Usability Testing

Phase 3 - Development + Evaluation

Usability evaluation is about finding out **how well the target audience can use a product to achieve their goal.** The evaluation also refers to **how satisfied the user** is with the process. To gather this information, there are myriad methods that solicit feedback from users about an existing website or plans related to a new site.

To conduct an effective usability test, a solid **test plan** must be created in advance, **participants must be recruited**, and then the **results must be recorded, analyzed, and reported.**

The results are evaluated, prioritized, and in a further step the product is adapted accordingly.

Test Plan

The goal of a test plan is to document exactly how the usability test will be **conducted, what metrics will be collected, how many participants will be tested, and with what scenarios.**

In this process, a UX designer, or if there is an usability specialist, should **meet with the project owner to determine the key elements of the plan.** Once a plan has been drafted, it is **shared with all participants** in the project team so that everyone involved can **submit their comments.** The test plan is then revised and finalized.

A test plan includes the following elements:

- **Scope - what do you want to test?**
  Name of the product, more detailed information about the test area and date.

- **Purpose - what is the aim of the test?**
  Note goals, concerns, and questions based on the pre-determined scenarios. In one round of testing, there can be several questions, from specific to general.

- **Schedule and location - where and when will the testing take place?**
  Precise determination of the number of sessions on a day and at what times.

- **Sessions - how should the session be conducted and how long should they last?**
  Usually testing sessions last between 60 and 90 minutes. It is recommended that approximately 30 minutes be reserved after sessions to discuss the encounter with the observer(s) or to allow time as a buffer between sessions.

- **Equipment - what equipment will be needed for testing?**
  Specify the equipment that will be used, as well as more detailed information about the size, resolution of the monitor, operating system, etc. Further, define whether recording of the test is planned or other special tools will be used for it.

- **Participants - how many participants and what type will be recruited for testing?**
  Brief description of how participants will be recruited. There are various providers for recruiting testing people, such as: https://www.testingtime.com/

- **Scenarios - how many tasks/scenarios should be included in a test?**
  Typically, about 10 (+/-2) scenarios are queried during a 60-minute test on the desktop. For mobile/smartphone testing, provide about 8 (+/-2) scenarios. It is recommended to prepare more scenarios so that the scenarios can be selected according to the situation.

- **Subjective metrics - what questions should participants answer before and after testing?**
  This includes questions participants should answer before testing (e.g., background questionnaire) and questions about overall satisfaction and likelihood of use/recommendation after testing.

- **Quantitative metrics - what quantitative data, were measured during the testing?**
  Such as success rate, error rate, time on task, etc.

- **Roles - who will be involved in the testing and what roles will they play?**
  The usability specialist or UX Designer should lead the sessions. The other participant(s) take on the role of observer or protocolist.

Running a usability test

Once the test has been planned and test participants have been recruited, the execution must be prepared. To do this, a **moderation technique, space and equipment for testing must be determined and secured.**

Below are advantages and disadvantages of four moderation techniques:

Techniques	Pros	Cons
Concurrent Think Aloud (CTA) is used to understand participants' thoughts as they interact with a product. In this process, participants are encouraged to think aloud while they work. The goal is to maintain a continuous stream of consciousness whilst interacting with the product.	• Understand participants' thoughts as they occur and as they attempt to work through issues they encounter • Elicit real-time feedback and emotional responses	• Can interfere with usability metrics, such as accuracy and time on task
Retrospective Think Aloud (RTA) At the end of testing, the moderator asks participants to retrace their steps. Often, participants watch a video replay of their actions.	• Does not interfere with usability metrics	• Overall session length increases • Difficulty in remembering thoughts from up to an hour before = poor data
Concurrent Probing (CP) This technique requires the moderator to ask participants follow-up questions as they work through the tasks. Especially in the case of interesting behavior, the answers can be valuable.	• Understand participants' thoughts as they attempt to work through a task	• Interferes with natural thought process and progression that participants would make on their own, if uninterrupted
Retrospective Probing (RP) While the participant is interacting with the product, comments or actions of the participant are noted. At the end of the session, additional questions are asked about the participant's thoughts and actions.	• Does not interfere with usability metrics	• Difficulty in remembering = poor data

Example Usability Test Session

1. The moderator **welcomes** the participant and **explains** the test session, introduces other project participants and their role in testing, asks the participant to sign the release form, and ask any pre-test or demographic questions.
2. The moderator **explains the method** thinking aloud and asks if the participant has **any additional questions.** The moderator explains where to start.
3. The participant **reads the task scenario aloud and begins working on the scenario** while they think aloud.
4. The note-takers take notes of the **participant's behaviors, comments, errors and completion** (success or failure) on each task.
5. The session **continues until all task scenarios are completed or time allotted** has elapsed.

6. The moderator either **asks the end-of session subjective questions** or sends them to an online survey, **thanks** the participant for their attendance, gives the participant the agreed-on incentive, and escorts them from the testing environment.
7. The moderator then resets the materials and equipment, speaks briefly with the observers and waits for the next participant to arrive.

Sources

- https://www.usability.gov/how-to-and-tools/methods/usability-evaluation/index.html
- https://www.techtarget.com/searchsoftwarequality/tip/4-UX-analysis-methods-that-ensure-optimal-user-experiences