



Data Gathering on Creating User Interaction

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Overview

- Four key issues of data gathering
- Data recording
- Interviews
- Questionnaires
- Observation
- Choosing and combining techniques

Four key issues

Setting goals

- Decide how to analyze data once collected

Relationship with participants

- Clear and professional
- Informed consent when appropriate

Triangulation

- Use more than one approach

Pilot studies

- Small trial of main study

Data recording

- Notes, audio, video, photographs
- Notes plus photographs
- Audio plus photographs
- Video
 - Screen Recording
 - Screen Capture
 - Documentary



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.

Interviews Question

- 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

- Properties
 - Software
 - Sample Prototype
 - Goodies
- Scenario Based Interview



Questioners

- 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

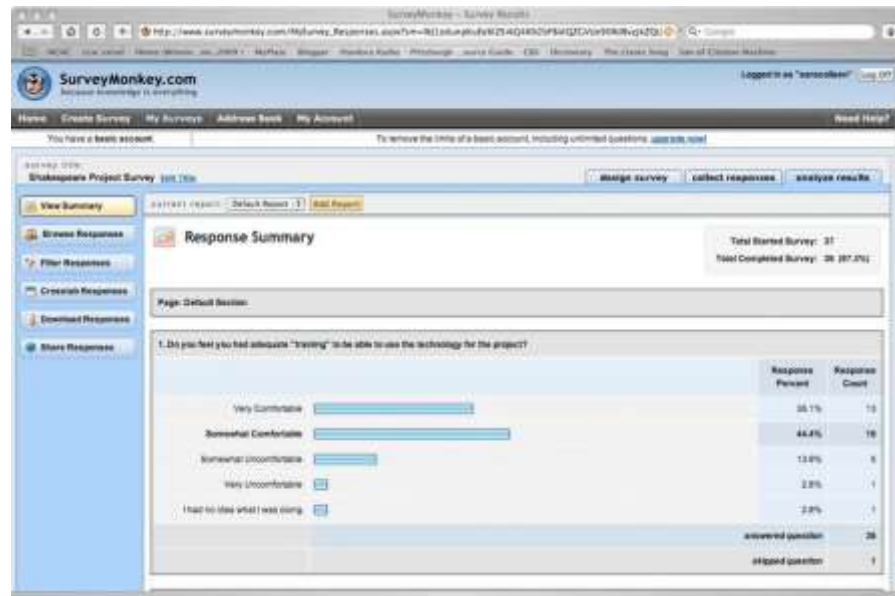
- 'Yes' and 'No' checkboxes
- Checkboxes that offer many options
- Rating scales
 - Likert scales
 - semantic scales
 - 3, 5, 7 or more points?
- Open-ended responses

Get 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

online questionnaires

- Responses are usually received quickly
- Low 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

- Problematic Population
- Preventing individuals from responding more than once
- A lot of Implementation
 - Email Based
 - Web Based

online questionnaires

Webanketa

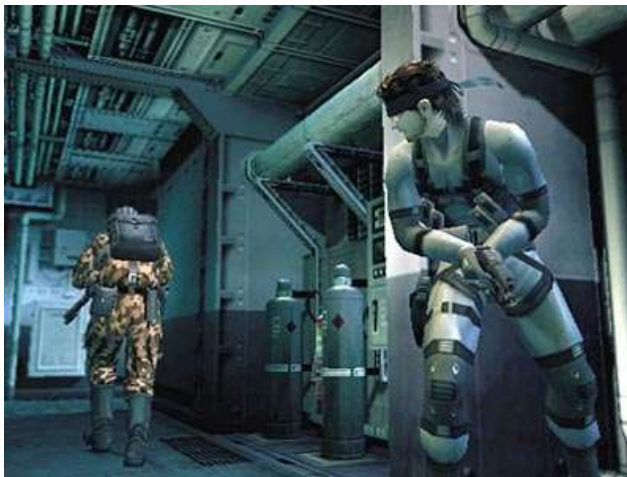
 SurveyMonkey™

 Office 365



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



Observation Guide

- - *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

- Ethnography is a philosophy with a set of techniques that include participant observation and interviews
- A researcher's degree of participation can vary along a scale from 'outside' to 'inside'
- Ethnographers immerse themselves in the culture that they study
- Time consuming from 1 - 6 months
- Collections of comments, incidents, and artifacts are made

Ethnography

- Co-operation of people being observed is required
- Questions get refined as understanding grows
- Reports usually contain examples

Choosing and combining techniques

- Depends on
 - The focus of the study
 - Broad
 - Specific
 - The participants involved
 - Direct
 - Indirect
 - The nature of the techniques
 - The resources available
 - Designer?
 - Developer?
 - Domain Expert?

Key points

- Three main data gathering methods: interviews, questionnaires, observation
- Four key issues of data gathering: goals, 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