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