

KAIST Spring 2025

CS374: Intro to HCI

hci.cstlab.org

Class 03: Needfinding

2025.03.04

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ADMINISTRATIVE NOTES

- If you missed first week, contact course staff right away with any questions.
 - Sign-up form & Campuswire
- 3/06 (Thu)
 - Pre-class reading: Ideation
- 3/11 (Tue)
 - HW1 will be released. See course website

PREVIOUSLY ON CS374

Your mission: **Redesign the gift-giving experience ...for your partner.**
Start by gaining **empathy**.

1 Interview

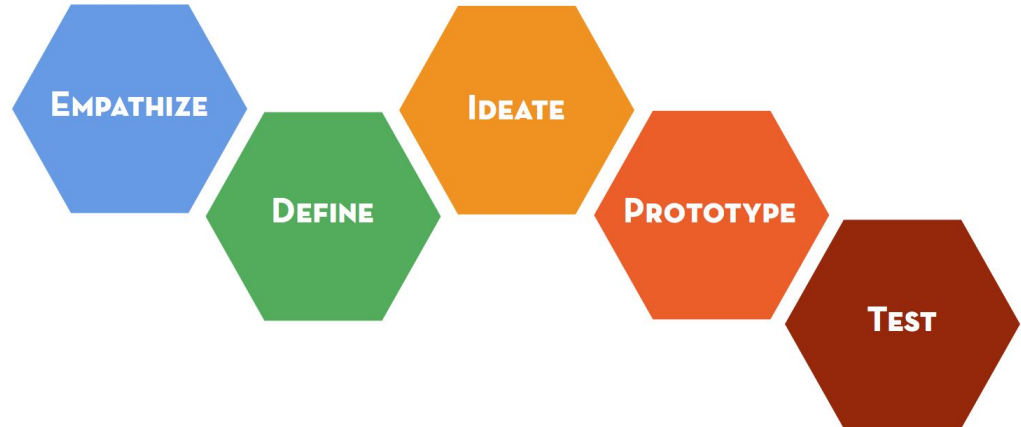
8min (2 sessions x 4 minutes each)

Notes from your first interview

2 Dig deeper

8min (2 sessions x 4 minutes each)

Notes from your second interview



CORE CONCEPT FOR USER-CENTERED DESIGN:

- There's a big difference between:
 - Redesigning the gift giving experience
 - Redesigning the gift giving experience FOR your partner

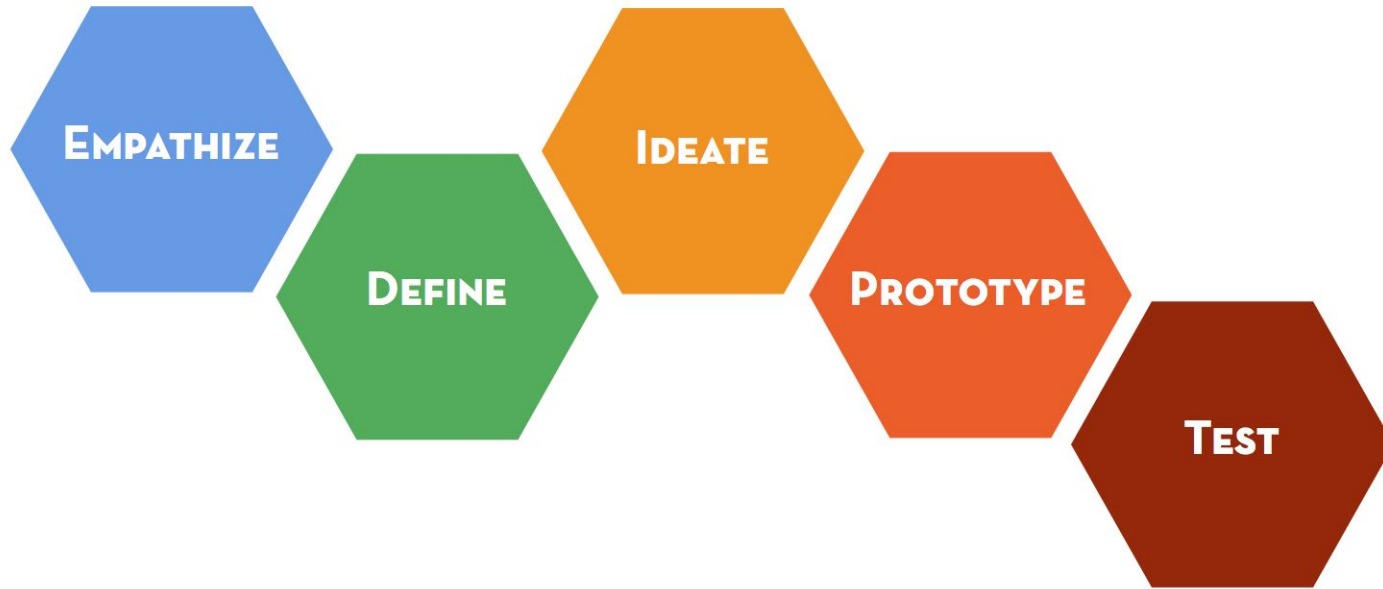
If you try to design for everyone, there's a good chance you end up designing for nobody in particular.

LEARNING OBJECTIVES

After this class, you should be able to...

- Understand different needfinding techniques.
- Exercise contextual inquiry in a one-on-one setting

USER-CENTERED DESIGN PROCESS



NEEDFINDING TECHNIQUES



CONTEXTUAL INQUIRY

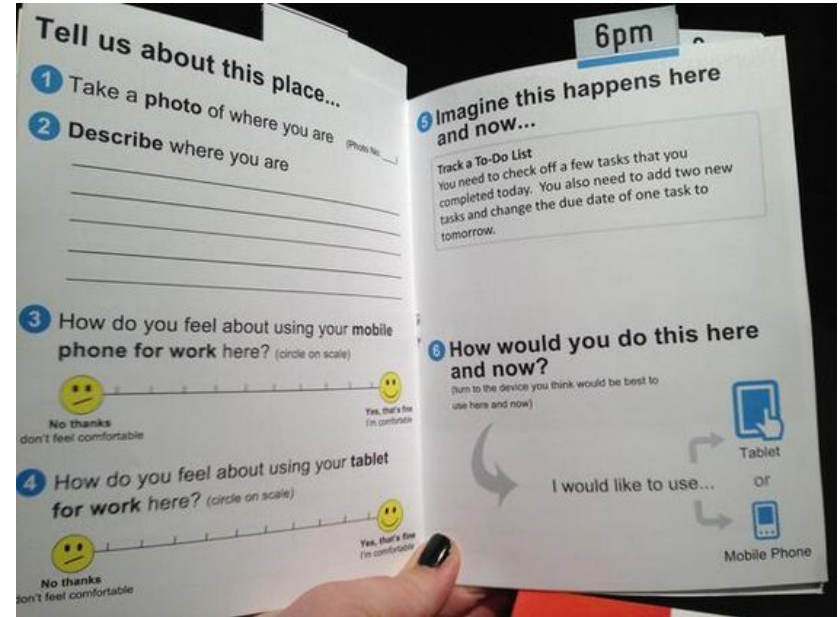
- Master/Apprentice model
 - Master does the work “in context” and talks aloud.
 - Apprentice makes observations & interrupts with questions.
- Four principles
 - Context: avoid summary / abstraction
 - Partnership: collaboratively unfold. Watch & probe
 - Interpretation: Fact → Hypothesis → Implication → Design idea
 - Focus: bring your own purpose & beliefs

OTHER NEEDFINDING TECHNIQUES

- When does direct observation / contextual inquiry not work?
 - Longitudinal or sporadic behavior?
 - When you need large n
 - “Uncommon but consequential harms”

NEEDFINDING TECHNIQUES: DIARY STUDIES

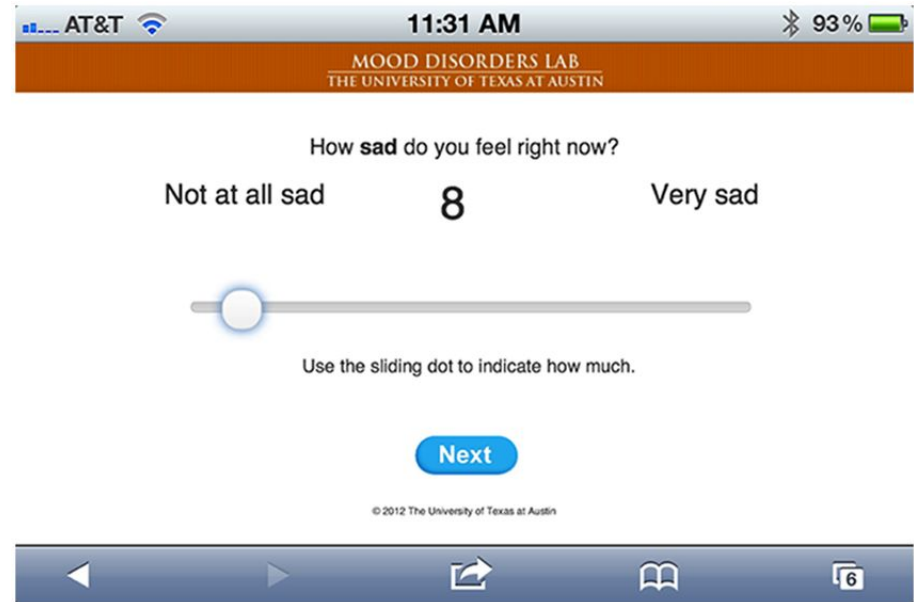
- Participants capture the experience themselves at a regular interval.
- Longitudinal, qualitative
- Journals, cameras, voice, video
- Easy capture tools are important.
- During a lecture? While driving?



Kate Needham on Pinterest

NEEDFINDING TECHNIQUES: ESM

- Short for Experience Sampling Method (ESM)
- Right then, right there
- Psychometric & open-ended questions (e.g., "How are you feeling now?")
- Similar types of data to those from diary studies



The screenshot shows a mobile application interface for mood tracking. At the top, the status bar displays 'AT&T', signal strength, Wi-Fi, the time '11:31 AM', and a 93% battery level. Below this is a header for 'MOOD DISORDERS LAB THE UNIVERSITY OF TEXAS AT AUSTIN'. The main question is 'How sad do you feel right now?'. A horizontal scale is shown with 'Not at all sad' on the left and 'Very sad' on the right. A large number '8' is positioned above the scale, and a white sliding dot is positioned on the scale line. Below the scale, the text reads 'Use the sliding dot to indicate how much.' A blue 'Next' button is centered below the scale. At the bottom, there is a navigation bar with icons for back, forward, home, and a list of 6 items. A copyright notice '© 2012 The University of Texas at Austin' is visible at the bottom of the screen.

Clasen et al., "Mood-reactive self-esteem and depression vulnerability" PLoS One 10.7 (2015).

NEED FINDING TECHNIQUES: SURVEY

- Predetermined set of questions given to a group of people
- Attitude, behavior, perception
- Recruiting relatively easy: scale, diversity
- Comparison bet. different groups

College Student Survey

The purpose of this survey is to find out about your current experiences in college and at work, and to learn about your plans for the future. To insure confidentiality, **do not** write your name on this survey.

1. How many classes have you completed in college?
 - 1 1-5 classes
 - 2 6-10 classes
 - 3 11-15 classes
 - 4 16-20 classes
 - 5 21 or more classes
2. When you graduate from this college, what do you plan to do? (*Circle all that apply. For instance, you may plan to work and go to 4-year college, so you would circle both.*)
 - 1 Undecided
 - 2 Enter military service
 - 3 Participate in a formal apprenticeship program
 - 4 Work part time (less than 40 hours per week)
 - 5 Work full time (40 hours per week or more)
 - 6 Attend job training
 - 7 Attend 2-year community college or technical school
 - 8 Attend 4-year college or university
 - 9 Other (*please specify*): _____
3. Besides yourself, who has helped you most to make plans for the future? (*Circle the one best response.*)
 - 1 Teacher
 - 2 Counselor
 - 3 Family member or guardian
 - 4 Friend
 - 5 Work supervisor, co-worker or work site mentor
 - 6 Other (*please specify*): _____

NEEDFINDING TECHNIQUES: ETHNOGRAPHY

- Study of culture and people via “fieldwork”
- “Explore cultural phenomena where the researcher observes society from the point of view of the subject of the study” (Wikipedia)
- Very few cases, or even one, in detail. Often for a long period.



WHICH NEED FINDING TECHNIQUE?

- General public's perception on fake news
 - Survey
- "Happiness index at 8pm every Sunday"
 - Experience Sampling
- Learn how teenagers operate messaging apps
 - Contextual Inquiry, Direct Observation
- Detailed account of a highly productive professor in an academic culture
 - Ethnography

USERS AS DESIGNERS

- Lead users
 - Many of them already have clever custom solutions
 - Designers generalize these point solutions
- Extreme users
 - Users with 1000s of emails per day
 - Users checking email once a month
 - Build solutions for the most difficult population first, then generalize
- Participatory design to involves users more directly in the design process

Video Break

CONTEXTUAL INQUIRY

WHEN DO YOU USE
CONTEXTUAL INQUIRY?



ACTIVITY: CONTEXTUAL INQUIRY

Procedure

1. You'll be assigned a partner
2. Interview your partner to find out how they manage their todo & schedule. (5 mins)
3. Apprentice: submit lessons @yellkey.com/house
4. Switch roles.
5. Repeat 2 & 3. (5 mins)

Now onto
the Mini Project!

MINI PROJECT (W2-3)

- Topic: *How might we redesign the food delivery ordering experience on KAIST campus?*
- You'll work in a team of ~4, randomly assigned.
- No actual implementation is needed.
- A lot of work will be done during class.
- One presentation & short report at the end
- 10% of your total grade

HERE'S OUR SOURCE DATA

- Data collected from a detailed contextual inquiry with 5 participants: yellkey.com/ground



ACTIVITY INSTRUCTIONS

- Topic: *How might we redesign the food delivery ordering experience on KAIST campus?*
- We assigned you into mini-project teams.
- You'll be working with these team members for two weeks from now.
- Check your team number and move to sit with your teammates.
- First, say hi and exchange contact information!!!

yellkey.com/get