Qualitative Evaluation 2

CS6501: Human-Computer Interaction

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Interviews and Focus Groups

- Mostly used qualitative research methods in HCI
- Surveys are limiting as respondents only answer questions that are asked, long and written questions are often unanswered.
  ➔ broad but not deep.
- Direct conversations as tools for data collection
  - Understand requirements, needs, problems
  - Interviews: One at a time
  - Focus groups: Many at a time
- Data is verbatim quotations: What people say, how they say it, and why

Interviews and Focus Groups

- Pros
  - Rich, attitudinal data
  - Can gain in-depth responses about experiences, attitudes, and knowledge
  - Flexibility
- Cons
  - Need skill to manage
    - Moving conversation along, eliciting meaningful responses, interpreting subtle cues, etc.
  - Time/resource intensive
  - Recall problems

Applications of interviews

- Initial exploration
- Requirements elicitation
- Evaluation and Subjective Reactions

Example: StreamWiki

3 FORMATIVE STUDY

3.1 Interviews with KSLS Streamers, Moderators, and Viewers

To better understand current practices and challenges of KSLS, we conducted semi-structured interviews with six regular knowledge sharing streamers (i.e., 4 males, S1-S6, Table 1) from China, five moderators (i.e., 3 males, M1-M5) who not only watched streams but also voluntarily helped streamers, and two viewers (i.e., 1 male, V1-V2) of S2 and S3. All the streamers created live streams at least twice a week and had at least three months of knowledge sharing experience on live streams. We interviewed more moderators than viewers to gain insights from these more active and engaged users. They all had at least three months of experience watching KSLS.

Zhicong Lu, Seongkook Heo, and Daniel J. Wigdor. 2018. StreamWiki: Enabling Viewers of Knowledge Sharing Live Streams to Collaboratively Generate Archival Documentation for Effective In-Stream and Post Hoc Learning. Proc. ACM Hum.-Comput. Interact. 2, CSCW, Article 112 (November 2018).

Example: StreamWiki

Outcome

- How well do you think the final document summarizes the stream?
- How well do you think the final document include the viewers' responses/feedback/questions?

Process

- Does the process bother/distract your streaming?
- Or if it helps understanding questions/thoughts of the viewers?
- Do you think the knowledge-summarizing activity is being conducted well?
- What do you think of the Danmaku?

After-stream use

- Do you have some plans or thought of reusing the outcome page?
- How would you reuse them?

Suggestions

- Do you have any suggestions regarding the system?
- Future work etc.?

Findings from Formative Study

Streamer

Expect (and love to see) a large volume of comments

Challenges of dealing with many comments

Need to collect feedback from individuals

*Effort to **archive** the video afterwards*

Losing meaningful comments in archived video

Moderators

Do more than moderate

Work as voluntary TA

Preparing materials
Edit archive video
Distribute documents

Sometimes need to collaborate with other viewers

Viewers

Context Loss if joins mid-stream

Follow-up discussions in group chat

Hard to refer to video or comments

➔ Design Goals

Streamer

G5: Support Streamers in Reflecting on Streams

G2: Documentation of Content and Discussions

G3: Archive Meaningful Comments

Moderators

G4: Off-load the Workload of Moderators

Viewers

G1: Provide Content & Context Information

Who to interview

- Beyond users – Stakeholders
  - Anyone who may be affected by the use of a system
- Interview representatives of different groups from different perspectives
- Key informants: particularly useful/informative individuals

Types of Interviews

Fully Structured

- Stick with the script
- Good for comparison across individuals

Semi-Structured

- Pre-specified questions
- Starting point for discussion
- Digression is ok

Unstructured

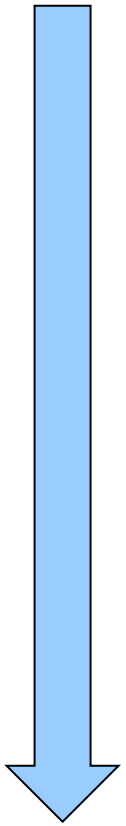
- Initial question
- possible list of topics
- But no pre-defined script

Types of Interviews

Fully Structured

Semi-Structured

Unstructured



Less structure: greater difficulty in conducting and interpreting interview

But

More opportunity for insight

Focused & contextual interviews

- Go beyond asking questions
  – to understand not just explicit understanding but also to find implicit practices

- Ask participant to
  - Demonstrate use of technology,
    not just explaining how they do
  - Show artifacts (papers, photos, etc.)
  - React to “probes” - props or prototypes designed to elicit reaction

Interviews vs. focus groups

- Interviews take time
  - Often 1 hour or more/response
  - Several hours for analyzing notes
  - May be done by a researcher
- Focus groups
  - More people in less time
  - Around 5-7 participants, or up to 8-12 people.
  - May need multiple focus group sessions
  - Involves many tasks: may need multiple researchers

Focus groups: pros and cons

- Pros
  - Broad range of viewpoints and insights
  - Each group will likely have at least one person who will stimulate others to talk

- Cons
  - Hard to manage group dynamics
  - Generally can't be fully structured
  - May need to ask fewer questions
  - Participants selection can be challenging

Closed-ended questions

- Specific answers
  - “On a scale of 1-10, 10 being best, how did you like the web page?”
  - “Did you like the webpage?”
- Easy to analyze, but may not be informative
  - Simple questions get simple answers.

Open-ended questions

- “What did you think about the web page?”
- Invite elaboration, discussion
- Ask users to complete a sentence
  - “My favorite web browser feature is...”
- Conceptual mapping
  - Draw pictures or layouts to describe understanding of a situation or problem

Other guidelines

- Simple questions – no jargon
- Avoid compound questions with multiple parts
  - Not “What were the strengths and weaknesses of the menu layout and the toolbar?”
  - Ask two separate questions instead.
  - Or four…
- Avoid judgmental phrasing or tone
  - Possible bias

Un- or Semi-structured Interviews

- Often, questions are generated in response to participant comments
- Can be hard to do this well
- Start with more highly-structured interviews
  - Get a few under your belt before moving to unstructured

Preparing for interviews

- Pilot test – with colleagues and participants
  - Good for logistics and for confidence
- Write an interview guide listing what to do and when
  - Particularly good if multiple researchers are involved
- Logistical backups
  - Batteries for laptop, audio recorder, extra paper, etc.

Notes

- Audio and video recordings are fine. But paper notes are still important.
- Record insights, non-verbal responses, etc.
  - Try to record what you can, but
  - Don't do so at the expense of listening
- Summarize written notes as soon as possible after the interview before you forget.

Recordings

- Complete, but expensive
- Transcription can take many hours
- Video is tricky, but gets useful information
- Consider audio + still pictures
- You may also take screenshots/screen recordings under their permission
- Respect privacy and anonymity
- Have a consistent policy for comments made after the notebook is away and the recorder is off

During the Interview

- You're the host:
  - Build rapport
  - Be friendly, respectful, nonjudgmental
  - Listen carefully
- Outline
  - Briefly introduce research goals
  - Complete paperwork (informed consent)
  - Simple questions first, hard questions later

During the Interview

- Be flexible
  - If your interview is not fully structured
- But, try to keep things on track
- Explain why you are asking each question
- Define terms, avoid jargon
- Ask for clarification

Read Between the Lines

- Is the interviewee telling you what they think you want to hear?
- If so, make a note of it
- Might want to downplay in interpretation

Challenges of Focus Groups

- Manage the room. Be prepared to deal with
  - Digressions
  - Arguments
- Give everyone a chance to talk
  - Address them directly
  - “Sandy, what do you think about...?”

Promoting Discussion

- What if they won't talk?
- Fully-structured – not much to do
- Otherwise
  - Rephrase questions
  - Dig deeper into specifics
- Use props and probes to stimulate feedback
- You may have a hidden assistant
- Focus groups – ask for dissenting or concurring feedback

Closing It Out

- Ask for any final comments
- Provide more detail about research goals
- Brief summary of findings
- Turn off recording devices
  - Interviewees might make additional useful comments
  - Ask before including these comments in analyses
- Say “thanks!”
- Reflect and summarize notes immediately

Phone or Online

- Phone, video calls, web chat, email, conference calls
- Pros
  - Easy, inexpensive
  - Reach more/geographically distant people with less effort
  - For interviews involving sensitive issues, good for anonymity
  - Participants are in their own environment so are more relaxed
  - Potentially powerful screen, audio capture
- Cons
  - Lack of face-to-face contact
  - Fewer non-verbal cues
  - Pacing can be harder
  - Group discussion can be challenging

Data analysis

- Do it as soon as possible
  - Sit down and summarize notes immediately afterward
- Avoid “cherry-picking”
- Fully-structured, closed-ended: tabulate answers
- Open-ended questions require qualitative coding
  - Transcribe audio
  - Written summaries

Qualitative analysis

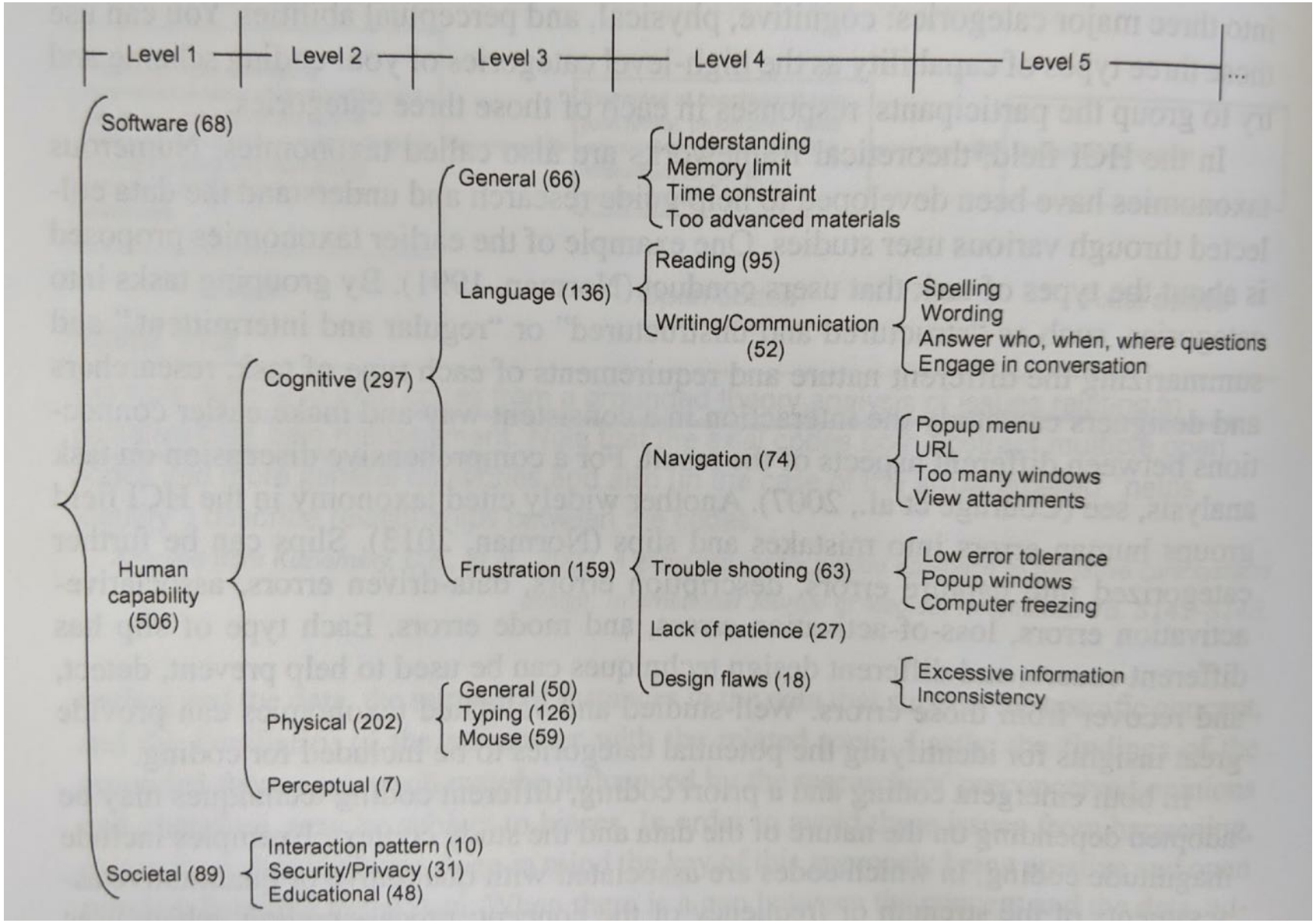
- Content analysis
  - frequency of terms, patterns in the notes
- Categorization
  - Affinity Diagrams
- Multiple analyses can increase validity

Content analysis

- A more specific view: a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding
- A broader view: any technique for making inferences by objectively and systematically identifying specified characteristics of messages

Analyzing Test Data

- A priori coding
  - Identify coding categories
  - Coding
  - Reliability check
- Emergent coding
  - Multiple coders identify coding categories based on subset of data
  - Consolidate category list
  - Code a subset of data
  - Reliability check
  - Repeat the process until satisfactory result is met
  - Code the rest of the data



From Feng, J., et al., 2020. Computer usage by children with down syndrome: challenges and future research. ACM Transactions on Accessible Computing 2 (3), 32. ACM

Coding the text

- Look for key items

Statement	Examples
Objectives	Use computers for educational purposes
Actions	Enter a password, chat online
Outcomes	Success or failure, whether the objective is achieved
Consequences	Files unintentionally deleted, a specific application abandoned
Causes	Limited memory, dated equipment
Contexts	User is computer savvy, user works with classified information
Strategies	Avoid specific tasks, multimodal interaction

Table 11.2 What to look for while coding.

Coding the text

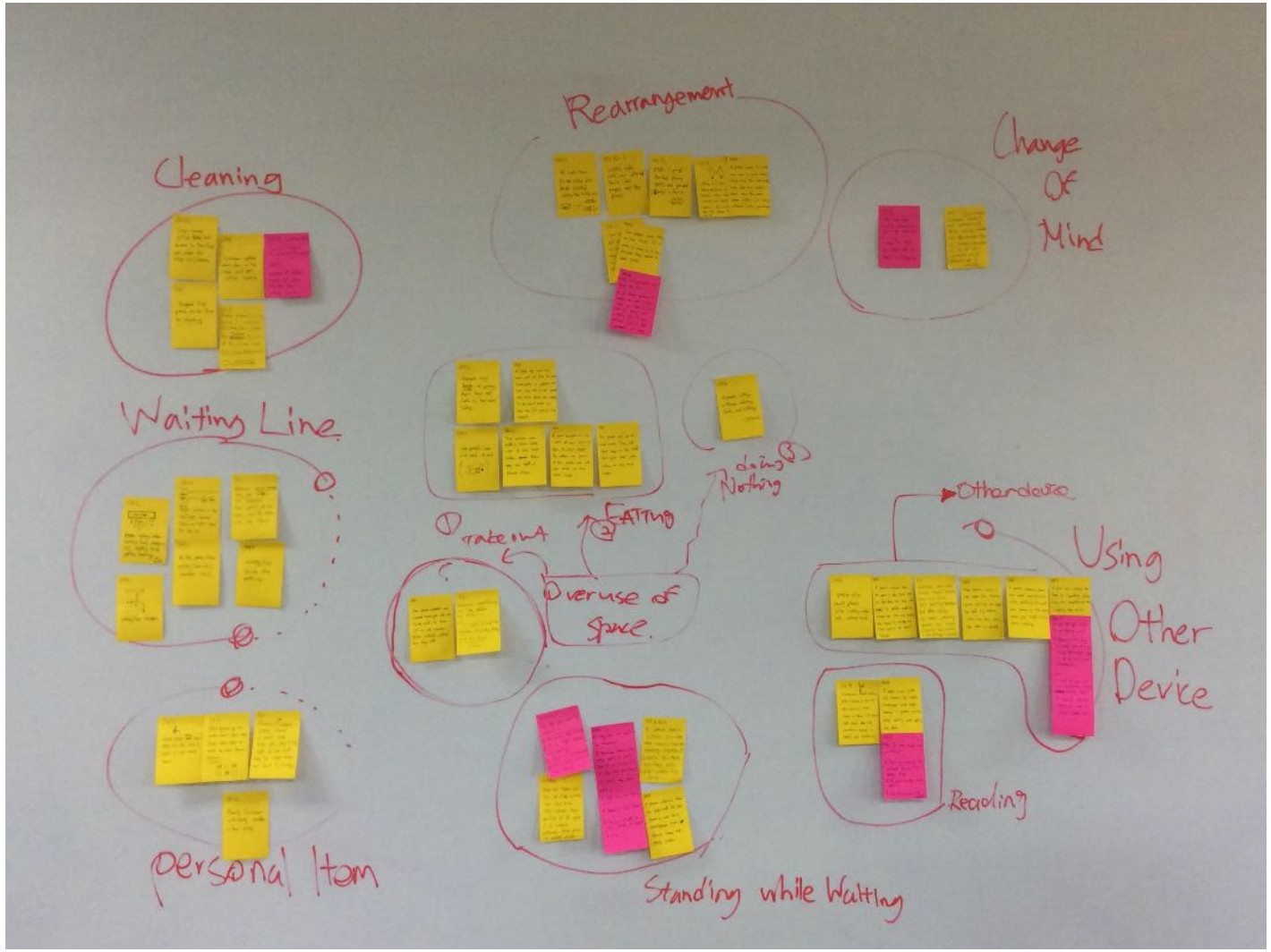
- Ask questions about the data
- Making comparisons
  - Between different coding category
  - Between different participant group
  - Between existing data and previous literature

Affinity Diagramming

- Common technique used in qualitative analysis
- Organize individual ideas and insights into a hierarchy showing common structures and themes.
- Groups are not predefined, but emerge from the data.

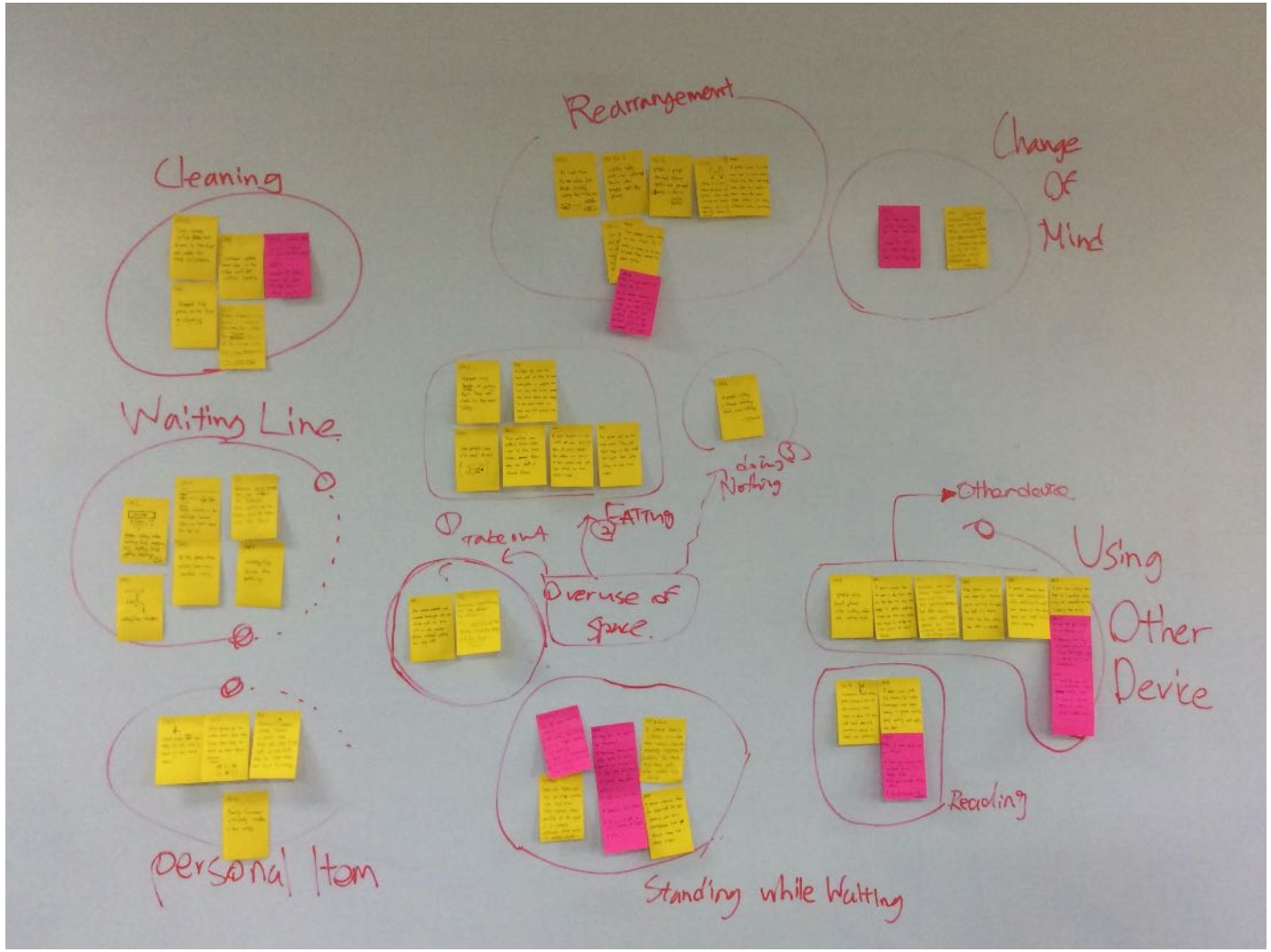
Affinity Diagramming

- Start by generating sticky notes
  - Observations and comments



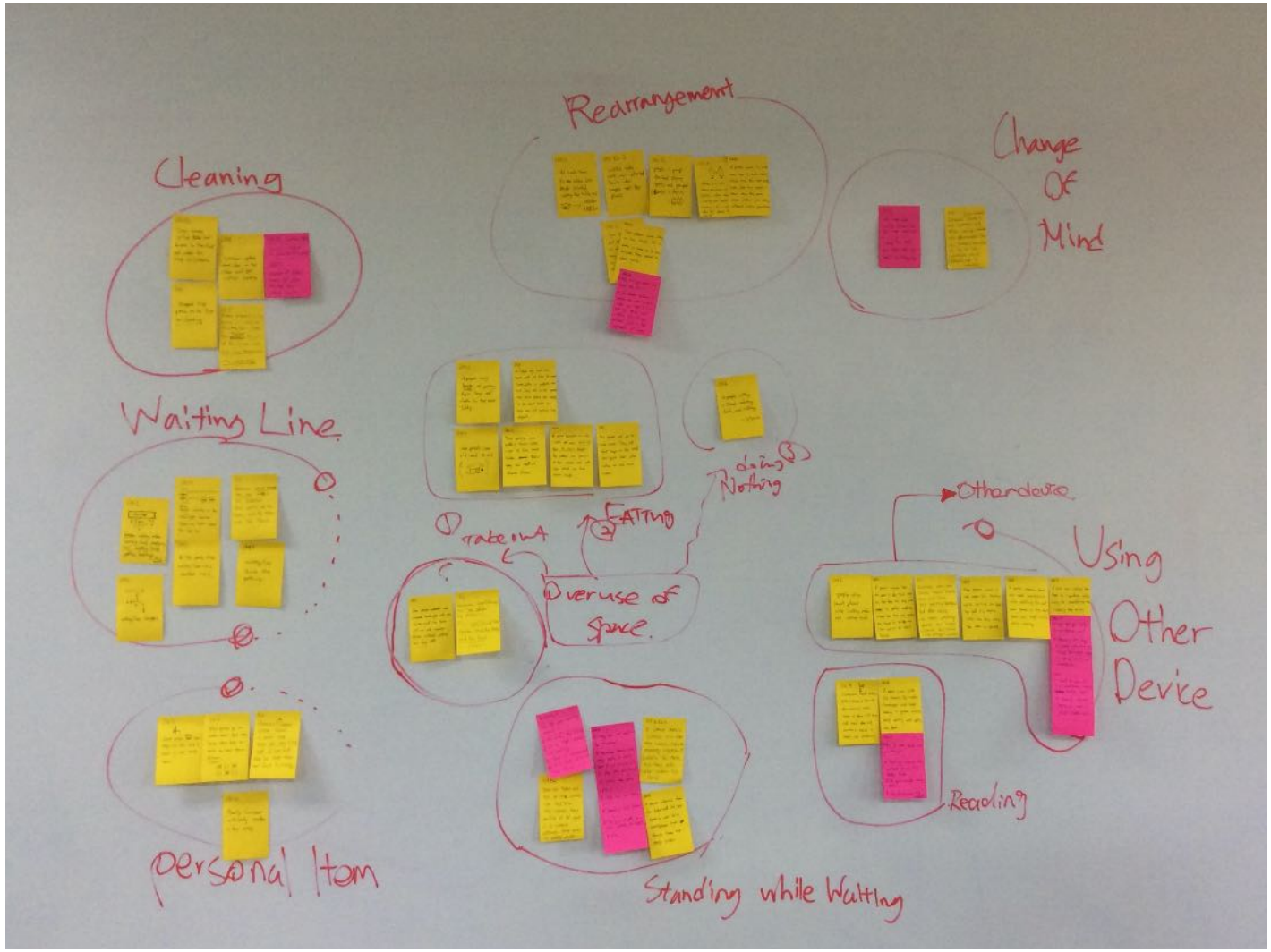
Affinity Diagramming

- Start by generating sticky notes
- Organize notes in groups
  - Find similar items and organize in groups
  - Should be done by multiple researchers, but no discussion



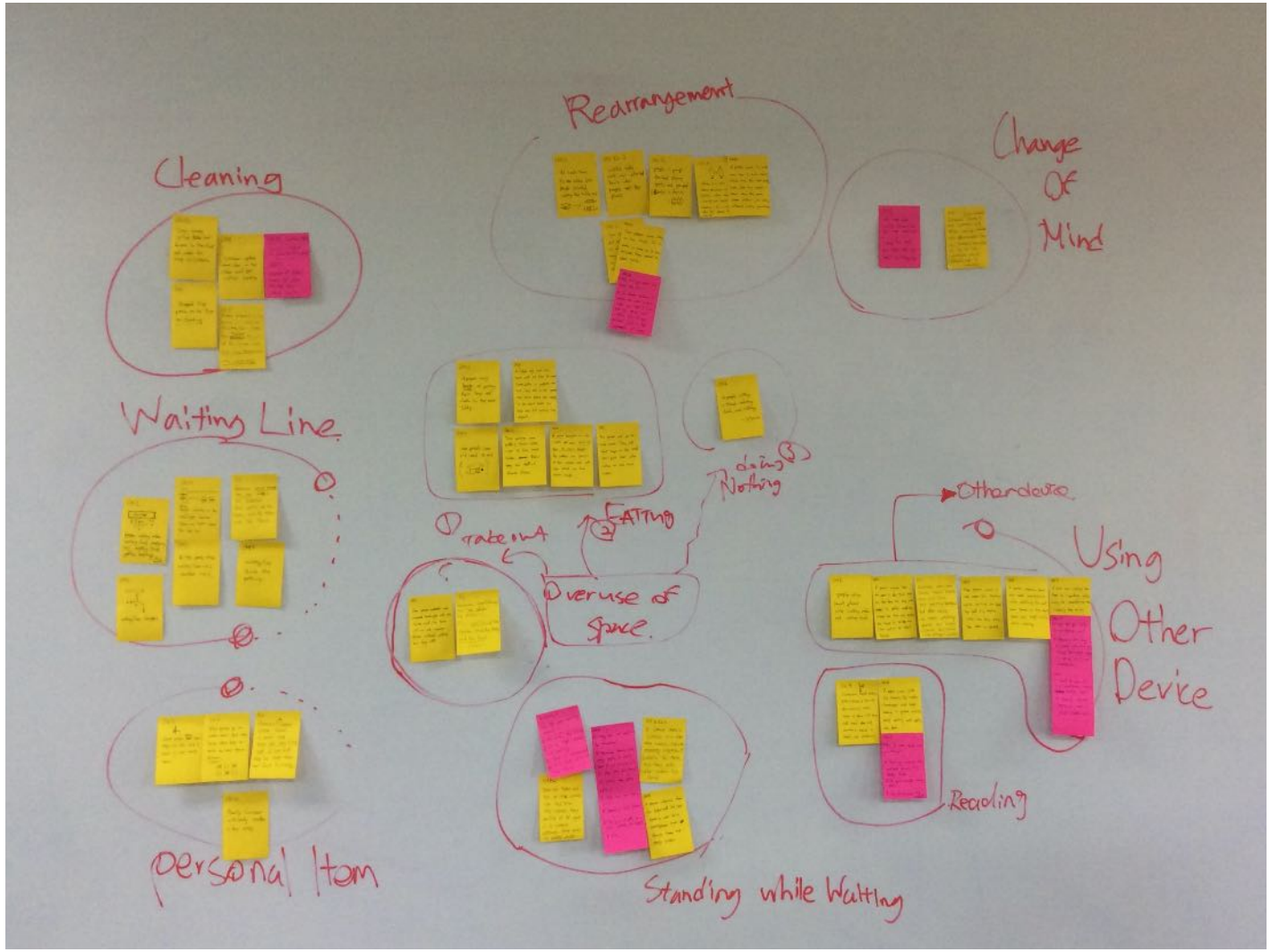
Affinity Diagramming

- Start by generating sticky notes
- Organize notes in groups
- Sort Notes into top-level categories



Affinity Diagramming

- Start by generating sticky notes
- Organize notes in groups
- Sort Notes into top-level categories
- Sort Notes into sub-categories



Reporting results

- Be as specific as possible
  - Not “most respondents”
  - Instead, “7 out of 10 respondents”
- Use quotes or paraphrases from respondents
  - But don't use participant name
  - Use identifiers (Subject 3) or pseudonyms
- Categories can be a good way, too
  - Organize findings in an organized way

Thank you!