

An exploratory look at  
**Action Research**  
*(Special Topic Seminar)*

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# Agenda

- Conducting Research
- Qualitative vs. Quantitative Research
- Characteristics of Qualitative Research
- Action Research
  - Characteristics, Benefits
- Action Research in Education
- Case Study
- Discussion

# Research Goals

Theoretical	Research focused on explaining phenomena through the logical analysis and synthesis of theories, principles, and results of other research
Empirical	Research focused on determining how education works by testing conclusion related to theory
Interpretivist	Research focused on portraying how education works by describing and interpreting phenomena
Evaluation	Research focused on particular program, product, or method usually in applied setting for the purpose of describing, improving or estimating effectiveness

# Research Methods

Quantitative	Experimental, quasi-experimental, correlational that involve quantitative data and use of inferential statistics
Qualitative	Observation, case-studies, interviews and other methods that involve qualitative data and its analysis using grounded theory and ethnographic approaches
Literature Review	Research synthesis that primarily involve the analysis and integration of other forms of research, e.g. frequency count and meta-analyses
Mixed-methods	Research approach that combine mixture of methods usually quantitative and qualitative, to triangulate findings

# Research

- **Quantitative**
  - Deals with Numbers. Descriptive or Inferential statistics. Examples include survey methods, lab experiments, mathematical modeling etc.
- **Qualitative**
  - Examples include Case study research and ethnography. Qualitative data sources include observation, interviews and questionnaires, documents, and researcher's impressions.

# Methodology Comparison

## Quantitative

- Deductive Process
- Cause and Effect
- Static Design (Categories Isolated before study)
- Generalizations leading to prediction, explanation, and understanding
- Accurate and reliable through Validity and Reliability

## Qualitative

- Inductive Process
- Mutual simultaneous shaping of factors
- Emerging Design (Categories identified during research process)
- Patterns, theories developed for understanding
- Accurate and reliable through verification

# Other Research Methods

- Survey Research
- Content Analysis
- Experiments
- Existing data research
- Historical Research
- Comparative Research

# Qualitative Research Characteristics

- Does not intend to predict future, but understand nature of setting
- Researcher is primary instrument for data collection and analysis
- Involves fieldwork for data collection so behavior is observed in natural setting
- Uses inductive reasoning – finds theory that explains data (*instead of deductive which finds data to match theory*)
- Focuses on process, meaning, and understanding. Product is richly descriptive
- Does not allow for entry of hypothesis, or math formula that could produce findings of probability and inference



# Categories of Qualitative Data

- **In-Depth Interviews**
  - Audio/video/text
  - Probes idea of subjects about phenomena
- **Direct Observation**
  - No active queries
  - Field research (being among participants)
  - Recording using audio/video/text
- **Written Documents**
  - Newspapers, books, websites
  - Perform content analysis

- **Positivist Studies**

- Premised on the existence of fixed a priori relationships within phenomena which are typically investigated with structured instrumentation. Test Theories.

- **Interpretive Studies**

- Studies assume people create and associate own subjective means in the world around them. Ethnography is Interpretive.

# Approaches to Qualitative Data

- **Ethnography (*anthropology*)**
  - Study of entire culture
  - E.g. Nicobar Islands, IBM Business Culture
- **Phenomenology (*social science*)**
  - Focus on people's subjective experience/interpretation of world
  - How does the world appear to another
- **Field Research**
  - Participant observation in natural setting
  - Field notes coded and analyzed
- **Grounded Theory**
  - Develop theory based on observation (not abstraction)
  - Raise questions, gather data, identify core theoretical concepts, establish links between theory and data

# Phenomenology

- As one example, phenomenology is a widely used qualitative method that does not set out to find relationships. The goal of phenomenology is to study the ‘lived experiences’ of participants involved in the phenomenon under study.
- Here’s a made-up example from decades gone by: What is the experience of middle managers when Drucker’s Total Quality Management procedures are implemented?

# Qualitative Analysis Assessment

## Example:

- **Problem:** Determine whether learning has occurred with course material where primary interaction is online dialog between faculty and students in Nursing Informatics course.
- **Assumption:** Use of concepts in student dialog can be indication that learning has occurred.
- **Method:** Online dialog converted to text files and imported into QA software, text search using course topics/concepts, count of passages in discussion forum that included topic phrase or concept.

# Qualitative Analysis ...2

- **Results**

- Topic/concept frequency was high in the discussion forum dedicated to the topic
- Related topic/concepts were raised at lower frequencies in focus discussions where the related concept is commonly associated

# Software Tools for Qualitative Research

- **CAQDAS** : Computer Assisted Qualitative Data Analysis Project - <http://caqdas.soc.surrey.ac.uk/index.html>
- **NUD\*IST** : <http://www.qsrinternational.com>
- **The Ethnograph** : <http://www.qualisresearch.com/>
- **ATLAS/ti** : <http://www.atlasti.de/>
- **WordStat**: Content Analysis  
<http://www.simstat.com/wordstat.htm>
- **Text Analyst** : Semantic text analysis  
<http://www.megaputer.com/>

The screenshot shows a 'Text Editor' window with a toolbar containing icons for Cut, Copy, Paste, Bold, Italic, Underline, List, Field, and Highlight. The text in the editor is: "My name's Alexandra. I'm tall, slender, with short dark blonde hair, hazel eyes, high cheekbones & a knock-out smile. I'm classy, confident & caring. I'm a good listener, I like children, pets. & I love to laugh. I enjoy the arts, good movies, music, collecting antiques, teddy-bears, fine dining, & intelligent conversation with that someone special. I like rollerblading, cross-country skiing, skating, hiking & keeping physically fit. I'd like to meet a gentleman who has similar interests, to share dreams, tender moments & new adventures. If you're 40-55 yrs. old, professionally employed, a non-smoker, you feel we may have something in common & perhaps a chance at love & friendship, please leave a message at Box 2208." The words are color-coded: 'slender' (blue), 'listener' (blue), 'children' (grey), 'laugh' (purple), 'arts' (red), 'movies' (red), 'music' (red), 'dining' (cyan), 'intelligent' (yellow), 'conversation' (blue), 'rollerblading' (cyan), 'cross-country' (cyan), 'skiing' (red), 'skating' (red), 'hiking' (red), and 'professionally employed' (grey). The status bar at the bottom shows navigation arrows, '51 / 72', and a 'Close' button.

From: <http://www.simstat.com/wordstat.htm>



# Action Research

- **ACTION**
  - To bring change (to community, organization, program)
- **RESEARCH**
  - To increase understanding

*For Practitioners...*

*Action informs understanding*

*Understanding assists action*

# Action Research

- Study of problem at the local level
- Apply findings immediately
- Less formal when compared to pure or applied research
- E.g. 5<sup>th</sup> grade teacher experimenting with a new method of teaching spelling using a software program

# Action Research

- Researchers are interested in insight, discovery, and interpretation rather than hypothesis testing
- Bridges theory-practice gap by using intuition and experience, can generate meaningful and useful findings
- Empowers practitioners to engage in research and development/implementation

Problem  
Diagnosis

Action Research

Reflective  
Learning

Action  
Intervention

# Action Research in Education

- Identify needs of student, classroom, school, district
- Teachers become committed to change
- Student behavior, seen as data, becomes more interesting to teachers
- Collaboration with other professionals overcomes isolation
- Reflection on practice causes growth

# Why?

- Promote personal/professional growth
- Improve practice to enhance student learning
- Advance teaching profession
- Develop confidence and expertise necessary to question and challenge
- Teachers become theoreticians and practitioners, creating new knowledge and using it

*"Putting practice, ideas, and assumptions to test is at the heart of action research"*

“When teachers become researchers, they become theorists, articulating their intentions, testing their assumptions, and finding connections with practice.”

“They become more critical readers of existing research literature, and provide education with information impossible to obtain through traditional research methods.”

- Goswami & Stillman (1987)

# Reporting Action Research

## 1. Introduction

- Describe field situation, reason for study
- Need for action
- Preview original contribution of thesis

## 2. Methodology

- Reasons for taking steps
- Justify approach

## 3. Findings

- Present each major finding, conclusions
- Relevant literature



- Instructional Technology Adoption in Higher Education: An Action Research Case Study
- Discussions

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