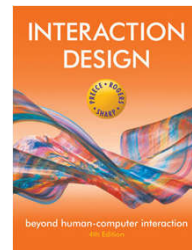


Chapter 7

Data Gathering



By: Mamoun Nawahdah (PhD)
2015/2016



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. Collect more than one type of data, e.g. qualitative from experiments and qualitative from interviews.
5. **Pilot studies:** Small trial of main study.



3

Data Recording

❖ Notes, audio, video, photographs can be used individually or in combination:

- Notes plus photographs
- Audio plus photographs
- Video



❖ Different challenges and advantages with each combination.



4

Interviews

- ❖ **Unstructured (open ended)**: 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.
- ❖ **Focus groups** – a group interview.



5

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.



6

Interview Questions

❖ Avoid:

Long questions.

Compound sentences - split them into two.

Jargon (slang) 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.



7

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.



8

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 broadcasting.
- ❖ 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**.



11

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.



12

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.



13

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.



15

Observation

- ❖ Direct observation in the field.
 - Structuring frameworks
 - Degree of participation (insider or outsider)
 - Ethnography (تصويرى, وصفى)
- ❖ Direct observation in controlled environments.
- ❖ Indirect observation: tracking users' activities.
 - Diaries
 - Interaction logging
 - Video and photographs collected remotely by drones or other equipment



Structuring frameworks to guide observation

- ❖ Three easy-to-remember parts:
 - *The **person***. Who?
 - *The **place***. Where?
 - *The **thing***. What?



17

Structuring frameworks to guide observation

- ❖ A more detailed framework (Robson, 2014):
 - **Space:** What is the physical space like and how is it laid out?
 - **Actors:** What are the names and relevant details of the people involved?
 - **Activities:** What are the actors doing and why?
 - **Objects:** What physical objects are present, such as furniture
 - **Acts:** What are specific individual actions?
 - **Events:** Is what you observe part of a special event?
 - **Time:** What is the sequence of events?
 - **Goals:** What are the actors trying to accomplish?
 - **Feelings:** What is the mood of the group and of individuals?



18

Planning and conducting observation in the field

- ❖ Decide on how involved you will be: passive observer to active participant.
- ❖ How to gain acceptance.
- ❖ How to handle sensitive topics, e.g. culture, private spaces, etc.
- ❖ How to collect the data:
 - What data to collect
 - What equipment to use
 - When to stop observing



19

Ethnography

- ❖ **Ethnography** is a philosophy with a set of techniques that include participant observation and interviews.
- ❖ Debate about differences between participant observation and ethnography.
- ❖ Ethnographers engage 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 .



20

Observation in a controlled environment

- ❖ Direct observation
 - Think aloud techniques
- ❖ Indirect observation – tracking users' activities
 - Diaries
 - Interaction logs
 - Web analytics
- ❖ Video, audio, photos, notes are used to capture data in both types of observations



21

Choosing and Combining Techniques

- ❖ Depends on the:
 - Focus of the study
 - Participants involved
 - Nature of the technique(s)
 - Resources available
 - Time available



22

Summary

- ❖ 3 main data gathering methods: **interviews, questionnaires, observation.**
- ❖ 6 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.

