Chapter 7

Data Gathering

Overview

- Five key issues of data gathering

- Data recording

- Interviews

- Questionnaires

- Observation

- Choosing and combining techniques

Five key issues

1. Setting goals
    - Decide how to analyze data once collected
2. Identifying participants
    - Decide who to gather data from
3. Relationship with participants
    - Clear and professional
    - Informed consent when appropriate
4. Triangulation
    - Look at data from more than one perspective
5. Pilot studies
    - Small trial of main study

Data recording

- Notes, audio, video, photographs

- Notes plus photographs
- Audio plus photographs
- Video

Interviews

- Unstructured - are not directed by a script. Rich but not replicable.

- Structured - are tightly scripted, often like a questionnaire. Replicable but may lack richness.

- Semi-structured - guided by a script but interesting issues can be explored in more depth. Can provide a good balance between richness and replicability.

Interview questions

- Two types:
  - 'closed questions' have a predetermined answer format, e.g., 'yes' or 'no'
  - 'open questions' do not have a predetermined format
- Closed questions are easier to analyze
- Avoid:
  - Long questions
  - Compound sentences - split them into two
  - Jargon and language that the interviewee may not understand
  - Leading questions that make assumptions e.g., why do you like …?
  - Unconscious biases e.g., gender stereotypes

Running the interview

- *Introduction* – introduce yourself, explain the goals of the interview, reassure about the ethical issues, ask to record, present any informed consent form.
- *Warm-up* – make first questions easy and non-threatening.
- *Main body* – present questions in a logical order
- *A cool-off period* – include a few easy questions to defuse tension at the end
- *Closure* – thank interviewee, signal the end, e.g, switch recorder off.

Enriching the interview process

- Props - devices for prompting interviewee, e.g., a prototype, scenario

Questionnaires

- Questions can be closed or open
- Closed questions are easier to analyze, and may be done by computer
- Can be administered to large populations
- Paper, email and the web used for dissemination
- Sampling can be a problem when the size of a population is unknown as is common online

Questionnaire design

- The impact of a question can be influenced by question order.

- Do you need different versions of the questionnaire for different populations?

- Provide clear instructions on how to complete the questionnaire.

- Strike a balance between using white space and keeping the questionnaire compact.

- Decide on whether phrases will all be positive, all negative or mixed.

Question and response format

- 'Yes' and 'No' checkboxes

- Checkboxes that offer many options

- Rating scales

  - Likert scales

  - semantic scales

  - 3, 5, 7 or more points?

- Open-ended responses

Encouraging a good response

- Make sure purpose of study is clear
- Promise anonymity
- Ensure questionnaire is well designed
- Offer a short version for those who do not have time to complete a long questionnaire
- If mailed, include a stamped addressed envelope
- Follow-up with emails, phone calls, letters
- Provide an incentive
- 40% response rate is high, 20% is often acceptable

Advantages of online questionnaires

- Responses are usually received quickly
- No copying and postage costs
- Data can be collected in database for analysis
- Time required for data analysis is reduced
- Errors can be corrected easily

Problems with online questionnaires

- Sampling is problematic if population size is unknown

- Preventing individuals from responding more than once

- Individuals have also been known to change questions in email questionnaires

Observation

- Direct observation in the field
  - Structuring frameworks
  - Degree of participation (insider or outsider)
  - Ethnography
- Direct observation in controlled environments
- Indirect observation: tracking users' activities
  - Diaries
  - Interaction logging

Structuring frameworks to guide observation

- - *The person*. Who?
  - *The place.* Where?
  - *The thing.* What?

- The Goetz and LeCompte (1984) framework:
  - *Who* is present?
  - What is their role?
  - *What* is happening?
  - *When* does the activity occur?
  - *Where* is it happening?
  - *Why* is it happening?
  - *How* is the activity organized?

Ethnography (1)

- Ethnography is a philosophy with a set of techniques that include participant observation and interviews

- Debate about differences between participant observation and ethnography

- Ethnographers immerse themselves in the culture that they study

- A researcher's degree of participation can vary along a scale from 'outside' to 'inside'

- Analyzing video and data logs can be time-consuming

- Collections of comments, incidents, and artifacts are made

Ethnography (2)

- Co-operation of people being observed is required
- Informants are useful
- Data analysis is continuous
- Interpretivist technique

- Questions get refined as understanding grows
- Reports usually contain examples

Online Ethnography

- Virtual, Online, Netnography
- Online and offline activity
- Interaction online differs from face-to-face
- Virtual worlds have a persistence that physical worlds do not have
- Ethical considerations and presentation issues are different

An ethnographic project for you …

- Join www.ActiveWorlds.com or go to another chat room of your choice

- ActiveWorlds is a 3-D chatroom environment in which you can visit different environments and chat with the people that you meet there

- To use ActiveWorlds you will need to check the instructions that they provide and download the appropriate software to run on your computer

- Select one of the worlds to visit and choose an avatar (a graphical personification) to represent you.

- Spend one to two hours doing an ethnographic study.

- Use one of the frameworks discussed in the previous slides to guide you and write a one or two page report about your study.

- Also notice and report on any usability issues you encounter and on user experiences in this environment.

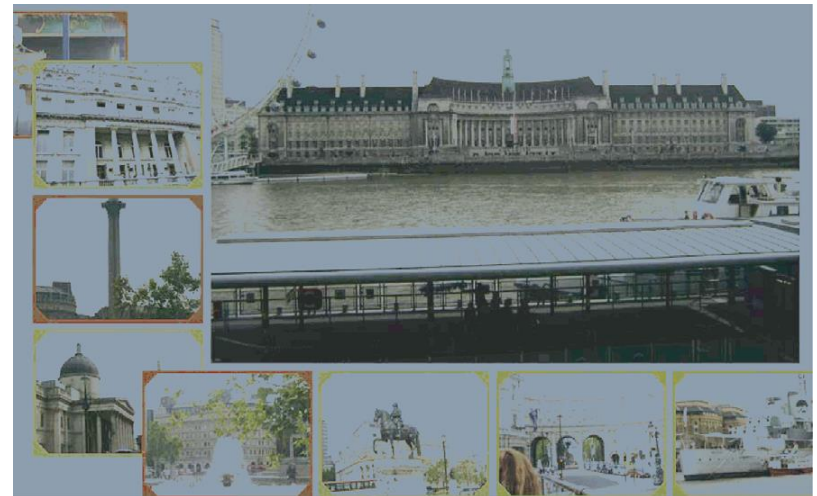# Direct observation in a controlled environment

- Think-aloud technique

Indirect observation

- Diaries
- Interaction logs
- Web analytics

Choosing and combining techniques

- Depends on
  - The focus of the study
  - The participants involved
  - The nature of the technique
  - The resources available

Summary

- Three main data gathering methods: interviews, questionnaires, observation
- Five key issues of data gathering: goals, choosing participants, triangulation, participant relationship, pilot
- Interviews may be structured, semi-structured or unstructured
- Questionnaires may be on paper, online or telephone
- Observation may be direct or indirect, in the field or in controlled setting
- Techniques can be combined depending on study focus, participants, nature of technique and available resources