Introduction to User-Centered Design

Lecture 3 -Understanding phase part 2

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Outline of this lecture

Part 1: Summing up desk research

- What is the outcome of this activity

Part 2: Primary research

- Why involve users?
- Basic principles of working with users
- Types of user research

Part 3: Specific methods

- Observations
- Interviews

Part 1

1 Summing up desk research

What has been done last week

Question

Question:

How many have chosen to work with:

- Physical activity
- Recycling
- Connectedness

Activities in the Understanding phase

Activities

- **Exploration of the problem space** (group activity)

- **Desk research** (secondary research)
  - Academic research
  - Applied research
  - Competitive analysis

- **User research** (primary research)
  - Observations
  - Contextual inquiry
  - Diary studies
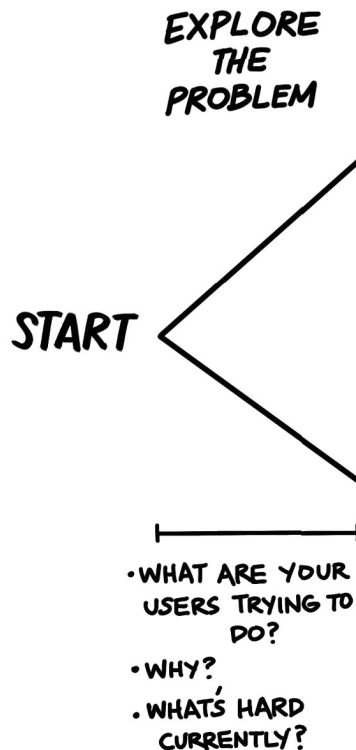 - Interviews /focus groups

Part 1
Last time

Part 2
This and next lecture

Where are we in the process

EXPLORE
THE
PROBLEM

START

- WHAT ARE YOUR USERS TRYING TO DO?
- WHY?
- WHAT'S HARD CURRENTLY?

We are still in the first phase in which we explore the problem space

- We are not thinking about solutions

- Discussing where problems are

- **Why is** (recycling, exercising, connecting) hard?

- What are the problems, frictions?

- Are there groups of people that have similar needs or problems? …

Exploration of the problem space (Group activity)

Understanding phase

- What?
- Who?
- Where?
- When?
- Why?

- articulate the problem as a team
- reflect on ideas in the early stages of the process
- view multiple perspectives on the problem space

Where is friction?
Where are the problems?
What are the opportunities?

Examples

Explorations of the Connectedness problem space

Connectedness

- What?

- Who?

- Where?

- When?

- Why?

Find more friends	Feel more connected to the city	Be more connected to family far away
New Students at NTNU	New arrivals at Gjøvik	Elderly
Away from Campus, City center, Parks ...	Public spaces, events	Elderly homes
Afternoons, after working, evenings	During special occasions, holidays	Everyday, not only on special occasions
To connect with non-University people, Integration, culture exchange	To feel part of a local community. Inclusion.	Feel connected and part of the lives of remote family members

Examples

Explorations of the Connectedness problem space

Connectedness

Academic research

- What?

- Who?

- Where?

- When?

- Why?

Be more connected to family far away
Elderly
Elderly homes
Everyday, no special occasions
Feel connected and part of the lives of remote family members

Intergenerational interaction - communication

Where is friction?
Where are the problems?
What are the opportunities?

- No proximity, no frequency,
- no common tasks Interest gap,
- nothing to talk about
- Opportunity: online activities/ communication
- Familiarity with technology

Connectedness

Preliminary problem statements

How can we help grandparents engage in common activities with grandchildren that live far away?

How can we help grandparents increase their interaction with remote family members through fun activities?

How can we help grandparents to feel useful and part of their grandchildren's lives?

Identified through desk research

Example

- What?
- Who?
- Where?
- When?
- Why?

Connectedness

Find more friends
New Students at NTNU
Away from Campus, City center, Parks ...
Afternoons, after working, evenings
To connect with non-University people, Integration, culture exchange

Academic research

New relationships, Ice-breaking, disclosure

Where is friction?
Where are the problems?
What are the opportunities?

- Proximity can exist, but initiation of conversations needs to be supported
- Opportunity: activities that would force group formation, common experiences
- To create strong relationships frequency of interactions has to be supported

Connectedness

Preliminary problem statement

How can we create ice-breaking opportunities in the city center that would trigger discussions among strangers

How can create repeated interactions among students and non-students in the city's Library

Recycling

Preliminary problem statement

How can we create awareness about correct recycling practices at building waste sorting locations?

How can we motivate the young people of Gjovik to recycle more

How can we help people create correct recycling habits in their households

Example

Physical activity

Preliminary problem statement

How can we utilise Gjøvik parks and communal spaces to promote more physical activity for elderly citizens

How can we support people to sustain an active lifestyle over the long-term

How can we motivate the citizens of Gjøvik to bike to work

Question:

Are those problem statements enough to start working on solutions?

What is missing?

(user) **Insights**

Information and insights from people involved in the problem you investigate

Part 2

(2) # Primary Research

- Why involve users?
- Basic principles of working with users
- Types of user research

Why involve people

Motivation for primary research

Desk research (if done correctly) can give you insides

But involving representative people from your target population

- Allow you to evaluate your assumptions

- Help finetune and localize the problem definitions

- Identify new opportunities or pain points

- Allows you to gain a better and deeper understanding of user needs

- Allows you to empathize with your target user

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Insights : *the ability to achieve a precise and intuitive understanding of people's needs, actions and attitudes*

Insight are not data but data analysis can reveal insight to act on
- An observation alone is not an insight
- A customer wish or statement of needs is not an insight

Insight is a discovery about the underlying motivations and rationales that drives people´s actions

Empathy

Empathy is the ability to put oneself in another's place or walk in the other's shoes.

You show empathy by understanding the users' motives, needs, and by including them in the design process.
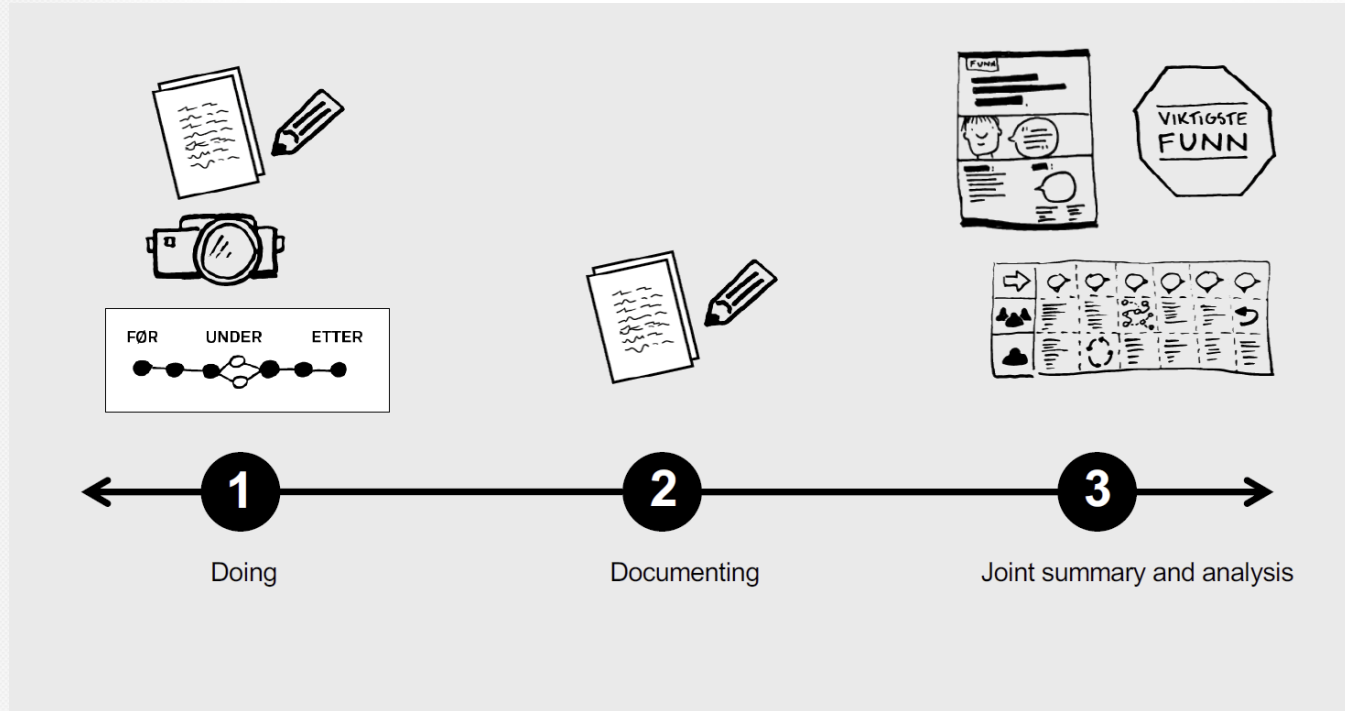
Empathy

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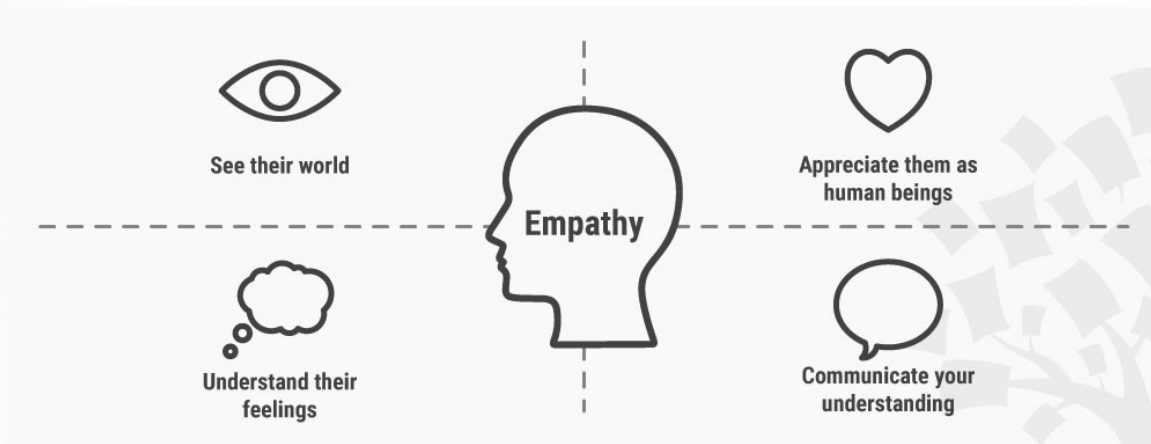
Keep in mind

Empathy is crucial to a human-centred design process. It helps designers to set aside their own assumptions about the world in order to gain insight into their users and their needs.

No guessing, no personal opinions

General process of user research

Plan your activity

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Steps

1. Start by identify stakeholders.

Those are your target users and others that could be affected. Who are the people you believe would benefitting the most from your future design?

2. Create a set of questions about what you'd like to learn..

Try to create questions that would help you understand user needs. What do they experience? What could make their lives easier? etc?

3. Set up a time to speak or observe people.

It's best if you can meet them in their environment to gain a better understanding of their world.

Plan your activity

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Steps

4. Record or capture the activity.

If possible, record or take photos of things you find interesting or inspiring to use as stimulus for discussion with your team

5. Meet and discuss with your group after the activity.

Meet with your team to discuss your findings and insights. Take turns telling the stories of what you've heard. (what surprised you? What ideas might these findings help generate?)

6. Analyse and report.

Contact data analysis to solidify findings and insight. Compare results with desk research findings and update your problem statement
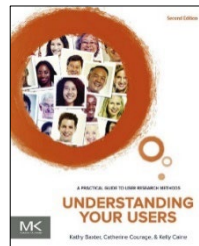
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Setting up and preparing for research

- Chapters 4,5,6,7

Methods

- **Diary studies** (Chapter 8)

- **Interviews** (Chapter 9)

- **Surveys** (Chapter 10)

- **Card sorting** (Chapter 11)

- **Focus groups** (Chapter 12)
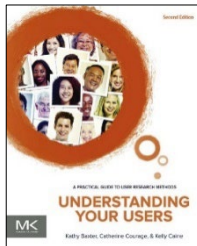
- **Field studies** (Chapter 13)

Baxter, Courage, Caine
Understanding your Users
Chapter 4 and 5

Preparing for research

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Key points:

- Do not harm
- Permissions and Consent
- Anonymity vs Confidentiality
- Comfortable experience
- Appropriate Language
- Right to withdraw
- Incentives. Gratitude and respect for their time
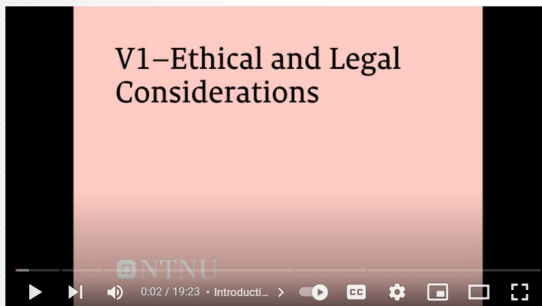- Validity and reliability of data

Baxter, Courage, Caine
Understanding your Users
Chapter 4 and 5

How to conduct a user study

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Important!

Watch Introduction to Research Ethics and instruction regarding the NSD application

Giovanni Pignoni

https://www.youtube.com/watch?v=zubgIGm6dwQ

Limits to user research

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- Time
- Money
- **Access** (e.g., users, participants, context)
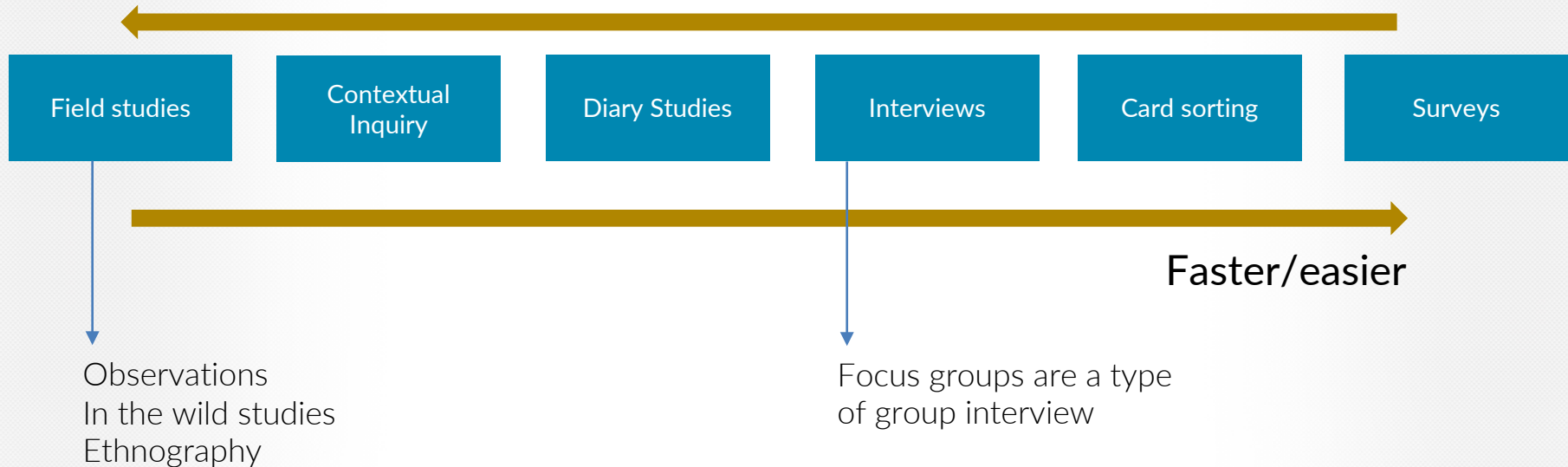- Bias
- Legal/ethical issues

Be aware of the limits before starting

– Choosing the right method

– Adjust according to research question and scale up or down

Types of research

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Richer insights (context)

←——————————————————————————————

Field studies	Contextual Inquiry	Diary Studies	Interviews	Card sorting	Surveys

——————————————————————————————→

Faster/easier

Observations
In the wild studies
Ethnography

Focus groups are a type
of group interview

3 Specific Methods

- Observations
- Interviews
- Outcome o those activities

Observations (field studies)

Observations

Data gathering technique conducted at the target users location. The goal is to gain insights by observing you target population in their natural environment (in the field, in the wild, ethnography).

Why?

• What people say they do is often different from what they actually do

• People don't always remember what they do

• Can reveal underlying reasons that users are not aware of

• Can identify findings that are not possible to be revealed in interviews
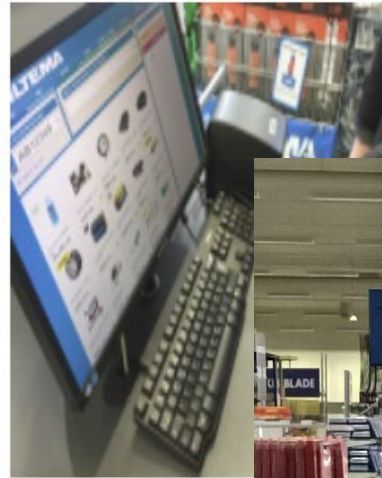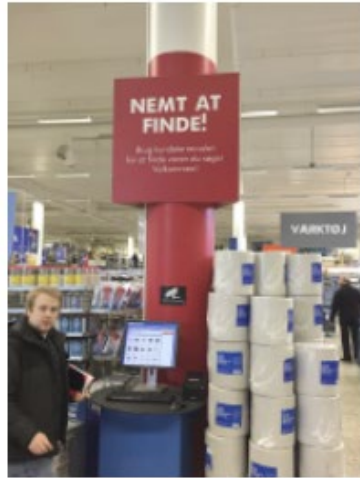
Observations examples

Method description observations

Observations examples

Method description observations

Observations examples

Method description observations

Observations examples

Method description observations

Observations

People are observed in their natural surroundings while reviewing their routines and tasks. There are different methods of observation (see table 13.1 p. 385 UYU book)

Why perform observations?

Through observation, you will get a more realistic picture of the course of events and user needs. This enables you to uncover both what works and the challenges that exist in current processes.

Observations – Practical tips

- People you observe should be comfortable with you being present, so that you can observe as real and unaffected a situation as possible

Who should be involved?

- One to two team members per observation.
- The entire project team should participate in analysing the results (e.g., notes, recordings, pictures, audio etc) **to build empathy and understanding.**

What should you have?

- Observation guide
- Pen and notebook
- Camera and/or sound recorder
- Addresses and itinerary
- Some information about the person

Where should you go?

- Wherever you target populations is
- Wherever the activities happen you are interested in
- Think about all the relevant stakeholders
- Explore secondary and related places to the activity

Observations - How to...

Method description observations

Before (preparation phase)

Formulate what the purpose of the observation is and what you want to gain insight into. Feel free to also prepare some questions you may have in mind.

During (execution)

Observe and take notes. Take pictures if appropriate, but do not disturb the situation. **Conduct a interview at the end** of the observation to ask questions related to events you observed. Try find out why they do things the way they do.

After (results)

Write down the most important lessons:
- What made the most impression?
- What worked poorly?
- What were the obvious needs?

Observation Guide

During the observations

SEE – NOTES – TAKE PICTURES

- Process and order: What happens when?

- Who does what and how?

- What tools / equipment are used?

- Differences between employees?

- Invisible services?

- Custom systems / tools?

- In what specific situations do unpredictable events occur?

- Where are the missing and unmet needs?

Immediately after each observation:

Write down the most important lessons: What made the most impression? What worked poorly? What were the obvious needs?

Summary across all observations:
### Description of the processes (AZ)

- The processes: what happens when?
- When do variations occur on how the job is performed and when does it work and not?
- Where are the missing and unmet needs?

Summarize as most important findings:

- What works / does not work in the work processes?
- What are opportunities for improvement?

Variation : Artifact walk-through

Method description observations
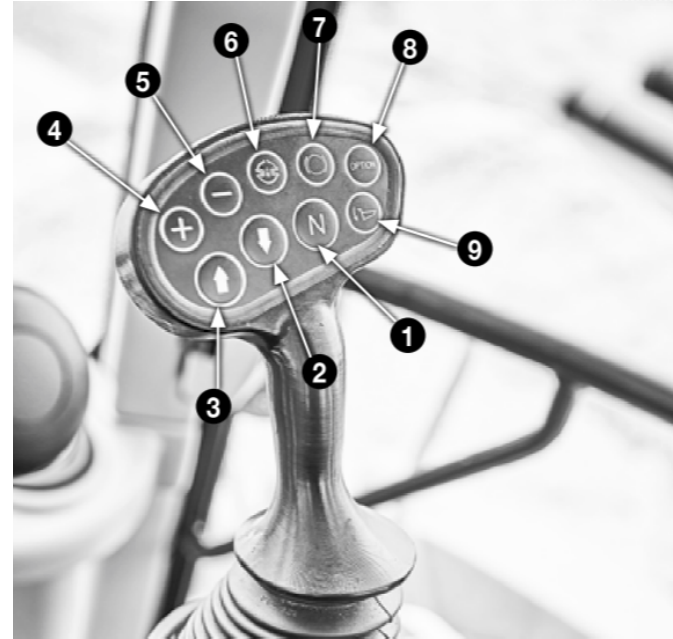
Collect all the artifacts used by participants and determine what triggers their use, when they are used, and for what purpose

Variation : Contextual Inquiry

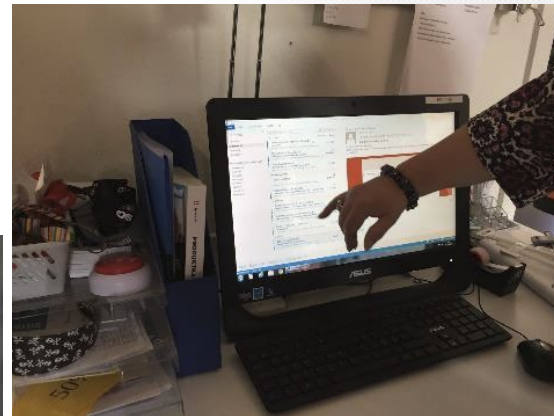Basically, an interview on site considering context.

- You go to the user's environment to try to understand the context of their action
- The user is aware of your presence and is considered a partner to your research
- You take an apprentice role

Variations Contextual Inquiry

Method description observations

Observation Pros and Cons

Method description observations

Pros:

- Deep insights
- Actionable results

Cons:

- Costly and time consuming
- Not always possible to get access
- Not always possible to observe the activity in question
- Bias
    - Simplification bias
    - Hawthorne effect

The Hawthorne effect

The Hawthorne effect is a type of reactivity in which individuals modify an aspect of their behavior in response to their awareness of being observed

Based on a study 1924 and 1927at the Hawthorne Works (electric factory), investigating if its workers would become more productive in higher or lower levels of light. It was found almost any change in the lighting would increase productivity.
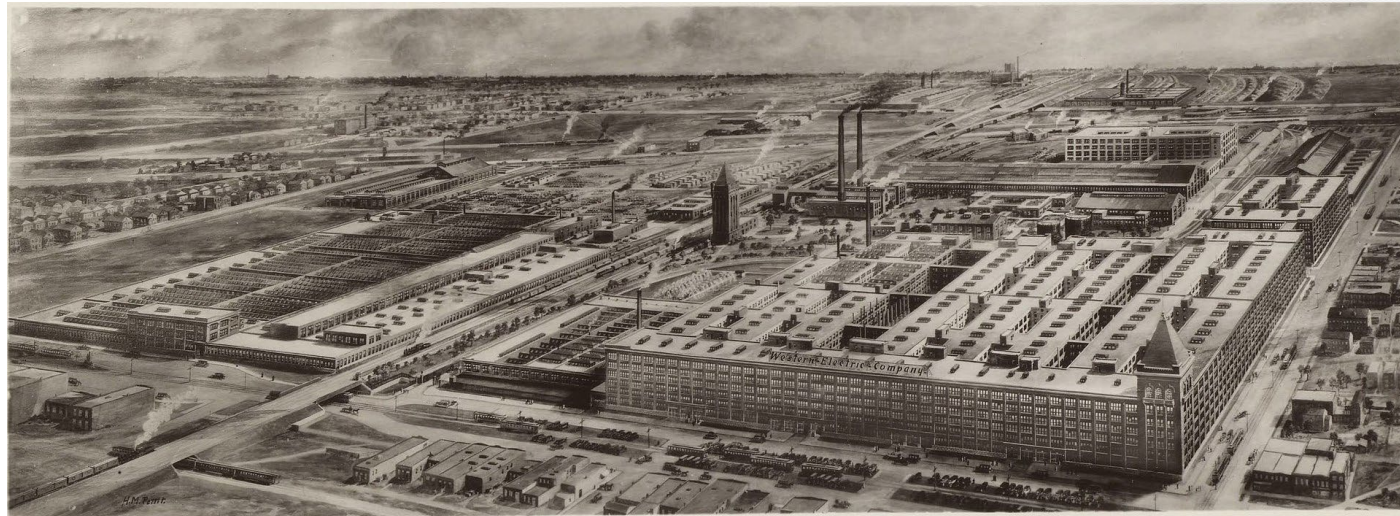
Interviews

Interviews

A guided conversation in which one person seeks information from another

There are different types of interviews depending on the desired structure and time use.

Most frequently used method

Why?

- Conversations and interviews will give you valuable **insight** into people's everyday lives, **feelings, expectations and habits**,

- Through face-to-face dialogue, needs, motivations and reactions can be revealed in a more personal way. The purpose is to **build empathy** for the person so that you can create designs adapted to meet the actual needs of users

Interviews – Practical tips

- People you interview should be comfortable with you being questioned

Who should be involved?

- Two team members per interview. Not more. Two pairs of eyes and ears catch more.
- The entire project team should participate in analysing the results (e.g., notes, recordings, pictures, audio etc) **to build empathy and understanding.**

What should you have?

- Interview guide
- Pen and notebook
- Camera and/or sound recorder
- Consent Form

Interviews – Practical tips

Who should you interview?

Decide who you want to understand and what to you want learn

- There are no average users!
- Meet different people who range in age, gender, background, life situation, digital competence, experience etc.

- Meet also non-users stakeholders

Create interview guides that are tailored to each group of people

Interviews - How to...

Before (preparation phase)

- Set clear criteria for **who you should talk to**.
- Agree time and place with the people.
- Prepare an **interview guide** and be aware of what the purpose of the interviews is and what you want to gain insight into.
- Agree on **roles** - one asks questions and the other takes notes.

During (execution)

Make the person feel safe. Explain that this is an conversation where you want to learn more about them and get input for your project. There are no right or wrong answers

After (results)

Write down the most important lessons:
- Summarize what you learned right afterwards while remembering details

Interviews for data collection

The qualitative interview is one of the most important data gathering tools in qualitative research

"permitting us to see that which is not ordinarily on view and examine that which is looked at but seldom seen"
(Rubin & Rubin, 2005)

"Interviwing is rather like a marriage: everybody knows what it is, an awful lot of people do it, and yet behind each closed door there is a world of secrets'
(Oakley, 1981)

Rubin, H. J., & Rubin, I. S. (2005). Qualitative interviewing: The art of hearing data (2nd ed.). Thousand Oaks, CA: Sage.
Oakley, A. (1981). Interviewing women: A contradiction in terms. Doing feminist research, 30(6), 1.

Types of Interviews

Structured interview.

- A complete script that is prepared beforehand.
- There is no room for improvisation.
- Often used in surveys where the interviews are not necessarily conducted by the researcher.

Semi-structured interview.

- There is an incomplete script. Only discussion topics
- Some room to improve and make follow up questions
- The researcher may have prepared some questions beforehand, but there is a need for improvisation.

Unstructured

- Similar to a normal conversation.
- The researcher has room to improvise.

Pros and cons of Interview types

Qualitative research

Structured interview.

Pros: Faster to analyze, consistency across participants

Cons: There is no room for improvisation, less rich insights

Semi-structured interview.

Pros: structure but also opportunity to ask follow up questions

Cons: less consistency compared to structured

Unstructured

Pros: Rich data, flexible, ability to make follow up questions

Cons : Difficult to analyze, no consistency in discussion points among participants

	Type of question	Purpose	Example question
Ice breaker	Ice breaker	Get participant talking, put participants at ease, create rapport	What's your name and where are you from?
Introduction	Introduction	Bring up topic, shift focus toward product	Tell me about a favorite place you've traveled.
Key			
Key	Key	Gather insight on areas of primary interest; achieve study goals	• How often do you book travel using only your smartphone? • Tell me about the most recent experience you had booking travel using your smartphone.
Summary	Summary	Consider key questions within a broader perspective	Considering everything we've talked about today, what's the one thing that's most important to you?
Wrap-up	Wrap-up	Bring closure to discussion	Is there anything we didn't talk about today that you'd like us to know?

Interviews for data collection

What is going on in the minds of users?

How do humans reason about their actions and why?

Knowledge creation by *"Inter View"* a key source in qualitative research.
- Artificiality of the interview
- Lack of trust
- Lack of time
- Level of entry
- Howthorne effects
- Constructing knowledge
- Ambiguity of language
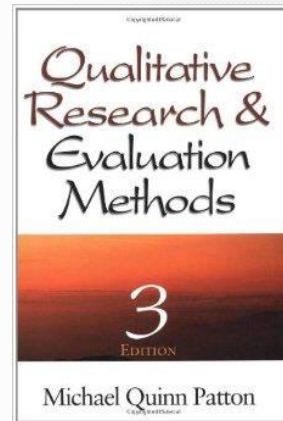
(Meyers & Newman 2007, p. 4-5)

Types of questions

Qualitative research

Question Focus	Past	Present	Future
Behaviors/ Experiences			
Opinions / Values			
Feelings/ Emotions			
Knowledge			
Sensory			
Background			

(Patton 2002, p. 352)

Chapter 7 "Qualitative Interviewing" from the book: Patton, M. Q. (2002). Qualitative Research & Evaluation Methods. Third Edition. Sage Publications. Thousands Oaks, California.

Question formation tips

Qualitative research

- Ask truly open-ended questions

- **Ask singular questions** avoid double barreled questions**:**

  Wrong: "Do you regularly book your travel online to save money?"

- Avoid vague questions
  Wrong: "Do you usually purchase plane tickets online?"
  Right: "How often do you purchase plane tickets online?"

- Avoid leading questions
  Wrong: "Most of our users prefer the new look and feel of our app over the old one. How do you feel?"
  Right: "How do you feel about the visual appearance of this app?"

- Ask "why?" but be careful

Question formation tips

- The recommended approach is based on **active listening**, which is about being present in the conversation

- **Silence** is gold It is the person who is to speak, not you

- Stay **neutral** so that you do not influence what the person says

- **Never correct** the person It is possible that the person is saying something that is completely wrong

Question formation tips

Qualitative research

Ask open-ended follow up questions questions:
- "What is important in this context?"
- "Can you tell us about yourself?"

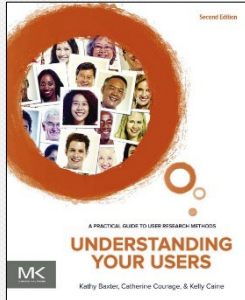Do not be afraid to ask "stupid" questions even if you think you know the answer.

Find out why and how:
Ask the person to elaborate on their answers. Do not assume that you know the answer, find out what they really think.

Reading material for this Lecture

exercise

Reading

Baxter, Courage, Caine **Understanding your Users**

- **Chapter 7 and 9, and 13**

For the Lab session

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Meet up in the Lab rooms and prepare to conduct User Research (primary research)

- First, meet and identify target users for your problem space

- Discuss if there is a place you can go and observe

- Choose method and create an interview or observation guide)

- Conduct the user activity

Thank you

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