



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.,⁶gender 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

The screenshot displays a web interface for finding colleagues. On the left, there is a vertical navigation menu with sections: 'Services Center' (containing links for Seminars, Schools, Assoc's & Non-Profits, Counselors, etc., Financial Services, Public Sector, and Recruiters), 'Colleague Center' (containing Register Now!, Colleague Directory, Local Chapters, My Notebooks, E-news Letter, My Homepage, and Discussions), and 'Shopping Center' (containing Publications and Health & Fitness). The main content area features a search form with the following elements: a registration notice ('Not registered? Register Now. It's free and secure!'), a text input field for 'Please enter your Colleague ID', and three search options. Option 1 is 'Match My Profile'. Option 2 is 'Career Change Process Step' with a dropdown menu showing 'None', 'Assess and Test', 'Break into the New Career', and 'Investigate Careers'. Option 3 is 'Thrive in Transition' with a dropdown menu showing 'All'. Below these options are input fields for 'By Profile', 'By Criteria', and 'By Geography', and a 'Find Colleagues' button. On the right side of the interface, there are sections for 'Share Your Experience' (with links for Personal experience, Article or article review, Book review, and Test, tool or tip), 'Recommend a' (with links for Service Center Provider, Career Showcase, and Success Story Candidate), and 'Rate this website!'. At the bottom right, there is an 'Ask Others' section with links for 'Use our directory email service or our online discussion groups to make contacts, solve problems and find someone who listens' and 'Ask us a question'.



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





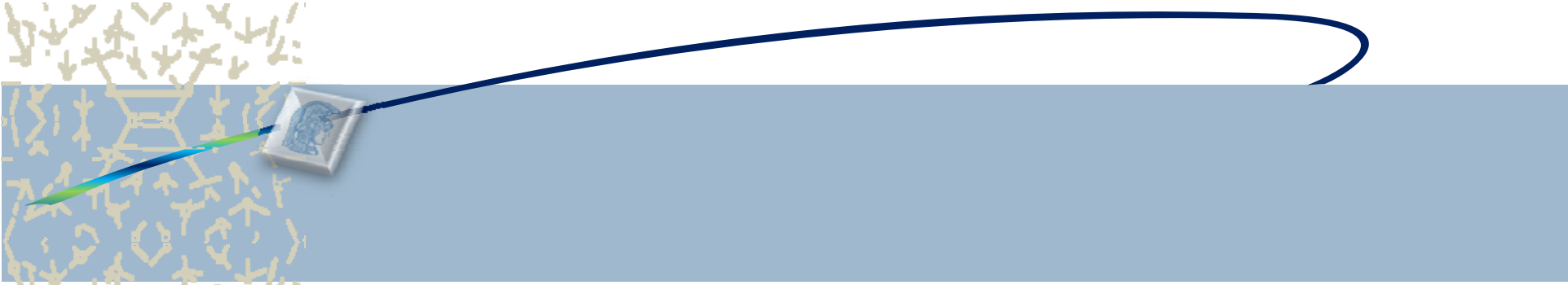
Online Ethnography

- ✱ 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

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- ✦ 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

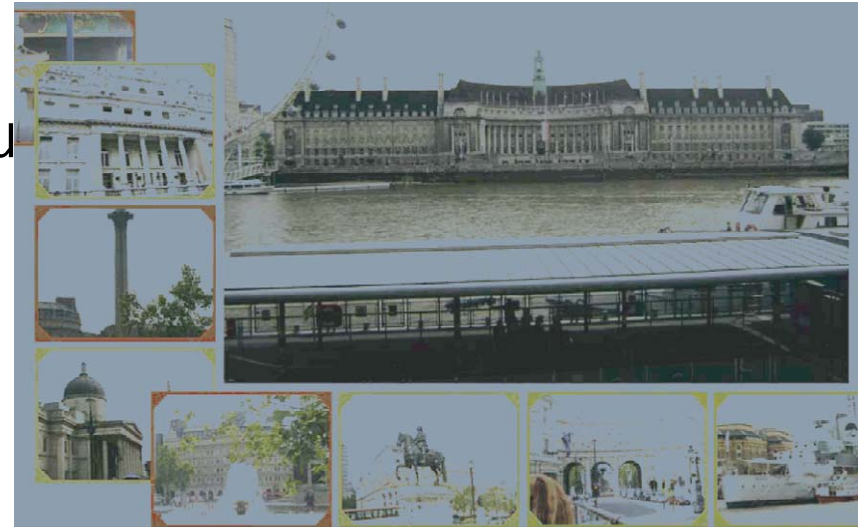
Indirect observation



- 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