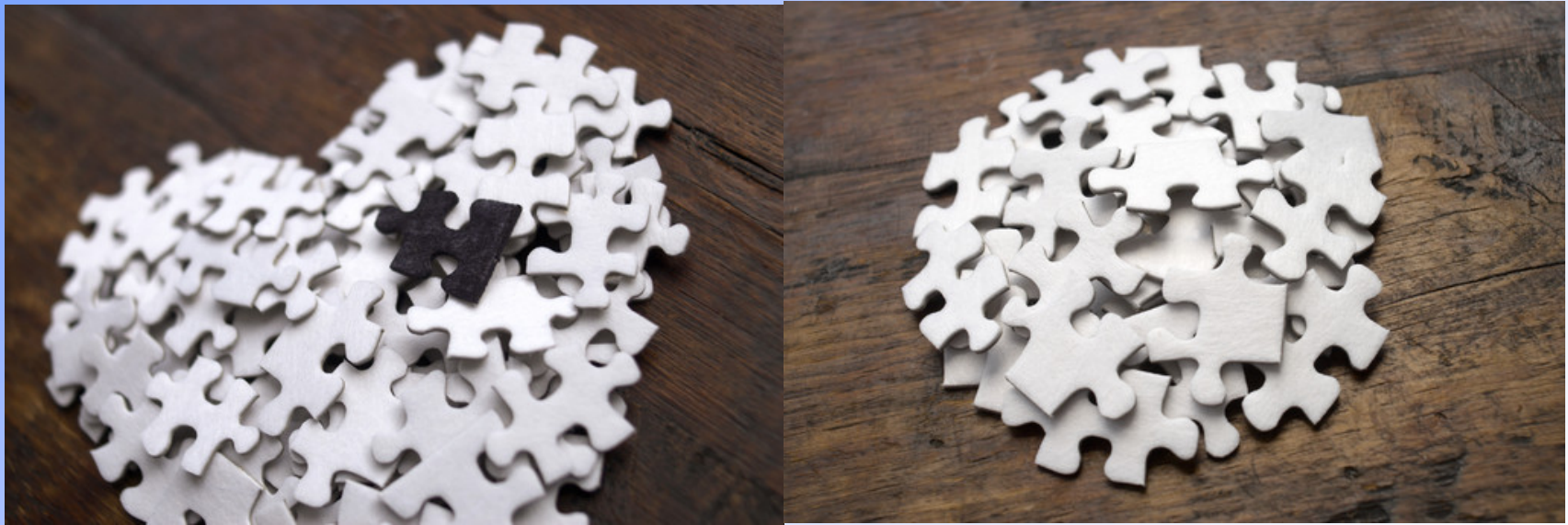
Alternative Knowledge Claims

Postpositivism (Quantitative dominant) Singular reality •Distance & impartiality •Unbiased •Deductive, Theory verification, Work “top down” •Formal presentation style •Empirical observation & measurement	Constructivism (Qualitative dominant) Multiple realities •Closeness •Biased •Inductive, Theory generation, Work “bottom up” •Informal, literary style •Understanding, Multiple participant meanings
Advocacy/Participatory (Qualitative dominant) Political reality •Collaboration •Biased and negotiated •Participatory •Advocacy and change-provoking style •Empowerment issue-oriented	Pragmatism (Mixed Methods dominant) Singular & multiple realities •Practicality •Multiple stances (biased & unbiased) •Combining, Pluralistic approaches, Use “what works” •Formal or informal •Problem-centered, Real-world practice oriented
Transformative (Mixed Methods dominant) Inequality and injustice shape a power and privilege reality •Culturally competent mixed methods •Power and privilege determinants of reality for community engaged in this work •Qualitative methods unveil processes and quantitative methods describe outcomes	

What is the construct of knowledge likely represented here?



What is the construct of knowledge likely represented here?



What is the construct of knowledge that might be represented here?



What is the construct of knowledge likely represented here?



What do you believe about
knowledge construction?



Strategies of Inquiry

What research method to use?

Quantitative	Qualitative	Mixed Method
Experimental Between Group Designs Within Group Designs Quasi-Experimental Correlational Explanatory Prediction Survey Cross-Sectional Longitudinal	Grounded Theory Systematic Emerging Constructivist Ethnographic Realistic Critical Case Study Narrative Research Biography Phenomenology Case Study	Action Research Practical Participatory Community-Based Mixed Designs Triangulation Embedded Sequential Explanatory Exploratory

Methods – Procedures Within

Quantitative Procedures	Qualitative Procedures	Mixed Method Procedures
Predetermined Instrument based questions Data - Performance - Attitude - Observational - Census - Claims Analysis - Statistical	Emerges through study Open ended questions Data - Interviews - Direct observation - Documents - Audio and Visual Analysis - Coded and Thematic text and image analysis	Predetermined and emerges Open, closed and instrument based questions Data - All forms in both quantitative and qualitative procedures. - May transform between qual and quan forms. Analysis - Statistical are integrated or compared with text and/or image analysis.

Definition of Quantitative Research

- ***Investigator*** uses postpositivist claims for developing knowledge:
 - Cause and effect thinking
 - Reduction to specific variables, hypotheses and questions
 - Use measurement and observation
 - Test theories
- Strategies of Inquiry experiments and surveys
- Collect data on predetermined instruments that yield statistical data.

Definition of Qualitative Research

- ***Inquirer*** makes knowledge claims usually based on constructivist and/or advocacy participatory perspectives.
- Strategies of inquiry often include:
 - Narratives
 - Phenomenologies
 - Ethnographies
 - grounded theory studies, or case studies
- Open ended emerging data is collected with the intent of developing themes from the data

Definition of Mixed Methods Research

- **A researcher who uses mixed methods research** is using a research design with philosophical assumptions as well as methods of inquiry.
- As a methodology, it involves philosophical assumptions that guide the direction of collecting, analyzing, and mixing qualitative and quantitative approaches in many phases in the research process.
- As a method, it focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies.

Creswell, J.W. and Plano-Clark, V. (2007)

Juxtaposition of Qualitative and Quantitative Scientific Beliefs

Qualitative World

- Emphasis on qualities of entities and on processes and meanings that are not experimentally examined or measured in terms of quantity, amount, intensity or frequency.
- There is a socially constructed nature of reality, an intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry.
- Seek answers to questions about how social experience is created and given meaning.

Quantitative World

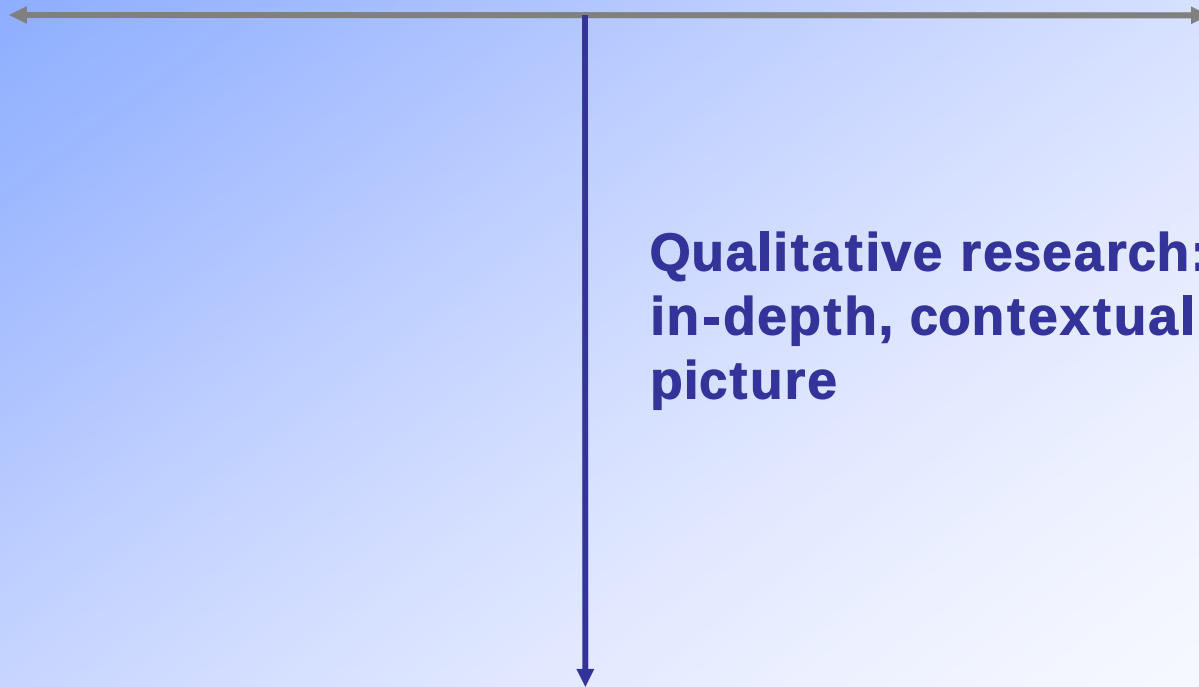
- Emphasis on the measurement and analysis of causal relationships between variables, not processes.
- Proponents of such studies claim that their work is done from within a value-free framework.

Both Worlds

- Think they know something about society worth telling to others, and use a variety of forms, media and means to communicate their ideas and feelings.

A general picture of the differences between quantitative and qualitative research

Quantitative research: broad, generalizable trends



**Qualitative research:
in-depth, contextual
picture**

and the combination to construct mixed methods

Four Combinations of Knowledge Claims, Strategies of Inquiry and Method Procedures

Research Approach	Knowledge Claims	Strategy of Inquiry	Method Procedures
Quantitative	Postpositivist assumptions	Experimental Design	Measure attitude with score
Qualitative	Constructivist assumptions	Ethnographic Design	Field observations
Qualitative	Advocacy or participatory assumptions	Narrative Design	Open-ended interviews
Mixed Methods	Pragmatic assumptions	Sequential exploratory Design	Open-ended interview then a survey instrument

Comparing Practices by Methods

The researcher uses these practices of research:

<i>Quantitative Approach</i>	<i>Qualitative Approach</i>	<i>Mixed Methods Approach</i>
Tests or verifies theories or explanations. Identifies variables to study. Relates variables to questions. Uses standards of validity and reliability. Observes and measures information numerically. Uses unbiased approaches. Employs statistical procedures.	Positions himself or herself. Collects participant meaning. Focuses on a single concept or phenomenon. Brings personal values into the study. Studies the context or setting of participants. Validates the accuracy of the findings. Makes interpretations of the data. Creates an agenda for change or reform. Collaborates with the participants.	Collects both qual and quan data. Develops 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.

Adapted from Creswell, J.W. (2003) *Chapter 1: A framework for design*, in Research design: qualitative, quantitative and mixed methods. Sage Publications, Thousand Oaks, CA.

Qualitative, Quantitative or Mixed?

- Your worldview or paradigm stances, beliefs and assumptions
- Your choice of interpretive theory, framework or lens...
- These direct you to choice of qualitative, quantitative or mixed research.

What is your problem, question and purpose about?



What do you need to see?



Orchestra Filarmonica della Scala

What do you need to see?



What do you need to see?



What do you need to see?



What do you need to see?



What do you need to see?



How the approach shapes the research design

The focus of the study suggest a particular approach

- Describe the typical, infer cause, or generalize findings to others not studied - *experiment*
- Develop a theory grounded in data from the field – *grounded theory*
- Develop an in depth understanding of a case or multiple cases – *case study* or *biography*
- Change a group response as you discover emerging knowledge – *action research*
- Describe and interpret a culture sharing group – *ethnography*.

Creswell, J.W. (2007) Qualitative inquiry & research – choosing among five traditions. Sage Publications, Thousand Oaks, CA.

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How the approach shapes the design

- The approach to inquiry shapes the language of the research design procedures in a study
 - The terminology associated with the approach is needed to encode the text of the study within the approach to research
 - Affects how the introduction, purpose statement, and central question, methodology, and data analysis sections are written

How the approach shapes the design

- The approach to inquiry shapes the number and types of participants that are chosen for the study
 - In *experiment* participants meet inclusion criteria and the numbers are determined through statistical model
 - In *biography* only one or two participants are chosen as opposed to interviews with multiple individuals in *grounded theory* or *phenomenology*
 - In *phenomenology* all participants must have experienced the phenomenon while in *ethnography* they are part of a culture-sharing group

Construct the overall research project by mapping the steps of the process to the approach and design

- Overview of the overarching problem or need that the project/program was/is designed to address
- Literature or other contextual information
- Primary research question
- Overview of study design
- Context of research methodology – why it was chosen in this project; what makes this methodology well suited to this project

- Sentinel literature about this methodology in the context of its application to your project
- Usual procedures followed to conduct this methodology
- Procedures you followed to conduct this research methodology for your project. Did they vary from the literature description?
- Limitations to this methodology

General Procedures for Quantitative Methods

- Identify the type of experimental design for the study
 - Include survey method section (if relevant)
 - Include experimental method section (if relevant)
- Identify the population and sample
- Describe the selection and assignment process of participants
- Identify the instrument and report validity and reliability
 - Describe instrument development if new
- Specify the major variables
- Identify the treatment and criterion variables
- Provide definition of terms (if relevant)
- Identify how validity is addressed in the design
- Describe the steps in data analysis

General Procedures for Qualitative Methods

- Identify the major characteristics of qualitative research.
- Select a qualitative strategy of inquiry.
- Identify your role as researcher in the study.
- Describe the selection and assignment process of participants
- Specify methods of collecting data.
- Specify methods of recording data.
- Identify the steps in analyzing the qualitative data.
- Use coding procedures to generate description of themes.
- Use validation strategies to demonstrate the accuracy of the findings.
- Use qualitative conventions for writing the narrative.

General Procedures for Mixed Methods

- Identify the major characteristics of the mixed methods study.
- Identify your criteria for selection of a mixed methods study.
- Identify the sequence for implementing the quantitative and qualitative data collection.
- Identify the priority to be given for the quantitative and qualitative data collection.
- Identify at what steps in the research process the quantitative and qualitative data will be integrated.
- Identify whether a theoretical lens will be used in the study.
- Create a visual model of the proposed mixed methods study.
- Conduct the study using appropriate qualitative and quantitative procedures.
- Fit your data analysis approach to the mixed methods strategy.
- Use steps that assure validity for both the qualitative and quantitative study strategies.
- Structure the mixed methods report to fit the type of research strategy.

What are the philosophical assumptions and how do they shape the practice of quantitative research?

Assumption	Question	Characteristics	Implications for Practice (examples)
Ontological	What is the nature of reality?	Reality is objective and singular, as seen by the researcher	Researcher uses statistics and traditional methods of presenting evidence with visual tables, charts and graphs to compliment the textual description
Epistemological	What is relationship between the researcher and that being researched?	Researcher disassociates him/herself with the research and becomes invisible to the study	Researcher uses existing literature as the framework for determining what is needed. The researcher attempts to remove all influence and bias from the research subject.
Axiological	What is the role of values?	Researcher generally believes that there is one form of knowledge (empirical) and tries to remove personal biases from the work	Researcher does not integrate explicit values into the work
Rhetorical	What is the language of research?	Researcher writes in a objective and impersonal third person voice Determines definitions and taxonomy prior to work and explicitly provides in written description	Researcher uses an objective, standard and traditional approach to describing the research
Methodological	What is the process of research?	Researcher uses deduction and attempts to position the research to a generalizable state. A predetermined research design is used	Researcher works with pre-stated questions that do not change, and attempts to generalize an explanation or theory, extending the interpretation of the findings to as broad an application as possible. Context is described in the framework of limitations to use of the findings

What are the philosophical assumptions and how do they shape the practice of qualitative research?

Assumption	Question	Characteristics	Implications for Practice (examples)
Ontological	What is the nature of reality?	Reality is subjective and multiple, as seen by participants in the study	Researcher uses quotes and themes in words of participants and provides evidence of different perspectives
Epistemological	What is relationship between the researcher and that being researched?	Researcher attempt to lessen distance himself/herself and that being researched	Researcher collaborates, spends time in field with participants, and becomes an “insider”
Axiological	What is the role of values?	Researcher acknowledges that research is value laden and that biases represent	Researcher openly discusses values that shape the narrative and includes own interpretation in conjunction with interpretation of participants
Rhetorical	What is the language of research?	Researcher writes in a literary, informal style using the personal voice and uses qualitative terms and limited definitions	Researcher uses an engaging style of narrative, may use first-person pronoun, and employs the language of qualitative research
Methodological	What is the process of research?	Researcher uses inductive logic, studies in the topic within its context, and uses an emerging design	Researcher works with particulars (details) before generalizations, describes in detail the context of the study, and continually revises questions from experiences in the field

Key Resources Used to Prepare this Presentation

1. Becker, H.S. (1986). Doing things together. Evanston, IL: Northwestern University Press.
2. Creswell, J.W. (2003) Research design: qualitative, quantitative and mixed methods. Sage Publications, Thousand Oaks, CA.
3. Creswell, J.W. (2007) Qualitative inquiry & research – choosing among five traditions. Sage Publications, Thousand Oaks, CA.
4. Creswell, J.W. & Plano Clark, V. (2007) Designing and conducting mixed methods research. Sage Publications, Thousand Oaks, CA.
5. Denzin, N.K. & Lincoln, Y.S. (2005) 3rd ed. The SAGE handbook of qualitative research. Sage Publications, Thousand Oaks, CA.
6. Greene, J.C. (2007) Mixed methods in social inquiry. Jossey-Bass, San Francisco, CA.
7. Guba, E.G. (1990) The alternative paradigm dialog. In E.G. Guba (ed.), The paradigm dialog (pp.17-30) Newbury Park, CA: Sage.
8. Mertens, D.M.(2007). Transformative paradigm. Journal of Mixed Methods Research, Vol. 1, No. 3, 212-225.

Future Topics for Presentation to Consider

- Overview of how to conduct different methods by research methods and procedures, e.g., design of a *grounded theory study* and how to report it out.
- Overview of the different common types of *mixed methods study designs* and when these are usually used.
- How to *improve reliability, validity, credibility, acceptance* of your unique research design.
- How to *make your study more attractive to funding sponsors*.
- Have a workshop where we design your study based upon you providing an abstract of your research problem and question.
- Others?

Conclusion

- What additional offerings and refinements are needed to advance abilities in the conduct of research?