08. Qualitative Studies

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THE UNIVERSITY OF CHICAGO

SUPER GROUP
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Security, Usability, & Privacy
Education & Research

Today's class

- Class project questions

- Designing and analyzing qualitative studies

- Keybase.io

Interviews

Why do an interview?

- Obtain rich data from a few participants when you aren't sure what you'll find

  - Explore an area
  - If done properly, lets you identify themes
  - Come up with entirely new perspectives

- Allows you to get mental models, what people think, why

- Semi-structured interviews allow you to explore issues as they are raised

- Allows you to clarify if people don't understand a question

Limitations

- Time consuming to conduct; large number of interviews may not be feasible

- May not be able to quantitatively generalize frequencies of opinions

- Time consuming to analyze
  - May require transcription and coding
- Hard to completely avoid bias

Developing an interview script

- Keep your questions fairly open-ended

- Follow-up with specific probes:
  - "What files do you have on your computer that you consider valuable?"
  - Follow up with "Do you have valuable photos? Videos? School work?"

- Start with general questions and get more specific so you get unbiased impressions before you direct them to particular details

- A *semi-structured* approach allows real time adjustment

- Write-out all your questions and follow-up probes

Role play and hypothetical scenarios

- Appropriate for some interview studies

- Give participant a role to play or put them in a hypothetical scenario

  – Imagine you just saw this message on your computer screen….

  – Imagine your friend called you and told you he saw this message and asked you what to do….

Prepare: 1 day before interview

- Print out:
  - Protocol, including detailed interview script w/ space for notes
  - Official consent form
  - Payment sheet

- Prepare:
  - Compensation payment
  - Audio/video recording (devices, extra batteries, extension cords)

- Send an email reminder to the interviewee including date/time/place, contact info, how to get there, parking
  - Arrange to meet at location that is easy to find or post signs
  - Another researcher might be in charge of greeting participants and bringing them to the interview room

During the interview

- Introduce yourself and any research assistants

- Explain purpose of study (unless you need to hide it to avoid biasing participant)

- Ask participant to read and sign the consent form

- If recording/video taping, turn it on

- Perform the study

- Debrief participant (if applicable)

- Ask participant to sign payment sheet

- Provide payment and thank participant

Interview best practices

- Make participants feel comfortable

  - Comfortable environment, refreshments for long interviews

- Avoid leading questions. Stay neutral!

- Support whatever participants say (don't make them feel like they're incorrect or being judged)

- Know when to follow up

- Interview a broad range of people

Focus groups

Focus groups

- Similar to interviews, but more efficient as you can interview 5-10 people at once

- Good for getting a lot of opinions quickly or for topics that benefit from group discussion

- Less detail from any interviewee than you would get in an individual interview

- Not great for testing usability because you can't watch multiple people use software at the same time

- Sometimes an opinionated individual can dominate a focus group

- Hard to publish paper based only on one or two focus groups

Planning a focus group

- Develop very detailed script to guide you

- Pre-screen participants to get a good mix of people who meet your criteria

- Setup audio and video recorders, but don't make people feel under surveillance

- Helpful to have at least 2 people: moderator + note taker

- Give people name tags with their first name only

- Plan to do multiple focus groups to mitigate effects of dominant participant steering conversation

Conducting a focus group

- Make the session fun, informal, relaxed feel

  – Provide drinks and snacks

- Promote a free flowing conversation that engages all participants

  – Ask open ended questions

  – Show people multiple things and ask them to compare

  – Give demos or show videos to start-off discussion

  – Give people handouts and ask them to circle things they like/don't like, or jot down first impressions before discussing with the group

Diary studies

Why do a diary study?

- Rich longitudinal data from a few participants in a natural environment

    - Explore natural reactions and occurrences

    - Examine over longer time periods

    - "Existence and quantity" of phenomena

    - Provide concrete examples to discuss during interview

- Examples

    - Record every time you self-censor a Facebook post

    - Record every time you authenticate

    - Record every time you share a file

    - Take a photo of anything you see that helps people protect privacy

    - Every evening, think about your day and write about the most frustrating thing that happened

Logistics

- Participants may record words on paper, on a computer, on a mobile device, with camera, with voice recorder

    – Unstructured and open ended, or filling out form

- Once per day diaries, quick entries throughout the day, or quick entries with detail added once per day

- Provide clear instructions and expectations

- A lot of work for participants, pay them well

Analyzing qualitative data

Qualitative data

- Generally unstructured

- Open ended responses to surveys

- What people said in interviews or focus groups

- Drawings, photos, …

Coding

- Process of assigning labels ("codes") to qualitative data

- Develop "code book" and use codes consistently

- Technology can help automate some aspects of coding and manage codes

Developing codes

- Codebook = hierarchy of allowable codes

- Often iteratively develop codes
  - One or more coders use current codebook to code some number of interviews

- Codes should be well-defined, unambiguous

- Intentionally limited number of codes

- Know what you're going to do with codes

Applying codes

- Software (TAMS Analyzer, ATLAS.ti, MAXQDA) or online apps

- Generally use multiple coders for all or some of the data

- Coding process can be applied to entire interviews, open ended survey questions, drawings, photographs, or other artifacts

Coding interview data

- Transcribe interview data (yourself or with hired transcription service)

  – Depending on purpose of study, transcribing only selected quotes may be sufficient

- Iteratively review transcripts and create code for concepts mentioned by participants

- As new codes are added, check to see whether those concepts were mentioned in previously analyzed transcripts

- Keep track of how many participants mentioned each concept to find concepts that resonate with a lot of participants

- Group similar codes together into categories

- Note interesting quotes

Analyzing interview data

- Interview can be formally analyzed through a coding process

- Qualitative approach
  - Use concepts and categories to develop theory (Grounded theory approach, does not start with hypotheses)

- Quantitative approach
  - With large number of interviewees (~30), and questions that ask participants to provide numerical ratings, quantitative analysis may be feasible
  - Important to validate for coder reliability

- Can be used to develop mental models

Coding example

I would…we believe that the kids, that there's a… {why>space}{why>parentexp}my wife is a social worker. So she comes from the bent of, and I agree, that our kids need a space that's theirs, that they can go to and shut the door and be alone and whatever.{/why>parentexp}{/why>space}

{teenprivacy>nonprivacy>choosegive}If there were ever a taking advantage of that somehow to do something harmful to themselves or that would be harmful to our household or whatever, then we would take some action to take away the right. The privilege, actually, not the right. {/teenprivacy>nonprivacy>choosegive}

Some intercoder agreement metrics

- Percentage agreement

  – Don't use this by itself

- Cohen's Kappa

  – Easy to compute
  – Two coders, mutually exclusive categories

- Krippendorf's Alpha

  – Accounts for any number of coders
  – Allows for missing (uncoded) values

Affinity diagramming

- Interactive "group" coding

- Print out individual quotes and physically put them into groups by themes