Asking the Right Question: Qualitative Research Design and Analysis

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Learning Objectives

- To develop an understanding of different approaches to qualitative research
- To understand how to design and conduct qualitative study visits and perform data collection, including tips and practices for qualitative interviewing
- Review basic principles of qualitative data and thematic analysis approaches and techniques
- Discuss resources available to support development of qualitative research
What is Qualitative Research?

“Qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings attempting to make sense of, or interpret, phenomenon in terms of the meanings people bring to them.”

-Denzin and Lincoln, 2003
Quantitative vs. Qualitative

Quantitative

- Conducted during later phases of research
- Quicker data collection and analysis
- Close ended questions or scales (e.g. Yes/No, 1-10 scales)
- Larger sample sizes
- Objective data - precise measurements and analyses

Qualitative

- How? Why?
- Initial phases of research - exploratory
- Lengthy, tedious data collection and analysis
- Open ended questions
- Smaller and more focused sample sizes
- Subject data - experiences and interpretations of events
Quantitative vs. Qualitative Research Methods

Quantitative

- Close ended questionnaires, surveys, and checklists
  - Example: What is your race?
  - On a scale of 1-10, how severe is your anxiety?
- Large-scale data sets
- Random sampling
- Structured data

Qualitative

- Open ended questionnaires and surveys
- Focus groups
- Diaries
- Un-structured or semi-structured interviews
- Observations and field notes
- Case studies
- Drawings
- Videos
Quantitative vs. Qualitative Data

Quantitative

- Numerical - 9, 16, 3.5
- Categorical
  - Nominal - Sex, Language, Race
  - Ordinal - Scale of 1-10, Very satisfied to Very dissatisfied
- Statistics, p-values
- Clean data

Qualitative

- Text - visit summaries, office notes, interview transcriptions, journal entries
- Photos, videos, audio recordings, drawings, observations
- Narratives looking for patterns

*Mixed Methods - Uses a combination of both
<table>
<thead>
<tr>
<th></th>
<th>Qualitative Research</th>
<th>Quantitative Research</th>
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<tbody>
<tr>
<td><strong>Objective/Purpose</strong></td>
<td>To gain an understanding of underlying reasons and motivations</td>
<td>To quantify data and generalize results from a sample to the population of interest</td>
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<td></td>
<td>To uncover prevalent trends in thoughts and opinions</td>
<td>Sometimes followed by qualitative research to explore findings further</td>
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<td><strong>Sample</strong></td>
<td>Small, focused</td>
<td>Larger number of cases representing population of interest</td>
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<tr>
<td><strong>Data Analysis</strong></td>
<td>Coding, looking for patterns</td>
<td>Statistical data, conclusive and descriptive findings</td>
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<td><strong>Example</strong></td>
<td>Focus groups, interviews, group discussions</td>
<td>Surveys</td>
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Deductive vs. Inductive Research Processes

**Deductive - Quantitative approach**
- Known idea or theory exists
  - Form hypothesis
  - Test hypothesis and Observe results/data
  - Confirm results

**Inductive - Qualitative approach**
- Observation of phenomenon
  - Detecting a pattern
  - Develop tentative hypothesis
  - Form a theory

*Mixed methods can allow for both processes to occur either simultaneously or be used in a cyclical manner.*
So why conduct qualitative research?

- Understand behavior, beliefs, opinions and emotions from the perspective of participants
- Understand and explain views and behaviors
- Understand processes, such as how people make decisions
- Understand meaning people attribute to their experiences
- Understand social interactions among people and the values shared by them
- Identify social, cultural, economic, and physical context in which events take place
- Give voice to issues of certain populations that may be overlooked, and examine sensitive and complex issues in detail (e.g. sexuality, violence, drug use)
- Provide depth, detail, nuance, and context to research issues
Strengths of Qualitative Research

- Gain insider perspectives into issues that are often missed (subtleties and complexities)
- Building relationships, causes, and effects, and dynamic processes surrounding issues
- Allows for ambiguities/contradictions in the data, which reflect social reality and duality behind many major issues
- Descriptive, narrative style which provides rich data
Limitations of Qualitative Research

- Lengthy and complicated designs, which do not draw large samples
- Validity of reliability of subjective data
- Difficult to replicate study because of central role of the researcher and context
- Data analysis and interpretation is time consuming
- Subjective - open to misinterpretation
### Developing a Qualitative study - Types of Qualitative Methodology

<table>
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<tr>
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<th>In depth interviews</th>
<th>Focus Group Discussion</th>
<th>Observation</th>
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<tbody>
<tr>
<td><strong>Objective</strong></td>
<td>Individual perceptions, beliefs, feelings and experiences</td>
<td>Range of opinions on specific issue, community norms, or evaluation</td>
<td>Observe how people act and interact in certain social situations or environments</td>
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<td><strong>Research instrument</strong></td>
<td>Semi-structured Interview guide</td>
<td>Discussion guide</td>
<td>Observation guide</td>
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<td><strong>Advantages</strong></td>
<td>Gain in depth information Identify personal experiences Useful for sensitive issues Identify context</td>
<td>Group interaction provides range of issues and opinions Discussions provide detail, justification, and clarification A lot of information collected quickly</td>
<td>Unobtrusive Contextual information Supports data from other sources Identify people’s actual behavior</td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
<td>No interaction or feedback from others Individual perceptions only Multiple interviews may be needed to identify range of issues</td>
<td>Less depth of information Less suitable for personal experiences Managing group dynamics</td>
<td>Interpretation of observations may be subjective Distinction between participation and observation is needed</td>
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Developing your qualitative interview/focus group guide

- The interview guide is a guide
  - Typically qualitative visits are unstructured or semi-structured
  - Does not need to be read verbatim
  - Interviewer needs a very good understanding of the research question and probe
  - Create a certain amount of order on topic areas that your question covers and then follow in a reasonable order (but you can jump around depending on how the participant leads the conversation)
- Types of questions
  - Background
  - Behaviors or experiences
  - Opinions or beliefs
  - Knowledge
  - Sensory experiences
- Focus on research question and formulate questions that are concretely oriented to answer to it (but avoid specific questions)
- Use language that is relevant and understandable to participants
Qualitative Study Visit Tips and Practices
Do’s and Don’ts of Qualitative Study Visit

- Do know your guide
- Do ask open ended questions
- Do leave your assumptions at the door - You know nothing!
- Do take notes
- Do validate and empower
- Do maintain eye contact
- Do rephrase questions
- Do Probe Probe Probe!

- Don’t ask closed questions
- Don’t interrupt/tell your own story
- Don’t lead/put words in their mouths
- Don’t judge
- Don’t be afraid to re-direct
- Don’t be afraid of the silence
Open ended vs. Closed ended Questions

Example: Study looking at how experiences with stigma affect people with mental health conditions

**Closed ended question** - All participants answer same questions for comparisons
Have you experienced stigma? **Yes, No**
Does stigma affect your decision to seek care for your mental health condition?

**Open ended question** - Participants respond in their own words
How has your experience with stigma affected your daily functioning?
Please describe how your experience with stigma has affected your decision to seek care for your mental health condition
DON’T lead/put words in their mouths

Example: Study looking at differences in parent and child attitudes surrounding social media

Participant: Sometimes my mother and I fight when I want to go on Facebook.
Interviewer: So tell me more about how you hate your mother.

VS.

Participant: Sometimes my mother and I fight when I want to go on Facebook.
Interviewer: Can you describe more about what you and your mother fight about?
**DO Take Notes**

- One important piece of the interviews are the notes, observations, or memos that the interviewer/researcher marks down.
- Notes should be used more for contextual information rather than content.
  - Example: Participant is teary-eyed at this question, participant is agitated, participant avoids eye contact, participant tenses up and rocks back and forth. Anything that would not be captured on the audio recording (e.g. body language).
- You do not need write down everything the participant says.
- Take notes both during study visit and analyses.
One important thing to remember:
Qualitative data is transcribed verbatim!

- One limitation of qualitative is it can be easily misinterpreted
  For example: These kids are driving me crazy.
- The tone/impression of the statement changes depending if the participant is speaking in a sad, angry, or joking manner. Notes and memos are very important!

**CONVERSATION #1**
I just fell down the stairs!

**CONVERSATION #2**
I just fell down the stairs! 😊

**CONVERSATION #3**
I just fell down the stairs! 😞 😸

Oh no! Do you need help?

I did the same thing yesterday! 😊

Where are they taking you? I will be right there!
DON’T be afraid of the silence

- Some participants may not volunteer very much information and may say, “I don’t know” or “I’m not sure” repeatedly.
- The interviewer should try to elicit more information using probes such as, “Can you give me an example of a time when...” or “Can you tell me more about that?”
- Sometimes, if the interviewer stays silent, this will encourage the participant to volunteer more information as it is a natural human tendency to want to “fill the silence”
DO Probe

- In a quantitative survey collection, the data is what it is.

**Over the last two weeks, how often have you been not able to stop or control worrying?**
- Not at all
- Several days
- More than half the days
- Nearly everyday

- In qualitative, you can probe for more context (e.g. what they’ve been unable to stop worrying about, how that’s affected their everyday functioning, how does the worrying manifest?)

- You can probe depending on where the participant is leading you

- Probes can include Who? Why? When/In what circumstances? How did it feel (physically, emotionally)? Severity? How do you feel now? How often were you experiencing it? How much did it impact your daily life? How did friends/family/community react?
Qualitative Data Collection

- Audio recordings
- Memo-ing - reflective notes about what you are learning from the data
- Interviewers impressions, thoughts
- Drawings, Pictures
- Journal entries
- Interview transcriptions
Saturation

When do I stop interviewing?

- The most new information about your study will be gained in the initial interviews or focus group discussions
- May add new topics/issues in subsequent interviews
- **Saturation**: The point in which information begins to repeat itself, based on the research topic and variation in study participants
Qualitative Analysis
Qualitative Analysis Approaches

- No specific method - different methods are based on different philosophical approaches (e.g. linguistics, analytic philosophy, structuralism)
- Categorisation
- Recognising relationships and developing the categories you are using to facilitate this
- Developing and testing hypotheses to reach conclusion
- Different approaches can be used together
Qualitative Analysis Process

Identifying, coding, categorizing themes

**Thematic Analysis**
Codes qualitative information
Process of identifying themes
Identify why specific categories chosen

**Grounded Theory**
No preconceived framework or hypotheses
Data provides abstract concepts
Researcher builds ‘theory’
Theoretical saturation

**Discourse Analysis**
Language beyond sentences
What and how people communicate
Visual communication

Eg. What is the meaning of the lived experience of this phenomenon?

Eg. How does the basic social process of X occur in the context of Y?

Eg. How does communication shape identities/activities?
Grounded Theory

"The grounded theory approach is a qualitative research method that uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon”.

Contains both inductive and deductive thinking.

The questions you keep on asking are "What’s going on?" and "What is the main problem of the participants and how are they trying to solve it?"

Resembles what many researchers do when retrospectively formulating new hypotheses to fit data.

Grounded theory is based around developing an overarching theory that *explains* the findings within the data

Emphasizes systematic analysis of data

- Theoretical sampling
- Coding
- Theoretical saturation - All data can be coded into a category; new categories are not emerging, and the existing category structure appears stable
- Constant comparison
Coding

- Coding
  - Naming the segments of your data with descriptive words or category names
  - Provide a descriptive name for each category and develop a definition about what is included in the category and what is excluded
  - Means to organize data and reduce material into organized categories
  - Main categories may be broken into subcategories and sub-sub categories.
  - Interpreting categorical material still needs to be made - interpretations develop during the coding process

- Co-occurring codes
  - Codes that partially or completely overlap
  - The same lines of text may have more than one code attached to them
Coding, continued

- Relational/Axial codes
  - Look for patterns and connection both within and between categories
    - How themes relate
    - Direction of relationship
    - What factors contribute to the issue
    - Develop a table or matrix to illustrate relationships across categories
- Inter-coder reliability
  - Consistency among different coders
Axial Coding

Context
1. Social influence
2. Secondary resources

Causal conditions
Attitudes towards technology

Action
Use of technology
Non-use of technology

Consequences
1. Utilitarian outcomes
2. Hedonistic outcomes
3. Social outcomes

Intervening conditions: facilitators
1. Positive self-evaluative attitudes
2. Training
3. Assistance
4. Encouragement
5. Adaptive design

Intervening conditions: barriers
1. Situational barriers
2. Dispositional barriers
3. Technological barriers
Analyzing Data

- **Thematic Analysis** - Inductive method of identifying and analyzing themes/patterns.
- **Content Analysis** - Quantify and analyze the presence, meaning and relationships of certain words, themes, or concepts.
- **Discourse Analysis** (Conversational analysis) - Analyze patterns of speech, language use
- **Ethnography** (Participant observation) - Analyze social setting, customs and culture
Visualizing Codes, Categories and Themes

- Word Cloud - displaying word frequencies
- Concept Map - displaying relationship between categories and themes
Resources

Technology - Coding software packages

- Nvivo, Atlas.Ti

Books

- “Qualitative Inquiry and Research Design: Choosing Among Five Approaches” by John W. Creswell
- “Qualitative Data Analysis: A Methods Source Book” by Matthew B. Miles, A. Michael Huberman, and Johnny Saldana
- “Qualitative Research Methods” by Monique Hennink, Inge Hutter, and Ajay Bailey
Thank you!