# Research Methods
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Plans for Today

- Introductions
- Syllabus overview
  - Course activities
  - Critical analysis assignments (formation of groups)
  - Research proposal assignments
- Research Engagement, Definitions and Process
- Critiquing research
- Critical analysis of Kasula (2015) – in class

- **Afternoon tasks:**
- Groups A, B and C work on critical analysis
- Online assignment (send via email): Research topic and Literature review – due by Friday next week

Reflect in groups…
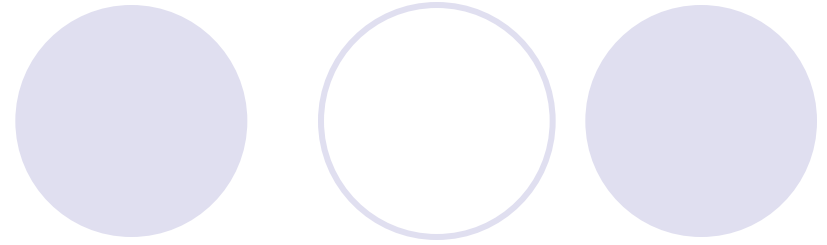
- What is research?

- What is the value of research for teachers?

- What is your experience with research?

Teacher research engagement

Coombe & Sheetz, 2015
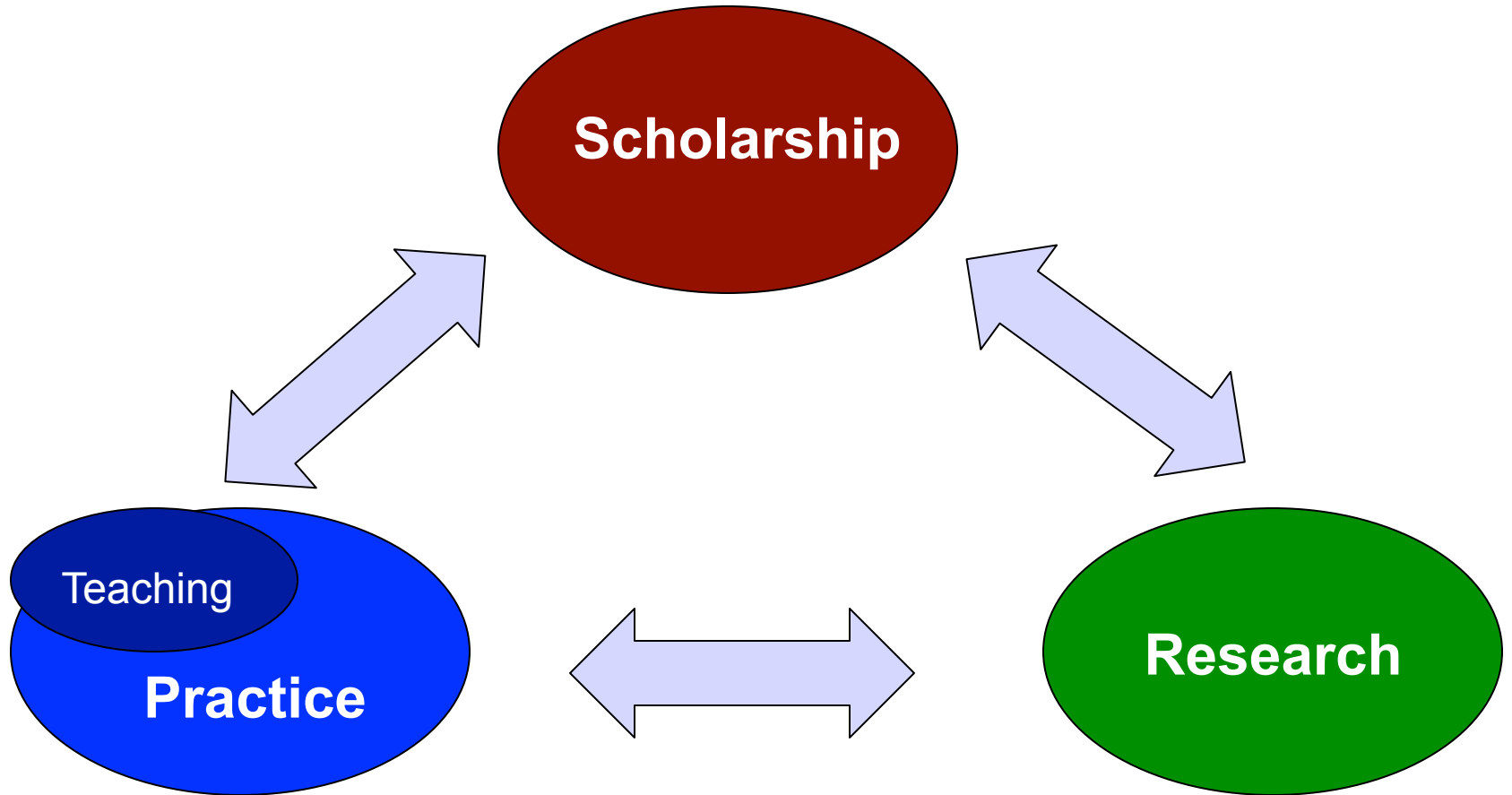
Related Concepts

- Scholarship: interpreting meaning and value from sources/materials and molding it into a form that is personally useful

- Practice: Applying principles to personal situations (can involve scholarship and research). Teaching is a form of practice

- Research: Exploration of the unknown for a socially useful purpose

Benefits and Obstacles of Doing Classroom Research

Benefits

- Improve practice
- More flexible & open to new ideas
- Produce knowledge that is useful for teachers
- Professional and personal growth (sense of accomplishment)

Obstacles

- Not accessible
- Not relatable
- Lack of ownership
- Time constraints
- Workplace doesn't encourage research
- Self image ("knowledge implementers," not "knowledge producers")

Research Definitions and Processes

Burns, 1999

Quantitative Approaches to Research

- "Scientific" and experimental – more established approaches
- Aimed towards objectivity and control
- Findings are "generalizible"
- Standardized approach
- Involves formulating a research hypothesis which is subjected to controlled testing and statistical measurement procedures

Quantitative Approaches to Research

- The researcher aims to detect cause and effect relationships between the phenomena being investigated

- To research these relationships objectively, the researcher controls or eliminates variables in the research context that may affect the outcomes

- Important to operationalize terms: define terms used in the hypothesis so there is no confusion about their exact meanings

Quantitative Approaches to Research

- Internal reliability: Were the methods for collecting, analyzing and interpreting data consistent? Would the same results be obtained by other researchers using the same analysis?

- External reliability: Could an independent researcher reproduce the study and obtain results similar to the original study?

Qualitative Approaches to Research

- Human situations, experiences and behaviors construct realities that are inherently subjective

- Social facts cannot be seen as fixed. Quantification glosses over the diversity of multiple and socially-constructed meanings

- Aim is to offer descriptions, interpretations, and clarifications of naturalistic social contexts

Qualitative Approaches to Research

- The researcher treats the context as it occurs naturalistically

- No attempt is made to control variables in the context

- The process of observation and the emerging descriptions and insights of the researcher are important aspects of the research findings

Qualitative Approaches to Research

- Emphasis on "rich" data collection with extensive explanations and details ("thick descriptions")
- Typically involves a small number of contexts and participants
- Typically involves multiple data sources (triangulation)
- Does not attempt to generalize findings of the research to large populations

Quantitative vs. Qualitative Research

Table 2.1. *Comparisons between quantitative and qualitative research*

Quantitative research	Qualitative research
• values objectivity through the discovery of facts or truths	• encompasses socially subjective and relative interpretations of phenomena
• tests pre-established hypotheses through the collection and measurement of data	• draws on data to develop and refine hypotheses
• establishes cause and effect relationships	• interprets human behaviour from participants' perspectives
• intervenes in the research context and controls variables	• explores naturalistic cultural settings without controlling variables
• reduces data to measurable quantities	• gathers 'rich' data and interprets them through 'thick' description and analysis
• ensures reliability through the consistency and replicability of methods	• ensures validity through multiple data sources
• generalises beyond the research population	• does not seek to generalise beyond the research context
• focuses on research outcomes that confirm or disconfirm hypotheses	• focuses on the processes as well as the outcomes of research

An Action Research Approach

- *Critical* collaborative enquiry by
- *Reflective* practitioners who are
- *Accountable* in making the results of their enquiry public,
- *Self-evaluative* in their practice, and engaged in
- *Participative* problem-solving and continuing professional development.

Critiquing the Research of Others

1. Topic/Questions/Literature

- Research topic
- Research purpose/questions
- Theoretical framework/review of the literature

2. Research Approach & Design

- Research approach (qualitative/ quantitative)
- Research design: context, methods, participants

3. Data Collection and Analysis

- Data collection procedures and instruments
- Researcher's role
- Connection to research questions
- Data analysis methods

4. Findings

- What were the results/findings?
- Connections to the literature and previous findings
- Limitations of the study

5. Conclusions, Recommendations, General Critique

- Conclusions and implications from findings
- Recommendations for future research
- General critique:
  - answered research questions?
  - claims supported by data?
  - author's assumptions?
  - practical use of research for you?

In groups: Critical analysis of Kasula (2015)