Outline

• Qualitative research
• Analysis methods
• Validity and generalizability
Qualitative Research Methods

- Interviews
  - Ethnographic interviews (Spradley, 1979)
  - Contextual interviews (Holtzblatt and Jones, 1995)
- Ethnographic observation (Spradley, 1980)
- Participatory design sessions (Sanders, 2005)
- Field deployments
Qualitative Research Goals

- **Meaning:** how people see the world
- **Context:** the world in which people act
- **Process:** what actions and activities people do
- **Reasoning:** why people act and behave the way they do

Maxwell, 2005
Quantitative vs. Qualitative

- Explanation through numbers
- Objective
- Deductive reasoning
- Predefined variables and measurement
- Data collection before analysis
- Cause and effect relationships

- Explanation through words
- Subjective
- Inductive reasoning
- Creativity, extraneous variables
- Data collection and analysis intertwined
- Description, meaning

Ron Wardell, EVDS 617 course notes
Quantitative vs. Qualitative

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Ron Wardell, EVDS 617 course notes
<table>
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Ron Wardell, EVDS 617 course notes
Getting ‘Good’ Qualitative Results

- Depends on:
  - The quality of the data collector
  - The quality of the data analyzer
  - The quality of the presenter / writer
Qualitative Data

- Written field notes
- Audio recordings of conversations
- Video recordings of activities
- Diary recordings of activities / thoughts
Qualitative Data

- Depth information on:
  - thoughts, views, interpretations
  - priorities, importance
  - processes, practices
  - intended effects of actions
  - feelings and experiences

Ron Wardell, EVDS 617 course notes
Outline

- Qualitative research
- Analysis methods
- Validity and generalizability
Data Analysis

- Open Coding
- Systematic Coding
- Affinity Diagramming
Open Coding

- Treat data as answers to open-ended questions
- Ask data specific questions
- Assign codes for answers
- Record theoretical notes

Strauss and Corbin, 1998, Ron Wardell, EVDS 617 course notes
Example: Calendar Routines

- Families were interviewed about their calendar routines
  - What calendars they had
  - Where they kept their calendars
  - What types of events they recorded
  - …

- Written notes
- Audio recordings

Neustaedter, 2007
Example: Calendar Routines

- Step 1: translate field notes (optional)
Example: Calendar Routines

- Step 2: list questions / focal points

  Where do families keep their calendars?
  What uses do they have for their calendars?
  Who adds to the calendars?
  When do people check the calendars?
  ...

  (you may end up adding to this list as you go through your data)
Example: Calendar Routines

• Step 3: go through data and ask questions

B (husband) and C (wife) have two young children. C is a teacher and has been told that she is a very organized teacher. She has learned her organization skills through years of hands-on experience. The family uses 5 main calendars, each with their own purpose and location. B’s role is really to just be reminded by his wife as to what he needs to pay attention to. While she is very organized, he admits he is not very organized.

“We probably had our calendar by the time my daughter was a year and a half.” - B

Kitchen calendar (img 2611): the paper calendar that hangs in the kitchen is the master calendar. It is used by C to plan out activities. It is done in pencil because it is the planning calendar. Events will move from this calendar on to the other calendars as needed. Once a month, C will spend a morning setting up the different calendars for the month.

Orange family calendar (looks like children’s, img2612): this is a kids’ style calendar that contains the activities for the children and any reminders for B. This calendar and the ones for the children all use an icon system because the kids can’t read yet. The calendar was designed so the children can learn the days of the week and their numbers. They both wanted to put up the day numbers (which happens each day) so C made the kids each their own copy of the calendar that they can keep in their room and add the number on for past days.

Where do families keep their calendars?
Example: Calendar Routines

- Step 3: go through data and ask questions

Calendar Locations:

[KI] – the kitchen

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Where do families keep their calendars?
Example: Calendar Routines

- Step 3: go through data and ask questions

Where do families keep their calendars?

Calendar Locations:

[KI] – the kitchen  
[CR] – child’s room
Example: Calendar Routines

- Step 3: go through data and ask questions

Calendar Locations:

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[CR] – child’s room

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Continue for the remaining questions....
Example: Calendar Routines

• The result:
  • list of codes
  • frequency of each code
  • a sense of the importance of each code

• frequency != importance
Example 2: Calendar Contents

- Pictures were taken of family calendars

![Calendar Image]

Neustaedter, 2007
Example: Calendar Contents

- Step 1: list questions / focal points

  What type of events are on the calendar?
  Who are the events for?
  What other markings are made on the calendar?
  ...

  (you may end up adding to this list as you go through your data)
Example: Calendar Contents

- Step 2: go through data and ask questions

What types of events are on the calendar?
Example: Calendar Contents

- Step 2: go through data and ask questions

What types of events are on the calendar?

Types of Events:

[FO] – family outing
Step 2: go through data and ask questions.

What types of events are on the calendar?

Types of Events:
- [FO] – family outing
- [AN] - anniversary
Step 2: go through data and ask questions

Types of Events:

[FO] – family outing
[AN] - anniversary

Continue for the remaining questions....
Reporting Results

• Find the main themes

• Use quotes / scenarios to represent them

• Include counts for codes (optional)

Dad’s role. “I’m pretty used to our schedule so I don’t need to check it that often. As sad as it is, I work full time so a lot of activities don’t pertain to me. But Fridays change because I may be home. I may also glance at it because the activities end at regular periods. I look for the ends of things because I’ll try to make it to the last class so I can make it to at least one of their classes during that activity. And I’ll glance at it to see if anything is out of the ordinary. I get used to the pattern so if there is something that is out of the ordinary I’ll take a closer look to see what’s going on… I don’t have to do much. If I have something that is coming up, I’ll just tell [my wife] then she’ll know where I am and I’ll know.” - B
## Non-Digital Photo Routines

<table>
<thead>
<tr>
<th>P#</th>
<th>Where do you display your photos?</th>
<th>How did you decide to store your photos there?</th>
<th>Why did you store your photos there?</th>
<th>What works well about this location?</th>
<th>What doesn't work well about this location?</th>
<th>Etc.</th>
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</thead>
<tbody>
<tr>
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</tbody>
</table>

### Location Codes:

[LR] A location within the living room of the home.
## Sample Photo and Souvenir Study Coding

### Demographics

<table>
<thead>
<tr>
<th>ID</th>
<th># of Members</th>
<th>Member 1</th>
<th>Member 2</th>
<th>Member 3</th>
<th>Member 4</th>
<th>Parent 1</th>
<th>Parent 2</th>
<th>Where</th>
<th>How did</th>
<th>Why did</th>
<th>What was</th>
<th>What did</th>
<th>Etc</th>
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<tr>
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### Codes for Locations:

- **LR**: A location within the living room of the home.
Software: ATLAS.ti

http://www.atlasti.com/ -- free trial available
Data Analysis

• Open Coding

• Systematic Coding

• Affinity Diagramming
Systematic Coding

- Categories are created ahead of time
  - from existing literature
  - from previous open coding

- Code the data just like open coding
Data Analysis

- Open Coding
- Systematic Coding
- Affinity Diagramming
Affinity Diagramming

- **Goal:** what are the main themes?
- Write ideas on sticky notes
- Place notes on a large wall / surface
- Group notes hierarchically to see main themes

Holtzblatt et al., 2005
Example: Calendar Field Study

- Families were given a digital calendar to use in their homes

- Thoughts / reactions recorded:
  - Weekly interview notes
  - Audio recordings from interviews

Neustaedter, 2007
Example: Calendar Field Study

- **Step 1: Affinity Notes**
  - go through data and write observations down on post-it notes
  - each note contains one idea

- It was really easy to check the calendar from work because of the web page.
- The colors on the events made it really easy to see who had events.
- We couldn’t place the calendar in the spot we usually do in our home.
- I check my calendar on my cell phone while driving.
- The size of the writing was too small to read.
Example: Calendar Field Study

Step 2: Diagram Building
- place all notes on a wall / surface

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Example: Calendar Field Study

- Step 3: Diagram Building
  - move notes into related columns / piles

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Example: Calendar Field Study

- **Step 4: Affinity Labels**
  - write labels describing each group

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Example: Calendar Field Study

- **Step 4: Affinity Labels**
  - write labels describing each group

Calendar placement is a challenge

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Example: Calendar Field Study

- **Step 4: Affinity Labels**
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Calendar placement is a challenge

- we couldn't place the calendar in the spot we usually do in our home.

Interface visuals affect usage

- The colors on the events made it really easy to see whom had events.
- The size of the writing was too small to read.

I check my calendar on my cell phone while driving.

- It was really easy to check the calendar from work because of the web page.
Example: Calendar Field Study

- **Step 4: Affinity Labels**
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- Calendar placement is a challenge
  - We couldn’t place the calendar in the spot we usually do in our home.

- Interface visuals affect usage
  - The colors on the events made it really easy to see who had events.
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- People check the calendar when not at home
  - I check my calendar on my cell phone while driving.
  - It was really easy to check the calendar from work because of the web page.
Example: Calendar Field Study

- Step 5: Further Refine Groupings
  - see Holtzblatt et al. 2005

Calendar placement is a challenge

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Interface visuals affect usage

- The colors on the events made it really easy to see who had events.
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People check the calendar when not at home

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Outline

- Qualitative research
- Analysis methods
- Validity and generalizability
Validity Threats

- **Bias**
  - researcher’s influence on the study
  - e.g., studying one’s own culture

- **Reactivity**
  - researcher's effect on the setting or people
  - e.g., people may do things differently

Maxwell, 2005
Validity Tests

- Intensive / long term
- Rich data
- Respondent validation
- Intervention
- Negative cases
- Triangulation
- Quasi-statistics
- Comparison

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- Intensive / long term
- Rich data
- Respondent validation
- Intervention
- Negative cases
- Triangulation
- Quasi-statistics
- Comparison

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Maxwell, 2005
Generalizability

- **Internal generalizability**
  - do findings extend *within* the group studied?

- **External generalizability**
  - do findings extend *outside* the group studied?

- **Face generalizability**
  - there is no reason to believe the results don’t generalize

Maxwell, 2005
Summary

- Qualitative goals:
  - meaning, context, process, reasoning

- Good qualitative research:
  - data collector / analyzer / presenter
Summary

- **Qualitative data:**
  - detailed descriptions (audio, written, video)

- **Analysis methods:**
  - open coding
  - systematic coding
  - affinity diagramming
Summary

- Report descriptions / scenarios / quotes
- Look for face generalizability
- Use validity tests
References

   - Chapter 11: qualitative methods in general

   - conducting and analyzing contextual interviews

   - Chapter 8: building affinity diagrams

   - Chapter 1: a model for qualitative research design
   - Chapter 5: choosing qualitative methods and analysis
   - Chapter 6: validity and generalizability

   - example qualitative studies, analysis, and results reporting

   - participatory design for idea generation

   - Part 2, Step 2: interviewing an informant
   - Part 2, Step 5: analyzing ethnographic interviews

   - Part 2, Step 2: doing participant observation
   - Part 2, Step 3: making an ethnographic record

   - Part 2: coding procedures