Micro-survey top topics we’ll review today:
More on modeling!

NEXT WEEK:
Mon: In-class practice – other types of UX research data collection
Wed: In-class practice – simple statistical analysis of UX research data + StatisticsQuickGuide.pdf

CHECKPOINT 2: AT LEAST 3 INTERVIEWS AND ALL WORK MODELS AND AFFINITY NOTES COMPLETE BY WED – show results to us by Thurs

Micro-Survey – Model Overview

Items from the interview may be included in more than 1 model, and may also be included as notes for the affinity diagram.
Model Examples

- Study example and notes in WorkModelsQuickGuide.pdf
- Flow model
  - Contextual Design by H. Beyer and K. Holtzblatt:
    - Fig 6.1 – example of ‘hub’ pattern of work
    - Fig 6.2 – example of ‘creative’ pattern of work
- Sequence model
  - Contextual Design by H. Beyer and K. Holtzblatt:
    - Fig 6.3
- Cultural model
  - Contextual Design by H. Beyer and K. Holtzblatt:
    - pp 111-112 – how to recognize culture
    - Fig 6.5 – product development organization

Moderator Role

From Contextual Design by H. Beyer and K. Holtzblatt, pp 132-133:

- Keep the meeting on the mainline conversation.
  - For an interpretation session, this “what happened on this interview and what do we need to capture from it?”
- Keep the pace of the meeting brisk
- Keep track of where the interviewer is in the story and remind them when they have been interrupted and lost their place.
- Ensures that ALL data from the interview is included somewhere (note and/or work model)
- Ensures EVERYONE is involved and participating; may mean asking quiet people for input, or asking others to give someone else a chance. Makes sure everyone is able to share insights and design ideas without being ridiculed.
- Must stand away from the meeting and the process enough so that they can see what is going on. If they get too involved in the meeting content they need to let someone else moderate.

Note that timing the interview reading so that people have time to process the information and include it in the relevant places is part of the moderator job. Everyone should be watching for this – ask the interviewer to slow down or pause till everyone is ready to go on.
Your Choice

1. Do another round of an interpretation session – change roles from last time and interpret another on-line shopping interview, (15 min)
   – If we do this, I’ll probably cover about 5 of today’s slides and you’ll be responsible for studying the rest and asking questions about them.
   – Also if we do this, you need to submit some comments about what is clear and what isn’t regarding the interpretation/modeling practice you just did in your micro-survey (in addition to thinking about the slides we do cover today).

2. Continue with today’s topic: qualitative/quantitative data, coding, and interpretation

Data Collection and Interpretation

Learning objectives:
   1. Understand types and levels of data, when they are appropriate and ways to collect them
   2. Understand what “coding” means, and how to do it

Materials originally created by Prof. Jamie Ruiz
Data Types and Levels

Types:
- Quantitative – numerical
  - Discrete (e.g. countable items)
  - Continuous (e.g. measurements)
- Qualitative – non-numerical

Levels:
- Nominal
  - Qualitative (e.g. categorical: company name)
- Ordinal
  - Discrete (natural order, but intervals may not be equal)
- Interval
  - Continuous with equal intervals between each value
- Ratio
  - Interval with a natural zero point (e.g. degrees K – has absolute 0)

Data collection methods

Quantitative:
- Use categories or scales to measure
- Examples: questionnaires, structured interviews, Likert scales

Qualitative:
- Detailed data, holistic understanding of complex phenomena (e.g. corporate culture)
- Examples: observations, unstructured interviews, focus groups, Contextual Inquiry
Is one better than the other?

- When used appropriately, both types of data gathering methods can grant us new knowledge and insights
- Each provides a different, but valid view of a phenomenon
- But the value of data from either highly dependent on how the study is conducted
  - If data collection methods are not sound, data can be useless no matter how much you collect
  - Good example: What is your favorite color?
  - Poor example: “You don’t really use that, do you?”

Qualitative Methods

Qualitative methods *immerse* the investigator

- Brings the investigator close to where the action really is
- Qualitative data != anecdotal data
- *Recollections* of an individual not as strong as *directly observing* something
- *One interview* cannot possibly capture all the nuances of work
- Can help us understand what questions we *should* ask in more targeted, quantitative methods
Quantitative Methods

Quantitative methods seek to isolate phenomena and place it in neat categories

- Can pull investigator further away from the natural environment and all of its rich interactions, which can have consequences
- Example: Observing accountants using your tax software in your clean, quiet usability lab vs. observing them using it in their workplace the day before the tax deadline

Time Requirements

- Both categories of data gathering can require significant investments in time
- There are no real “shortcuts” to gathering high quality data
  - Takes time to decide what questions to ask in a questionnaire, how to ask them to avoid bias, must pilot the questionnaire...
  - Interviews, naturalistic observations take time, too
From Data to Interpretation

• Act of labeling and interpreting is called coding:
  – process of developing, defining, and applying labels to
    the actions, phenomena, activities in your collected
    data
• An emergent process
  – codes emerge from systematic data analysis
• Coding scheme is the list of labels and their
  properties
• Coding helps move beyond a surface
  understanding of work to a detailed, critical
  examination of work

Coding Process

• Examine everything in minute detail to find
  unique, standalone phenomena
• Label and define those phenomena
• Apply labels to the data
• Over time, filter, aggregate, separate labels
  into higher-level categories and subcategories
• Categories will serve to group and
  differentiate activities of your users
How to Code

• Label everything that makes sense
• Labels can be words or pictorially-based
  – Words, phrases
  – Annotated visualizations, diagrams, and models (e.g. work models)
  – Anything that helps you discriminate between phenomena
• As we label, we want to start interpreting
• We want to not only identify phenomena, we want to be able to ascribe meaning to those phenomena

Examples

Labels from a desktop app
  – “Mouse click” (low-level label)
  – “Command selection” (higher level label)
  – “Experimentation” (higher level label)

Sketches
  – Sketch of physical environment showing where materials flow throughout environment
  – Sketch of physical artifact and how it is manipulated
• Include time codes, durations, frequency counts as necessary
Interpretation

Ask:
- Who?
- What?
- Why?
- Where?
- How?
- With what?

How long?
How much work?
With whom?
With what results?
How much effort?

Which of these fit with each of the contextual inquiry work models?

Interpretation Helps Us

- Identify likely candidates for improvement
- Identify *workarounds* and inefficiencies in workflow
  - A workaround is any augmentation of a tool or process that is not officially supported by the tool or process but which helps get work done
  - Some are obvious, others are much more subtle
    - The notes on debit card terminals to tell you how to align the card to swipe it
    - Using a box to align text
## Coding Benefits

- Give us a single term (or sketch or model) to describe what may be a complex, sophisticated, involved phenomenon
- Provides a verbal and mental shorthand
  - Makes it easier to communicate to others
  - Allows us to group similar phenomena, objects, actions
- Also allows us to differentiate

## Coding Process Benefits

- Transforms us from mere viewers to *analytical* observers
  - We start observing with an eye for *meaning*
  - Helps us understand work practices at a much deeper level
- Reveals workarounds and habits people forget they had
  - Little things that compensate for tool deficiencies so that people can get the job done
- Leads to *quantification* of the phenomena
  - Frequency, duration, expended effort...
Remember ...

• People have tools to do their work, but they never perfectly fit with their needs
  – They can always be improved
• Collected data and interpretations will “speak” to you
  – Suggest new areas of concern not addressed by current technology
  – Suggest ways to improve and increment existing systems

Micro-survey

Today’s learning objectives were:
  1. Understand types and levels of data, when they are appropriate and ways to collect them
  2. Understand what “coding” means, and how to do it