

Qualitative data acquisition methods (e.g. Interviews and observations)

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
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Menu

1. Sampling strategies in qualitative research	2
2. Data gathering techniques (empirical measures)	6
3. Observation and transcription	8
4. Texts	12
5. Interviews	13

1. Sampling strategies in qualitative research

-  Often you only work with 1-2 big cases (i.e. classes, organizations)
- Qualitative analysis is highly labor intensive

-  But within each case you also have to think about sampling !

example: organizational study (innovation research)

- informants within the organization
- external experts (domain/subject experts/practitioners)
- clients and other interacting organizations
- observed processes (e.g. workflow analysis)
- texts (e.g. written decisions, files, ...)

example: impact of an initiative on a living area (e.g. publicly accessible computer rooms)

- external decision makers and interest groups
- organized local groups (e.g. parent's associations)
- population of the area
- events and behaviors associated with this initiative

-  Sampling is often multi-stage (by waves)

- Research in progress can show new phenomena that need investigation and therefore sampling

1.1 General sampling strategies

Miles & Huberman (1994:28)

Type of case	Usage	
maximal variation	will give better scope to your results (but needs more complex models !!)	major strategies
homogeneous	provides better focus and conclusions will be "safer" since it will be easier to identify explaining variables and to test relations	
critical	exemplify a theory with a "natural" example	
according to theory, i.e. your research questions	will give you better guarantees that you will be able to answer your questions	
confirming / infirming	test the limits of an explanation	validation
extremes and deviant cases	test the boundaries of your explanations, seek new adventures	
typical	Show what is "normal" or "mean" or "typical"	
intense	complete a quantitative study with an in-depth study	specialization
according to dimension	Study of particular phenomena	
"snow ball"	According to information received during study	inductive approach
"opportune"	Follow new "leads"	

Type of case	Usage	
all	(rarely possible)	representativeness
quota	selection of subgroups	
according to reputation	recommendations of experts	
comparative method	according to operative variables	
according to criteria	according to criteria you want to study	
convenient	those who are willing ...	bad
political	Exclusion/inclusion for political reasons	



Use this big list to think about your own strategy

- There are no general rules !
 - Use this table to think the kind of sampling you need for **your** research.
- Choose well your cases = avoid trouble later ...
- ... avoid adopting a sampling-by-induction strategy (more difficult)
- Look at your research questions !!
 - can you answer all of them (measure concepts, find causalities, etc.)
- Understand the scope of the sampling task (see next slide)
 - roles (functions organization),
 - groups, organizations, institutions,
 - “programs”,
 - processes,
 -

Advice for intra-case sampling:

- identify **types of informations** you need.
- sample **all categories** (activities, processes, events, dates, locations, agents, ...)
- again: think about your the theory you want to produce and its scope
- reduce your ambitions (research questions) when your sampling lists get to large
- you always can add cases (snow-ball strategy)

Advice for inter-case sampling:

- It's a good strategy to adopt a kind of similar systems design:
 - select similar cases that have a nice variance within your operative variables (dependant and independent)
 - E.g. to test an e-learning design, select relatively similar domains, or relatively similar target population
- You then can add contrasted (extreme) cases to test the external validity (generalization potential) of your analysis

Remember: qualitative research is very expensive

- 2-3 big cases (e.g. courses, schools, designs) are enough for a master thesis
- 12-30 cases within all cases (e.g. people, processes) are enough for a master thesis
- else complete qualitative strategies with quantitative

2. Data gathering techniques (empirical measures)

Overview:

activity	medium	principal objective
look	observation	Global observation of an organization, culture, activity, etc. see: 3. "Observation, transcription and text analysis" [8]
examine activities	transcriptions of natural activities	In-depth study of activities and interactions in context see: 3. "Observation, transcription and text analysis" [8]
provoked activities	transcriptions of provoked activities	In-depth study of formal activities you engage somebody in see: 3. "Observation, transcription and text analysis" [8]
study	texts	Written traces of activities (e.g. decision protocols, guidelines) See: 3. "Observation, transcription and text analysis" [8]
ask	interviews	Extraction of information in peoples head see: 4. "Interviews" [12].
participate	share	Participatory observation shares research and work

Different roles for qualitative technology

 Don't confuse the technique and approach levels when you talk about qualitative methods

	Some different objectives and preferred techniques for different kinds methodologies (approaches)	
method	quantitative	qualitative
look	<ul style="list-style-type: none"> • preliminary work for questionnaire design 	<ul style="list-style-type: none"> • "Deep understanding of an institution's or culture's working
examine activities	<ul style="list-style-type: none"> • quick studies of work activities and interactions to prepare initial design specifications • systematic usability studies 	<ul style="list-style-type: none"> • dialogue analysis
provoked activities		<ul style="list-style-type: none"> • understanding of reasoning processes
study	<ul style="list-style-type: none"> • formal content analysis • most often work counting or more sophisticated like LSA 	<ul style="list-style-type: none"> • categorization and understanding of concepts
ask	<ul style="list-style-type: none"> • fixed questions to systematically gather relatively complex attitudes, opinions and descriptions of behaviors 	<ul style="list-style-type: none"> • open interviews or semi-structured interviews to engage subjects in

- This table is not very complete, but it shows that qualitative designs are more geared towards going in depth whereas mostly quantitative designs put more emphasis on scale or preparation of quantitative studies, ...

3. Observation, transcription and text analysis

3.1 Observation of behaviors in natural contexts

 Essential instrument for *in-depth studies* of cultures and/or organizations

- Takes **time** and requires **skills** (see below)
- Needs assessment:
 - of the researcher's role in the organization, group, culture, ...
 - on investigation methods, research goals (in order to focus observations), etc.
- Needs a good “field notes” technique:
 - notational conventions for sessions
 - notational conventions after session notes
 - a journaling technique
- Example:

Marks	Usage
“ ... ”	verbatim quotations
‘ ... ’	paraphrases
(...)	contextual data (or researchers interpretations)
< ... >	Analytical categories) derived from the subject's conceptual frameworks
/ ...	Analytical categories) derived from the researcher's conceptual frameworks
_____	time elapsed

3.2 Computer mediated transcriptions

- ... are very popular in educational technology
- Media: experimental artifacts, portals, CSCL, CSCW
- Tools are sometimes rigged to register detailed user acts for research purposes
- Types of activities observed:
 - user-machine interactions
 - mediated user-user interactions
- In addition, screen activities can be filmed or electronically registered
 - give extra informations, also allows to register non CMC-mediated user-user communication

Data

- can be enormous amounts
- Analysis of transcriptions take an enormous amount of time
 - either you have to spend days/weeks for manual coding (preferably using specialized software adapted to the media type)
 - or you need high technical skills to write scripts to reduce and "massage" data
- Likely you also have to invent your own data analysis and visualization techniques
- Be sure to search the literature for coding and analysis techniques !

Advice

- think very hard about the concepts you need to measure !

3.3 Elicitation of cognitive processes

- The “**thinking aloud**” method combined with protocol analysis (Ericsson & Simon, 1983) is a popular method in cognitive science and expert system design
- Used to collect relatively "objective" data about thinking processes, problem solving in particular.
- There can be important experimentation effects:
 - ex-post rationalization of behavior,
 - analytical thinking instead of case-based/pattern matching
 - influence of experimenter
 - subject may become silent and confused ...
- Basic principle: Users are given tasks and are asked to think aloud what they do.


The Ericsson & Simon procedure for elicitation cognitive processes

- Experimenter is completely silent...
- ...except when subject is ± 15 s silent
- “Keep talking”

Boren & Ramey: Usability testing practice is different:

- Subjects asks for help,
- Testers ask questions (clarification, opinion, ...),
- ‘Push’ subjects in certain directions.

3.4 Transcriptions of user activities in semi-formal situations

 Usually audio or video recordings

- Take time to analyze (like above) !
- Ask permission to use a tape-recorder or a camera if you do this in a work context
- Can also modify user's behaviors

(more details to follow in a next version, sorry ...)

3.5 Texts

- Text analysis (other than "texts" mentioned above) concerns artifacts like official documents, student/teacher paper productions, etc.
- Don't ask for everything when you start your research
 - People don't always like to give away written traces of their activities, and therefore you need to establish a confidence relation first.
- There are a large amount of analysis techniques
 - will not be covered in this short "crash course".

4. Interviews

Type	composition	function / advantages
Information interviews	check-list	<p>Initial studies</p> <ul style="list-style-type: none"> • See 4.2 “The information interview” [13]
Semi-structured interviews	list of questions and “probes”	<p>Main interview type in qualitative research</p> <ul style="list-style-type: none"> • subjects are allowed to “talk” and therefore to think • difficult to analyze • See 4.4 “The semi-structured interview” [15]
Structured (directive) interviews	list of fixed questions	<p>Semi-quantitative studies:</p> <ul style="list-style-type: none"> • easier analysis • better comparison • faster than semi-structured • See 4.3 “The structured interview” [14]
Interviews with a fixed list of questions and closed questions (see quantitative modules)	list of questions with response items	<p>Quantitative studies</p> <ul style="list-style-type: none"> • fast interview • reliable • easy to analyze • needs good understanding of the studied phenomenon

4.1 General advice for interviews



Interviewing is a well documented technique (in most textbooks)

Interviewees (in natural settings) don't have time to loose

- focus on the **essential**
- check if some information is available in other forms (e.g. written memos, rules, etc.)
- learn the **"jargon"**
- consult all other available information before the interview

4.2 The information interview

- Possible Objectives:
 - determine your research goals, e.g. you need to find out if your potential research subject is of any interest, etc. ;
 - prepare your research questions ;
 - prepare field research, e.g. you need information about the workings of an organization, process, procedure, about people and their roles, etc.
- Find **the** person:
 - often you may first interview **a domain specialist** ;
 - sometimes **any person** that has knowledge on your subject area **and time** will also do.
- In "natural contexts" avoid to "over-tax" key actors:
 - You must make sure that key actors will agree to in-depth semi-structured interviews in later stages, interviewing twice may not please some of them.

4.3 The structured interview

- Definition: A list of questions and open responses (usually a few sentences)
 - Useful to systematically gather comparable informations about relatively complex variables (beliefs, behaviors, etc.)
- The questionnaire needs a **lot of preparation !**
 - make sure that each concept can reliably be measured and lead to valid indicators.
- To prepare the questionnaire you ought to do 2-3 semi-structured interviews (or at least some information interviews)
- In addition, make **pre-tests** with 2-3 subjects in order to be sure that your questions are understandable
- You have to think about analysis methods beforehand
 - manual or machine coding?
 - code books
 - cost estimations, remember that any sort of text analysis is very costly (!)
 - etc.
- Consider surveys with closed response items as cheaper alternative !

4.4 The semi-structured interview

- This is preferred type of interview in typical qualitative research.
- You will get answers for your questions.
- Concurrently, this interview type allows the interviewee to **reason**.

General remarks

- (again): **preparation** !
- (again): **read your research questions** and identify the ones that need interviewing

Usual structure of the interview: 2 layers

- prepare a **list of general question**
- for each of these questions you make a "secret" list of points ("**probes**") that need to be covered
 - during the interview you must "probe" the interviewee for all those points

Interviewer's behavior

- **Let the person talk !!!**
.... and cover your questions and probes later !
- it is important that the interviewee is allowed to develop chains of reasoning (e.g. perceptions of causality, associations between concepts, etc.).
- The goal is to extract "meaning", i.e. so called "deep" or "think" structures.

 **Carefully word your questions**

- Watch out for sensitive questions
 - put them at the end
 - if you are lucky the subject will mention them anyhow.
- Use indirect questions that project the interviewee into a situation
- Example:
 - don't ask: "do you work well with person A ?"
 - but: "do you have frequent contacts with A", "how do you coordinate", etc.
 - don't ask: "do you know how to use this software" ?
 - but: "how frequently do you use this software", etc. ?
- When appropriate, ask about concrete cases
 - e.g. present a hypothetical case and ask how they solve it.
 - e.g. (in usability testing) give them tasks to solve

En résumé:

- rather ask what people **do** than what they feel
- in many situations, it is useful to present the interviewee with a scenario and use it also to let people reflect on more general issues