



Vietnam National University of HCMC
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UI/UX Design & Evaluation

★ Data Collection Techniques & Report Usability Test Results ★

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Course Overview

1. Introduction to HCI
2. Needfinding
3. Analyzing and Synthesizing
4. Prototyping
5. Design Theory, Principles, and Guidelines
6. Introduction to Prototyping
7. Visual Design
8. Human abilities and theoretical models
9. Human abilities and theoretical models (cont.)
10. Medium-fidelity Prototypes
11. Evaluation: overview. Heuristic evaluation
12. Design Patterns
13. High-fidelity Prototypes
14. Designing for Diversity
15. Usability Testing & Evaluation Methods
16. Data Collection Techniques & Report Usability Test Results

Semi-structured interviews

- Semi-structured interviews present some structure, as the name suggests, but leaves room for discussion.
- The UX researcher creates a discussion guide or script that helps lead the conversation in the direction that will produce valuable insights for the UX design team.
- This type of interview also allows for the UX researcher to “probe” the user to take some action or explain their thoughts.
- **Important:** Semi-structured interviews are usually conducted **after the user completes the usability tasks**. This is called “post-interaction interview”.

UX surveys (questionnaires)

- Surveys (questionnaires) can gather insights about people's attitudes, perceptions, intents, habits, experiences, and characteristics, at significant moments both in time and over time.
- Survey research seems straight-forward: it is easy to write questions, and there are many inexpensive tools. However, there is a significant gap between quick-and-dirty surveys and surveys that are properly planned, constructed, and analysed.
- Example of standardised questionnaires: SUS, AttrakDiff, many others.

System Usability Scale (SUS) questionnaire

- The System Usability Scale (SUS) provides reliable tool for measuring the usability.
- It consists of a 10-item questionnaire with five response options for respondents, from Strongly agree to Strongly disagree.
- Originally created by John Brooke in 1986, it allows UX researchers to evaluate a wide variety of products and services, including hardware, software, mobile devices, websites and applications.

System Usability Scale (SUS) questionnaire

When a SUS is used, participants are asked to score the following 10 items with one of five responses that range from **Strongly Agree** to **Strongly disagree**:

1. I think that I would like to use this system frequently.
2. I found the system unnecessarily complex.
3. I thought the system was easy to use.
4. I think that I would need the support of a technical person to be able to use this system.
5. I found the various functions in this system were well integrated.
6. I thought there was too much inconsistency in this system.
7. I would imagine that most people would learn to use this system very quickly.
8. I found the system very cumbersome to use.
9. I felt very confident using the system.
10. I needed to learn a lot of things before I could get going with this system.

System Usability Scale (SUS) questionnaire

- Interpreting scoring can be complex. The participant's scores for each question are converted to a new number, added together and then multiplied by 2.5 to convert the original scores of 0-40 to 0-100.
- Though the scores are 0-100, these are not percentages and should be considered only in terms of their percentile ranking.
- Based on research, a SUS score above a 68 would be considered above average and anything below 68 is below average, however the best way to interpret your results involves "normalising" the scores to produce a percentile ranking.

Cognitive Walkthrough

- A cognitive walkthrough is a structured approach to evaluating usability of a product.
- It involves the tester, who is not a user, asking four simple questions about the way a specific user journey is conducted whilst observing the user.
- The tester will record the outcomes of these questions, in their opinion, and use these observations to improve the product further.

Cognitive Walkthrough

- Will the user try and achieve the right outcome?
- Will the user notice that the correct action is available to them?
- Will the user associate the correct action with the outcome they expect to achieve?
- If the correct action is performed, will the user see that progress is being made towards their intended outcome?



Task: User records and uploads a video

Action Sequence:

① User Presses Record

- ① Yes
- ② Yes
- ③ Yes

④ No. The user needs a static message.

② User Presses Stop

- ① Yes
- ② Yes
- ③ No

Notes:

First-click testing

- First-click testing examines what a test participant would click on first on the interface in order to complete their intended task.
- It can be performed on a functioning website, application, a prototype or a wireframe.
- Successful websites and apps take users' tasks into account upfront. First- click testing allows UX researchers to evaluate the effectiveness of the linking structure of the product, including the navigation, to see if users how to get around the site and complete their intended task.

First-click testing

- Make sure you know and have documented the correct path to complete each task, both for yourself and for your observers. This will simplify note taking and transcription. Track each click.
- Time how long it takes the user to make this click. Taking a long time to make that first click may indicate an issue with navigation that will need to be monitored or address.
- After each task, assess whether the participants feel they were able to find the correct information using a satisfaction or confidence scale (e.g. SUS questionnaire).

A/B testing

- A/B testing, also known as split testing, refers to a randomised experimentation process where two or more versions of a product (web page, app page) are shown to different users at the same time to determine which version provides a superior user experience and drive business metrics.



Choosing a UX Research Method

Planning and conducting a usability test

- Prior to conducting a usability test, make sure you have all your materials, consents and documentation prepared and checked.
- It is important to pilot test equipment and materials with a volunteer participant.
- Run the pilot test 1-2 days prior to the first test session so that you have time to deal with any technical issues or changes if necessary.



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Mobile Test Setup

Usability test checklist

1. Is my high-fidelity prototype ready to be tested?
2. Did I prepare a list of tasks to be part of my usability test?
3. Did I prepare consent forms before approaching potential test participants?
4. Am I going to conduct the test in-person or remotely?
5. Am I going to use my phone to open the prototype or am I going to use the participant's phone?

Usability test checklist

6. Did I define both the qualitative and quantitative data collection methods?
7. Did I prepare all materials necessary for the test?
8. Did I conduct a pilot testing session? Is everything working?
9. Am I going to record the session for later analysis or am I taking notes during the session?
10. Did I collect demographic data about my participants? Such as age, gender, education/professional background, familiarity with technology and so on?

A portrait of a woman with long, wavy brown hair and large, white, teardrop-shaped hoop earrings. She is wearing a light-colored, possibly white, zip-up top. The background is a solid orange color.

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UX Research

Writing the Usability Test Report

Background Summary:

- Include a brief summary, including what is being tested (in this case, a mobile application).
- Describe the overall goals and objectives for the testing (i.e. what exactly do you want to achieve with the usability test).



Writing the Usability Test Report

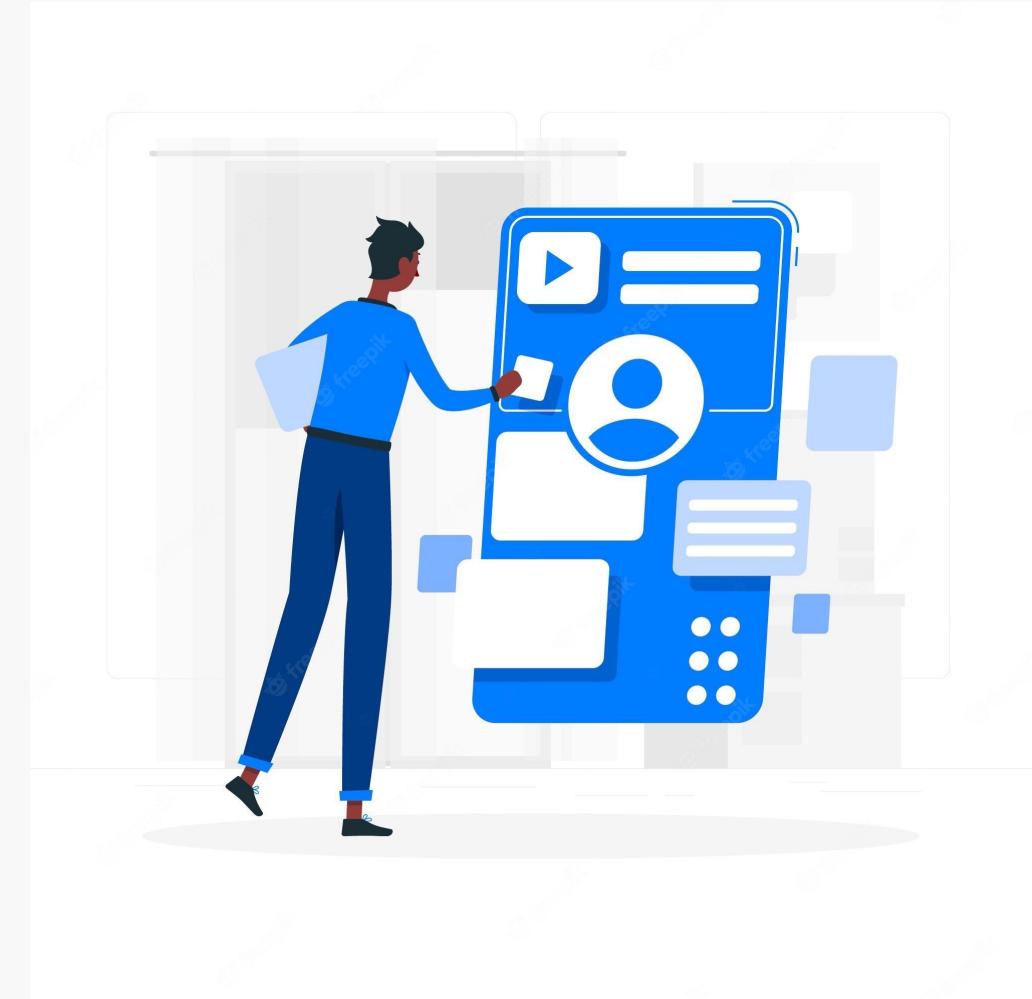
Procedure (also known as Protocol):

- Include the test methodology so that others can recreate the test.
- Describe the device/equipment used during the test (i.e. screen size).
- Explain how you conducted the test by describing the test sessions and their duration, the type of interface tested, and an overview of task scenarios.
- Describe the quantitative and qualitative data collection techniques used during the test.

Writing the Usability Test Report

Participants:

- Describe the number of participants and provide summary tables of background/demographic responses (e.g. age, professions, technology experience and any other important information).
- **Do not include their full names!**



Writing the Usability Test Report

Reporting results:

- Include a summary of what the facilitator observed.
- Describe the tasks that had the highest and lowest completion rates. Provide a summary of the successful and problematic tasks.



Writing the Usability Test Report

Reporting results:

- Depending on the data you collected, you may want to report:
 - Number and percentage of participants who completed each scenario, and all scenarios (a bar chart often works well for this).
 - Average time taken to complete each scenario for those who completed the scenario.
 - Satisfaction rates.
 - Participant comments can be included if they are illustrative.



Writing the Usability Test Report

- **Example:**

	Task 1	Task 2	Task 3	Task 4
P1	2 min	0.5 min	1.4 min	1.3 min
P2	2.1 min	0.4 min	1.2 min	3.1 min
P3	4.1 min	0.8 min	0.9 min	1.2 min
P4	1.2 min	0.9 min	0.8 min	1.5 min
P5	1.9 min	0.8 min	1.3 min	1.1 min

Writing the Usability Test Report

Quantitative Data

- Enter the data in a spreadsheet to record data or make calculations such as:
 - **Success rates**
 - **Task time**
 - **Error rates**
 - **Satisfaction questionnaire ratings**
- You may want to add participant's demographic data so that you can sort by demographics to see if any of the data differ by the demographic variables.
- Make sure you identify the task scenarios for each of the metrics.

Qualitative Data

- Record data related to:
 - **Observations about navigation paths**
 - **Problems experienced**
 - **Comments/recommendations**
 - **Answers to open-ended questions**
- Make sure your problem statements are exact and concise. For example:
 - **Good problem statement: Clicked on link to Premium subscription.**
 - **Poor problem statement: Clicked on wrong link.**
 - **Poor problem statement: Was confused about links.**

Writing the Usability Test Report

- At the end of usability testing, **there will be several types of data collected** with participants depending on the metrics you identified in the study plan.
- When analysing the data collected during the usability test, read through the notes carefully looking for **patterns and be sure to add a description of each of the problems.**
- Look for trends or **repeated user behaviour** and keep a count of problems that occurred across participants.



Writing the Usability Test Report

- Some usability problems contribute more to participants not being able to complete the scenarios than others. **To help differentiate, you should note the severity of the usability problems.** For example:
- **Critical:** If not fixed, users will not be able to complete the scenario.
- **Serious:** Many users will be frustrated if this usability problem is not fixed.
- **Minor:** Users are annoyed, but this does not keep them from completing the scenario. This should be revisited later.

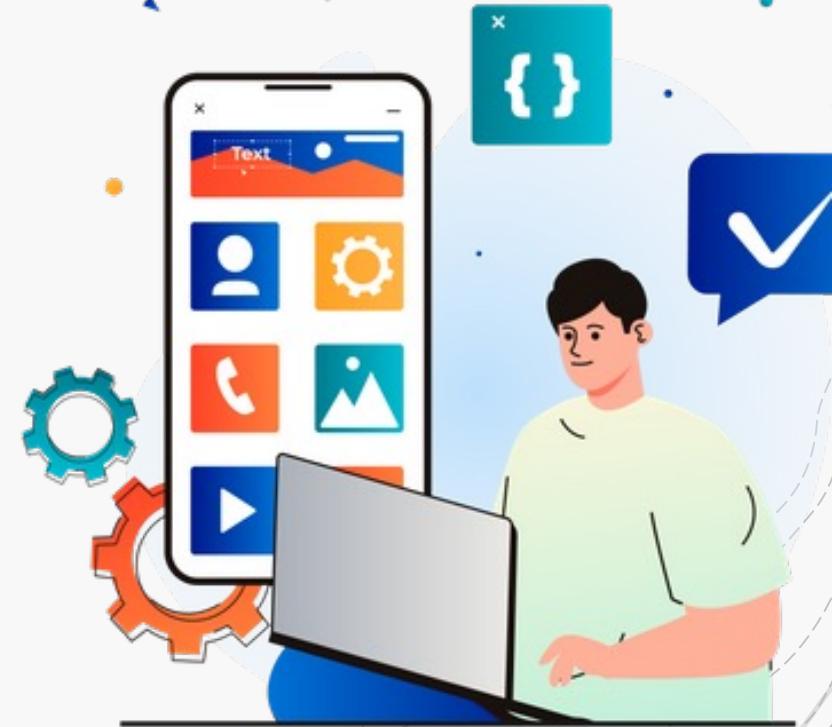
Analysing Usability Test Results

- **Recommendations for improvement (Redesign):**
- List your findings and recommendations using all your data (quantitative and qualitative, notes and spreadsheets). **Each recommendation should have a basis in data—in what you actually saw and heard.**
- You may want to have just one overall list of recommendations, or you may want to have recommendations scenario by scenario, or you may want to have both a list of major findings and recommendations as well as a scenario-by-scenario report.

Analysing Usability Test Results

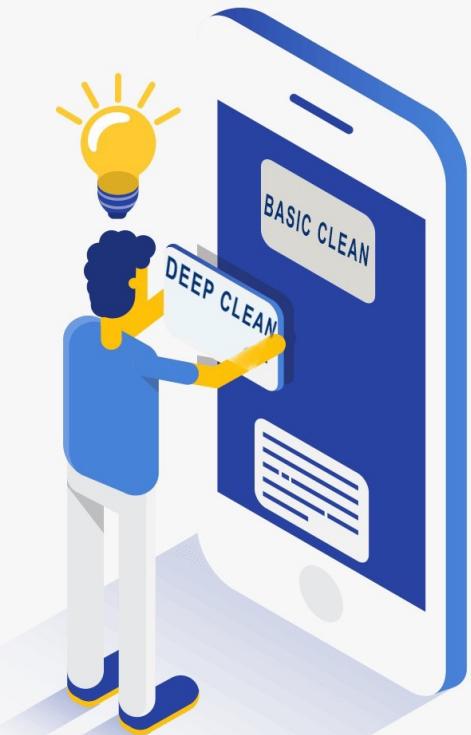
- **Findings and Recommendations:**

- Although most usability test reports focus on problems, it is also useful to report positive findings. **What is working well must be maintained through further development.**
- Each finding (or group of related findings) should **include recommendations on what to do.**



Improving the user experience and your prototype

- For a usability test to have any value, **you must use what you learn to improve your mobile application.** You may not be able to implement all the recommendations.
- If you cannot implement all the recommendations, **develop priorities based on fixing the most critical and serious problems.** As you prioritise, push to get the changes that users need.





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THANK YOU

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