

*Group Project*

## Research – UI/UX Testing methods

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## Context

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This document answers the sub-question 'How can we test the UX/UI of the app?' In this research document, the most relevant testing methods for the 'grip on sound' project are discussed.

First, different types of research approaches are discussed, after which a choice will be made on what will be the best choice to gather insights from users.

After this, a number of applicable research methods will be reviewed. A final selection of research methods will be made. These will be applied in the final research plan. The quantity, and how extensively the methods will be applied, will depend on the limitations of the project.

## Research Methods

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Literature Study



Usability Testing

## Distinction

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*Types of research:*

### **Quantitative or Qualitative:**

Quantitative tests take into account certain data points so that trends and patterns can be identified.

- Answers the questions 'what', 'where' and 'when'.
- Is for large groups of users.
- Analyses numerical data, identifies patterns, makes predictions.
- Collected by UX research tools or statistics.

Qualitative testing focuses on generating observations and insights about user behaviour. This allows you to find out why users perform certain actions.

- Answers the 'why' question.
- Is for small target groups.

- Creates a deeper understanding of problems.
- Collected through observation or study.

### **Attitudinal or behavioral:**

The difference between attitudinal and behavioural can be outlined as: what does the user say, and what does the user do. However, the two are often still very different. The form of attitudinal research focuses very much on understanding standards and norms of a user. Normally, most of research is based on behavioural research, but certain methods bring out the attitudinal part. Research methods that can provide useful insights in both spectrums are:

- Card sorting (reveals a lot about a user's "mental model").
- Surveys
- Focus groups (offer a user's top-of-mind view about a product).



### **Moderated or unmoderated:**

In moderated testing, the test participant can ask questions, provide clarification and ask for help from the researcher if necessary. In unmoderated testing, this is not possible.

**Remote or face-to-face:**

Remote testing takes place virtually in most cases unmoderated. Face-to-face tests are at the same location.

## Methods and Tools

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**Usability testing:**

The participant is put 1-on-1 in a room with the researcher and the product. Typically, tasks are given to the participant. The participant performs these tasks, with the researcher observing the process. The goals of a usability test can vary greatly, but for this project, it is mainly to figure out bottlenecks, and come up with improvements to these.

For this project:

- Will be very useful as it mainly collects qualitative data. It will mainly be used to figure out bottlenecks, and come up with improvements for this.

**Guerrilla testing:**

With Guerrilla Usability Testing, you randomly approach people and ask if they want to help you by participating in your test. You give an assignment, observe the execution of your assignment and ask how they experienced the use of your website during the execution. The advantage of Guerrilla testing is that you can easily gain new insights from different angles. Everyone has different interpretations on certain topics.

For this project:

- This method will not be useful since the app is being created for a specific target audience. Asking random users will give wrong results.

**A/B testing:**

A/B testing involves comparing two different designs/versions to conclude which performs best. These designs often only need to have minimal differences.

For this project:

- Will be useful for the project for small features, and also for larger features. A quick question about which version a user prefers is already a form of A/B testing.

### **Card Sorting:**

Is a testing process where participants show what they expect the website navigation and layout to look like. Participants can then sort these 'maps' into categories in such a way so that it is laid out logically for them.

For this project:

- Usually, card sorting is used as a method when there is an idea but no design yet. This method clarifies the user's mental model to create a structure of the design that makes sense to the user. For this project, whether it will be applied still depends on the constraints.

### **5-second test:**

With the 5 method, information is gathered what the participant sees in the first 5 seconds. After this, questions can be asked to the user such as, what did you see? What was your first impression? What is the topic on the page?

For this project:

- Will be able to be used to validate the most useful information on a page. For example, a user should be able to see right away where something important is, and should not have to search for it.

### **Eye Tracking:**

This method observes a user's eye movements via a pupil tracking device. It analyses where the user is looking. This data tells what attracts the most attention for the user.

For this project:

- Could work well in combination with a 5-second test, but may be a little too sophisticated for this project.

**Screen Recording:**

With this method, the participant will perform tasks that involve capturing the screen with mouse movements. Testers are often asked to speak their thoughts out loud as they perform the tasks. This test can easily be performed remotely.

For this project:

- Since we want to observe participants in person and moderated. A screen recording would not be necessary. This takes extra time to review the footage.

**Contextual Inquiry:**

A contextual inquiry (asking for information in specific context) is basically a combination of observations and interviews. It is a form of field study.

The concept is to observe the user in their natural use of the product, while simultaneously asking questions.

These questions are asked to find out how and why the user does certain things.

- Context: the user uses the product in their natural environment to replicate the most natural user flow.
- Inquiry: the researcher observes the user while the user performs his/her task and asks for information to understand how and why users do what they do.

For this project:

- Since this method is mainly intended for products that are already being used is, it will add little value for this project. There is no mobile app in use yet that a user already uses regularly, it has yet to be created.

**The System Usability Scale (SUS):**

The System Usability Scale is a questionnaire completed by a candidate at the end of a usability test. The questionnaire consists of ten questions. All questions are answered on a scale of 1 to 5, where 1 is strongly disagree, and 5 is strongly agree. All even questions are negative questions, while the odd questions are positive. This prevents the user from filling in the same answer for each question.

For this project:

- Will have additions for validation, and the user could even fill this in his/her own time after taking the test.

## Conclusion

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There are a number of different methods that can be used. Some can also be carried out in direct succession with the same participant.

When a prototype is ready to be tested, the plan of execution for testing will be made. This will then be used as a reference point to adhere to while conducting the tests.

The research methods chosen:

- Usability testing (qualitative, moderated)
- A/B testing
- Card sorting
- 5 second test
- The system usability scale

## Learning Outcomes

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Learning outcome 5: Investigative problem solving

*This research document uses the CMD research methods. As a result, conclusions have been drawn that provide answers to the sub-questions. These answers help answer the main question.*



## Literature

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