

# Week 4-2

# Understanding Users: Ask

SFWRENG 4HC3/6HC3 Human Computer Interfaces

*\* Slides adapted from previous instructors of COMPSCI/SFWRENG 4HC3/6HC3*

# Understanding Users: **Look**

- Good to understand users' **actual behavior** in **real context**
- Good to understand users' **actual behavior** that are **difficult to articulate**
- Good to understand users' **actual behavior** in **details**
- May need **access** to participants in the specific context
- Relies on the situation being **frequent enough** to observe
- May be difficult to understand **what is happening** or **why it is happening**

# Look: Example #5

## Buttons used most:

Start, Stop, power,  
0,2,3,5,6,9,1

## Buttons never used:

frozen pizza, dinner  
plate, etc.

**Guesses:** Never used  
autocook, used time  
cook most of the time



# When looking is not enough...

**Looking** gives you great insight into **the state of the world (what is happening)**

But it doesn't tell you **why people are acting the way they do, or what their goals, needs, or feelings are (why it is happening)**

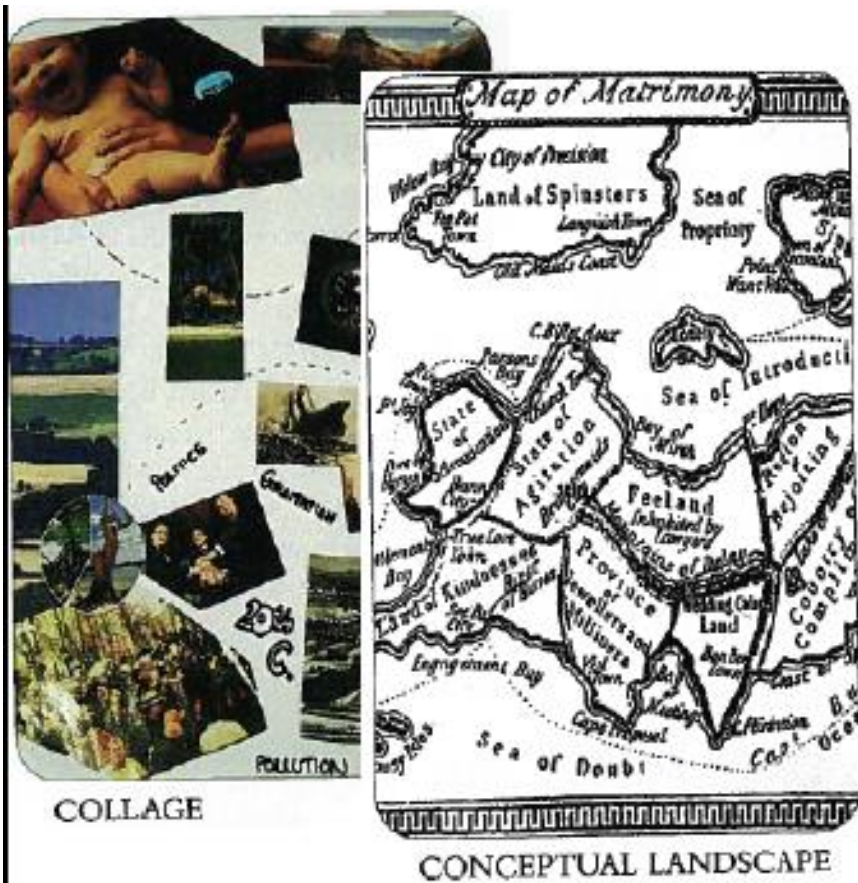
That's when you **Ask**

# Week 4 Goals Overview

- ~~Monday~~
  - ~~Understanding User~~
  - ~~Understanding Users: Look~~
- **Wednesday**
  - **Understanding Users: Ask**
- Friday
  - Understanding Users: Ask
  - Design Principles: Practices

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# There are various methods you can use to **ask users for help**



# Understanding Users: **Ask**

**Asking isn't easy.**

People may be influenced by  
**what they think you expect  
them to say**



# Understanding Users: **Ask**

You need to **develop your “asking” and analysis skills**

You need to learn how to:

- Design good interviews
- Conduct good interviews
- Make good questionnaires



# Ask: Interviews

- “Conversation with a purpose”
- Primarily for collecting qualitative data
- Can be **structured, semi-structured, unstructured**
  - Differ in **how much control** the interviewer places on the conversation
- **Group interviews / focus groups**
  - A group is gathered that is representative of target population
  - Interviewer acts as a facilitator

# Ask: Interviews

- **Unstructured**
  - Exploratory – finding out what is important
- **Structured**
  - You have a clear agenda, good for generalizing across people
- **Semi-structured**
  - An agenda, but don't want to close the door on exploration. Limits generalizability

# Who should I interview?

- A **diverse background**
  - use user characteristics to diversify your participants
- Look for **extreme cases**
  - Try to include people who have various experience regarding what you are looking for
- **Screening**

## Extreme User Interviews

HOW: Identify individuals who are extremely familiar or completely unfamiliar with the product and ask them to evaluate their experience using it.

WHY: These individuals are often able to highlight key issues of the design problem and provide insights for design improvements.

By understanding the role and mindset of the youngest family member, the IDEO team uncovered new product design opportunities for household cleaning.

# Interviews: **Unstructured**

- Resembles a **conversation** on a particular topic
- **Very exploratory** in nature
  - “Can you tell me about the last time you purchased music on-line?”
- A particularly useful technique when little is known about the target domain or end users

# Interviews: **Unstructured**

- Despite their lack of structure, unstructured interviews should always **have an objective**
- Can be difficult to conduct effectively
  - The interviewer has to balance between
    - getting the **information they want, staying on topic**
    - allowing the interviewee to **take the conversations** in unanticipated but useful directions

# Interviews: **Structured**

- The interviewer asks **a set of pre-planned questions in the same order** for every participant
- Best for situations **where enough is known** about the users and domain that a list of relevant questions can be identified
  - You have an idea of what users want/need and you want to verify assumptions
  - You want to collect specific usage or demographic data
- Unlike unstructured interviews, structured interviews allow for **direct comparison** between participants

# Interviews: **Structured**

- Often questions are **closed**
  - User selects an answer from a pre-determined set of alternatives
    - “Where do you use your iPhone most frequently: at home, at work, in the car?”
      - VS.
        - “Where do you use your iPhone most frequently”
- Improves ability to generalize and summarize
  - What do we lose?



# Interviews: **Semi-Structured**

- The amount of interviewer control is **between** that of an open-ended interview and a structured interview
- Interviewer has **a basic set of questions, but can probe for further detail**
  - “When was the last time you used your iPhone”
    - Answer: Last night?
  - “What were you using it for?”
    - Answer: I was using google maps
  - “For what reason?”....

# Interviews: **Semi-Structured**

- Probes can take the conversation **in new directions**
  - Allows for **some exploration** around specific topics
  - Allows conversation to **differ between participants**
- But some comparison among participants is still possible
  - The same basic questions are asked of all participants

# Interviews: **Techniques**

- **Always have a clear objective**, even when conducting an unstructured interview
  - With unstructured and semi-structured interviews, ask participants to walk you through specific examples
  - Grounds discussion and aids with **recall**
- **Artifacts** can also help ground the discussion
  - Ask to see **examples** of work that your participants have done using an application or technique
  - Show them a **prototype** you are working on and have them comment on it

# Interviews: **Techniques**

- Keep body language and acknowledgements **neutral**
  - “hmm” vs. “yes!” in response to participants answers
- **Avoid leading questions**
  - **“Do you like this cell phone?” “Why/why not?”** vs.
  - “Why do you like this cell phone”

# Interviews: **Techniques**

- **Avoid jargon**
  - Use the participant's terminology
- **Avoid compound questions**
  - Break complex questions into a series of shorter ones
- **Don't interrupt**
  - Give users **sufficient time to answer** before moving onto the next question

# Interviews: Data Collection

- Need to **record user answers**
  - Otherwise, there is a risk of forgetting something
- Structured interviews
  - The interviewer typically has **a sheet where they can quickly fill in answers** (e.g., questions with checkboxes for answers)
- Unstructured, semi-structured interviews
  - Audio / Video recordings
  - Notes (dedicated note taker)
- Must always have **permission** to record audio/video

# Interviews: Protocol

A typical interview consists of the following phases:

- 1. Introductions:** Point of interview, ethical issues, permission to use recording devices
- 2. Warm-up questions:** Easy questions to make the participant comfortable (e.g., demographic questions)
- 3. Main session:** Questions asked in a logical sequence
- 4. Cool-off period:** Easy questions if it has been a tense/difficult interview
- 5. Closing:** Thank the participant for their time



# Interviews: Protocol Examples

## Interview Study Protocol:

Review the consent form

Ask for and answer any questions regarding the consent form

Get consent for study participation

Ask for permission to audio record

**Part 1:** questions about **background information involved** in Learning Buddies program. Example questions:

- o How did you get involved with Learning Buddies?
- o How long have you been working with Learning Buddies?
- o How many volunteers you have worked with so far? And how many years have you worked with each volunteer?

**Part 2:** questions about **task and student assignments** for Learning Buddies volunteers (using specific volunteers as example case). Example questions:

- o How do you decide on what students need help with?
- o How do you decide on the content for specific weeks?
- o How is the assignment been communicated with volunteers?
- o And communicated with students?
- o How do you help volunteers working with students?
- o What kind of student information do you provide volunteers (to get prepared)?
- o How do you check with volunteers on the mentoring sessions?
- o How do you keep track of students' progress with volunteers?

**Part 3:** questions about **general feedback** for Learning Buddies program.

Example questions:

- o What are the benefits of having Learning Buddies volunteers?
  - o What are the challenges of having/working with Learning Buddies volunteers?
  - o What is the ideal involvement a Learning Buddy you want to have with your class (time commitment, format, etc.)?
  - o What are other school/class activities Learning Buddies volunteers can help with?
- 
- o (Imagine the situation) If you can have digital helpers/volunteers for your class, how would you work with them?
  - o Other suggestions on improvements for this volunteer program or general feedback?

**Part 4:** additional questions **from the observation**

Are there any other questions that you think I should ask? Or do you have any questions for me?

# Ask: Surveys / Questionnaires

- A list of questions aimed at extracting specific data from a particular group of people
- A quick way to reach **a large number of people**
- **Open-/Closed-ended** questions
- Can be powerful if designed appropriately

## Surveys & Questionnaires

HOW: Ask a series of targeted questions in order to ascertain particular characteristics and perceptions of users.

WHY: This is a quick way to elicit answers from a large number of people.

Developing a new gift-wrap packaging concept the IDEO team conducted web-based surveys to collect consumer perspectives from many people around the world.

# Questionnaires: **Principles**

- **Conciseness:** questions should be clear and specific
  - Should the system include a user manual? (YES/NO)
- **Closed questions:** when possible, ask closed questions and offer a range of answers
  - How often do you print cheques? (1: very often – 5: never)
- **Alternative option:** Consider including a “no-opinion” option for questions that seek opinions
  - The payroll module is essential (...N/A)

# Questionnaires: **Principles**

- **Order:** think about the ordering of questions. General questions should precede specific ones
  - A question about a specific feature in a payroll module should come after asking whether the payroll module is essential
- **Instructions:** Provide very clear instructions on how to complete the questionnaire
  - If you expect users to check a box, say so
- **Attention Check:** often good to have for long surveys

# Questionnaires: **Example**

Questionnaire for understanding people's multi-device usage at home

- Background questions on participants and their devices
- Provide **3 activities examples with photos**
- Activity **frequency**
- **Appreciate/Painful**
- Features needed
- Why use multiple devices



# Questionnaires: Quick Practice

**Suggest improvements** to the following questionnaire items:

- Is it important to include a map of the campus? (1 very – 5 not at all)
- Do you recommend capturing audio and video?
- Do you prefer toolbars to floating menus?
- Which age group do you belong to? 20-25, 25-35, >35
- How many times a day do you reboot the system? 1, 2-5, > 5

# Questionnaires: Quick Practice

- Is it important to include a map of the campus? (1 very – 5 not at all)
  - How important it is to include a map of the campus?
  - 1 (not at all important) – 5 (very important)
- Do you recommend capturing audio and video?
  - Separate audio and video
  - Rate on scale
- Do you prefer toolbars to floating menus?
  - Rate preferences on scale
  - Rank preferences
- Which age group do you belong to? 20-25, 25-35, >35
  - Even interval / just enter the age
- How many times a day do you reboot the system? 1, 2-5, > 5
  - N/A option



# Ask: Diary Studies / Journaling

- Good to **collect longitudinal data**
- Good to **reveal points of view and patterns of behaviors**
- Good to **capture reflections in the context**
- Range from a few days to even a month or longer
  - **Depends** on the activity you are interested in capturing

## Camera Journal

HOW: Ask potential users to keep a written and visual diary of their impressions, circumstances, and activities related to the product.

WHY: This rich, self-conducted notation technique is useful for prompting users to reveal points of view and patterns of behavior.

The IDEO team designing a travel information system distributed camera journals to families taking car trips to capture map reading and other car travel behavior.

# Diary Studies: Example #1

- Are Kindles/Nooks good for work-related reading?
- Paper logs – fit in a pocket (1998)
  - Log reading activity
  - What else is going on
- Findings
  - People write while reading
  - Searching/finding is frequent
  - Annotations are common
  - Single displays may be inadequate

Day of Week	S	M	T	W	T	F	S
Time of Day	12am - 6pm	6am - 9am	9am - 11am	11am - 1pm	1pm - 6pm	6pm - 9pm	9pm - 12pm
Location	Meeting room						
What are you reading?	- financial reports - quarterly earnings						
What are you doing?	- reporting on what's going on - circling new things						
What are you working with?	- nookbook						
Reading for how long?	< 5 min	5min - 15min	15min - 30min	30min - 1hr	1hr >		
Have you read this before?	Yes			No			

# Diary Studies: **Example #2**

- **What are podcasters' current technology practices for podcast creation?**
- Diary entry collections over **two weeks**
  - Often the cycle they have for finishing one episode's production

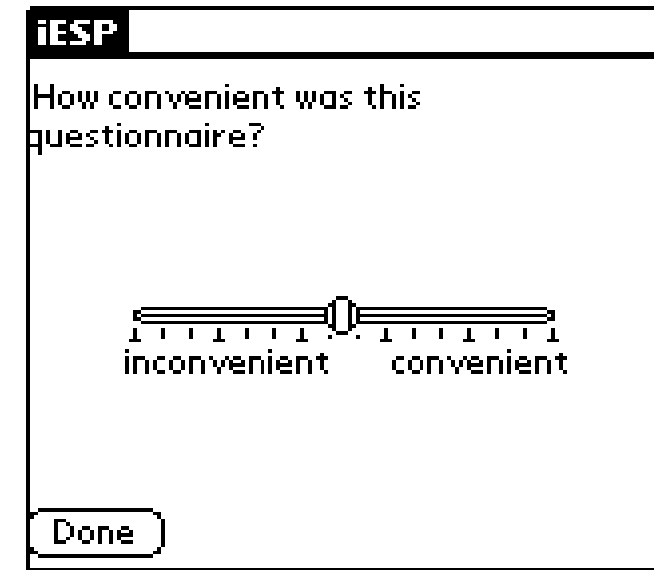
## Diary Study Example Question Prompts

The following questions will be used to prompt participants in providing information about their podcast related activities.

- Did you complete any podcast related task today?
  - If yes, proceed to the following questions.
  - If no, reply with thank you and we will check in with you tomorrow.
- Can you describe the task in one sentence?
- Can you send us a short video (a couple minutes) provide more details about the task and the technology setup you used for completing the task? What did you do? Who did you work with? What technological tools did you use for completing the task? How did you set up your technology for completing this task?
  - Provide an example of the video entry.
  - Provide an example of the photo/audio entry.
- Is there anything else you would like to share today? Things worked well or things didn't go well?

# Ask: **Experience Sampling**

- Have users carry around a device that has them answer questions at given intervals
- **Example:** page user once every 3 hours and ask them to fill out a short survey on their current activity, and rate sleepiness level on a scale from 1 to 7



The screenshot shows a mobile application window titled "iESP". The main text asks, "How convenient was this questionnaire?". Below the text is a horizontal slider scale. The left end is labeled "inconvenient" and the right end is labeled "convenient". There are seven tick marks on each side of the central slider knob. The slider knob is currently positioned at the fourth tick mark from the "inconvenient" end. At the bottom left of the window is a button labeled "Done".



# Quick Practice **Interview Method**

# Quick Practice: Interview

- Pair up with the person next to you and write a **semi-structured interview protocol** for understanding users' music app usage. Thinking about getting the following information:
  - What current apps they are using for listening to music?
  - In what scenarios do they often use the app?
  - Likes and dislikes?
  - Current challenges?
  - Anything else that might be interesting to you (interviewer)?
- Practice your problem!

# Quick Practice: Protocol Example

- **Background**
  - What apps are you currently using?
  - How frequently do you use them?
  - Any subscriptions?
- **Current usage**
  - Think about the past day/week, can you give some examples of when you use the apps?
  - Any differences in usages among these examples?
- **Likes/Dislikes**
  - What do you like/dislike about these apps?
  - Is there a moment that you really enjoyed? Or not enjoyed?
- **Current challenges**
  - What are some challenges you currently have with the usage?
- **Social usage**
  - Do you share your account with anyone? If so, with whom and how?
  - Do you share playlist with anyone?
  - Do you use your app when you are with others (friends, family members)?
    - If so, can you talk about a recent time of this scenario?



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  - **Design Principles: Practices**