

HCI: Interviews and Contextual Inquiry

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19th September 2016

Interviews

Interview structures

- **Unstructured** interviews are not planned in advance. The interviewer might ask an initial planned question and then follow-on questions
 - Rich data
 - No possible to replicate
- **Structured** interviews are tightly scripted, similar to a questionnaire.
 - Comparable data between interviews
 - Very possible to replicate
- **Semi-structured** interviews have a script of topics/questions that need to be covered, but the format is more open to exploration
 - Somewhat comparable between interviews
 - Possible to replicate, but not exactly

Unstructured interview

- When to use it
 - Unstructured interviews are best when you have little to no understanding of the topic being discussed.
 - Useful when talking with a client about the project
- Pros
 - High flexibility, you follow up on anything you feel is relevant
 - The participant gets to do the most talking
- Cons
 - No planning means that your odds of missing important things are high
 - Challenging to identify what exactly to follow up on in real time
 - Resulting data is unstructured and qualitative. More challenging to analyze

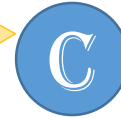
Unstructured interview with client

- Example from yesterday, involved no planning.



Why do you want to replace it?

We want to create a new UG4/MSc project matching website that does automatic matching of students to projects. I'm asking you first though because you are an HCI Lecturer.



So right now you take in emails from students and staff and do project matching using what?

Our student numbers are going up, so it is no longer sustainable to do project matching by hand. So we need to automate the matching.

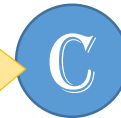


What about the matching takes you the most time or is the most annoying?

A complex spreadsheet and text file system I setup. But it took me a long time this year and we will have more students next year.



Some projects are very popular, but only one student will get it. We tell students to select some projects which are not overly popular, but quite a few students select only popular projects, which makes it hard to give them projects that they want. Hm, should we have a "popular project" icon based on last year?



Structured interview

- When to use it
 - When you know your topic very well and can predict common opinions
 - When you want structured data
 - Many people will be interviewed, possibly by several interviewers
- Pros
 - Strong script that is well defined. Very clear what you will ask the participant
 - Easy to replicate between participants and interviewees
 - Resulting data is very structured and easy to analyze
- Cons
 - Inflexible. No way to follow up with a participant.
 - Difficult to identify if you have the correct questions/answers

Structured interview with supervisors

- Participants:
 - The supervisors
 - Interviewers could be researchers or trained undergraduates
- Planned questions:
 - How many years have you accepted project students?
 - How many projects did you post last year?
 - How many students contacted you about projects last year?
 - Did you get more or less emails from students interested in your projects this year than last year?
 - On a scale from 1-5 where 1 is very important and 5 is not important. How important is it for you to meet with each student individually?

K

How many years have you accepted project students?

5 years.

S

K

How many projects did you post last year?

2. One hard and one easy one.

S

K

How many students contacted you about projects last year?

20-30, I think? I don't really remember.

S

K

Did you get more or less emails from students interested in your projects this year than last year?

There were a lot more students in the program this year. I think everyone got piles of email.

S

K

Did you get more email?

Yes.

S

K

On a scale from 1-5 where 1 is very important and 5 is not important. How important is it for you to meet with each student individually?

2, important, but group meetings can work if needed.

S

Semi-structured interview

- When to use it
 - When you know your well enough to predict key areas, but not well enough to know what people are likely to say.
- Pros
 - Loose script that makes sure you cover key topics
 - Possible to somewhat replicate between participants and interviewees
 - Resulting data is structured by topic
- Cons
 - Interview is more topic-constrained than unstructured, may miss key ideas because they are not in the script
 - Follow-up possible, but more time limited

Semi-structured interview with supervisors

- Participants:
 - The supervisors
 - Interviewers need to be researchers
- Planned questions:
 - How many years have you accepted project students?
 - How many projects did you post last year?
 - Tell me about setting up meetings for projects last year.
 - After meeting with all the students you had to submit your rankings. How did you come up with rankings?
 - What happened after the projects were matched?

K How many years have you accepted project students?

K How many projects did you post last year?

K Tell me about setting up meetings for projects last year.

K After meeting with all the students you had to submit your rankings. How did you come up with rankings?

K How did you turn it in?

5 years.

2. One hard and one easy one.

Well, they send me an email similar to: "I'm interested in your project" but not which project. I send them an email with a Doodle poll where they can sign up for a slot. They come, by then I've forgotten which project they are interested in, but they typically tell me. I ask them to solve problems on the white board. Then I make notes in a text file with all the student names id numbers with notes about each student.

When entering notes I was keeping track of the students I most wanted to work with. So I took that list and just turned it in to the coordinator roughly ranked by how much I wanted to work with each student.

I emailed it to them.

S

S

S

S

S

Conducting an interview

- Overview
- Notification and consent
- Simple questions to start
- Main interview
- Thank the participant

Conducting an interview

- Overview
 - Explain what the research is about
 - what the purpose of the interview is
 - That this is not an evaluation of the participant, you are here to learn from them
- Notification and consent
- Simple questions to start
- Main interview
- Thank the participant

Conducting an interview

- Overview
- Notification and consent
 - Clearly state what kinds of data you will be collecting (audio, video, notes)
 - Show them any recording equipment
 - Explain how that information will be used and if it might appear publicly
 - Obtain clear consent from the participant written or verbal
- Simple questions to start
- Main interview
- Thank the participant

Conducting an interview

- Overview
- Notification and consent
- Simple questions to start
 - Start with simple questions that are easy to answer, this puts the participant at ease and gets them used to the interview format
 - “What is your name?”, “How long have you worked here”, “when did you first start using the X system?”
- Main interview
- Thank the participant

Conducting an interview

- Overview
- Notification and consent
- Simple questions to start
- Main interview
 - Most of the time will be spent here
 - We will discuss further on following slides
- Thank the participant

Conducting an interview

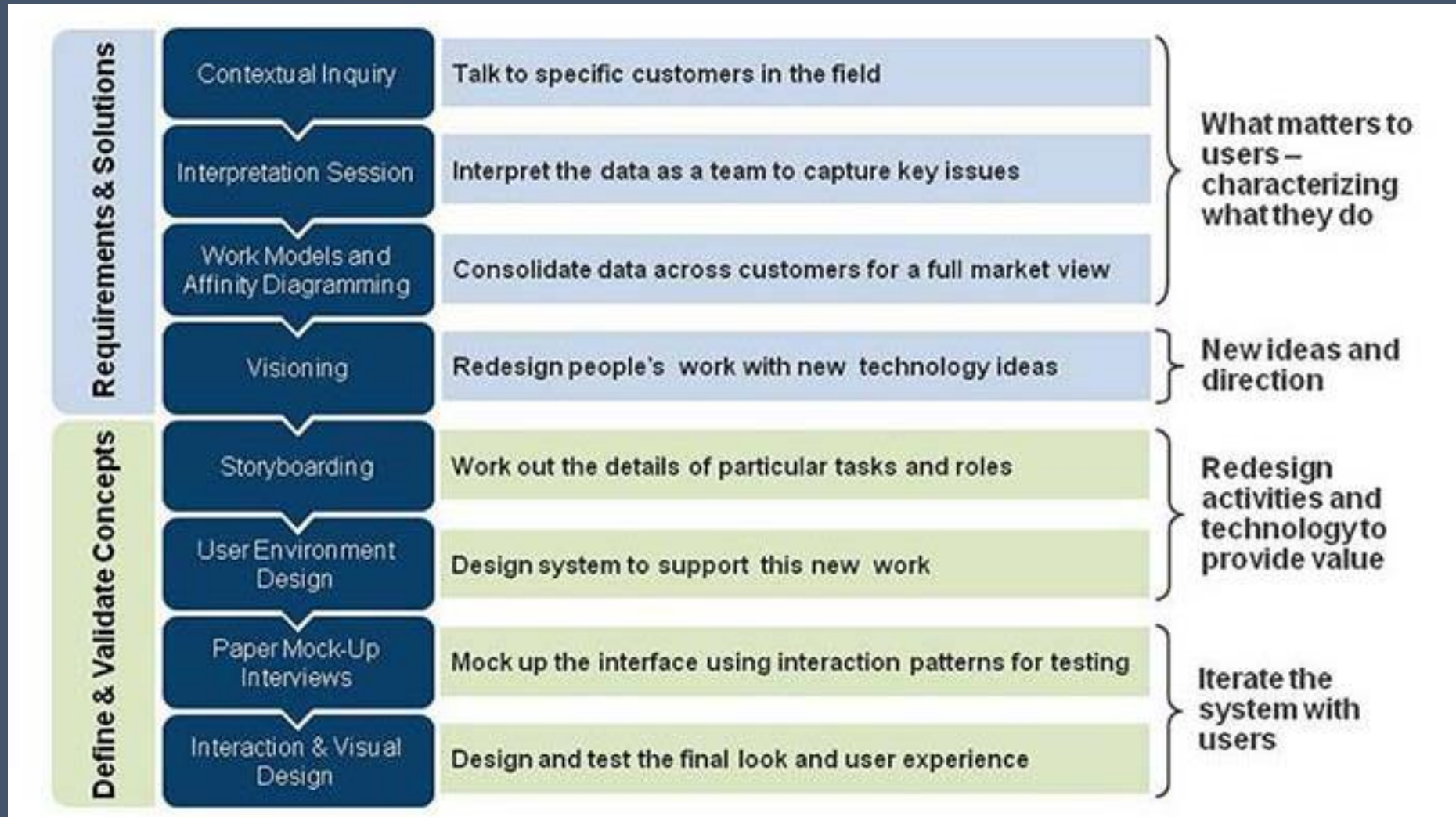
- Overview
- Notification and consent
- Simple questions to start
- Main interview
- Thank the participant
 - Interviews typically end with “do you have any additional questions or comments for me?”
 - When finished thank the participant for their time and clearly turn off any recording equipment.

Contextual Inquiry

Contextual Inquiry

- Similar to an interview, but done in the “context” where the participant is likely to interact with the technology.
- Greater partnership with the participant, working together to figure out how a workflow actually happens.
- Pros
 - Rich data similar to a normal unstructured or semi-structured interview
 - Get to see the space where users normally interact with your technology
 - Opportunity to identify “obvious” things that users don’t mention
- Cons
 - More involved, travel to location, 1-3 hour inquiry
 - Less structured data is harder to analyze
 - May require special permission to visit and record space

Contextual design



“Principle: People are experts at what they do - but are unable to articulate their own work practice.”

<https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed/contextual-design>

Example Contextual Inquiry

- I: “I noticed that after putting the order into the system you called the stocking room and told them about the order. Why did you do that?”
- P: “I just wanted to let them know that the order is coming.”
- I: “Why do they need to know that the order is coming?”
- P: “They can’t see the order system and it takes them a few minutes to find items in the stocking room. So when the customer shows up we look unprepared, so I always call down and tell them. Order from this department always look fast!”

Contextual Inquiry

- Ethnographic interviews
- Pros
 - Strong understanding of how a particular user works
 - Deep understanding of the context in which your software will be used
 - Opportunity to build a relationship with a user
 - Ability to observe context and understand “obvious” elements of environment
- Cons
 - Harder to use on infrequent tasks (like app installs)
 - Limited sample size

At a prior university the library decided to figure out why researchers were not backing up data. They tried surveying, but people left out important information. So they sent someone around to various research labs to do a contextual inquiry.

Where is all the data?



<http://www.csoonline.com/article/2112379/physical-security/the-clean-desk-test-what-s-wrong-with-this-picture.html>



5:34 / 11:50



Example exchange with researcher

- Me: we back up our data onto local servers which are then backed up to an online service.
- Interviewer: What about that? (pointing to the tablet in my hand)
- Me: I have a folder on this which rsyncs (uploads) to my backed up computer once an hour when I am at work
- Interviewer: What about when you travel?
- Me: It doesn't backup, but I consider the risk minimal

The result

- Researchers were not considering mobile devices like phones and tablets or cameras when describing where their data was
- They were using Dropbox instead of university services to sync to things like mobile devices
- Sources like Google Docs were also not being reported
- Large files like detailed photos or video were all being stored locally
- Some data was being printed and stored in hard copy with no backup

Think-pair-share

- Find one person from the people near you who is willing to share the contents of their backpack
- Have them go through the different objects and explain why they are there
- Ask questions to understand why the person needs each of these objects

Quantitative data analysis

Quantitative vs Qualitative analysis

Quantitative

- Typically using numbers or clearly defined categories
- Examples: surveys, time measurements, activity order.
- Easier version is counting things
- Harder version involves statistics

Qualitative

- Data that cannot be trivially measured in a way that produces a number
- Interviews, focus groups, natural language
- Easy version is identifying themes or topics
- Harder version is grounded theory or qualitative coding

Questions?