

Usability Research Techniques

HCDE 417

Human Centered Design & Engineering
University of Washington
Winter 2026

Instructor and Course Information

Instructor

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Reader/Graders

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We will use primarily [Slack](#) for communication. **Please note: grades cannot be discussed via Slack. Please reach out via **email** or **in-person** for questions about grades.**

Instructor and Course Information

Class times: Tuesdays and Thursdays, 2:30pm – 4:20pm

- We will usually (try to) take a short break midway through class (remind me)
- Class will start off lecture heavy and then transition to primarily on coworking time and collaborative instruction

Location: Sieg 329

All course resources are available on Canvas

Key Parameters

Be a decent colleague

Establish and honor shared values

Engage openly and with curiosity

Communicate with your colleagues/group based on shared values

Show up – work with your colleagues to support this, keep them in the loop

Keep instructors posted on progress, needs, etc.

Key Parameters

Grades

Engage with the content and your colleagues

Design is iterative, contingent, and unexpected

The goal is to use grades as touchpoints for learning and communication but focus on thorough, meaningful feedback so you all can turn projects in this class into portfolio pieces and genuinely focus on learning

Key Parameters

AI use

Disclose when you use it if you do (“this was the prompt we used, etc.)

Talk to your group about levels of comfort with how much AI is used

Do not use it to generate interview data/act as participants

Allow yourself to think things through first

Key Parameters

Missing classes

Best collaboration happens in person and I'll try to make the activities helpful so they scaffold into your assignments :)

Life happens! Slack me and your group if you can't make it, no explanation needed... please don't send me doctors notes or anything i trust you !!

Key Parameters

Instruction and support

I will try my best to create an environment of care and support but if and when in the quarter you realize something could change to make it even better, let me know

Same goes for group project conflict! Conflict is normal but loop me in if you feel I can support in some way and we can figure out if we need to bring in other resources together

Requesting that you all refrain from working on other things while I am lecturing

I'm usually pretty quick with responding to emails within 24 hours but if you haven't heard from me in a bit, feel free to follow up because you probably got lost in my million email junkyard < sometimes slack notifications get lost too

What are we actually doing in 417??

Project based learning with a group

In groups of 4, you'll be selecting an existing product (usually an app or website)

Screening and recruiting participants to conduct 10 usability interviews

Analyzing (primarily) qualitative interview data

Reporting findings in a final presentation and report geared toward a UX/industry audience

Example final presentation and report

[Duolingo report](#)

[Duolingo slides](#)

remember this project is not the most recent, just examples shared in class!

Let's make our intro slides...

https://docs.google.com/presentation/d/16l8dTkvT_HXjlfW8pwnPviMIQzA_LXPAkMBM3OYtQb4/edit?slide=id.g3814941f14d_0_7#slide=id.g3814941f14d_0_7

10 minutes to make a slide like mina's

We will go around the room afterward and introduce ourselves

Best slide award gets a prize (decided by mina)

Week 1

What is Usability?

Our collective ideas: What is “usability”?

Come up with ideas:

- How usable it is
- Easy to use
- How people are actually using it vs intent
- Intuitive, you can predict next steps
- Colors fonts texts, people perceiving design and buttons
- Finding things
- accessibility
-

What is “usability”?

Rubin & Chisnell 2008: Usability is “the absence of frustration in using [a product, object, etc.]”

Context: computer engineering in 1980s and 1990s

Usability studies

With these definitions and ideas...

WHY might we study usability?

HOW might we study usability?

FIRST...

Who is “we”?

Usability researcher

User researcher

UX designer

Visual designer

Content designer

Conversation designer

Project and Product Managers/Owners

Other Stakeholders

Front-end engineering

Back-end engineer

Users!!

Sales reps, user support personnel

Usability studies

With these definitions and ideas...

WHY might we study usability?

HOW might we study usability?

FIRST...

Who is “we”?

In addition to all of our ideas, here are some others to consider (if not already noted):

- **Context of application** (What is/are ultimate driver(s) of use? Commercial, grassroots, philanthropic... what else?)
- **Assumption of responsibility** (Who is responsible? To whom? What if this changes? How will we know if/when/how that changes? How/when/why does responsibility change hands? When/how might/should these considerations change?)
- **Duration of application** (What are timelines (and their knowability) for different aspects of all of the above?)

Our collective ideas: WHY might we evaluate usability?

financial/sales

Liking it, recommending to others

Improve future designs

User retention

Keeping up with newer competition and methods

Open conversations for accessibility

Time and resources.. Usability makes it worth it

Presentation to stakeholders

Our collective ideas: HOW might we evaluate usability?

- Rapid prototyping
- Surveys, qual quan, quantitative analysis
- Competitor analysis
- Interviews (task-based interviews)
- Field studies
- **A/B testing**

Our collective ideas: WHEN might we evaluate usability?

- Initial prototype
- Depends on the company!
- Functional prototype
- Concept testing
- Existing products
-



What is “usability”?

Rubin & Chisnell 2008: Usability is “the absence of frustration in using [a product, object, etc.]”

Usefulness

Efficiency

Effectiveness

Learnability (discoverability)

Satisfaction (desirability)

If you’ve taken HCDE 351, you might recall the design heuristics of usability, feasibility, desirability, and impact.

*Why isn’t feasibility on the list above?
(Definition: ability to execute intended design given broader constraints, e.g. organizational resources, market powers, etc.)*

What might impact mean in this context? Why isn’t impact on the list above?

What is “usability”?

Rubin & Chisnell: *Usability is “the absence of frustration in using [a product, object, etc.]”*

Usefulness: Can you achieve your goal using the product?

Efficiency: Does the product work the way you need it to *in the timeframe you require?*

Effectiveness: Does the product do what you expect?

Learnability (discoverability): Are you able to figure out how to use the product within reasonable constraints?

Satisfaction (desirability): Do you *like* using the product?

Some modifications to R&C's definition

Usefulness

Efficiency

Effectiveness

Learnability (discoverability)

Satisfaction (desirability)

Ergonomics, accessibility, safety, maintenance, contingency

- Decentering a product focus... Centering a human/user focus
- How does this jive with what we just discussed re: impact?
- Does feasibility play a role here? How, why, who?

[10 Usability Heuristics for User Interface Design](#) → a different perspective

Some modifications to R&C's definition:

Additional Definitions

Ergonomics: improvement of processes while reducing risk of injury/harm to process executor; related to human factors

Accessibility: making design artifacts as usable as possible to as many users as possible regardless of users' abilities or contexts

Safety: related to human factors and ergonomics; specific focus on reducing risk of injury/harm to both process operators and others affiliated (to varying degrees) with process/operation

Maintenance: continued availability and usability of a design artifact over *time*

Contingency: influence of historical contexts/events on designs and design spaces

Usefulness: redefinition

R&C: Can you achieve your goal using the product?

Our definition:

Who is “you” → What are their goals?

Willingness to use product— different than buy

Can you complete various goals that you set for yourself after you buy the product, so it inspires to keep using it past the purchase?

What does it mean to achieve a goal? Success vs failure? Make progress toward a goal?

New definition:

Can people with targeted goals that are specific to their own lifestyles use and continue to use the product?

Activity: Redefining usability attributes

- Split into 4 groups (5? people)
- Each group will be in charge of attempting to redefine one of the main usability attributes
- Be prepared to share
- Use [10 Usability Heuristics for User Interface Design](#) as inspiration

Efficiency: redefinition

R&C: Does the product work the way you need it to in the *timeframe* you require?

Discussion:

- What is work / how it works - successfulness or effectiveness
- Who is you - user, developers, stakeholders
- What is the timeframe — it may differ depending on the user demographic and individual needs

Our definition:

Can the target audience use the product to make progress towards their goals within their intended time frame?

Effectiveness: redefinition

Effectiveness

R&C: Does the product do what you expect?

Our definition:

- How well does your product address the problem the designer is trying to solve?
- How satisfied are the users/customers with the product?
- How quickly, efficiently and consistently does the experience of using the product go?

New Definition:

- Does the product address the problem (or goal) that the target user is facing quickly and consistently?

Learnability: redefinition

Learnability (discoverability)

R&C: Are you able to figure out how to use the product within reasonable constraints?

Our definition:

Figure: How do they figure out to use the product; is it tedious process or more intuitive

Reasonable: Who is it reasonable for???

Constraints: What are the constraints; is the same constraints for everyone, does it change depending on the user?

New definition:

Can individuals with varying backgrounds/experiences intuitively use the product intentionally?

Satisfaction: redefinition

Satisfaction (desirability)

R&C: Do you *like* using the product?

Our definition:

- Definitions of “like”, “you”?
- What does “using” mean?
- What emotion do you feel when you’re using the product?
- What does user’s feeling influence the perception of the product?
- Does it feel needed? Does it make something easier? Does it offer benefits to user?
- Does it solve an actual problem that user experiences?

New definition:

“How does the product’s functional and emotional fulfillment of the user’s needs affect their perception of the product and their desire to use it?”

Week 1, part 2

Concepts of Usability and Usability Research

Usability testing: Core elements

R&C Ch. 2

Overall purpose: Evaluate *user preferences* and *product performance* using *trustworthy methods* to produce *meaningful product awareness* and *actionable design recommendations*

- Research questions and test objectives (--> task development)
- Representative sample of users
- Representation/simulation of actual use environment (test environment)
- Observation of end-users using/reviewing simulation of product or actual product (via tasks in testing session in test environment)
- Controlled (scripted, +/- extensive) interviewing + probing by test moderator about experience of task attempts
- Collection of qualitative AND quantitative measures of performance and preference data based on task attempts in testing session(s) and in broader experience
- Design recommendations based on test session and interview findings

A note on methods

Usability testing is a site where both qualitative and quantitative methods play significant and intertwined roles

Our goal is to provide a space in this class where you can feel empowered using them

We'll get more detailed about specific quantitative methods throughout the quarter in addition to qualitative methods you may already find familiar

Research questions

Map your research questions to the **attributes of usability** and map your tasks to your research questions!

If the attribute I want to measure is the *accessibility* of a certain website one of my research questions might be “does this website support blind and low-vision users in turning on text-to-speech software?” and my task might be “turn on the text-to-speech software option on this website.”

If the attribute I want to measure is the discoverability of the notification settings on an app, I might ask “how easily can users find the notification settings?” and my task would be “turn off notifications for this app”.

For example research questions see page 70-71 of the Handbook of Usability Testing (R&C)

Tasks in Usability Interviews

In usability interviews, we use a combination of tasks and observation to see if our product/object/platform meets the **attributes of usability** criteria.

The interviewer prompts the user to complete specific tasks

The user follows the task and uses the “thinking aloud” method to narrate *in detail* both what they are doing and their thoughts while doing it.

The interviewer(s) observe:

- taking notes of the steps the user takes to complete the task (they click on the settings icon and say that they expect it to go to the notifications page)
- any benchmarks they observed (time, eye tracking, number of clicks)
- and qualitative insights that come up (they said the animations were overstimulating and distracting, they groan when the settings icon doesn't take them to the notifications page)

Task development

* this is especially important if all your tasks are in linear order but the user did not complete the task before, you may need to navigate to the starting state for them to continue

Task	Description of the task that you will prompt the user to complete
Starting State	What does the product/platform/object look like when the user is about to begin the task?*
Successful Completion State	What does the product/platform/object look like when the user has completed the task?
Benchmark	How do you measure a successful task? What if the user got to the successful completion state but it took them double the time expected or they went to the wrong page 6 times? Is that successful? MAYBE?? You define it!

Task development: alarm example

Task	In the clock app on your iphone, add a new alarm for 5:36pm. *
Starting State	Alarms tab is selected, user can see their previously set alarms.
Successful Completion State	5:36pm alarm is added to the bottom of the list and the toggle is green.
Benchmark	User sets the 5:36pm alarm without selecting a tab other than the alarm tab or pressing a different button (edit instead of +) to add the alarm.

* what is the difference between “add a new alarm” and “set an alarm”?
Task language matters!

Attributes of usability

Traditional attributes

Usefulness: Can you achieve your goal using the product?

Efficiency: Does the product work the way you need it to *within the constraints of your purpose/situation of engagement/use*?

Effectiveness: Does the product do what you expect in (a) particular use context(s)?

Learnability/discoverability: Are you able to figure out how to *reasonably* use the product within reasonable constraints *and without undue burden*?

Satisfaction/desirability: Do you like *how* a product works *based on your preferences as a user*? *updated

Expanded attributes

Ergonomics: Can a user engage with the product without incurring harm or injury in the context of *intended* use?

Accessibility: Is the product as usable as possible to the most potential/actual users as possible regardless of users' abilities or personal contexts?

Safety: Does *intended or non-intended* use of the product present the possibility of direct or indirect harm or injury to immediate users and/or others?

Maintenance: How do availability and usability of a product change over time, and how does responsibility for availability and usability change hands?

Sustainability and justice: How might intended/non-intended use of the product cause direct/indirect harm to stakeholders beyond users?
*added

Contingency: How do historical contexts/events related to product design and product design space influence how a product works, and how does this connect to user experience?

Think out loud method

- Common method for usability interviews
- Why? So we can hear all of our participants talk through their decision points– an opportunity to get qualitative insights into their thought process and reasoning
- We get a lot more information this way rather than just observation
- I tell my participants: “pretend you are a video game streamer!” if they get stuck on this
- Different than talking to you about their process, because you are a researcher.. Power dynamic

Mina demonstrates with sticky note example

Usability Test Demo

Partiful Event Creation

Task: create a new event on partiful

Recall demo

What did you see?

Participants

Moderator

Artifact

Questions

What else?

Think out loud method

Your turn:

- With a partner:
- Partner 1: come up with a task for your partner using playdough (i.e make a cat)
- Partner 2: complete the task using the think out loud method
- Partner 1: as partner 2 completes the task, take a few notes on what they are doing and saying

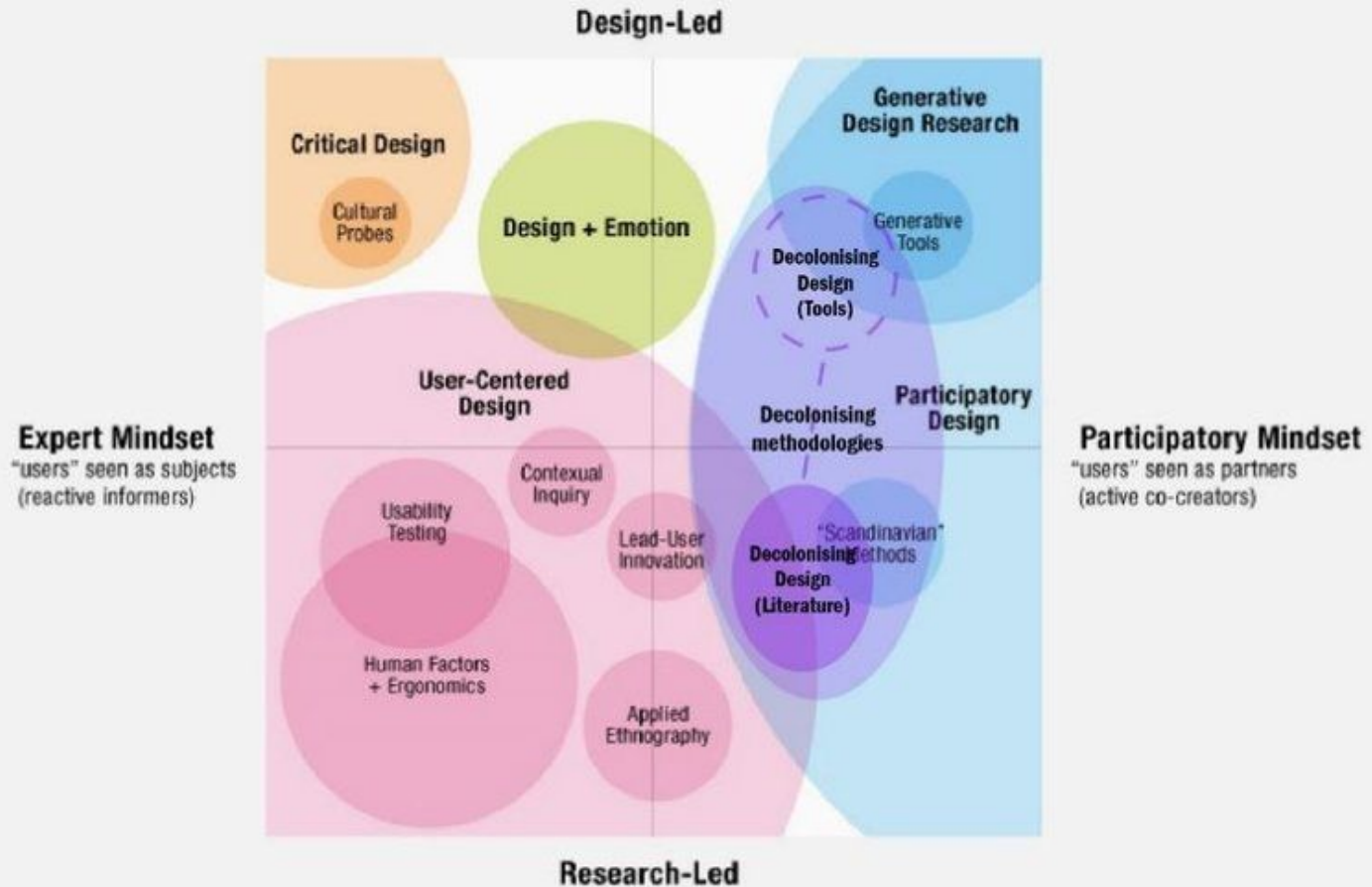
SWITCH and do it again! (~5 minutes per partner)

Be ready to share



Choosing a usability product for this class: tips

- What makes a good project for this class?
 - Something you'd want on your portfolio
 - Field of interest for you and your group (travel, entertainment, fashion, food, gaming etc.)
 - Scoped down to a manageable amount of work (10 usability studies, 10 week quarter)
 - Recruit-able population



Week 2

**Planning a Usability
Study**

What detracts from usability?

Focus on **artifact** rather than user/use

Target audiences change

Design organizations aren't necessarily
integrated in mission

Designing “usable” products is **difficult**

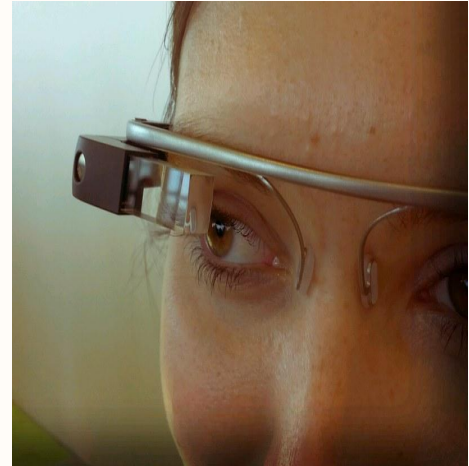
Implementation doesn't always match design

What detracts from usability?

Focus on **artifact** rather than user/use

Why? Assumptions...

- “Write what you know”
- Who adapts?
- Workforce priorities/trajectory/siloing



What detracts from usability?

Target audiences change

- “Next-bench” designers
 - hobby <> commerce <> access
- Who else? What else?

What detracts from usability?

Design organizations aren't necessarily
integrated in mission

- When in product development should usability testing happen?

Designing “usable” products is **difficult**

- Expertise < > constraints on resourcing

Implementation doesn't always match design

What detracts from usability?

Focus on **artifact** rather than user/use

Target audiences change

Design organizations aren't necessarily **integrated** in mission

Designing “usable” products is **difficult**

Implementation doesn't always match design

Different methods for studying usability address different dimensions of these challenges

Usability testing is a **lab-based** method for understanding **end-user** experiences **within and across populations**

Some notes about YOUR context...

Specs

- In this class, *you* will define these for your projects

Positionality

Reflexive work

Study Specifications Draft

[Start Assignment](#)

Due Feb 7 by 11:59pm Points 5 Submitting a text entry box or a website url

Write a paragraph (multiple if needed) addressing the following:

- What are your research questions? What is the rationale for each RQ?
- What population(s) does your study examine?
- Why did you focus on this population?
- What scoping decisions did you make for this study and why did you make each decision? Scoping decisions can include the aspect(s) or application(s) of the product you studied, populations you chose to study/not study if applicable (i.e. beyond what you described above), etc.
- If you had more resources (time, material, personnel, etc.), what would you like to study that you are not able to study in this course project?

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Identifying target audiences, contexts, and activities

Intended users – *who defines?*

Edge cases → *who defines? who discovers? how?*

- Repurposing

- Workarounds

- Tolerating

- Integrating/isolating

- What else?

Identifying target audiences, contexts, and activities

Intended users – *who defines?*

Edge cases → *who defines? who discovers? how?*

Repurposing

Workarounds

Tolerating

Integrating/isolating

What else?

Some means of identifying study spaces...

Phenomenological inquiry: examines *spatiality, temporality, materiality, embodiment*

Feminist standpoint theory: *who holds power/position of comfort with/via product? who navigates experience with product while un/disempowered? why?*

User-centered design: *literature review, field observations, semi-structured interviews, focus groups, etc.*

Getting into teams

Stand up!

Take some time to find/choose your team: 4 people

Talk about what **areas you are interested in** for choosing a product to test in this class (you came up with a bunch in the product reflection assignment):

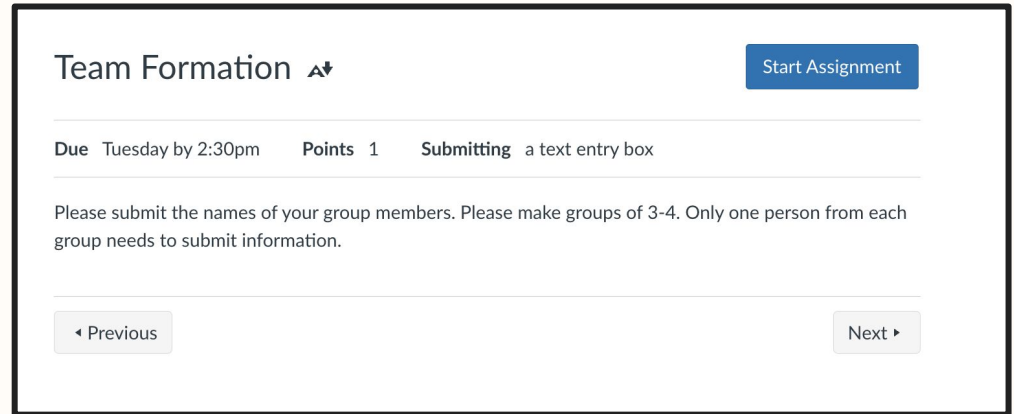
- Health
- Food
- Entertainment
 - Gaming
 - Shows/Movies
 - Music
- Travel
- Fashion
- Art
- And more!

Also: before you commit to a group, ask about **availability** of timings to meet up outside of class to make sure there is at least some overlap

Sit down together once you have your group

Only have 3 people and see someone without a group? Invite them to join you.

Submit your teams on Canvas.



The screenshot shows a Canvas LMS assignment page. At the top, the title 'Team Formation' is followed by a small icon of two arrows pointing in opposite directions. To the right of the title is a blue button labeled 'Start Assignment'. Below the title, there is a horizontal line. Underneath this line, the text 'Due Tuesday by 2:30pm' is followed by 'Points 1' and 'Submitting a text entry box'. Another horizontal line follows. Below this line, the text reads: 'Please submit the names of your group members. Please make groups of 3-4. Only one person from each group needs to submit information.' At the bottom of the page, there are two buttons: '◀ Previous' on the left and 'Next ▶' on the right.

With your team...

From the product reflection assignment on Canvas:

- Share your ten products from your Product Reflection assignment
- As a team, identify 3-4 products of interest that you would potentially like to explore for this course
- (Question 1 of assignment) What do you want to learn/explore about this product's usability? Use the attributes of usability we discussed in week 1.

Group 1: Game Stuff

Steam Remote Play: Steam allows users to remotely play games across devices, we want to explore the effectiveness of the platform.

Local AI Video/Image Generation Download/Setup: We want to explore how useful and effective local AI models. Relative high barrier of entry compared to other models.

Minecraft Server Stuff: Learnability, effectiveness; What do you want to learn/explore about this product's usability? Use the attributes of usability we discussed in week 1.

Product 4 Name: What do you want to learn/explore about this product's usability? Use the attributes of usability we discussed in week 1.

Noted: Product Identification

Airline App (Delta, Southwest, etc.): It would be really interesting to dive into the learnability and discoverability within a specific travel app. As travel is something that people might not do all the time, being able to use the app without prior knowledge is important.

Uber: We want to explore user satisfaction using the uber app since it is a service app that people use to ensure their transportation.

Airbnb: We want to explore the usefulness of the app especially since college students tend to travel in larger groups.

Zillow: We want to look into and research the satisfaction using zillow, as an app meant for discovering and finding homes for people to buy/rent.

Group: Usaba-silly

Naomi, Spriha, Chaelynn, Subin

Google Calendar: We want to explore how people integrate this app into their daily routines and how they differentiate work/school related events from personal events and deadlines within one interface.

ChatGPT: Since ChatGPT is a relatively new application that has been expanding into many different fields/functionalities, it could be interesting to see how it measures for effectiveness and usefulness since it has become so widely integrated.

FindMy (Apple): This product would be interesting to evaluate because it balances powerful tracking features and privacy awareness. We would want to examine the learnability and effectiveness of the application.

Netflix Streaming via TV: We want to explore how the remote-based navigation affects efficiency and satisfaction, especially when searching for content and switching between menus.

Group : Slightly Fashionable

Facebook Marketplace: What do you want to learn/explore about this product's usability? Use the attributes of usability we discussed in week 1.

- Safety/legitimacy of transactions
- Accessibility of listing an item

Molly Tea: What do you want to learn/explore about this product's usability? Use the attributes of usability we discussed in week 1.

- Interactivity of the buttons?

Dior's Website: What do you want to learn/explore about this product's usability? Use the attributes of usability we discussed in week 1.

- Navigating to a certain beauty product on their website

Heytea App: What do you want to learn/explore about this product's usability? Use the attributes of usability we discussed in week 1.

- Design of the UI (accidentally placing my order at the wrong location)
- Efficiency (How quickly can users customize and place an order?)

Usability Unicorns: Product Identification

Apple Photos: Evaluate the usability and satisfaction of album navigation, because from our experience, it is easy to accidentally exit the page, disrupting the user when organizing photos.

Substack: We wanted to evaluate the satisfaction of writing and reading articles on the app for people who have varying interests and hobbies across a wide spectrum

Travel(klook): We want to learn more about the planning aspect of different activities that someone can book when planning their trip. Some attributes that we would want to look into would be learnability and efficiency.

Beli: We wanted to explore the bookmark feature to be more efficient for organization and sharing information, ranking system

Facebook marketplace: In terms of effectiveness, we want to see if the listing creation detail view can be improved so there will be less inconsistency across the diverse marketplace, allowing buyers to smoothly evaluate the item before messaging.

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Traditional attributes

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Expanded attributes

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Maintenance: How do availability and usability of a product change over time, and how does responsibility for availability and usability change hands?

Sustainability and justice: How might intended/non-intended use of the product cause direct/indirect harm to stakeholders beyond users?

*added

Contingency: How do historical contexts/events related to product design and product design space influence how a product works, and how does this connect to user experience?

Identifying research questions

Design questions: *“How might we...?”*

Research questions: *“What are, why is, who does,”* etc.

Demo: research questions for usability testing

Step 1: Define specs

Define: *What constitutes “use”?*

Define: *Who is the target audience?*

Define: *In what contexts should this product be usable based on the given specs?*

Define: *What attributes of usability should you study?*

Demo: research questions for usability testing

Example: Spotify Jam (collaborative listening session) – Step 1: Define specs

Define: *What constitutes “use”?*

- Listening to music with one or more friends either through joining or starting a “jam”

Define: *Who is the target audience?*

- **Spotify premium users** who want to listen to music with friends

Define: *In what contexts should this product be usable based on the given specs?*

- Since it is a newer feature, premium users should be able to **find** and start a session easily

Define: *What attributes of usability should you study?*

- Learnability/Discoverability

Identifying potential research questions...

Step 2: consider potential research question types

What are known pain points for existing users?

What populations do/don't use the product or aspects of the product? /have repurposed/integrated/deintegrated/etc.

Comparison of documentation help versus challenges users face IRL

Comparison of user thought processes versus product workflow

Complaints, wishlists, seamful experiences (e.g. "Dr. Google")

See Ruben & Chisnell Ch. 5, pp. 70 (bottom) - 71 for list of examples RQs

Demo: research questions for usability testing

Example: Spotify Jam (collaborative listening session)

Example design question:

How can we improve the discoverability for the mobile version of the Spotify Jam feature for spotify premium users?

Example research question:

*Can **spotify premium users** who are unfamiliar with the feature **find** the “start a spotify jam” button on the **mobile version** of the app?*

— — —

Get VERY specific

How does the following research question differ?

Can spotify users find spotify jam on spotify?

More on formulating research questions...

Focus on questions for which you can collect data that meaningfully answers or helps you answer the question. Remember: you are testing the *product*, not the *participant*!

E.g. Strava (cycling/other exercise/recreation planning and tracking app)

“Is this product usable for people in snowy settings?”

More on formulating research questions...

Focus on questions for which you can collect data that meaningfully answers or helps you answer the question. Remember: you are testing the *product*, not the *participant*!

E.g. Strava (cycling/other exercise/recreation planning and tracking app)

“Is this product usable for people in snowy settings?”

Vague - who to recruit as participants? what kind(s) of snowy settings? what are uses of interest? what defines usable versus not usable?

More on formulating research questions...

Focus on questions for which you can collect data that meaningfully answers or helps you answer the question. Remember: you are testing the *product*, not the *participant*!

E.g. Strava (cycling/other exercise/recreation planning and tracking app)

“Are cross-country skiers able to utilize the map function to navigate while they are out on trails?”

More on formulating research questions...

Focus on questions for which you can collect data that meaningfully answers or helps you answer the question. Remember: you are testing the *product*, not the *participant*!

E.g. Strava (cycling/other exercise/recreation planning and tracking app)

“Are cross-country skiers able to utilize the map function to navigate while they are out on trails?”

Better - specific population with reduced possible task space, specific function of product; still vague - what is successful utilization?

More on formulating research questions...

Focus on questions for which you can collect data that meaningfully answers or helps you answer the question. Remember: you are testing the *product*, not the *participant*!

E.g. Strava (cycling/other exercise/recreation planning and tracking app)

“How often are cross-country skiers able to complete a planned course through using the map function to navigate while out on trails?”

More on formulating research questions...

Focus on questions for which you can collect data that meaningfully answers or helps you answer the question. Remember: you are testing the *product*, not the *participant*!

E.g. Strava (cycling/other exercise/recreation planning and tracking app)

“What precludes cross-country skiers from successfully using the map function to navigate while actively out on trails?”

More on formulating research questions...

Focus on questions for which you can collect data that meaningfully answers or helps you answer the question. Remember: you are testing the *product*, not the *participant*!

E.g. Strava (cycling/other exercise/recreation planning and tracking app)

“How often are cross-country skiers able to complete a planned course through using the map function to navigate while out on trails?”

Good - can identify metric (completion rate), specific population, specific task(s), specific settings/contexts

More on formulating research questions...

Focus on questions for which you can collect data that meaningfully answers or helps you answer the question. Remember: you are testing the *product*, not the *participant*!

E.g. Strava (cycling/other exercise/recreation planning and tracking app)

“What precludes cross-country skiers from successfully using the map function to navigate while actively out on trails?”

Also good - assumes a previous metric (e.g. completion rate) that indicates an area for interrogation, specific population/activity/context

More on formulating research questions...

Focus on questions for which you can collect data that meaningfully answers or helps you answer the question. Remember: you are testing the *product*, not the *participant*!

E.g. Strava (cycling/other exercise/recreation planning and tracking app)

“What would improve the ability of a cross-country skier to use the map function in order to navigate trails while actively outside skiing on those trails?”

More on formulating research questions...

Focus on questions for which you can collect data that meaningfully answers or helps you answer the question. Remember: you are testing the *product*, not the *participant*!

E.g. Strava (cycling/other exercise/recreation planning and tracking app)

“What would improve the ability of a cross-country skier to use the map function in order to navigate trails while actively outside skiing on those trails?”

Also good - e.g. for post-task interview, assumes identification of pain points or undesirable product/infrastructure seams, allows bounded space for individual insights into product <> activity <> context <> user interaction

With your team...

Assignment on Canvas (question 2):

- Define (initial) research questions–these may change!
- **From Product Identification assignment:** Draft 2-3 research questions (per product) based on your answers to #1. E.g. "How do students seeking to buy hard-copy textbooks negotiate unavailable products on Elliott Bay Book Company's website?"

PRODUCT	RESEARCH QUESTIONS
Small interfaces	How easily do users switch between modes on multi-purpose buttons? How well do users understand the symbols and icons? Which ones are problematic? Why? How easily do users download updates and features? How quickly can users perform common tasks?
Hardware	How easily and successfully can users use all buttons on the control panel? Can users use the control panel without assistance or training? How easily can users find the correct input and output ports? How easily can users change settings in the menus?
Online and written documentation	Do users go to online help when they encounter error messages? How easily do users find topics they are looking for in the online help? How well do the topic titles reflect what users are looking for? How well do they understand the content of the topics they find? How helpful is the topic content? Which parts of each topic do users pay attention to? Can users easily switch between reading the online help and interacting with the interface to complete the task?

Software

interacting with the interface to complete the task.

How closely does the flow of the software reflect how the user thinks of the work flow?

How easily and successfully do users find the tools or options they want?

Do users use the toolbar icons or the standard menus? Why?

Is the response time a cause of user frustration or errors?

General

What obstacles prevent users from completing installation and set up?

Can users perform common tasks within established benchmarks?

What are the major usability flaws that prevent users from completing the most common tasks?

How does ease-of-use compare in the planned release to the last release?

How does ease-of-use compare between our product and the competition?

Is there an appropriate balance of ease of use and ease of learning?

Research questions

In addition, in this study will try to answer these questions:

- How easily and successfully do travelers get started with making a reservation on the site?
- Does the starting point make any difference in whether travelers are successful in reaching their goal on H.com? If so, what are the differences?
- What paths do travelers take to completing a booking?
- How well does the site support the paths and goals of the travelers? That is, how closely does the organization and flow of the site match travelers' expectations?
- What obstacles do travelers encounter on the way to completing a booking, whether using a credit card or rewards?
- What questions do travelers ask as they work through their reservation?
- How do travelers feel about how long it takes them to complete an online booking, both the perceived of time and the number of steps?

Figure 5-2 Sample research questions

See Ruben & Chisnell Ch. 5, pp. 70 (bottom) - 71 for list of examples RQs

Group 1: Game & Stuff

Product 1 Name: Steam Remote Play

- What Pain points exist which prevent users from setting up the software, and why do they happen?
- What issues in the presentation of the software or provided information harm the learnability of the software and why?

Product 2 Name: Local Video gen UI

- Research Question
- Research Question

Product 3 Name: Minecraft Server Stuff

- What tools/guides and exist and are most commonly for setting up servers?
- What issues exist with these guides and tools, and how do they not effectively serve users?

Product 4 Name:

- Research Question
- Research Question

Group : Slightly Fashionable

HEYTEA APP:

- How do new customers place a customized pick up order in the mobile app?
- How do customers with dietary restrictions or allergies make confident and informed decisions when ordering a drink?
 - There's no space in the mobile app to remove a certain ingredient > HI ITS MINA if this is your concern then incorporate it in the question! Aka how do customers with restrictions remove a certain ingredient when ordering a drink.

Dior (beauty) website:

- How do customers choose a shade that best matches their skin tone?
- How do customers make confident and informed decisions when buying makeup for their skin type?

Facebook Marketplace:

- What process are app users going through to browse for and find desired items near them?
- How does Facebook Marketplace protect its user from scammer and fake listing?

Molly Tea:

- Are users able to understand wait times and order status without confusion?
- Are there any barriers to mobile app interactions occurring for customers due to

Group: Usaba-silly

ChatGPT:

- How
- Research Question

Google Calendar:

- Research Question
- Research Question

FindMy (Apple):

- How
- Research Question

Netflix Streaming via TV:

- When searching for content on streaming platforms?
- How does remote-based navigation influence user satisfaction during menu switching and browsing tasks?
- HI ITS MINA instead of impact xyz and influence xyz, what is the actual measure here? Time? Emotional happiness? You want to name is specifically. Also these are still pretty broad in terms of features.

Usability Unicorn: Product Identification

Apple Photos:

- Can iPhone users successfully create a photo album for a group of photos
 - What steps do they take to navigate in and out of this album?
- HI ITS MINA ^this is two research questions split it up
- Can iPhone users successfully access specific photos from the intended photo albums within their intended time frame?

Substack:

- Can new Substack users on mobile devices successfully save and find bookmarked articles
- Can new Substack users on mobile devices create and publish an article
- Can Substack users read publications easily on the mobile app?

Travel(klook):

- Can people plan their whole trip creating an itinerary for outdoor activities based on their travel preferences and budget?
- Can a person who wants to travel to a new destination plan tours throughout their trip efficiently?

Beli:

- Can new/experienced users save restaurants using the bookmark feature in the way that they intend?
- Can new/experienced users easily browse restaurants by category (cuisines, locations, neighborhoods) within their intended timeframe?

Noted: Product Identification

RyanAir App:

- What would improve the price clarity of a user trying to book a ticket on a flight?
- How intuitively can a user locate a variety of flights from point a → point b?

Uber:

- How intuitive is the process of setting a pick up point for users?
- What usability issues arise when users try to understand pricing information based on different times?

Airbnb:

- Can college students invite other travellers to the booking?
- Are users able to find the cancellation policy before potentially booking an airbnb?

Zillow:

- How effectively can users search, filter, and evaluate homes that meet their criteria?
- Where do university users struggle to understand the renting process?

HI ITS MINA get even more specific about the features!!!! Avoid “how intuitive” & “how effective” and go for specific success metrics

Complete and turn in the “Product Identification and Brainstormed Testing Questions” assignment on Canvas

You’ve done the bulk of it! Just add in answers to these next two questions (~ 1-2 sentences each):

3. Speculate about potential material requirements (i.e. what materials would you need to have to examine your research questions).
4. Speculate about potential speedbumps or other issues likely to arise and how you might plan for them.

Week 3

**Planning a Usability
Study**

Welcome!

Get into your teams, you'll sit with them for the rest of the quarter!

- If you do not have a team, come see me :)
- Go on Canvas > People > Project Groups and identify your group # and verify if your team members are listed correctly (let Ria know if it's not)

Today's class

- Introducing test plans and why they are important
- Choosing a product with your group
- Building off what you learned about research questions last time and creating specific questions for your product
- Translating research questions into tasks

Developing a test plan

What is a test plan? A description (typically a document) of:

- What research questions a usability study will address and why
- How usability researchers will address the questions and the rationales for the choices made
- Data analysis and interpretation plans
- Presentation plans

The test plan is a roadmap for the research team and a means of communicating with other stakeholders who are not directly involved in usability testing.

Next Canvas assignment is close to this format, but not as formal

Developing a test plan

What is a test plan? A description (typically a document) of:

- What research questions a usability study will address and why
 - Including background information/research
- How usability researchers will address the questions and the rationales for the choices made
 - Participant population(s), recruitment strategies, and details regarding special populations
 - Materials and logistics necessary to conduct usability testing sessions
 - Environment, equipment, etc.
 - Test design (methods)
 - Task list (*and connections to RQs)
 - Types of data to be collected, how, and why
 - Scripts for conducting sessions
 - Pre-screening (may be part of recruitment or pre-test interview)
 - Pre-test interview
 - Usability testing session
 - Post-test interview
 - Debrief (“anything else? anything you feel we didn’t ask or cover? any other questions about this usability testing experience?”)
 - Roles and responsibilities for each researcher in support of testing sessions
- Data analysis and interpretation plans
- Presentation plans

The test plan is a roadmap for the research team and a means of communicating with other stakeholders who are not directly involved in usability testing.

Prototyping testing sessions

You will need to prototype your testing protocols before engaging study participants to iron out the testing flow, discover major bugs (logic, materials, etc.), discover unforeseen but generally foreseeable events (may not be able to anticipate everything!), etc.

More control over mockups/prototypes vs. products as they exist in the wild

- participants may attempt to search for elements that do not exist in mockups/prototypes vs. go down distractor paths in existing products
 - Facilitators guide participants (“You have what you see in front of you - how would you do this if you were using this in your normal morning routine?” “Let’s go back to a previous page you were looking at...”) - more next week...

Test with peers, including peers who are not on your team

Translating research questions to discrete tasks

In a usability testing session, researchers collect data about how participants approach/are able to perform discrete tasks with the product. Tasks are given as **INSTRUCTIONS** to participants within a mocked-up product use environment.

Example:

*Can **spotify premium users** who are unfamiliar with the feature **find** the “start a spotify jam” button on the **mobile version** of the app?*

→ *“Please navigate to where you would go to start a Spotify Jam session. Let me know when you have done so.”*

Types of data and collection mechanisms

Variables (measures)

- Countable (discrete vs. continuous)
- Categorical
- [Attribute: go/no-go]

Qualitative responses

- Open- vs. closed-ended questions (e.g. focus groups, surveys, interviews, diary studies...)
- Ethnographic data (observations, interviews, etc.)

not strictly divided into
qualitative/quantitative!!

Types of data and collection mechanisms

Variables (measures)

- Countable (discrete vs. continuous)
- Categorical
- [Attribute: go/no-go]

Qualitative responses

- Open- vs. closed-ended questions (e.g. focus groups, surveys, interviews, diary studies...)
- Ethnographic data (observations, interviews, etc.)

not strictly divided into
qualitative/quantitative!!

Examples [How to collect? What kind of data?]

Task completion rate

Time to task completion

Documentation assistance engagement

Frequency

Point in workflow

Reason for engagement (predetermined list)

Reason for engagement (open-ended)

Unsolicited observations (e.g. during think-aloud protocol, pre-/post-testing interviews)

Solicited observations (“tell me about...”)

Next week: starting recruitment!

But we will work through it all in class
and you will not put out screening
materials until you have mina's approval

Choosing a product for this class

Take some time to talk with your group about which product you would like to work with throughout this class

Keep in mind the limitations of this class:

~2 participants per group member (so 8-10 based on how big your group is), you need to be able to recruit that many people (or more, taking scheduling into account).

AKA each group member will facilitate at least two participants, but notetaker, timekeep, handle tech for (some) others

Well-scoped and specific

You have access to the product

Something interesting enough that you will enjoy doing research for the whole quarter!

Check in with mina to approve your product and the scope

With your team...

- Come up with 1 design question and 3-4 research questions for your chosen product
- Raise your hand when you are done and I will come give feedback!

Copy this template!

Group # + names

Product Name

Design question:

Research question:

Research question:

Research question:

Research question:

Game Stuff: Logan, Tegan, Oscar, Varun

OBS Studio

Design question: How might we improve OBS to support new users and those familiar with streaming software, what ways could features be changed?

Research question: How effectively does OBS communicate recording status, output location, and recording quality to users?

Research question: Can users successfully adjust audio levels, mute/unmute sources, and manage multiple audio inputs while recording?

Research question: Does OBS provide adequate visual clarity and control for multi-monitor captures?

Research question: How well does the interface guide users through essential tasks without overwhelming or confusing them?

Apple Photos: Simone, Hannah, Zahra, Elle, Brianna

Design question: How might we enhance frequent apple photo users' experience retrieving and organizing their photos with IOS 26 software update?

Research question: What primary navigation path do frequent users default to when tasked with retrieving a photo from 6+ months ago?

Research question: How does the high volume of photos impact a user's efficiency and error rate during the retrieval process?

Research question: How many clicks does it take for a user to find and use the filter in their photo library?

Research question: How satisfied are users with the ability to find photos via the search bar results?

Copy this template!

Group # + names

Product Name

Design question:

Audio Mixing Research question:

Research question:

Multi Monitor Record Research question:

Research question:

Group: Slightly Fashionable (Irene, Kristi, Oliver, Sam, You) – HeyTea App

Design question: How might we improve the usability of the ordering system at HeyTEA for new users?

- **Research question:** How do new customers place a customized pick up order in the mobile app?
- **Research question:** How do users remove a certain ingredient from their drink?
- **Research question:** Are there any barriers to mobile app interactions occurring for customers due to specific design elements and features?

Group NOTE: Natalie, Olivia, Tucker, Emma

Ryanair Booking Website

Design question: How can we streamline the website checkout process on Ryanair for new users?

Research question: Where do new users experience confusion, hesitation, or breakdowns during the checkout process?

Research question: Can user easily navigate to find the cheapest flight available?

Research question: How do we shorten how long it takes a user to find a flight to the checkout screen?

Research question: How do pop-ups, optional add-ons, and pricing disclosures affect users' ability to make confident decisions?

Group 3 + Ally, Olivia, Sofia, Jane

Linkedin Job Search

From autumn 2025

Design question: How might we improve effectiveness for UW students that are current LinkedIn users to find a well-matched job using the job search feature?

Research question: In what ways do UW students utilize filters to narrow their job search?

Research question: How would users go about keeping track of a well-matched job posting in order to apply to it at a later time?

Research question: What path are users who are familiar with LinkedIn using to find jobs matching their criteria?

Research question: What filters are most relevant in user searches for UW students looking for internships/jobs?

Group 1: Ayesha, Devon, Kai, Maddie, Stephen

Pinterest (specifically boards)

From autumn 2025

Design question: How might we improve the learnability of mobile version Pinterest board features to infrequent users?

Research question: Can infrequent users create a new public board and pin posts to it on the mobile version?

Research question: Can infrequent users update an existing board from public to private (“secret”) on the mobile version?

Research question: Can infrequent users find where to shop from existing boards on the mobile version?

Research question: Can infrequent users tune their home feed by selecting certain boards on the mobile version?

Learnability = precision, which is more learnable: path A or path B (who uses what, etc.)

Group 2: Jordyn Padzensky, Jessica Cao, Annie Chang, Lena Trieu, Pimnipa Thawai

Pinterest Mobile (Collages)

From autumn 2025

Design Question:

How might we improve the learnability and discoverability of Pinterest's collage feature on the mobile application for experienced Pinterest users who haven't used the collage feature?

Research Questions:

1. Can experienced Pinterest users who are unfamiliar with the feature find the collage feature and start a new collage on the mobile app?
2. How easily can the users learn how to snip, add, and rearrange pins to a collage?
3. How intuitive is the collage interface of tools and options?
4. Can the user delete their collage? How long did it take?

Group # 4 – Maya, Meredith, Zoe, Erika

Notion Onboarding

From autumn 2025

Design question: How might we improve the onboarding process for new users to improve new user retention?

Research question: How effective is the welcome page in helping new users learn how to create and customize a new page?

Research question: Are new users able to find templates that suit their specific needs?

Research question: Does the onboarding process make users aware of the capabilities of Notion?

Research question:

Group 5

Google Flights – Joey, Kristine, C...

From autumn 2025

Design question: How learnable are Google Flights tools for students who are new to Google Flights?

Research question: How accessible is it to navigate the website to get the cheapest flights available?

Research question: How effectively do new users find and utilize filters like prices, airlines, trip duration, layovers?

Research question: What paths do new users take to find different flight options? (calendar view, filters, sorting tools)

Research question: Which interface elements (buttons/filters/icons) can cause confusion or hesitation for first time users?

Group 7 – Chung, Justis, Wenyi, Michelle, Angel

Hinge

From autumn 2025

Design question: How might we design to make the core features (liking, messaging, profile set-up etc) more effective and optimize profile space to make hinge users feel more in control?

Research question: How easy is the onboarding process for first time users?

- Was there any confusing UI patterns?
- Where do users get stuck/confused?

Research question: How do users feel about the unique prompted and answer-based questions?

Research question: What other profile options that are not already available do users want to add?

Research question: What emotional or social factors motivate users to continue using or deleting hinge?

Group 8 – Jo, Anita, Yuri, Athena

TikTok Shop

From autumn 2025

Design question: How might we improve the purchase journey for infrequent tiktok shop users so that they are more inclined to use this feature?

Research question: How efficient and clear is the TikTok Shop checkout process for (first time) users?

Research question: How easy is it for users to navigate to the shop and discover products that they would be interested in purchasing?

Research question: How easy it is for users to search for a specific item (e.g. “lip glosses under \$20”) and identify a product they would consider purchasing?

Group 9: Gwyneth, May, Seungyeon, Aniyah

The Apple Photos Experience

From autumn 2025

Design question: How might we streamline the Apple Photos App for users, focusing on the navigation aspect of the product?

Research questions:

1. What steps does a user take to browse and find a specific photos in the Photos app?
2. How do users currently organize and manage their photos in the Apple Photos app? Does the app support them?
3. Do users utilize the new features (customize & reorder, trips, memories, recent days, people & pets, pinned collections, featured photos, albums, shared albums, wallpaper suggestions) in the Photos app?

With your team...

- Each research question correlates to a task (or two)
- List and explain the tasks you propose to use in your testing sessions
- Test out your tasks (i.e. prototype your tasks) with a colleague from another group (or within your own group to start with)

Copy this template!

Group #:
Product Name

Research question:

- Task

Research question:

- Task

Research question:

- Task

Research question:

- Task

With your team...

Assignment on Canvas (question 4):

- Briefly describe what data you plan to collect from each tasks (this may change over time!)
- Describe the data, what you aim to learn from it, and how you might analyze it to do so

Copy this template!

Group #

Product Name

Task

- **Description of data collected**
- **What will you learn from it?**
- **How might you analyze it?**

Task

Task

Task

Week 3, part 2
Screening &
Recruiting
Participants



Participants: identifying, recruiting, screening, consenting, compensating

Top-down: market segments, intended users, desired users, etc.

Bottom-up: actual users (communities, anecdotes, etc.), incidental users, etc.

Differentiate: users vs. buyers, direct/regular engagement vs. responsibility/maintenance/authority

Participants: identifying, recruiting, screening, consenting, compensating

Depends on product, target user-testers

- Online recruitment, word-of-mouth, **snowball connection**, direct engagement, etc.
- Dependent populations: access/permission via designated/responsible third-party
 - E.g. parents/children, fire chief/firefighters, etc.
 - Will third-party play role in usability testing or related rapport management?
- Vulnerable populations: extra care and rapport required
 - Is this the population necessary/sufficient to engage? Would it be detrimental to engage? Would it be detrimental NOT to engage?
 - Who are affiliated third-parties? What obligations do you have as a researcher to all involved parties?
 - **“Nothing about us without us”** → **“Nothing without us”**
 - Oversubscribed research pools
 - **Positionality and reflexive work**

**It is IDEAL to start start running test sessions
while you are still recruiting!**

Participants: identifying, recruiting, screening, consenting, compensating

Screening allows researchers to engage potential participants based on predetermined study requirements

- E.g. recruiting specific level of expertise, language familiarity, professional role, demographic (why?), etc.

Screening mechanisms can also be a means of collecting some pre-test information

- Instead of collecting during usability testing session in pre-test interview
- Base on ease for/comfort of participant > ease/comfort of researcher (typically)
 - Sensitive questions
 - Safety of participants and researchers

Often in the form of surveys

Participants: identifying, recruiting, screening, consenting, compensating

Consent to participation as a research **participant**/subject is:

- **Voluntary** on the part of the participant/responsible party
- **Non-obligatory**: no compulsion to participate
- **Prospective, ongoing, and revocable**: participants can withdraw at any time without negative impact to participant
- **Informed**: includes adequate time for potential participant to reflect on study information and to ask questions of researchers; this may include types of follow-up in some circumstances (e.g. providing participants with copies of published papers), though this is often not a requirement - very field/context/method-dependent
- **Appropriate to participant**: clear, non-obfuscatory language
- **Documented**: participants are offered documentation of agreement to participation and communication about all of the above information/standards

The wellbeing of participants supersedes the objective of collecting and interpreting study data.

You do not need to apply for research ethics (IRB) approval for research undertaken in this class, as coursework is already covered under specific agreements for you.

Note that you should always obtain specific permission if you plan to record sessions and include this information in your recruitment/screening materials.

True or false...

Participants have to stay for the entire time of the study...

True or false...

It is okay to intentionally leave out details of the study because the participant can figure it out as they go...

True or false...

Verbal consent is okay, no need to write it down...

True or false...

Once the study is complete the researcher should not reach out to the participant with follow ups...

True or false...

The well being of participants comes first, over everything else...

Participants: identifying, recruiting, screening, consenting, compensating

We will not financially compensate participants in studies in this class (unless there is a good motivation for an exception - discuss with instructor)

Why compensate participants?

- Researchers/developers/commercial entities benefit from labor/time/resources (information) contributed by participants
- Benefits/impacts may extend well beyond original study scope, participants may not anticipate value of contributions - compensation is a *nod*, not quid pro quo
- Participants may be best/only source of motivating/actuating data - this may be of value to participants, including in ways not seen by researchers
- Some populations are frequently asked to contribute in ways that emphasize otherwise subaltern experiences → can exacerbate subalternity
- Navigation/reduction of power differentials

With your team...

Assignment on Canvas (question 5):

- Detail your participant recruitment and selection processes and rationales

5. Answer the following questions about participant recruitment. If a question does not apply, please respond with N/A.

a. What is your target population? Why have you selected this population?

b. How will you recruit and screen-in/-out participants? Do you anticipate being able to recruit your target number of participants within 10-14 days of the beginning of your recruitment window (end of class Thursday, 1/23)?

i. If you suspect that you may not reach your target within this window, please discuss with instructors and detail your discussion/plans here.

ii. If you plan to recruit fewer or significantly more participants than the guidelines given in class (3-4 participants per team member), discuss with instructors. If this applies to your team, detail your rationale for your target number of participants.

c. If you have more than one target population, detail what distinguishes the populations, why you need to study them distinctly, and your current thoughts about the manageability of the scope of a multi-population study.

d. Do you have any special considerations for recruitment? E.g. vulnerable, secondary, oversubscribed participant pools? Please ensure that you discuss any special considerations with instructors. If you have already discussed these, please detail how your recruitment strategy addresses these considerations.

e. Please provide/attach/link to your DRAFT recruitment materials, including recruitment/screener surveys if applicable. (You will receive feedback such that you can begin recruiting by Thursday, 1/23, at the end of class-- please do not begin participant recruitment before then unless you have discussed doing so with the instructor.)

Today's Plan

- Creating your recruitment materials
- By the end of today you will have approval for all your recruitment materials and you will be able to send out your recruitment blurb (with your screener linked)

Examples

Great screener survey

consent form



Mai Kanapornchai 12:46 PM

🌱 **Help Us Grow the Arboretum!** 🌱

Hi! Are you a visitor or fan of the Washington Park Arboretum? Your insights can help us make it an even better place for everyone!

We are a group of students from UW collaborating on a project to improve accessibility for the arboretum. Please take a few minutes to complete this survey, you'll be supporting efforts to make the Arboretum even more welcoming for all. Every response is a step towards positive change, so please share your thoughts and help our green space flourish!

Thank you for caring. 🌱 ✨

Link to survey: <https://forms.gle/97Emz2163EB9USuT7>



Google Docs

Your Experience Visiting Arboretums/Parks

We are a group of students from the University of Washington conducting this survey as part of a Design Jam project. Our goal is to enhance accessibility in wayfinding and map reading for individuals with physical disabilities. All information collected through this survey will remain confidential and will not be shared publicly.



Create your...

- Recruitment blurb
 - This is your invitation for people to fill out your screener survey (to post on slack, email out ect)
 - Short description of the study and who you want to recruit
 - Link to the screener survey
- Screener survey
 - Name, email contact
 - Short description of the study including the method you are using and how long it will take (ex. 45 minute in-person interview located at the university of washington seattle)
 - Inclusion/exclusion criteria in the form of user facing questions
 - Anything else to know if you want to interview this person
 - Include your contact for questions
- Scheduling email blurb
 - Short and sweet paragraph to schedule participants with via email
 - Include preselected times that work for all members of your group so you can conduct the interview together
- Consent form
 - Longer description of the study
 - What data you will collect (mention it will remain confidential)
 - Permission to participate in the study
 - Permission to record the interview
 - Mention that they can revoke consent at any point
 - Pseudonym (optional)

Pseudonym text example for screener

If you do consent, you have the option to either use your real name or a pseudonym. This will be used to reference your materials and to quote your contributions if they make it into future artifacts/papers. If you choose to use a pseudonym, please enter one below. This can be any phrase/name you'd like, it can be silly but just try to keep it appropriate. If you would like to use your real name, please enter it below.

Common screener mistakes

- Double barrel questions
 - Avoid asking two things at once, like “do you use or would you consider using this app?”
 - Focus on one thing at a time!
- Overlapping ranges
 - Avoid things like “how many times do you use x app.. 1-2 times per week, 2-3 times per week..” or “age? 30-40, 40-50” → instead: “1-2 times per week, 3-4 times per week” and “30-39, 40-49”
- Random ranges, nonsensical scales
 - Avoid ranges that don’t have logic to them: “once a year, twice in a blue moon, one hundred times a day”, try using consistent scales that make sense for your product
- Obvious answers
 - Avoid having a “right” answer
 - “We are testing new users of DoorDash... have you ever used DoorDash?” obvious yes/no to qualify for the study
 - Instead: “We are conducting a usability study on DoorDash.. Which food delivery apps have you used?”

Copy this template!

Group [Product Name]: Recruitment Materials

- Recruitment blurb: link
- Screener survey: link
- Scheduling email blurb: link
- Consent form: link

Group Apple Photos: Recruitment Materials

- Recruitment blurb: [link](#)
- Screener survey: [link](#)
- Scheduling email blurb: [link](#)
- Consent form: [link](#)

Note-Ryanair: Recruitment Materials

- Recruitment blurb: [LINK](#)
- [Screening survey](#)
- Scheduling email blurb: [LINK](#)
- [Consent form](#)

Group [FindMy]: Recruitment Materials

- Recruitment blurb: [link](#)
- Screener survey: [link](#)
- Scheduling email blurb: [link](#)
- Consent form: [link](#)

Group #4 [Notion Onboarding]: Recruitment Materials

From autumn 2025

- [Recruitment blurb](#)
- [Screening survey](#)
- [Scheduling email blurb](#)
- [Consent form](#)

Group #7 [HEYTEA]: Recruitment Materials

- Recruitment blurb: [recruitment](#)
- Screener survey: [Survey](#)
- Scheduling email blurb: [Email blurb](#)
- [Consent form](#)

Week 4

**Screening &
Recruiting
Participants**

Week 4, part 2: Completing Test Planning and Recruiting Participants

Quick check in about recruiting

Talk to mina about where your group is with recruiting participants:

Did you send out your recruitment materials? (you should have this done)

Where did you post them? (think about where you can reach your niche audience, feel free to also pass out flyers)

How many responses did you get so far? (if any)

Do you have any participants scheduled? When is your first interview scheduled for? (you def **do not** need this yet.. Aim for sometime early/mid next week)

Writing a script 101: links

Open a new google doc and link it here, this is where you will write your groups script!

[Group \[FindMy\] link](#)

[Group Ryanair](#)

[Game Stuff](#)

[Group Script Apple Photos](#)

Writing a script 101: links

Open a new google doc and link it here, this is where you will write your groups script!

[Group 1](#)

[Group 2](#)

[Group 3](#)

[Group 4](#)

[Group 5](#)

[Group 6](#)

[Group 7](#)

[Group 8](#)

[Group 9 script](#) - gwyneth, may, seungyeon, aniyah

AUTUMN 25 [old examples]

write your script as if someone that is not in your group could follow it to conduct a usability interview

Going off script

- Coaching vs guiding
- Clarifying questions
- Guiding questions

Writing a script 101: set up and pre test interview

Set up checklist

- Notes open
- Timer
- Recording
- Product set up, at the starting page you want it to be at for your first task

Pre-test interview

- Chance to collect any data you didn't get in your screener!
- How often they use the product, why they have never used it, how they feel about it generally

Writing a script 101: intro

This part needs to be professional but not overly formal or it will sound awkward in person

Introduction

- Verbal permission to record
- Thank participant for agreeing to be interviewed
- Introduce yourself and whoever else is in the room
- Information/logistics about the interview and the study
- Introduce and demonstrate think out loud method
- Ask them about questions they have
- Ask the participant to do anything else you need from the participant to conduct the interview

INTERVIEW SCRIPT

Hi,

Before we start, do we have permission to record this meeting? Your identity will remain confidential. [hopefully they yes]

Awesome! We will now start the recording.

Thank you for conducting this interview as we research Figma's prototyping tools. My name is [name], I will conduct this interview and [name(s)], will be joining us as a notetaker. This interview will last around 35-40 minutes and we hope to gain an understanding on your experience using these tools by having you complete a series of 3 different tasks. And if we have extra time, we may do a 4th task as well.

As you work through the tasks, we may ask questions to understand the reasoning behind your decisions and actions. During this interview, we would like you to follow a think-aloud technique. This means that as you work through the tasks, you'll talk out loud about what you're thinking and why you're making certain choices. Don't worry about making everything sound perfect—just speak naturally as you go along.

Before we get started, please make sure that your device is out and powered on. Do you have any questions for us?

Writing a script 101: tasks

Start with your bare bones: tasks

A good usability task is clear, uses language the participant can understand, uses consistent language, and asks the user to complete ONE action (avoid double barrel)

Format:

Task (language you will give to the participant)

(optional) follow up questions →

Transition to next task (“Thanks for doing that, let’s continue.”)

Thank you for completing the last task! How was that experience?

Could you walk us through your strategy finding an effect that inspired you to live on a farm? How easy or difficult was it to find an effect that felt inspiring for this theme?

Did any specific features or design elements in the filter navigation system stand out or influence your choice?

How clear or confusing was the process of finding the specific filter we asked for?

Then did using the effect make you feel more creative in your video creation, or did it limit your creativity in any way?

Last question! How would you describe the overall intuitiveness of TikTok’s filter navigation system?

Responses to the participant to after they complete a task

Okay!	Avoid..
Thanks for explanation. Thanks for doing that task. Thank you.	Good job! You're doing great! Perfect!
Alright, let's move to the next task	Uhhh okay... moving on..
How was that task for you? Feel free to let us know if you need to take a break.	Sorry that task was hard. Just a few more minutes.

Recall: task development

* this is especially important if all your tasks are in linear order but the user did not complete the task before, you may need to navigate to the starting state for them to continue

Task	Description of the task that you will prompt the user to complete
Starting State	What does the product/platform/object look like when the user is about to begin the task?*
Successful Completion State	What does the product/platform/object look like when the user has completed the task?
Benchmark	How do you measure a successful task? What if the user got to the successful completion state but it took them double the time expected or they went to the wrong page 6 times? Is that successful? MAYBE?? You define it!

Recall: Attributes of usability

Traditional attributes

Usefulness: Can you achieve your goal using the product?

Efficiency: Does the product work the way you need it to *within the constraints of your purpose/situation of engagement/use*?

Effectiveness: Does the product do what you expect in (a) particular use context(s)?

Learnability/discoverability: Are you able to figure out how to *reasonably* use the product within reasonable constraints *and without undue burden*?

Satisfaction/desirability: Do you like *how* a product works *based on your preferences as a user*?

Expanded attributes

Ergonomics: Can a user engage with the product without incurring harm or injury in the context of *intended* use?

Accessibility: Is the product as usable as possible to the most potential/actual users as possible regardless of users' abilities or personal contexts?

Safety: Does *intended or non-intended* use of the product present the possibility of direct or indirect harm or injury to immediate users and/or others?

Maintenance: How do availability and usability of a product change over time, and how does responsibility for availability and usability change hands?

Sustainability and justice: How might intended/non-intended use of the product cause direct/indirect harm to stakeholders beyond users?

*added

Contingency: How do historical contexts/events related to product design and product design space influence how a product works, and how does this connect to user experience?

Writing a script 101: post task questions

- What are your measures for each task? Map to usability attributes
- Come up with questions that get at those measures
- This will help in your analysis
- Clarify anything that you didn't get in the session
- Great for participants that were quiet
- Feel free to add more spontaneously that feel applicable to that exact session.. Like if you saw the participant having frustrated body language on your second task.. You might ask about how the second task made them feel, to confirm your initial thoughts

"Can you explain why you rate [a specific question] of [their rating score]?"

E.g.: Can you explain why you rate the difficulty of task 1 (searching for non-organic Honeycrisp apples) of 2 (somewhat difficult)?

[Revisit the rating, show the page to help remember]

"What did you find difficult/not difficult about that task?"

[Repeat for all 5 tasks]

"Okay, I have a few follow-up questions. First, on a scale of 1-5, one being very unsatisfied and 5 being very satisfied, how would you rate your satisfaction with being able to find specific products on Amazon Fresh?"

[Stop recording if questions are sensitive questions, otherwise, stop recording after debriefing. Make note of design-relevant insights not recorded on video.]

[Record answer]

"Secondly, what was straightforward about this set of tasks?"

[Record answer]

"What would you do differently or like to see be different?"

TURN N TALK WITH YOUR GROUP

FIND YOUR TASKS

READ RIA FEEDBACK

FIX YOUR TASKS

Pilot your task questions with another group

Pair up with someone that is not in your group

Pull up your product and go through each of your tasks with them, treat them like a usability participant

Think about:

What do you learn about the wording of your tasks? Did they understand what you intended them to do?

Was the language as smooth as you wanted it to be?

Switch! ~5 minutes each

SHARE WITH YOUR GROUP

Rest of our time today...

- Finish your script, turn in the assignment by ??
- Ask questions as they come up

[Example script](#)

Week 5

**Mid quarter feedback and
conducting usability
interviews**

Reminders and intro

Check in with Mina:

- Did you conduct an interview?
- How was it?
- How many do you have scheduled coming up?
- Barriers? How is recruiting?

Asking questions and adjusting notetaking, script, tasks = okay and good! Normal part of the process but **document changes**

Any fun stories yet? :p

Note taking activity: pictictionary

Team 1	Team 2
Choose one person to draw	Practice note taking: Focus on body language, what the other team is guessing, whats going on with the drawer and if you can tell what they are drawing.
Drawer picks a word to draw randomly and draws it	Share out interesting observations after other team guesses right
Team guesses during drawing	

+2 point for correct guess from guessing team

+1 point for correct guess from notetaking team

+1 point for team with the most insightful observations (awarded after 2 rounds)

-1 point for guessing team if they need verbal hints from drawer

-1 point for incorrect final guess or give up

Team with the most points after x rounds wins

Mid quarter feedback link

<https://www.figma.com/board/71eccKDFn3m0Lqggy7u3hl/mid-quarter-feedback-417-winter-26?node-id=2001-2063&t=39cfD0cDnpWPj7H-1>

Week 6, part 1

Analyzing your data...
and making a plan for it!

Panel activity

For groups that have conducted an interview, elect one person from your group (ideally whoever was the facilitator or notetaker) to be part of our PANEL.

You get to sit at the front and tell the class about the experience

Ask questions about:

- Favorite moments
- A challenge your group has been facing
- Moments of confusion
- Funny stories

Check in time

Check in with mina about:

- How many interviews do you have scheduled? Conducted?
- What is hard about interviews?
- Show your notes from an interview

In the meantime:

Do study specifications draft

Refine materials with grader feedback

Make google drive and get organized

Getting organized (if you havent)

Google drive folder (shared with group)

- Zoom recordings
- Zoom transcripts
- Researcher notes
- Materials (screener, consent, recruitment blurbs)
- Other assignments/drafts/reports

Finding

Specific and interesting title and description to draw people in

**Prioritization: #
+ justification**

Evidence

At least three quotes or observations, quotes are strongest

If you have a lot of evidence, pick the strongest pieces

Analysis

Screenshots of thematic analysis

What does the evidence mean?

Design Recommendation(s)

Suggestion of what could change to improve things, answer your design question

~around 4 findings is the sweet spot but it depends on your project, maybe you will have 3 but they will be very strong or 5 where one requires more research

Data types (surveys)

Demographics (e.g.)

- Age
- # years experience with ____
- Member of group type (Y/N, A/B/C, etc.)

Preference/familiarity ratings

- Likert scales
- Non-numeric scales (Always, sometimes, rarely, never; etc.)

Free responses

Data types (surveys)

Demographics (e.g.)

- Age - summary statistics (average, SD), post-hoc categorizing
- # years experience with ___ - “ ”
- Member of group type (Y/N, A/B/C, etc.) - chart

Preference/familiarity ratings

- Likert scales - chart, summary stats, etc.
- Non-numeric scales (Always, sometimes, rarely, never; etc.) - chart

Free responses

Data types (testing sessions)

Observations - summaries, tallies, follow-up questions

Task evaluation

- Task completion - summary stats, emergent categories, etc.
- Qualitative descriptions of events
- Etc. - think about what uninitiated readers/viewers would want to know about your findings and how to translate your data to your audience(s)

Etc.

Data types (interviews)

Affinity mapping

Quotes

Post-hoc summarization of quantifiable information

Etc.

Affinity mapping and coding

A broad set of methods for observing and supporting patterns in a qualitative dataset

- Inductive: observing what patterns emerge without specific prior priming
- Deductive: detecting patterns while guided by a specific question/objective

Multiple steps

- Open coding: at the level of sentences, lines, or even words —granular labeling of elements of data
- Axial coding: detecting emergent patterns in the open codes
- Selective coding: re-engaging with data to interrogate axial codes more thoroughly

Grounded theory– Open coding

Timestamp	Email Address	What were you doing when you came across the art?	Did you interact with anyone when you viewed the art? If yes, who and why?	If you interacted with your personal technology (phone, smartwatch, etc) when you saw the art, what did you use it for? If not, why didn't you use it?	Are there any other details about your experience viewing the art that you would like to comment on?
2/13/2023 15:40:34	P1	I work at an archive that also has a small gallery attached to it with semi-regular exhibitions throughout the year. My friend came to visit me at work and I walked him through the gallery.	I interacted with my friend because I was showing him the current exhibit. I also interacted with the volunteer who was overseeing front of house.	I didn't use any personal technology while viewing. I usually use my phone to take pictures and save the image for later when I have the time to research or observe it in other ways, like making a master copy. There was no need to take photos since the art was in a vitrine, and I could lean over and look closely at it. Furthermore, because I work full-time at the Archive, the art will return to part of the day-to-day collection and I can look at it again outside the context of the exhibit.	need to observe closely-- glass box helps
2/13/2023 19:10:48	P1	Laying in bed, reading	Yes a bit, my partner was near me and asked how the book was, and I showed them the piece of art in the book	I try to keep my phone away while reading.	There are many pieces of art in the book, and this is one that I came across today, and I've been making an effort to read more books this year.
2/14/2023 20:00:58	P2	Scrolling through social media	No	I was just scrolling through when I saw it. I didn't have a personal need for it.	The art was very pretty.
2/17/2023 9:50:17	P2	I was on a virtual museum tour.	I interacted with other members of the tour in a chat when we saw different things a part of the tour.	I did not use it because I did not have a personal need for it.	It viewed the Charles H Wright Museum Tour
2/21/2023 14:22:24	P1	I was walking to class, there is a pop up museum in William Gates Hall for Black History Month	yes, there were two other students viewing the art so we said hello and they let me pass them because I moving more quickly through the exhibit	No. There was a sign that said we could take pictures and I considered that but I did not feel the need to take pictures of anything	I think seeing the exhibit within a school setting impacted my reactions to viewing the art and my thought process on what was being shown
2/21/2023 14:27:00	P1	walking to pikes place market, when into the native art exhibit	yes I went with my date and we talked about which art pieces we would want if we had a home together and which rooms the art pieces would go into and we talked about the differences in native art on the west coast and the east coast where they are from. I also said hello to the shop owner	no, it was in my purse	
2/23/2023 10:19:31	P2	Scrolling through social media	I liked the picture, so the creator saw my support	I did not use it because I did not have a need for it	It was a digital art portrait that someone made.
2/23/2023 10:23:19	P2	In a work presentation for AfroFuturism	Yes, members created art backgrounds after seeing a presentation, and we got to vote on which one we liked the most.	NA	In addition to the wallpaper component, we also were able to view comic strips and movie posters with depictions of AfroFuturism
2/23/2023 15:32:35	P3	Sitting at my desk and thinking.	Did not interact with anyone	The art is in my house, and I look at it every day, so I didn't need to record it	It reminds me of how life and beauty can come out of anything
2/23/2023 15:34:31	P3	Sitting on my couch	I snuggled with my cat.)	It was an episode of the last of us, and after watching it I messaged my friend to see what they thought about it	It showed me how people can find family and community even when everything else is lost
2/23/2023 15:36:30	P3	Just alone at home	My friend who made it talked about his experience making it	It's a painting made by my friend, hanging in my house. I've taken pictures of it in the past.	It feels like a mirror to all the little selves within me, ringing out one at a time and trying to make of the world
2/23/2023 15:38:09	P3	Sitting at my desk	Nobody	This was a piece of pixel art I made myself on my PC, so I interacted with my computer mouse/keyboard to make it.	It was the longest to work out the shading, and I noticed how artists put so much attention into the details of their work
2/23/2023 16:23:34	P2	Scrolling through social media.	I liked the photo on social media, so I interacted that way.	I did not use it because I did not have a need for it	I saw it on Kiarasharae's Instagram. She posted a video of her different paintings.

revisiting art through technology or through physically visiting it again

working around art

showing friend exhibit/sharing experience

role of volunteer

need to observe closely-- glass box helps

art at home because it's easy with virtual

showing art with partner

date! imagining future together using art as a medium

signage! something that was missing in the Burke

where the art is matters school setting impacted-- why?

how are creators of art involved in the art engagement process? how is this different from volunteers of a museum or gallery

being around art and having access to it = not needing to record it

virtual art engagement

reflection

creator making the art themselves, being the creator

creator

social media art engagement

Example of open coding being turned into themes

After listening to the video for a few minutes, he walks over to T who is interacting with a hands-on part of the display. T is a woman around the same age as U.

3:45
She has a cardigan on and the pocket on the side of it droops low with the weight of her phone that sticks out of the top. She has her fingers close to her phone. As she fiddles with the pieces of the hands-on pieces, she uses her left hand to pull her phone out of her pocket and points it downward, documenting the experience.

U watches her play with the pieces through her phone screen. He remarks "That looks cool" and T nods.

3:50
Two parents with their three kids come into the space. The three little boys run through the space and their parents speed-walk after them. One child, K, tries to play with a different hands-on experience that features different types of homes and their design. K picks a piece up and looks at it. His mother, L, scolds him and grabs the piece from his hand, putting it back and looking closely to make sure it didn't break. She pulls his hand, guiding him out of the exhibit after the other parent and two other children have already left.

3:55
T goes up to the same home design hands-on experience and a piece falls to the ground loudly. It clatters down and T quickly bends down to pick it up. She whips her head around and looks at the other people in the exhibit. She puts the piece back silently. She brushes off her clothing with her hand and moves on to another display across the exhibit, abandoning the one she was just at.

4:00
A young girl, M, and her parents (N and O) walk into the exhibit. The family exchanged some whispered words and laughs with each other. They gesture to one specific artifact in the generations display. O is a wall man so he has to bend down to look at it while N and M are short women that do not have to adjust their height.

4:05
As I leave the exhibit, I stop to observe a couple watching a video on the wall. The video plays through different words and their pronunciation in an indigenous language. P and O hold hands while they laugh at the word pronunciation together. P says the word and O repeats it. P laughs and says "good try, but you better fix your pronunciation before you meet my grandma". O looks at his white converse shoes and smiles. They continue to go back and forth repeating the words from the video.

4:10
Upstairs, a woman with a colorful cloth mask on watches the documentary playing in the Body Language exhibit. She sits at the furthest bench from the screen. She is the first person I've seen to be alone. She watches the projected screen, leaning forward in her seat.

At the Fossils Uncovered exhibit, another man who is alone, S, touches the hands-on fossils. He has a checkered flat-topped hat on and a suit jacket. He traces his fingers across the grooves of the fossils. He reads the description of them at the same time. He stops feeling the fossils and rests both fists on either side of the fossil and continues to read.

4:15
At the Our Material World exhibit, a young woman, T, observes the artifacts. She has on a bright yellow sweater to match her bright yellow hair. She squats down close to the floor, observing the details of an artifact closely.

In the same area, an older woman, U, with white hair and fine wrinkles is looking at an interactive tablet. Two young girls are with her, V and W. They are standing next to each other close the screen while U instructs them on what to do. U asked them, "Can you find one that is older than you?" and V clicks around. W watches V navigate the system and a few moments later says, "my turn!" and pushes V to the left. U says "oh this is interesting" as W taps the screen. U and W both explain "Oh! There's more!"

After they (U, V, and W) left the exhibit, I went to the tablet to see what it was featuring for context. It was a screen instructing visitors to take a photo of something that was in their bag (keys, wallet, etc) and to upload it with a description and tags. I could scroll through and see what items past visitors had uploaded. The area was largely featuring human consumption and waste.

this is like opposite of joint media engagement

this was a really interesting joint media engagement instance with children/youth because it involved technology that was meant to be interacted with

Media and technology as a learning tool

joint media engagement

U asked them, "Can you find one that is older than you?" and V clicks around. W watches V navigate the system and a few moments later says, "my turn!" and pushes V to the left. U says "oh this is interesting" as W taps the screen. U and W both explain "Oh! There's more!" (183-186)

H references culture to O: "this is their culture. Do you have a culture?" O shrugs and says "Yes?". H responds "yes, you do, you are Irish." (92-93)

personal tech

C takes a single picture of the description with her phone, then closes it. (79-80)

As she fiddles with the pieces of the hands-on pieces, she uses her left hand to pull her phone out of her pocket and points it downward, documenting the experience. U watches her play with the pieces through her phone screen. (131-135)

Noise level and disruption

the drawer shuts with an echoing slamming noise. E shakes his head, rolls his eyes (52-53)

He yells out "Hey mom!" at H but she shushes him, putting her index finger to her lip and widening her eyes. (88-89)

T goes up to the same home design hands-on experience and a piece falls to the ground loudly. It clatters down and T quickly bends down to pick it up. She whips her head around and looks at the other people in the exhibit. She puts the piece back silently (147-149)

They quietly stand together, looking up at the tall totem pole. They do not speak (35-36)

walking quickly and quietly (54)

- technology
- disruption/noise
- media engagement
- physical space
- body language

Grounded theory– Axial coding



Grounded theory– Selective coding

One central theme connects to subthemes and other ideas within the analysis

Humor is common in both practice and non-practice spaces to processes difficult emotions and experiences

In my inductive analysis, I noted that humor appears to be a mechanism I and others commonly employ in medical practices spaces and elsewhere to process difficult emotions and experience. The code “Humor” was one of my most common codes, dominating the pool of codes I identified relating to emotions to the point that I made “humor” its own pool entirely. This code was present in nearly all of my artifacts, across almost every artifact type, and appeared in a plethora of different spaces referenced in those artifacts.

Some instances were related to space-making for patients in deeply uncomfortable situations. I noted an example of a full prehospital care team (EMTs and paramedics) rallying together to distract a patient from severe pain during an event which was deeply frightening for that patient: *“And there came a point where the medics were getting set up to do their exams, our patient said, “Are you going to leave me?” and I was like, “No, you trying to get rid of me? I pinky promise I won’t leave.” And so we pinky promised and one of the medics goes, “Hey, your patient doesn’t look sick, they’re in the back there pinky promising.” It wasn’t just me, it was the whole team that was doing that space-making and that rapport-building. This person was having the worst day of their life. We use dark humor and we use really stupid humor sometimes and sometimes we look for those silly moments and those giggly moments or those really touching moments, just whatever is going to let us get into our patients’ heads in the ways that they need us to be there and not outside of that. You know, whatever space we can make for our patients to step into so that they can invite us into their space.”* (self-interview, lines 467-477)

Several instances of humor reflected my learning curve in my EMS work. For example, after one particularly long shift which had gone into significant overtime, I texted my physician friend to make a joke about how long it takes me to finish my paperwork. I made reference to infectious disease (“ID”) specialists, whose patient documentation is notoriously extensive and

Prelim (Background) Research Draft

 Published

 Assign To

 Edit



What secondary research did you find to explore the use/user experience of your product? Briefly summarize your findings (with appropriate citations).

For example, if you were analyzing a grocery delivery app, background research might have included learning about why people choose grocery delivery, when delivery apps got popular, the existing issues people have with delivery apps, which population gets their groceries delivered most, or how other companies are losing money from the use of competing grocery delivery apps. For another example, has this tool been in use before and is there any existing/known reaction to it? Is there a field that studies similar things?

Use google scholar!!

Points 5

Week 7

Data Analysis Plan

mon	Tues	wed	thurs	fri	sat	sat
2/16 Analysis plan due	2/17 today :)	2/18	2/19 No Class!	2/20 methods draft due	2/21 Have interviews done, Start analysis	2/22
2/23	2/24 Class	2/25	2/26 Class	2/27 Positionalities and study specs drafts due	2/28 Finish analysis, write report + make presentation	3/1
3/2	3/3 Class	3/4	3/5 Class	3/6	3/7	3/8
3/9	3/10 No Class!	3/11	3/12 Presentations	3/13	3/14	3/15 Final report due

Presentation Sign Up

10-12 minute presentations, 5 minutes for questions

Thursday 3/12

2:35- Ryan Air

2:55- Apple Photos

3:15- Slightly Fashionable

3:35- 10 min break

3:45- Find My

4:05- OBS Studio

Methods Draft

 Published

 Assign To

 Edit

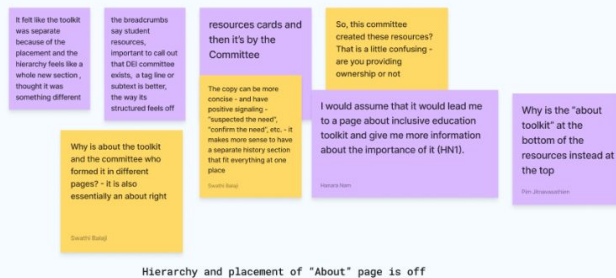
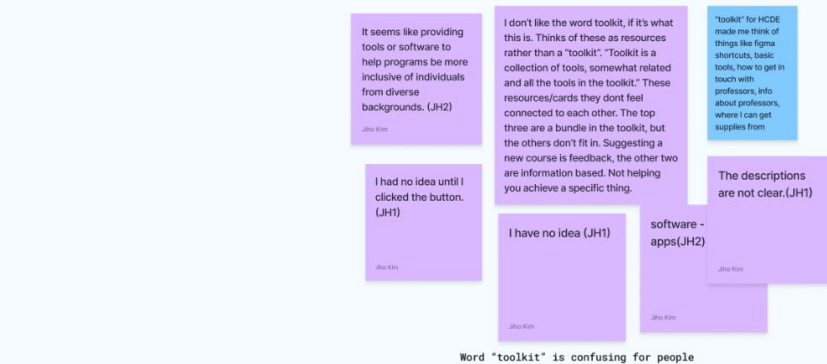


Please detail the materials and methods used in your usability study. Include your study materials as appendices (including recruitment material, your script(s), and any documentation of your study setup (e.g. pictures of a physical setup, screenshot(s), etc.)). Write this response as a **PROTOCOL**; i.e. how would you write this such that you could hand it to a person unfamiliar with the project so that they could run a testing session without issue?

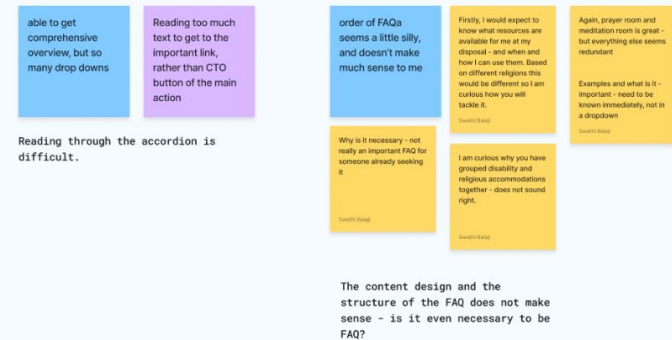
Points 5

Thematic analysis

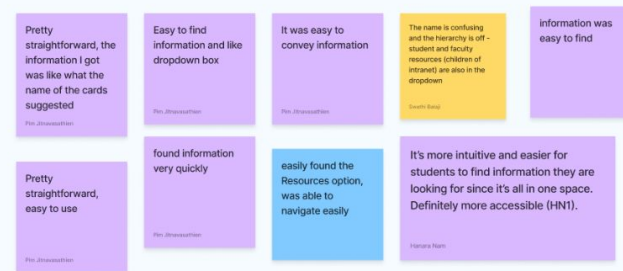
• Opinions on the Toolkit Page (About)



• Opinions on the religious accommodation page



Ease of Navigation



- Easy to find the information, but initial hierarchy and navigation is confusing
- Intranet dropdown
 - Toolkit H2 in Homepage

New shapes!

Reflexive thematic analysis is another type of this that takes into account the researchers interpretations- most similar to what we do in this course

One Data Analysis Example

<https://www.figma.com/board/X5RYb2epmG936XM7k8IIFC/HCDE-417?node-id=0-1&t=NgVYI1jlkAaNcahD-1>

^ Mina's example from 417 one million years ago

More examples- full reports, see how they did analysis

[google maps hcde 417 winter 25](#)

[expedia hcde 417 winter 25](#)

+ PLUS SCREENSHOT OF COMPLETED ANALYSIS

More examples– analysis plan

RQ1: How do travelers use the search function to find the lowest-priced flights in a specific month?

- From this task, we collected the following types of data: qualitative/free-response, quotes, follow-up responses, and completion time. Due to the nature of usability tests and our desire to get a deeper understanding of our target users, this data will be the most helpful for developing a set of recommendations for our given product.
- This data will be analyzed using thematic analysis and prioritization charting. We chose these techniques as they are the most intuitive type of analysis given that we must work with qualitative data. By using these techniques, we can better understand users' decision-making process, pain points, and rationale behind search strategies.
- Difficulties in the analysis that we may run into are the prioritization of our findings. Given the number and length of our usability interviews, we collected a significant amount of data, so it may take time to sort and prioritize our findings. Other difficulties we may encounter are differences in opinions between participants, which could be a hurdle for developing a list of recommendations if participants have contradicting thoughts.

RQ2: How do travelers who are planning a vacation find the lowest-priced packages for a specific week?

- For this task, we will collect data on free-response answers, quotes, answers to follow-up questions, and completion time. We chose a more qualitative approach because this will help us understand how users navigate the different UI elements on Expedia's website and their thought process behind it.
- This data will be analyzed using thematic analysis and prioritization charting. These techniques will help us address our RQ by providing insights into a user's cognitive process, pain points they might experience, and their rationale behind choosing specific search strategies.
- A few difficulties we might experience in the data analysis process are findings might contradict each other (e.g. Participant 1 says the task is easy while Participant 2 says the task is difficult), as well as having to sort through large amounts of data, which may be time-consuming.

RQ3: How do travelers seeking to plan their vacation select a hotel based on proximity to tourist attractions?

- For this task, we will focus our data collection on free-response, quotes, follow-up responses, and completion time. This task will help us identify user pain points and understand their thought process and rationale when navigating through the Expedia website.
- This data will be analyzed using thematic analysis and prioritization charting. These techniques allow us to gather insight from the qualitative data. By using these techniques, we can better understand users' decision-making process, pain points, and rationale behind search strategies. We can then ideate recommendations based on the findings.
- Difficulties we may encounter from this task are different opinions on the level of challenge presented in each task. Conflicting opinions on a task's difficulty level might change how we prioritize our findings and suggest design recommendations. Additionally, with the four tasks we conducted, it might be time-consuming to sort through the transcripts to find quotes that support our findings.

RQ4: How do travelers seeking to plan their vacation find and book activities to do during their trip?

- From this task, we collected the following types of data: qualitative/free-response, quotes, responses from follow-up questions, and completion time. This type of data allows us to thoroughly understand the user's pain points, needs, and desires. We can then use thematic analysis and prioritization charting to analyze the data and organize findings.
- We will analyze and identify recurring pain points and common themes from user interviews to help us gain a deeper understanding of their challenges, frustrations, and needs. This will be done through thematic analysis and prioritization charting. These techniques will help us pinpoint specific areas for improvement and address usability barriers to improve the user experience of Expedia and suggest solutions that will directly address the most popular concerns of our target audience.
- Difficulties we may encounter include lack of findings that help us with ideating solutions. Task four was one of the more difficult tasks and many users struggled to complete it thoroughly. Due to this, we may have many findings regarding the intuitiveness of the interface for this task but may face uncertainty about how to solve the issue.

Activity Part 1

On **individual** sticky notes write down as many things as you can in 5 minutes (aim for at least 15) that *you like to do*. This is broad for a reason.

One idea per sticky note.

Activity Part 2

With your group, sort your stickies into groups— the categories can be whatever you want them to be but **don't label the groups until you are done sorting**

If you are done sorting u can label bigger groups with whiteboard markers.

The groups are your “themes”-- they can have overlap, get creative to demonstrate that with arrows, circles, whatever makes sense to you.

themes

Group 1 (apple photos + find my)	Group 2 (heytea + obs)
Shopping, games, nourishment, physically active, outdoor, organization, digital entertainment, music, cook, travel, creative hobbies (pics, build), travel, cook, read, quality time, self care (rest, getting ready)	Sports, outdoors, pets, reading, music, travel, art, videos, sleeping, food, gaming, hanging out, clothing/shopping

Prioritization matrix

Marry your finding and design rec

In class activity

F1: bad placement of chargers, low access

Rec: Put in floor chargers

F2: colors of pipes are unpleasant

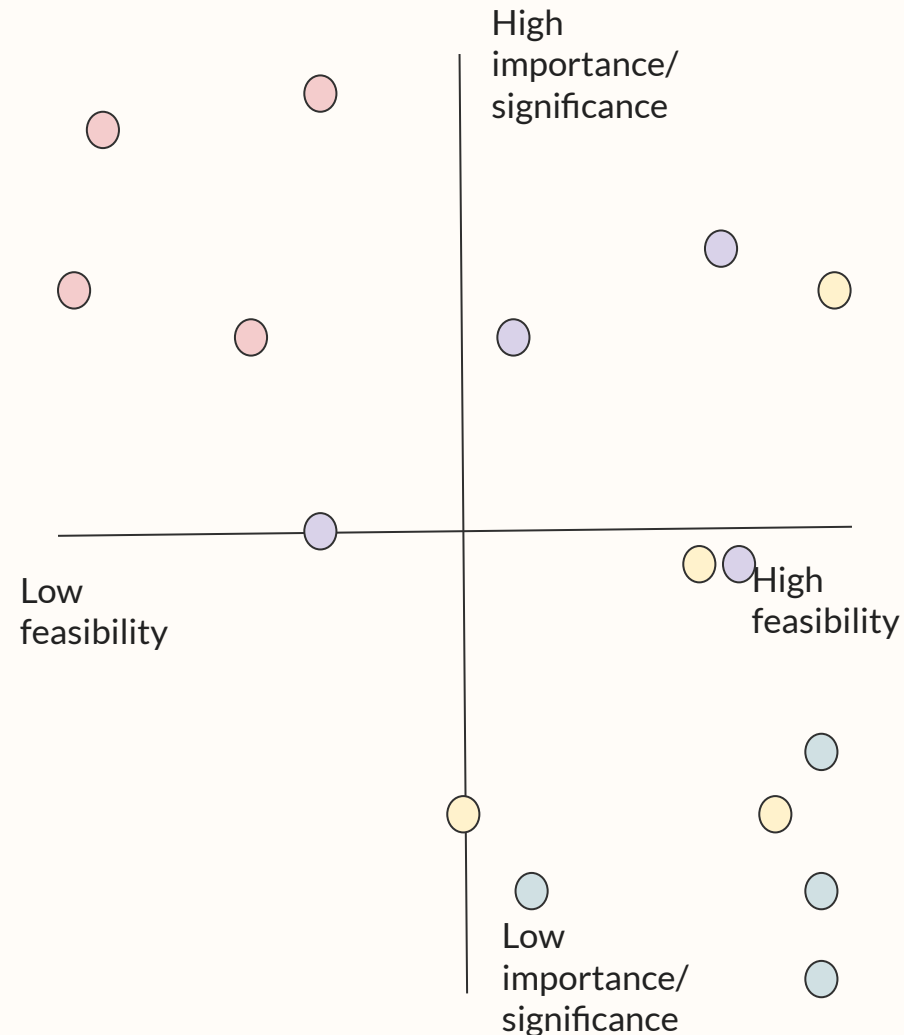
Rec: Consistently paint pipes

F3: inconsistent chairs + tables

Rec: have the same ones

F4: lighting too bright

Rec: bring in additional cozier lighting



Rest of class today

- Work with your group to make a plan for the next few weeks
 - Scheduling and Finishing up interviews
 - Data Analysis
 - Making presentation
 - Writing report
- Transcribe interview recordings if you haven't
- Start putting your interview data into FigJam sticky notes so it is ready to be analyzed (this takes more time than you'd think!)
- Look at feedback from past assignments and edit what you need to

Week 8

**Analyzing data and coming
up with design recs based
on findings**

mon	Tues	wed	thurs	fri	sat	sat
2/23	2/24	2/25	2/26 Class today :)	2/27 Positionalities and study specs drafts due	2/28	3/1 Finish analysis
3/2	3/3 Class	3/4 write report + make presentation	3/5 Class	3/6	3/7	3/8
3/9	3/10 No Class!	3/11	3/12 Presentations	3/13	3/14	3/15 Final report due

Today's Plan

- Short lecture on positionality
- Short lecture on findings > design recs
- Work time on:
 - Finishing analysis with group
 - Writing draft assignments
 - Updating assignments with Ria's feedback
 - Getting questions answered from Mina and Ria about project
 - Making the presentation
 - Writing the final report

Finding

Specific and interesting title and description to draw people in

**Prioritization: #
+ justification**

Evidence

At least three quotes or observations, quotes are strongest

If you have a lot of evidence, pick the strongest pieces

Analysis

Screenshots of thematic analysis

What does the evidence mean?

Design Recommendation(s)

Suggestion of what could change to improve things, answer your design question

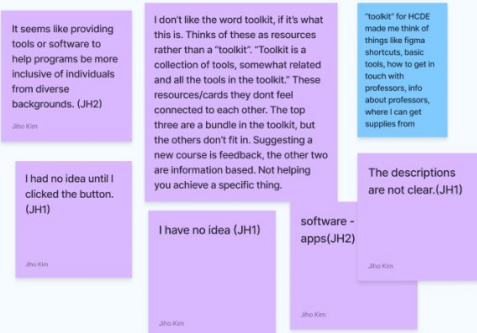
~around 4 findings is the sweet spot but it depends on your project, maybe you will have 3 but they will be very strong or 5 where one requires more research

Data analysis

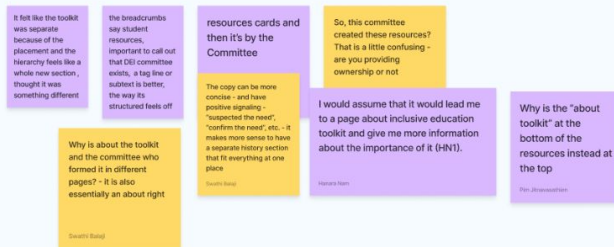
- Reference slides 157-171
- Read all the data... interview transcripts and researcher notes, things that came up in your debriefs
- Start with the most surprising, most important, most new parts of your data whether its quotes, debrief notes, observations, etc.
- Dump everything into Figma and sort into themes from there
- Leave labeling your themes for after you have the bulk of the sorting done

Thematic analysis

• Opinions on the Toolkit Page (About)

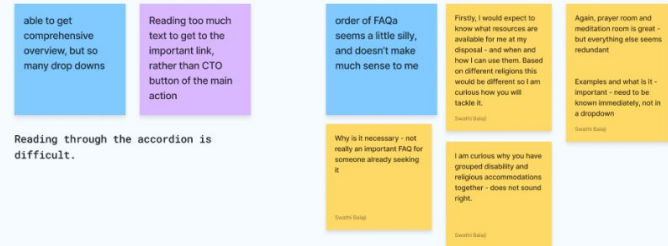


Word "toolkit" is confusing for people



Hierarchy and placement of "About" page is off

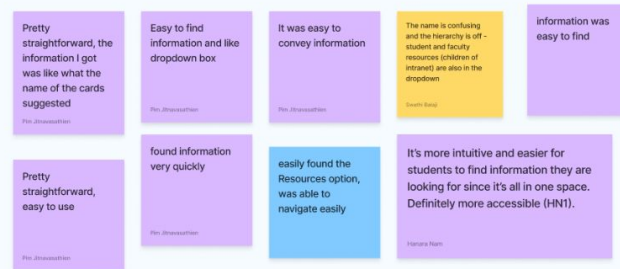
• Opinions on the religious accommodation page



Reading through the accordion is difficult.

The content design and the structure of the FAQ does not make sense - is it even necessary to be FAQ?

Ease of Navigation



Easy to find the information, but initial hierarchy and navigation is confusing

- Intranet dropdown
- Toolkit H2 in Homepage

New shapes!

Reflexive thematic analysis is another type of this that takes into account the researchers interpretations- most similar to what we do in this course

Themes > findings

- Remember last class activity where we had broad category and chopped them up into more specific interesting things
- Language of a finding should 1) draw people in 2) consistent across findings and 3) actually tell your audience what you found

Could be improved...	Better!
Student prefer to eat at UW dining hall	Students prefer dining hall over various new restaurants on UW campus
Message feature could be improved	Message feature glitch confuses and frustrates users
Onboarding	Users find onboarding screens helpful to use of app Users enjoy onboarding graphics

Usability specific

Think back to the usability attributes you chose to focus on

Your findings should tie back to them, which should be possible because your tasks were inspired by them

Example:

Attribute: discoverability

Research question: Can users find message feature?

Task: Please navigate to the message feature.

Finding: Users struggle to find the message feature

Design rec: Create a message button and place it on the home screen.

Design Recs

Start each recommendation with an action verb (“Move,” “Rearrange,” etc).

Be specific! avoid “Improve the layout” >> instead try: “Group related fields into sections with clear headers.”

Tie each suggestion directly to observed evidence from the sessions.

Think back to how you come up with design recs in other HCDE classes and discuss with group– turn and talk!

Prioritization

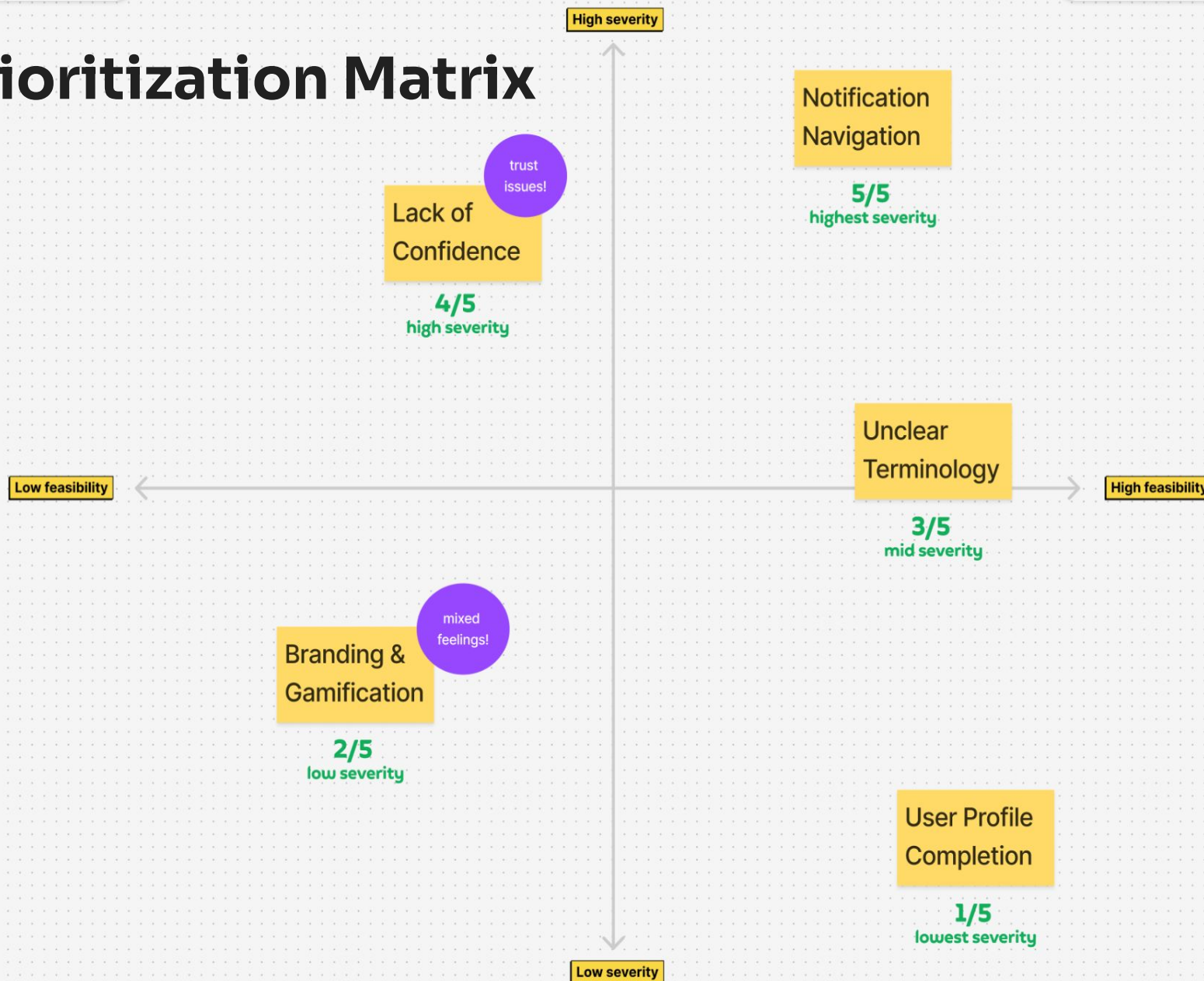
Prioritizing findings is a key part of data analysis

You will have many themes, which could translate to many findings

Why prioritize? Gives a hint to your audience (design team, stakeholders) about what to tackle first. What is the most important finding and design recommendation to take away?

Marry your findings and design recommendations to prioritize..

Prioritization Matrix



Finding

Specific and interesting title and description to draw people in

**Prioritization: #
+ justification**

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Analysis

Screenshots of thematic analysis

What does the evidence mean?

Design Recommendation(s)

Suggestion of what could change to improve things, answer your design question

~around 4 findings is the sweet spot but it depends on your project, maybe you will have 3 but they will be very strong or 5 where one requires more research

Some Grading Logistics

Check gradebooks

Make sure everything is good n fun

Something isn't right? Need to resubmit? Do it asap and let Ria know so she has time.

Logistics

- Presentations– Thursday, March 12th, there will be *snacks*!
- You don't need to be 100% done, but be transparent about where you are in the process and still have some findings to present
- Presentations will be 10-12 minutes (cut off at 15 minutes) with 5 minutes for questions
- Come prepared! Tips:
 - Don't read off of slides
 - Practice, practice, PRACTICE! With your group and alone
 - Have everyone present
 - Confidence is everything! Ways to practice confidence?
 - Dress to impress, whatever that means for you :)
 - Accessible slides, make sure text is not too light/dark for the background and use readable fonts
 - Get into the process, include challenges that you faced

MIINA TO DO LIST

MAKE TIME CARDS – 1 MIN 5 MIN

Week 9

**Analyzing data and coming
up with design recs based
on findings**

Today's Plan

- Work time on:
 - Finishing analysis with group
 - Writing draft assignments
 - Updating assignments with Ria's feedback
 - Getting questions answered from Mina and Ria about project
 - Making the presentation
 - Writing the final report

PLEASE FILL OUT THE COURSE EVAL TYYYY

mon	Tues	wed	thurs	fri	sat	sat
3/2 Finish analysis	3/3 Class	3/4 write report + make presentation	3/5 Class	3/6	3/7	3/8
3/9	3/10 No Class!	3/11	3/12 Presentati ons	3/13	3/14	3/15 Final report due

mon	Tues	wed	thurs	fri	sat	sat
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3/9	3/10 No Class!	3/11	3/12 Presentati ons	3/13	3/14	3/15 Final report due

Week 9, part 2

**Analyzing data and coming
up with design recs based
on findings**

Today's Plan

- Continue to analyze data in your groups
- By the end of class try to have your findings nailed down
- Start on your presentations if you haven't for Thursday 3/12 (10-12 minutes, 5 minutes for questions)

examples

[Duolingo report](#)

[Duolingo slides](#)

remember these are not the most recent, just examples shared in class!

Finding

Specific and interesting title and description to draw people in

**Prioritization: #
+ justification**

Evidence

At least three quotes or observations, quotes are strongest

If you have a lot of evidence, pick the strongest pieces

Analysis

Screenshots of thematic analysis

What does the evidence mean?

Design Recommendation(s)

Suggestion of what could change to improve things, answer your design question

~around 4 findings is the sweet spot but it depends on your project, maybe you will have 3 but they will be very strong or 5 where one requires more research

**Everything beyond this point is old
slides that i might use or might not,
beware**

Scripts: Testing session components/typical order

- Consent, including time for questions
- Begin data recording
- Pre-test interview
- Introduce task environment
 - Task 1
 - Task 2
 - ...
- Post-test interview
- Debrief, including time for questions
- Thank participant and give access to summary information (if relevant)

Testing session demo

Testing session demo debrief

Positionality and reflexive work

6.2 Limitations

While the design trial provided several useful insights into the design of affective wearable systems for children with ASD, there were limitations of the study. The participants we recruited were all from a single geographical area that contains a large concentration of high-tech families. For example, 6 of the child participants were curious enough to actively attempt to access the native Android operating system, which is a nontrivial task because the application is set to be persistent. Furthermore, all but one of the study families had a yearly income greater than \$100,000 per year. Because of the skewed population, it is not clear that the findings would generalize to a broader population.

The nature of our iterative trial resulted in some natural limitations in our results. During all participant check-ins and onboarding sessions, the most recent version of the Android and Glass software was uploaded to the device. Furthermore, the participants were recruited at different times, and therefore received differing versions of the system during onboarding. Specifically, the Guess the Emotion activity and line and triangle indicators were introduced shortly after enrolling the third participant. For analyses involving these choices, we only consider usage data from the first day that participants had all feature choices available to them. When excluding the first three affected participants from our plots, we show the same trends with some loss in statistical significance due to the decrease in sample size. Additionally, audio of activity sessions was originally not recorded due to privacy concerns. Audio recording for use in playback was enabled after confirming clearance with the Stanford Institutional Review Board, but was only available for a fraction of the study participants, so we did not include audio data in our analysis.

Further, the specific hardware available for the study also presented limitations to its implementation. The short battery life of Glass inherently limited some activity interaction design decisions. Also, while we believe the analysis method described in 5.3 to be a good proxy of facial engagement, availability of built-in or unobtrusive eye tracking capability would have allowed for a more accurate measure.

6.3 Ongoing Clinical Study

Given the inherently shifting nature of an iterative user design trial, our current study (which is well underway, although the data have not yet been examined) is a randomized controlled trial (RCT). We are keeping the implementation and protocol stable throughout the study.

Positionality and reflexive work

3.4 Author Positionality

In this section, we lay out the research team's values, epistemologies, and backgrounds so that readers can approach our findings and analysis with more clarity.

The views of the first author, CAL, are highly represented throughout this work—in developing the surveys and interviews, in conducting the interviews, and in analyzing and reporting on the data. They have sought to move away from their positivist training and now follow an interpretivist form of inquiry that builds knowledge, rather than one that sets out to prove it [127]. They value the co-construction of knowledge with participants and emphasize the importance of sharing lived experiences as a conduit of knowledge. This is shown through our research questions that are meant to explain a current variety of approaches to work with marginalized people in HCI (summative) and inform the future of such research (formative) [52]. They have seen how some HCI researchers have built systems for marginalized people without considering ways to truly partner with them in the research. They have also had first-hand experience with discrimination and harm based on their identities. From this, the first author values the knowledge of marginalized people and sees working with marginalized people as a requirement. Simultaneously, the first author holds different, interweaving identities, some marginalized and others that have granted him more privilege than others. It is through this unique combination of identities and understanding as both the oppressed and the oppressor that they have pursued and carried out this work.

SM was trained in systems engineering and information, and has designed and evaluated many systems, especially those either designed or appropriated to support health and well-being with

Positionality and reflexive work

- “View from nowhere”
- Strong objectivity, interlocking oppression, intersectionality
- Outsider within status, immanent critique
- Transparency, epistemic humility, openness

Positionality: example “data”

Example video

- [Fred Beckey in the NYT](#)
- Share your reactions aloud
 - reactions and reflection on them
 - brief statement of positionality wrt this interpretation
 - reflexive work plan/ideas (hypothetical) for this space

Positionality and reflexive work exercise

Choose one of the following videos and write::

- For yourself (not shared), your reactions to the video:
 - Identify 2-3 aspects of your reaction(s) to examine, e.g. something that surprised you, interested you, made you feel seen, made you feel uncomfortable/secure, etc.
- For your colleagues:
 - Identify 1 aspect of your reaction and 2-3 insights you have about that reaction
 - Positionality statement: What frames of reference do you have that may have led you to these insights?
 - Reflexive work prospectus: Based on your positionality statement, speculate about how you might identify, contextualize, and account for the influences of your frames of reference on how you interpret the video
 - This may differ before/after a study!

Videos - TWs (graphic images, harassment, language < > classroom, others)

- [Bottleshock's blind wine tasting wager](#)
- [Hyeonseo Lee's TED Talk \(to 5:09\)](#)
- [Leslie Jones on getting hacked](#)
- [Extra credit, all 6] Dr. Glaucomflecken's rural medicine: [first look](#), [eyeball edition](#), [surgery transfer edition](#), [mental health edition](#), [code blue edition](#), [job interview](#)

Data sources

- Surveys
- Interviews
- Testing sessions (outside of interviews)

Let's get some data

Please fill out this survey: <https://forms.gle/wJn45CoeRTJCjsXy7>

Visualizing and interpreting numerical/categorical data

Use the Google Forms results to examine the numerical and categorical results.

Each group (ON CANVAS):

- State the results for each relevant question
- Write 2-3 sentences interpreting these results. DO NOT CHANGE THESE as you proceed to the next step.
- Write 2-3 sentences reflecting on your positionality as you examined and interpreted these results.
- Write 2-3 sentences about what you would alter about your approach, if anything, to your process of examining and interpreting the data.

Communicating and interpreting ethnographic data

Review your notes about the demo usability testing session.

Each group:

- What did you *observe* about the participant's experience using the calculator tool?
- What caused you to make this observation? [Surprise? Expectations? Curiosity? Etc.]
- ON CANVAS: Summarize your findings in 4-5 sentences. DO NOT CHANGE THESE as you move to next steps.
- Write 2-3 sentences reflecting on your positionality as you examined and interpreted these results.
- Write 2-3 sentences about what you would alter about your approach, if anything, to your process of examining and interpreting the data.

Review the written responses from the survey.

Each group:

- Use sticky notes on Miro board to open code the things you notice in the responses.
- Compare your codes with those of your teammates. What common threads seem to emerge? What threads *aren't* shared among your group? Reflect on how you arrived at these threads.
- ON CANVAS: Summarize your findings in 4-5 sentences. DO NOT CHANGE THESE as you move to next steps. Include a screenshot of your coding (or at least a portion of it)
- Write 2-3 sentences reflecting on your positionality as you examined and interpreted these results.
- Write 2-3 sentences about what you would alter about your approach, if anything, to your process of examining and interpreting the data.

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- Write 2-3 sentences reflecting on your positionality as you examined and interpreted these results.
- Write 2-3 sentences about what you would alter about your approach, if anything, to your process of examining and interpreting the data.

Summarizing and Presenting Usability Research

Putting it all together

- So far, you've iterated a few times on approaches to asking research questions about attributes of usability, figuring out how studying users' uses of your product(s) to gather data to answer your research questions, and assessing how your role as a researcher (and other roles!) influence how you do this work.
- Now, we'll start pulling together the *narrative* of your research efforts.
 - This narrative is what you present to stakeholders, mentors, and other interested parties
- We will do this through a series of mini-assignments to help you synthesize what you've done/learned (even while the work is ongoing).

Report/presentation portions —> rapid mini-assignments

Product and user background

Positionality statements and reflexive work

Preliminary research

Study specifications (RQs, rationale for RQs, population(s), rationales for pops, scoping decisions and rationale(s))

Methods and materials

Findings

Discussion of findings (interpretations, limitations)

Design recommendations

Designer reflections

Report/presentation portions —> rapid mini-assignments

Product and user background

Positionality statements and reflexive work

Preliminary research

Study specifications (RQs, rationale for RQs, population(s), rationales for pops, scoping decisions and rationale(s))

Methods and materials

Findings

Discussion of findings (interpretations, limitations)

Design recommendations

Designer reflections

Introduction and background draft (Canvas)

Positionalities prompts (Canvas)

Prelim (background) prompts (Canvas)

Study specs prompts (Canvas)

Methods draft (Canvas)

Today: Analysis plans, updates, and report drafts

Analysis plans and updates

- Group assignment on Canvas (analysis plan)
- turn in at appointed time (in-class)
- Two (2) peer reviews per *person* - these assignments will be on Canvas
- Group assignment on Canvas (data collection update) - turn in in class

Coworking time

- Continue working on mini-assignments if you have not submitted them yet
- If you have submitted the mini-assignments, begin pulling the responses into a central document and editing
 - This will serve as the skeleton of your group's final report

Today

Transcript management

Mid-quarter check-in

Tea Time

Coworking time

Project Documentation Structure

Introduction and background

Description of positionality and reflexive work

Description of problem space

Methods

Findings

Discussion

Design recommendations/implications

Wrap-up/conclusion

Appendices

Introduction and background

Describe the product generally, why it is of interest, what readers need to know to understand this product space [product, populations, etc.]

If it makes sense in your narrative, you can include a description of any background research you undertook here

This study evaluates the usability of the speed information and control system in the 2017 Subaru Outback released to American markets in 2016. The speed information and control system offers vehicle operators to monitor current speed and fuel efficiency visually as well as maintain a static speed through steering wheel-based cruise control. This study specifically evaluates the usability attributes of discoverability, efficiency, and desirability of this system for experienced long-distance drivers who drive primarily for recreation in a variety of environmental conditions and roadway types. Prior internal research [RadCitation 2017] on this vehicle model has evaluated safety and basic usability through cognitive ergonomic approaches. However, this research focused exclusively on task performance and its impact on select cognitive and physical safety measures (e.g. RULA, multiple tests of visual distraction, etc.) while omitting aspects of driver experience (hereafter termed “user experience,” or “UX”) which are known in comparable product usage settings (e.g. commercial aviation, trauma surgical operating rooms) to indirectly but meaningfully impact many of the same aspects of safety and essential functionality previously studied internally with respect to this product.

Description of positionality and reflexive work

Describe the composition of the research team, their relevant backgrounds and priorities, and how these may influence the conception, direction, and/or execution of the research

Describe what measures were taken in order to respond transparently, meaningfully, and effectively to these influences; why influences were not addressed (or did not need to be addressed in this study); and what areas are still outstanding in terms of addressing bias within the research

For this class project, you may want to identify your participation in class as an aspect of your positionality if you plan to use this work as a portfolio piece

The group responsible for this study fell under the primary direction and management of Subaru NA's principle research and development division for post-marketing consumer response (PMCR). This division has traditionally worked directly with multiple lateral groups responsible for marketing and soliciting direct consumer and dealership feedback. Feedback from a 2017 report [ReallyRadCitation 2017] indicated that traditional metrics collected on consumer perception of safety based on perceived speed control while in motion could not account for a significant decline in overall willingness to recommend this vehicle to other target parties (adult family members, dependents of any age). While PMCR has traditionally been considered the most flexible of NA R&D divisions for identifying and studying otherwise poorly-visible satisfaction outcomes, division leadership recognized that PMCR's skillset needed to expand to include additional expertise in qualitative consumer research in real-world, non-simulated vehicle use settings. Therefore, PMCR brought on a user experience designer ("UX designer") to address this gap. Of note, the UX designer hired also brought a 15-year industry and 20-year academic background in cognitive ergonomics in addition to a 10-year UX design background, allowing for seamless integration into PMCR's existing workforce. The UX designer was asked to project a target budget necessary to address usability issues within this product and its current use cases of interest for a total addressable market of 10,000 new vehicle purchases in the 2020 fiscal year; ultimately, PMCR found that such an estimate may be difficult to operationalize without additional consideration for specific projects. The UX design budget was found to be adequate for the current study, and PMCR encourages similar integration of UX design in the future in order to better understand how UX design may integrate fiscally into operational units outside of research and development.

Description of problem space

Describe specific aspects of the product on which study will focus

Describe target population(s), why this/these were identified, and why others were not identified or chosen for inclusion

Present your research question [tip: make this stand out from the page through formatting such as bolding/titling]

Describe the rationale(s) for this RQ and its breakdown into sub-RQs if relevant

Detail attributes of usability you will study and the rationale(s) for these

[see next slide for example]

Description of problem space

The current study focuses on the discoverability, efficiency, and desirability of the speed information and control system in the 2017 Subaru Outback. According to engineering specifications available at [ExtraSuperRad Internal Documentation], this system is composed of four subsystems:

- 1) Digital and analog speedometers displayed immediately below driver eye-level above the steering wheel column
- 2) Dynamic qualitative illustration of instantaneous fuel efficiency relative to speed, located in the same display as (1)
- 3) Physical controls located on the face of the steering wheel (driver's right) to engage, change, resume, and disengage static speed ("cruise control")
- 4) Eco-info submenu within the Vehicle Information menu within the touchscreen infotainment system

Target populations were derived from direct consumer and dealer feedback surveys from December 2016 - April 2018. Most respondents were vehicle operators as well as either primary purchasers or immediate adult family members of primary purchasers. Because of the limited information accessible at scale for other vehicle operator bases, this study focuses on experienced (>10 years of non-commercial driving experience) adult vehicle operators who drive primarily in variable seasonal road conditions and for distances that exceed 1000 miles/month (1610 kilometers/month).

Discoverability (i.e. the experience of learning how to use a product), efficiency (whether a product provides utility within the constraints of resources of interest, typically time), and desirability (whether the product use experience is positive for users and whether users are motivated to continue to engage with the product) were identified through the same survey data detailed above as key areas of dissatisfaction with the speed information and control system. Therefore, this study seeks to evaluate how we might improve the experience of vehicle operators as they utilize the speed information and control system with respect to the discoverability, efficiency, and desirability of this system. This breaks down into the following questions:

- 1) Instantaneous vehicle speed information seeking
 - a) How do drivers obtain information about instantaneous vehicle speed? What information do drivers need about instantaneous speed?
 - b) How closely does this experience match with driver expectations? With their needs?
 - c) What experiences have drivers had that renders the **experience of seeking** instantaneous speed information a conscious experience/process?
- 2) Cruise control management
 - a) How do drivers interact with physical cruise control mechanisms while in settings identified previously as cognitively salient? These settings include long-distance highway-driving with and without the presence of drowsiness, wet road conditions above freezing temperatures, wet/slick road conditions below freezing temperatures, prolonged periods of speed maintenance on unimproved (e.g. gravel) roads, and highway driving at speeds above 45 mph (72.4 kmph) in heavy-traffic conditions (as defined by NHTSA).
 - b) How closely do these interactions match with driver expectations? Needs?
- 3) [Etc.]

Methods

Repeat/reiterate sub-RQs and detail what information is needed to answer them in a satisfactory/trustworthy/statistically-significant manner (depending on nature of RQs and metrics/data); what constitutes “satisfactory” and why?

Describe materials used to assemble usability testing sessions (including structure of surveys, pre-/post-session interviews, physical setups, remote setups, etc.)

Describe recruitment and screening of target populations (including number of participants!)

Describe 1) tasks developed to collect this information and 2) interview construction to collect this information

Describe analysis methods (not findings!) for each data type and why each method is appropriate for that data

[Tip: re-reference attributes of usability as anchor points/pointers back to RQs]

[Tip: reference documents/other information in appendices for ease of communication]

[See next slide for example]

Methods

We recruited ... through direct-to-consumer emails to vehicle owners with purchase dates from .. to .., information which was drawn from [ExtraSuperSecretInformationDatabase] in April 2018. Potential research participants were asked...

Usability testing sessions were conducted in a remote setting and included pre- and post-session interview questions bookending a usability testing session which utilized Subaru NA's [ExtraDefinitelySecretVeryRad Driving Simulator Software]. This software package allows for the use of eye-tracking hardware and a Wii-based model steering wheel...

To assess RQ1.a, the following task was developed to collect information regarding moment-to-moment user monitoring of instantaneous speed. Eye-tracking monitored participants' engagements with the visual scene while haptic monitors built into the model steering wheel collected data regarding steering wheel management and button engagement. We collected the following data as we asked participants to complete the following tasks...

1. *You will begin driving on a freeway in the right-most lane. Please navigate up to the speed limit (60 mph/100kmph) and change lanes as needed to maintain your personal comfort level. Again, when you are able to do so, please speak your thoughts aloud so that we can understand your thought processes.*
 - a. *Data collected: continuous haptics stream, continuous eye-tracking stream, screen and audio recording of participant's screen/face/voice*
2. *...*

Eye-tracking data streams were segmented by task. A visual field object was considered to have been attended to if visual focus was maintained within 1.5 SDs (100 pixels in any cardinal direction; please see appendix D for target field calculations) for at least 750 ms. ...

Findings

Present final tally of participation

Present analysis results

This is where charts, illustrative screenshots, and [select] codebooks go! [Longer data arrays should go in an appendix]

If a metric/data source could not be accessed/obtained or data was unavailable for another reason, note what is absent and very briefly why

Save extended discussion of limitations for the discussion section

[See next slide for examples]

Discussion/limitations

Summarize (/reiterate) how findings address RQs

“ ” how findings address topics outside of specific RQs where it may be important for readers to know even if the findings do not directly address an RQ

Discuss limitations of the study (structure, analyses, material/intellectual resources, research questions, etc.)

16 participants consented to participate and 15 completed usability testing sessions. Of note, eye-tracking was unavailable for 2 participants due to hardware malfunction. ...

While this study did not directly seek to study the Units and Measurements menu within the steering wheel visual display, 4/15 participants noted that they preferred readouts to display in metric units rather than imperial units. On further analysis of demographic information collected in recruitment surveys, we found that these participants were primarily Canadian residents, with one frequently crossing between the United States and Canada for work and recreational purposes. The remaining participants were residents of the United States. Of the 4 participants who had a preference for metric speedometer information, 3 noted frustration with the need to put the vehicle into the parking gear in order to access the Units and Measurements menu in the steering wheel visual display. One of these participants commented, “I don’t mind that if it’s a safety feature. Like, you don’t want to take your eyes off the road for as long as it takes to work through that menu tree. But the thing is that you CAN access that tree while driving. It’s just that that menu doesn’t come up. So if your only experience trying to find it was while driving, there’s really no reason you’d go back and look in the same place again when you WEREN’T driving. Again, it makes sense to limit information coming in while you’re doing something else that’s cognitively really important, but there’s just no way that you’d magically know that the switch from miles to kilometers lives in that menu and that it’s selectively invisible. Why would anyone know that?” Notably, this participant identified the affordances of RC protocol 46294852938bs3, namely that certain “extraneous” information [ibid] is hidden from electronic visual menus unless the vehicle is placed in the parking gear. This insight warrants further investigation given the indicated potential for potentially significant pain points currently outside the scope of this study.

Design recommendations, wrap-up, references, appendices

Design recommendations per your findings - refer to frameworks from other HCDE courses (318, 451, etc.)

Include any wrap-up you consider useful wrt your documentation narrative

Appendices are for transparency (methods, findings, etc.)

- Recruitment strategy and materials (where relevant)

- Session script

- Other items where relevant (e.g. complete codebook, product specific calculations, complete data presented only in summary form in Findings if too extensive for Findings section formatting, etc.)

References section should comprehensively include secondary research sources (i.e. complete bibliography)

Reflexivity hands-on exploration part 1

Choose one of the following and skim with your group:

- [Autoethnography of a Hard of Hearing Traveler, Jain et al 2019](#)
- [The Misgendering Machines: Trans/HCI Implications of Automatic Gender Recognition, Keyes 2018](#)
- [Improvised Cricothyrotomy on a Mountain Using Hiking Gear, Johnson et al 2016](#)
 - [TW imagery/description of traumatic physical injury]

Answer the following questions:

1. Who are stakeholders in this research?
2. Who is telling the story in this paper?
3. What do(es) the author(s) tell you, the reader, about their background/positionality? What do you want to know about their background/perspective/positionality?
4. Do(es) the author(s) detail any specific work/process undertaken specifically because of their recognition of how they are positioned perspective-wise wrt the paper's topic?
5. Do you trust this paper? Why/not?
 - a. If yes, what remains that you *might* consider—if not untrustworthy, then worth unpacking more? Why?
 - b. If no, what would make you trust it more (even if incompletely)?

Reflexivity hands-on exploration part 2

Group together in the following mega-groups:

...

Answer the following questions
group-by-group:

1. [group members:] What is your group's usability research topic?
2. [everyone else:] Who are the stakeholders for this project?
3. [group members:] What is the background of each of the members of your group wrt this topic/research?
4. [everyone else] What questions do folks have about these backgrounds?
5. [group members] Share an interesting finding/experience from your research so far.
6. [everyone else] Explore this with the group members wrt what you know about the researchers. (See q's to right)

Example questions...

What assumptions did you make at XYZ stage?

What did you have to learn about your study space to do this project? What did you learn? What didn't you learn? (Especially useful from people who know the spaces!)

What do you feel unsure about as you interpret your findings? Why unsure/uncomfortable/etc.?

What did you find surprising (in findings, in running sessions, etc.)? Why? What do you think makes this surprising for you?

Extending beyond the course: class discussion

“Special populations”

- Accessibility, familiarity/rapport, trustworthiness, **position/reflection**

Prototypes vs. real products

- Scope/location, type of prototype

Location

- Remote: +depth, +users
- On-site: +depth, +context
- Automated: +users
- Self-report (diary studies, surveys): +time, +context

Additional techniques

beyond sit-by think-aloud technique

- Interview-based testing
 - Motivation to do task
 - general understanding of task
- Progressive disclosure
 - Self-evidence of product
 - Need for documentation/assists, redesign
 - SMEs as testing personnel - when?
- Co-discovery, play tests
 - Teams, special populations
 - Dialogue as focal point
 - Ludic (“playfulness”) discovery
 - Consider personalities/objectives
- A/B testing with established users
 - Consider familiarity vs. willingness to critique

Reading/resources of interest...

Star, S. L., & Strauss, A. (1999). Layers of silence, arenas of voice: The ecology of visible and invisible work. *Computer supported cooperative work (CSCW)*, 8, 9-30.

<https://link.springer.com/article/10.1023/A:1008651105359>