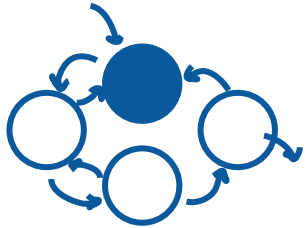
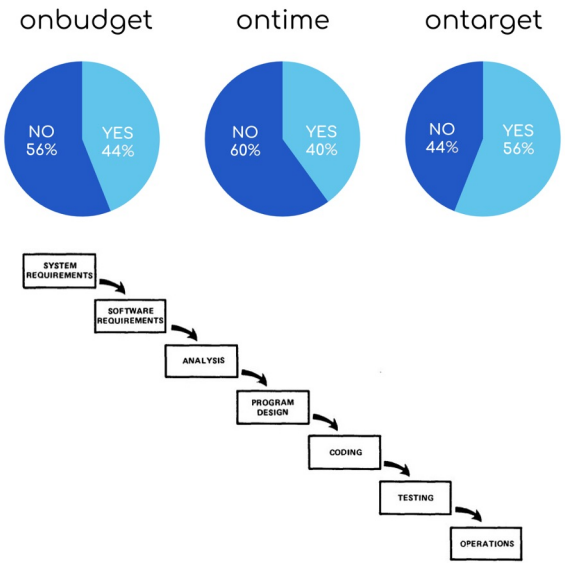


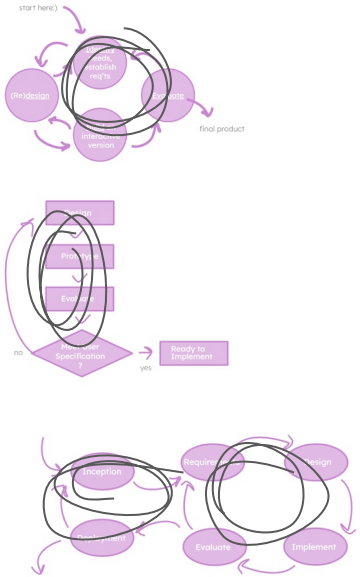
Human Computer Interaction

Taslima Akter

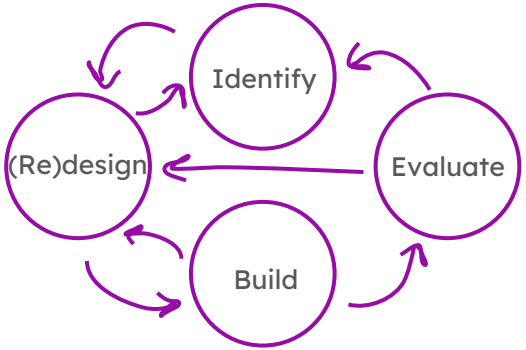
Design Processes & Methods – Part 2



Good software systems are hard to make. Most are delivered over budget, late, and don't meet the customer's need--if at all. The culprit: linear design processes w/o iterative user engagement.

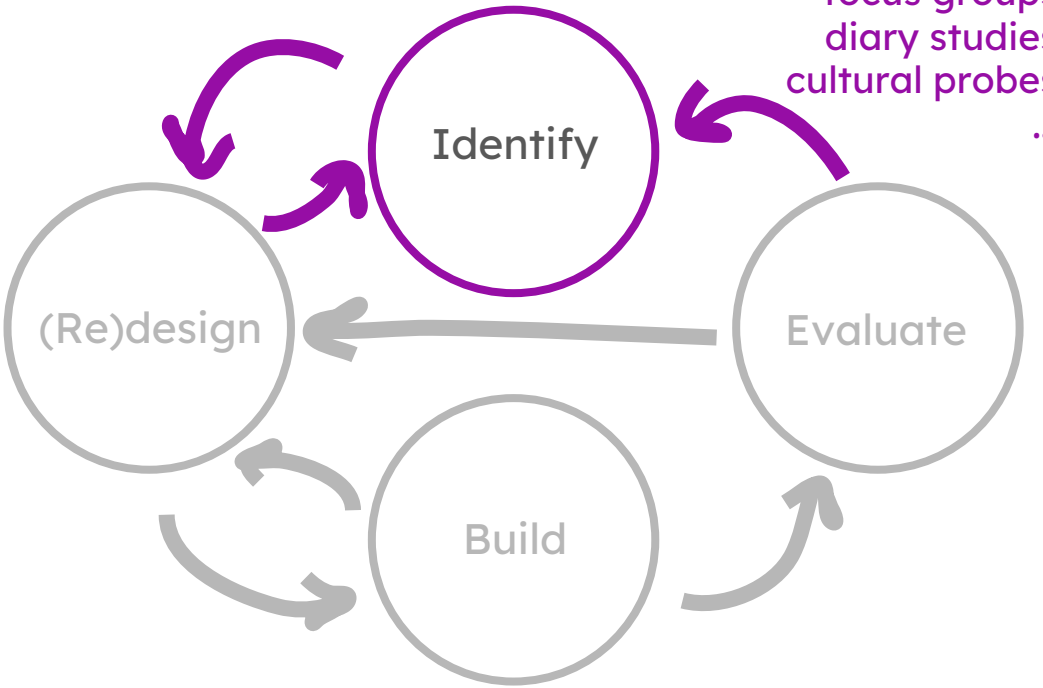


In contrast, human-centered processes have <u>iterative</u> cycles (you revisit past stages for checking and refinement) and regular <u>user engagement</u>.



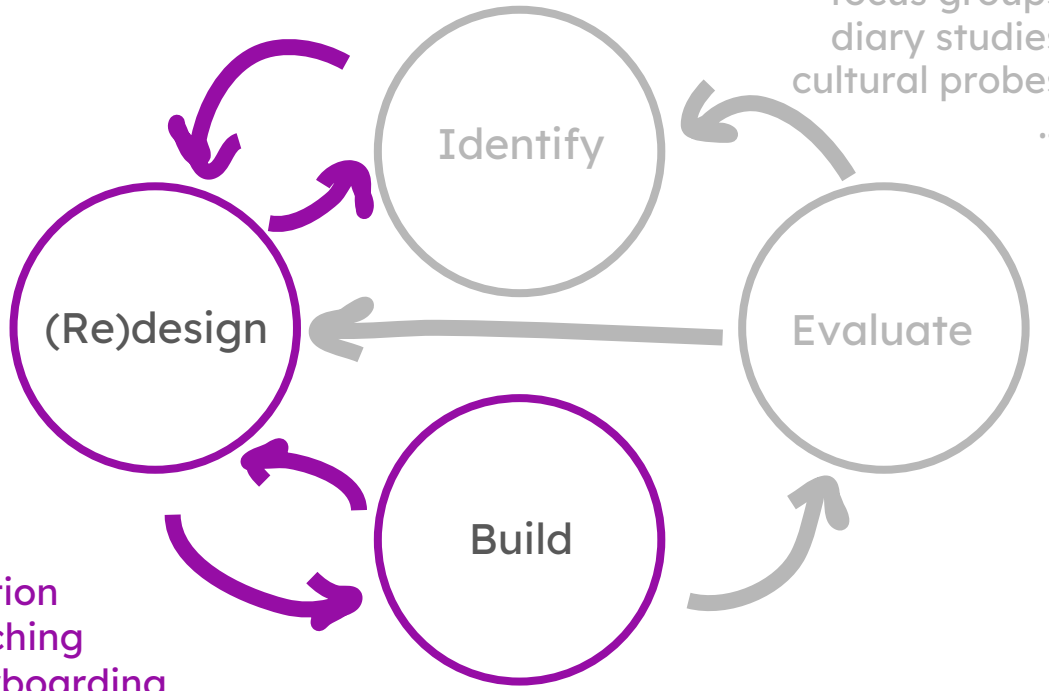
We use Preece's process model in this class. Remember: this is not a pipe :) This is just one representation of the design process, and in practice, things diverge from this abstraction.

stakeholders
observations
interviews
focus groups
diary studies
cultural probes
...



pt.2

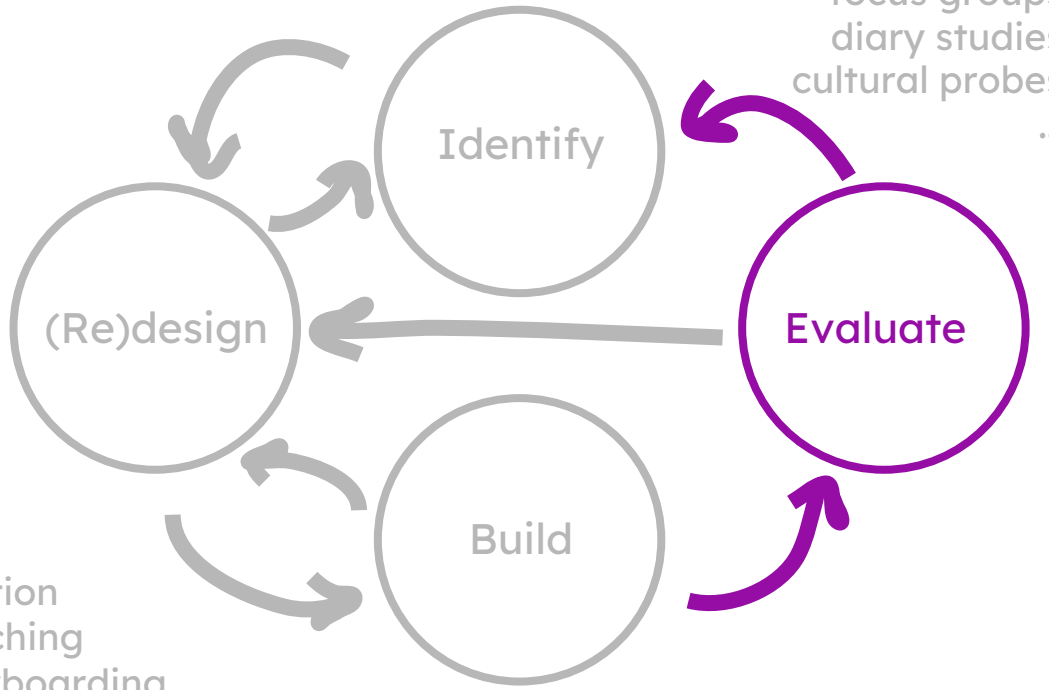
stakeholders
observations
interviews
focus groups
diary studies
cultural probes
...



ideation
sketching
storyboarding
mockups
prototyping
...

stakeholders
observations
interviews
focus groups
diary studies
cultural probes
...

pt.2

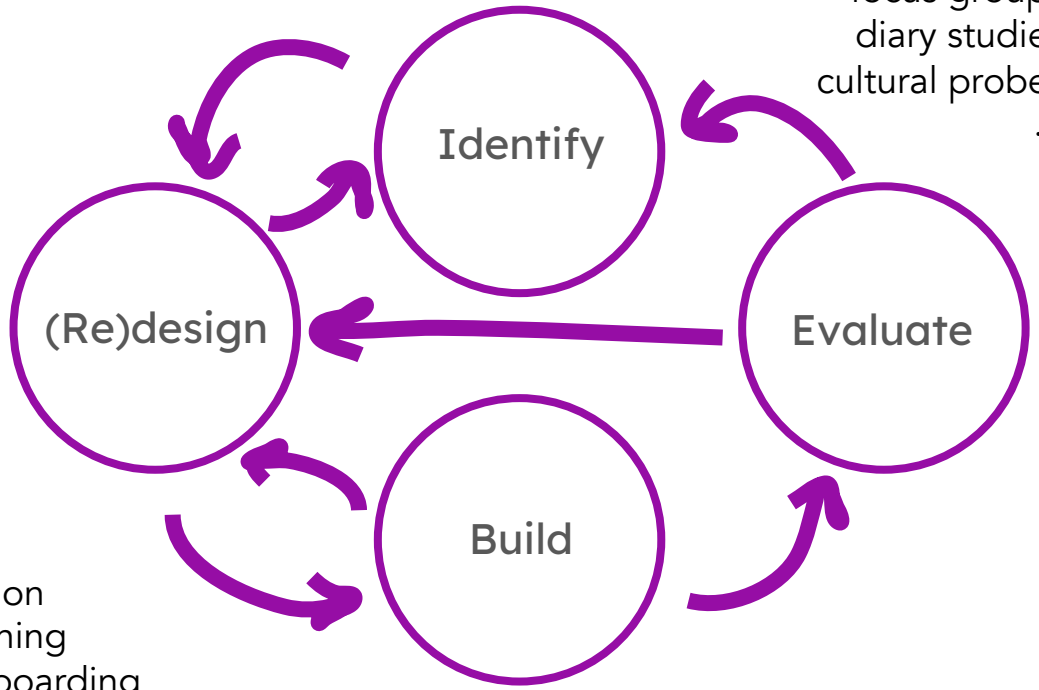


GOMS analysis
heuristic evaluation
think-aloud protocol
eye tracking
surveys
A/B testing
log analysis
...

pt.3

ideation
sketching
storyboarding
mockups
prototyping
...

stakeholders
observations
interviews
focus groups
diary studies
cultural probes
...



heuristic evaluation
GOMS analysis
cognitive walkthrough
surveys
lab usability testing
think-aloud protocol
eye tracking
A/B testing
log analysis
...

ideation
sketching
storyboarding
mockups
prototyping
...

Identify

Why are we doing this?

Helps us understand what problems to solve

What is a Problem

"Everyone designs who devises courses of action aimed at changing existing situations into preferred ones." (Herb Simon)

A problem is an "undesirable situation"

For one person a situation might be undesirable, but to another, it might be greatly desirable

Problems are inherently tied to specific groups of people that wish their situation was different

https://faculty.washington.edu/ajko/books/design-methods/#/understand

F O R W H O M ?

Who will be the users of your design?

What do your users want (motivations/goals)?

D O W H A T ?

What problem will your design solve?

What opportunities can you take advantage of?

A N D H O W ?

What are the expected requirements?

How do the users do it now?

Is there already another solution? If so, how does it work?

Why are we doing this?

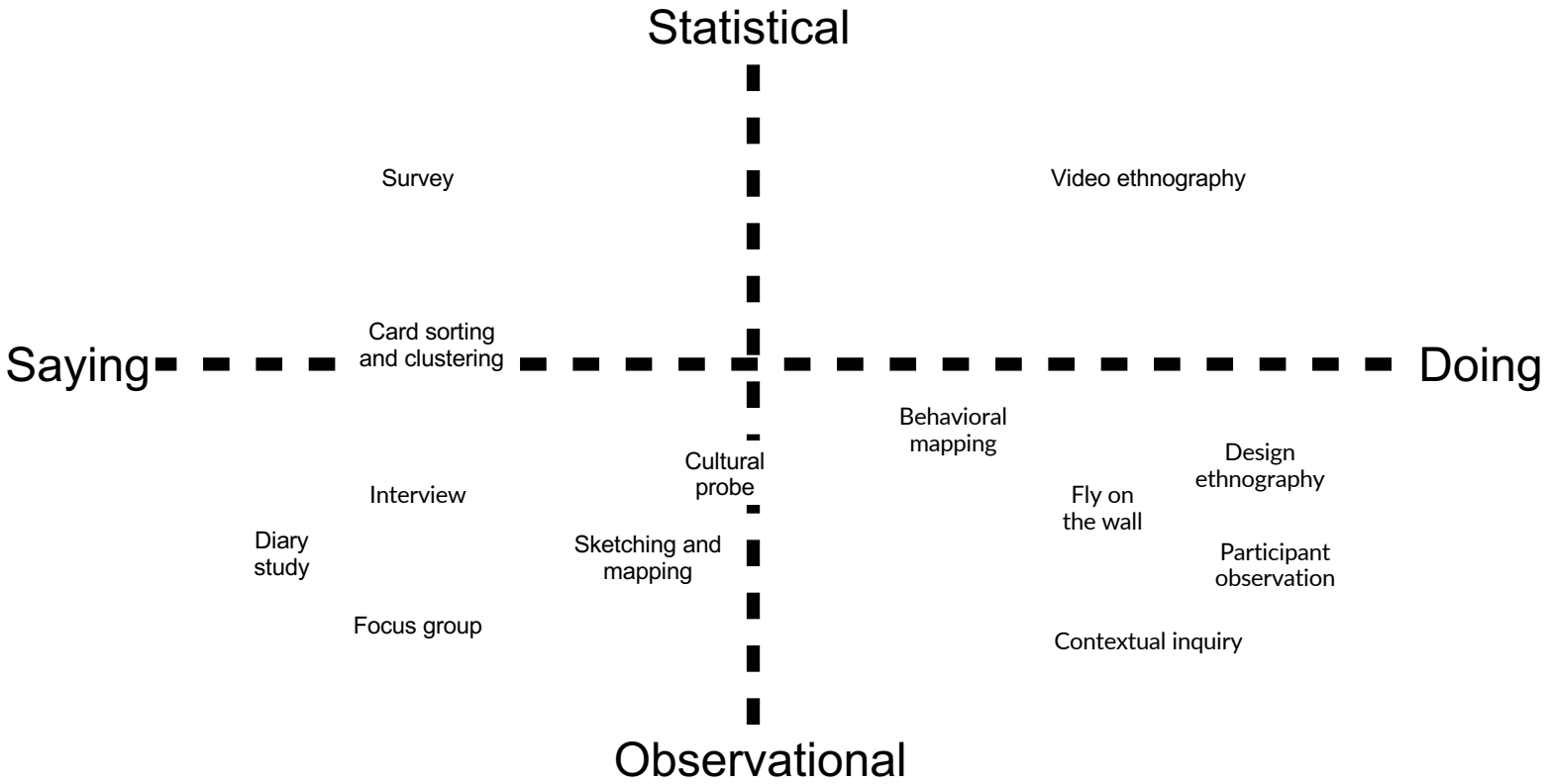
Helps us understand what problems to solve

User research is critical in human-centered design. It is the primary means of understanding user goals, needs, and motivations.

User Research

- Users' words can be unreliable
- People are notoriously bad at predicting what they would use, or would prefer when it is only hypothetical.
- They can respond much better to actual, concrete things, or make comparisons.
- This highlights the importance of observation and of prototypes.

Needfinding (an incomplete list)



This mapping is approximate and should not be used as exact.
Methods can cross between quadrants

LET’S TALK ABOUT LEARNING FROM THE USER

Six Things To Remember When Doing User Research

1.

Cast aside your biases, listen and observe

Let subjects tell their own story, and listen for the things that elicit emotion, cause them concern or frustration.

"If you want to find out what people really need, you have to forget about your problems and worry about their lives."

http://hci.stanford.edu/courses/cs447/docs/NeedFindingCribSheet.pdf

Six Things To Remember When Doing User Research

2.

Note the contradictions between what people say and what they do

Opportunities for innovation lie within the disconnect between action and words.

Six Things To Remember When Doing User Research

3.

Listen to people's personal stories

Let them relate their successes and failures.

Stories encompass the implicit rules that govern and organize peoples lives and reveal what they find normal, acceptable and true. They reveal moral codes, sources of pride, shames, shoulds and should-nots.

Six Things To Remember When Doing User Research

4.

Watch for "work arounds"

People make do and work around the shortcomings of products and situations.

In everyday life, we all come up with "work arounds," clumsy or clever, that we usually are totally unaware of.

You must take note.

Six Things To Remember When Doing User Research

5.

Distinguish between needs and solutions.

Needs open up possibilities, solutions constrain them.

If you start with a solution then you may overlook the possibility of coming up with an entirely new and revolutionary product or service.

Six Things To Remember When Doing User Research

6.

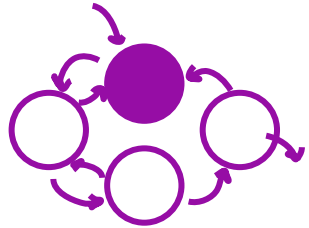
Look beyond the obvious.

Your research may seem so routine and familiar that you feel there is nothing new to be learned.

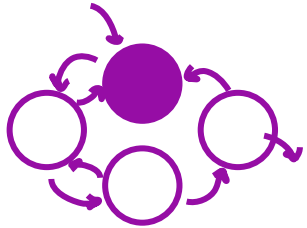
Boredom and frustration easily set in. Stay alert.

The epiphanies and insights emerge from the nuances.

Identify



- stakeholders
- observations
- interviews
- focus groups
- diary studies
- cultural probes



stakeholders

observations

interviews

focus groups

diary studies

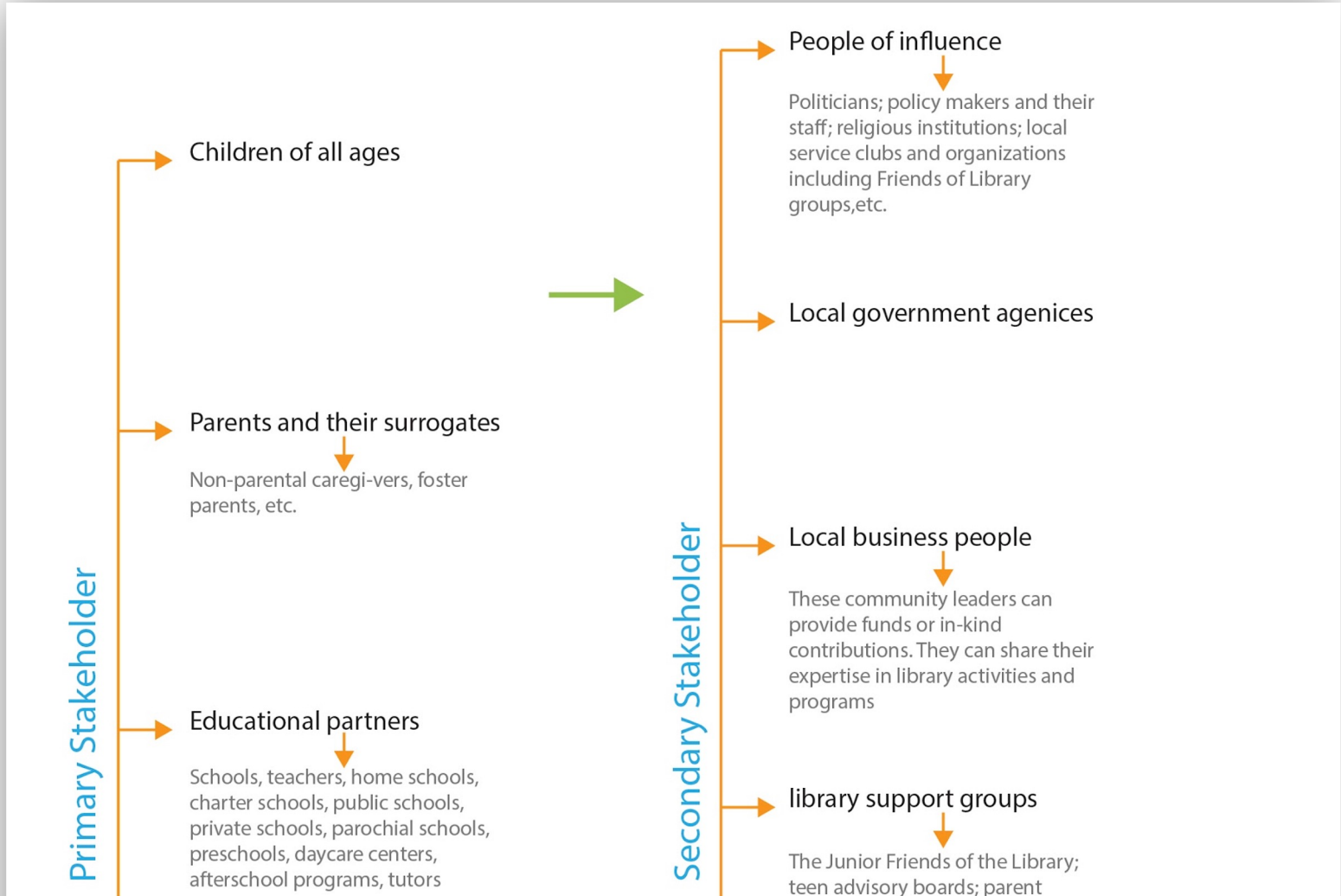
cultural probes

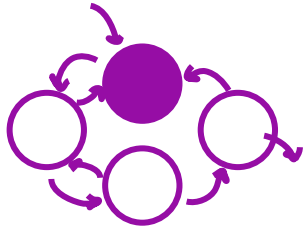
Who are the users/stakeholders?

- Not as obvious as you think
- Three categories of user (Eason, 1987):
  - primary: frequent hands-on (“target user”)
  - secondary: occasional or via someone else
  - tertiary: affected by its introduction, or will influence its purchase

Who might a public library's stakeholders include?

Stakeholders?


Primary Stakeholder
Children of all ages
Parents and their surrogates
Non-parental caregi-vers, foster parents, etc.
Educational partners
Schools, teachers, home schools, charter schools, public schools, private schools, parochial schools, preschools, daycare centers, afterschool programs, tutors
Secondary Stakeholder
People of influence
Politicians; policy makers and their staff; religious institutions; local service clubs and organizations including Friends of Library groups,etc.
Local government agenices
Local business people
These community leaders can provide funds or in-kind contributions. They can share their expertise in library activities and programs
library support groups
The Junior Friends of the Library; teen advisory boards; parent



stakeholders

observations

interviews

focus groups

diary studies

cultural probes

Ex. Ethnographic observations

start watching at ~2:36

(2:36) https://youtu.be/nV0jY5VgymI?t=156

Ethnographic Observations

- observations seem obvious in retrospect “hidden obvious”
  - specific insight gained from ethnography - signs are tricky - what you can do is easier to read
  - too much info = bad
- ethnography = study of people in their cultural contexts
  - broad tool you can use in any domain to understand human behavior
  - longitudinal = 1000 pictures / videos

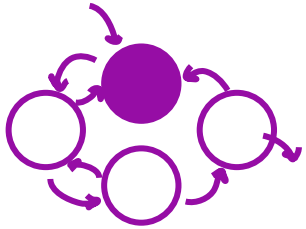
Ethnographic Observations

- In offices, homes, airports-- wherever users are
- Ethnographies often last several months or years!
- Need buy-in from community
- Develop “detached partnership” with community
- Take extensive “field notes”

Field notes include written descriptions, photos, diagrams, videos, audio, etc. Separate what you observe from your reflections. Fill in details you couldn’t write in the moment as soon as you leave the field.

Pros/cons of observations?

when doing any research that includes human subjects, ethics is of utmost importance. We don’t want to subject people to harm.



stakeholders

observations

interviews

focus groups

diary studies

cultural probes

Interviews

- 1 or more interviewers, 1-2 interviewees
- In-person, or remote phone/video chat
- In-person? In situ, or “third space”
- Between 5-120 minutes

Types of Interviews & Questions

- Interviews can be:
  - structured: pre-planned questions, read verbatim, not read out of order
  - semi-structured: prepared questions, but the interviewer expects to deviate from them, asking follow-up questions and going out of order, so as to follow the interviewee's lead
  - unstructured: spontaneous questions; may have a topic chosen, but conversation is open and free-flowing
- Interview questions can be:
  - open: answers are more likely to be longer and diverse between users (e.g., "Tell me about your career path." or "What's your favorite part of your job?"
  - closed: possible answers are chosen from a given or implied discrete list (e.g., "what's your job title?" or "do you own a mobile device?")

Preparation

- Develop a protocol
  - materials (e.g., notebook, pencil, recording devices x 2)
  - reminders (e.g., turn on the recorders, gain consent)
  - questions, timing info
- Run a “pilot” or test interview(s)
- Recruit participants
- Negotiate location, communication tools
- Gain user consent (e.g., adult) / assent (e.g., child)?
  - privacy
  - safety
  - compensation

Your first question?

- Which other social media sites do you usually use to share pictures? (closed)
- What role has tech played on your life?
- Why do you share photos on social media?
- What kind of photos do you post or not post?
- After you take a photo do you usually share w/ friends on Internet?

Middle questions?

- Is your account typically public or private?
- what's the worst experience you've had when you attempted to share an image on social media?

Last question?

- can you see our design?
  - would you change what you're currently using and use our app?
  - awkward??? like showing someone your mix tape...
- If you had to pick the best photo sharing feature on a current social media app, what would it be?
- scheduling

During

- Two recorders, always :)
- Take notes!
- Be synthesizing, asking thoughtful follow-ups (semi-structured)
- Be present (eye contact, backchannels like “mm”)
- Use the power of silence, editorial power
- Consider having a co-interviewer

Afterwards

- Transcribe interviews
  - manual transcription
  - professional transcription
- Analyze results (often, “thematic analysis”)
- Constant comparison between and across interviews
- Create personas, user stories, etc.

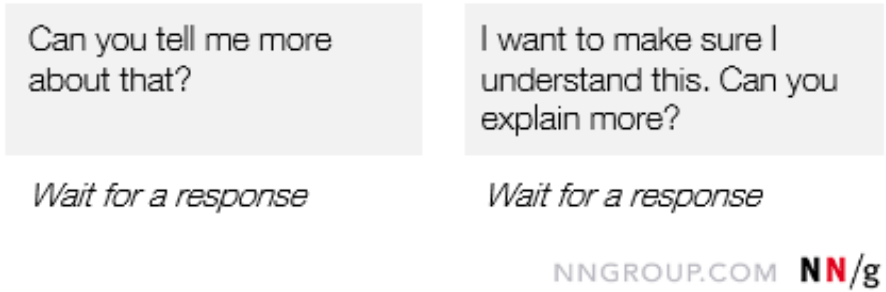
Interviewing tips

- Avoid leading questions
  - Bad: "*Why do you enjoy using the Acme product so much?*"
  - Better: "*Why do you use the Acme product?*"
- Avoid closed questions
  - Bad: "*So, you use the Acme product every morning?*"
  - Better: "*Can you tell me about how you use Acme?*"

https://www.nngroup.com/articles/user-interviews/

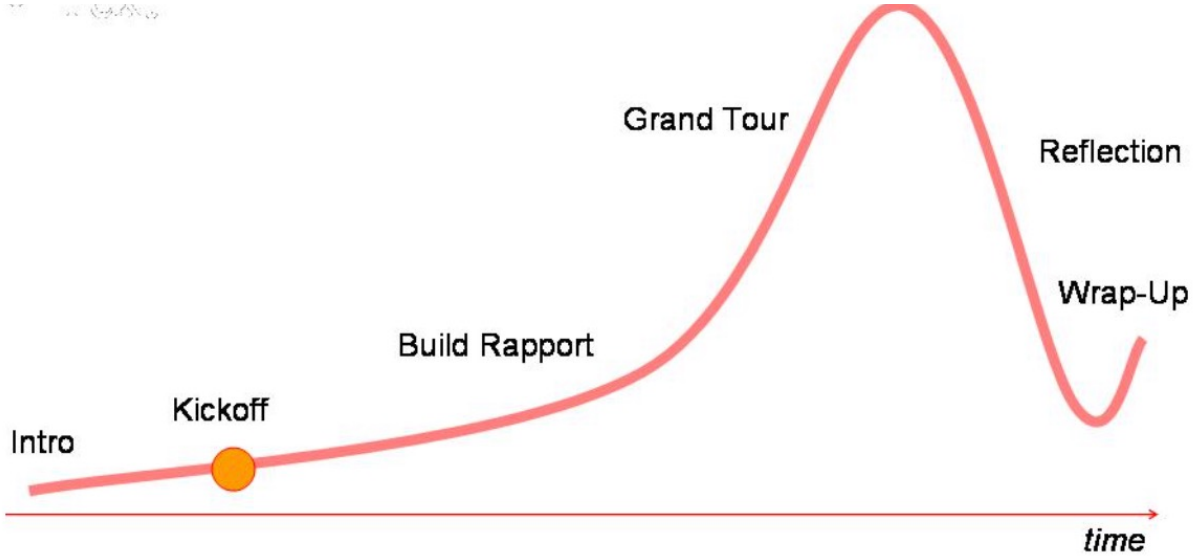
Interviewing tips

Practice follow-up or probing questions



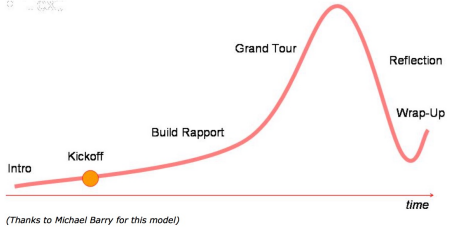
https://www.nngroup.com/articles/user-interviews/

Interviews



(Thanks to Michael Barry for this model)

Interviews



Intro: “Hi, I’m a UCI student studying coffee. I’m interested in hearing about your experience with coffee. There are no right or wrong answers, I just want to hear what you have to say.”

Kick-off: “Do you drink coffee?”

Build rapport: “Did you have a coffee today? How was it? Do you have a favorite coffee?”

Grand Tour: “Can you describe your most memorable coffee experience? Why was it so unique? What happened?”

Reflection: “If you were designing the ultimate coffee shop based on your ideal experience…”

Pros/cons of interviews?

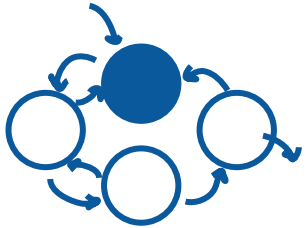
- detailed qualitative data
- elicitation allow for follow-up on interesting leads
- first-person accounts
  - gives some users a say, but may misrepresent the larger population
  - can be more OR less trustworthy, depending on the type of information
- take a lot of time, but relatively less than an ethnography
- requires a lot of time to analyze

A07: Draft an Interview Protocol

Activity 07

10 minutes

- Carefully design a list of interview questions for a semi-structured interview
- Submit questions to Canvas



Human Computer Interaction

Taslima Akter

Design Processes & Methods – Part 2

Materials in this course were compiled from courses taught by: Matt Bietz, Stacy Branham, Tyler Fox, Elena Agapie, Nigini Oliveira, Katharina Reinecke, Andrew Davidson, Jennifer Turns, Daniel Epstein, Andrea Hartzler. Thank you to all.