Detailed Study Report

Abstract:
In this report we investigate hypotheses for the music app's usage through studies to inform its design in pursuit of the design goal of aiding practice through structured practice sessions.

Goals and Hypotheses:
The overall goal of the project is to aid musicians through structured practice, in particular by providing feedback, a history of practice sessions, and through recording of practice sessions. We formulated hypotheses concerning features we consider important in the overall design for the usage of the app.

i. Greater Information density in the practice page is distracting for the user when practicing
ii. The user's experience with navigation within the app is a barrier to adoption of the app usage in practice sessions
iii. Overview of tasks during the practice session is required for structuring practice sessions
iv. Musicians are motivated by gamification of their practice sessions
v. Recommendations of tasks and practice sessions will be desired by users

Methods:

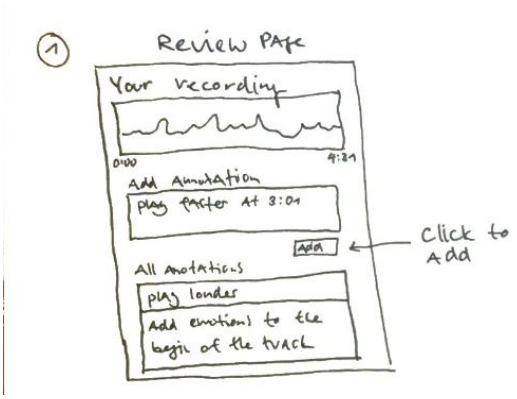
Study protocol:
The following structure was used during the interviews to keep irregularities due to differently asked questions at a minimum. See the evaluation form for the exact questions and format.

- Greeting the participant, explain the idea of our app and the most important functions (e.g. practice, projects, diary, progress overview)
- Go through the first block of questions, no further explanations should be necessary
- Explain the scenario the participant would be in (during a practice session using the app in the practice screen)
- Show them the 3 different density practice screens and let them choose their favorite
- Further questions about the practise screen
- Show the 3 annotation methods, let them choose their favorite
- Choose the navigation method drawer or button based (change between every other participant for A/B testing). This part will take place on the phone of the instructor.
- Go through the scenarios and as the participant does so count any missclicks they make.
- Go through the questions regarding navigation

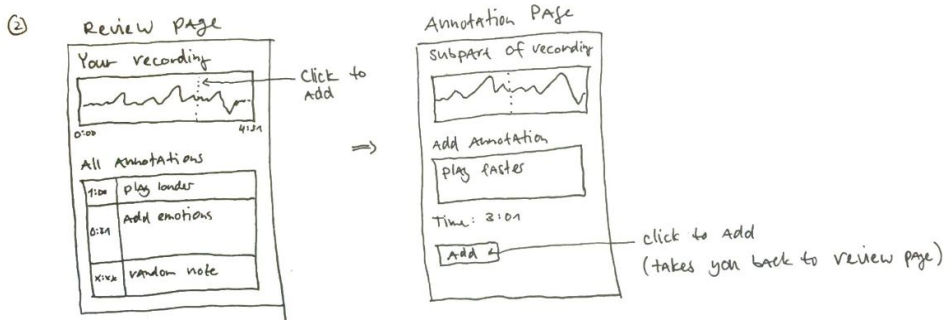
- For the next part decide between situation A or B (with motivation or without), always choose participants 2 in a row for each situations to keep navigation and motivation results independant.
- Go through motivation questions
- Go through last section of questions
- Ask participant if there are any further questions f if there is anything to add from their side.
- Thank participant

Test 1: Prefered annotation method for recordings

This test looks at the preferred annotation method for recordings in an exercise session. The test subjects can choose between three different annotation options which differ in number of clicks to achieve the annotation and visibility of the already made annotations. This test, with some room for interpretations from our side, takes into account hypothesis ii) and, in part, v).

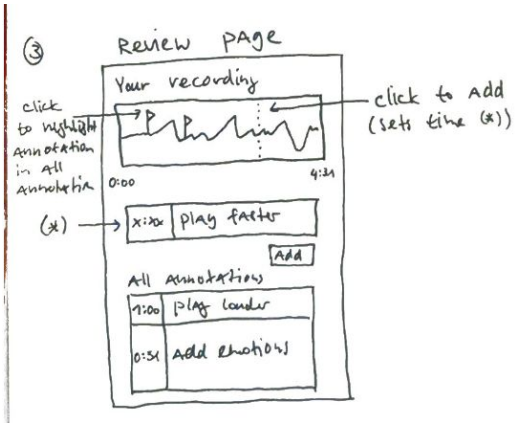


Option 1:
Straight forward way to make an annotation after a recording session. In the review page (opens after recording is finished) the user can make annotations without implicit time reference in a simple text box.



Option 2:
Two step process for making an annotation. The user tabs on the part of the recording where he wants to make a comment. This leads him to a second page which is dedicated to make annotations.

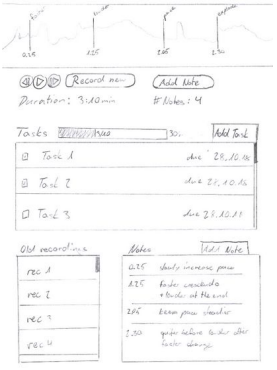
After creating the annotation the user gets taken back to the review page where all annotations are shown with implicit time reference.



Option 3:
More sophisticated combination of options 1 & 2 to make an annotation. User has with the text box a straightforward way to make an annotation. The time reference can be set by tapping the recording at the wanted time or the time can be entered manually in the dedicated field. The annotations get marked directly in the preview of the recording.

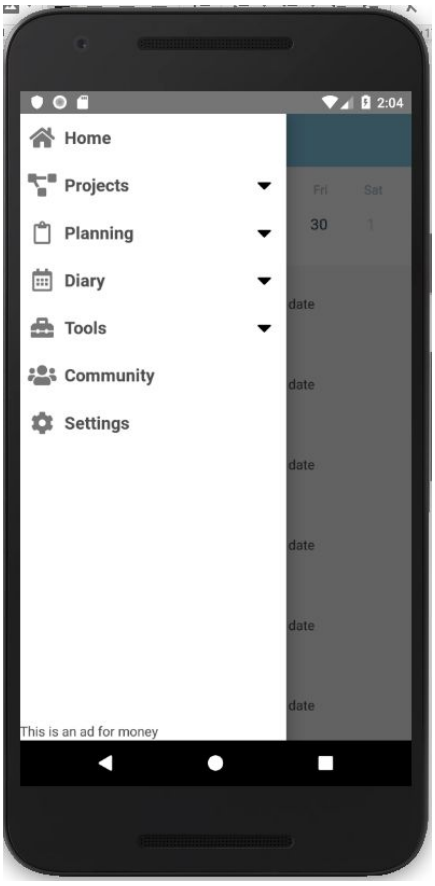
Test 2: Layout of practise page

In this part the subjects are asked about what information and tools they need during a practice session. In addition to that, we tried to find the optimal information density to have the most efficient use of the practise page.To achieve this the subject are asked what tools the use or would want to use during practise. After that the are presented with three different screens with different information density, one of which they choose according to their preference. After that they were questioned if there were functionalities or information that was missing or unimportant.

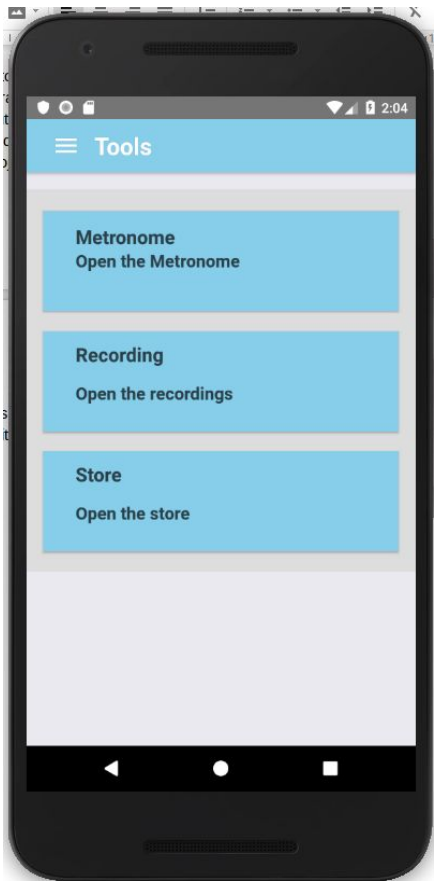


Test 3:

For the third test, we built an app prototype, that only featured the navigation system. It fully supported both types of navigation, drawer navigation which is widely used today, as well as a new approach, an overview based button navigation system.
The participants then were handed a device with the app installed, and got a few navigation tasks, for example ‘navigate to the projects screen’. Each participant was only given one type of navigation, and had no knowledge of the other one existing.
We tested for a few different variables, some of them were qualitative (how well did the user like it), and some of them were quantitative (how many times did the participant missclick).



Drawer Based



Button Based

results:
We made the design study with 14 test subjects, most of which are playing an instrument and have to practice somewhat regularly.

Test 1:
Annotation Option 1: 28%
Annotation Option 2: 16%
Annotation Option 3: 56%

Comments:
Almost all test subjects liked option 1 because of its simplicity
Five test subjects preferring option 2 commented that the annotation review of option 3 would fit perfectly into this annotation method. The two way process is not a problem in terms of “straigthforwardness” to make an annotation.
Four test subjects reported that option 3 seems to be to dense on a smartphone screen, they’d also need help with the functionality the first time.

Test 2:
Density Option 1: 28%
Density Option 2: 64%
Density Option 3: 8%

Comments: With this section we searched for the optimal amount of information on the practice screen.

- Option 1: Only minimum information to be able to navigate and mark tasks complete.
- Option 2: Includes additional information to give the user a better idea of when what has to be done and his history.
- Option 3: Even more information is given to the user and additional functionalities (metronome etc) are presented on the screen.

It is clear that users do not like the most information dense display, reasons cited were that it was difficult to navigate and they thought it may be distracting. Even though some participants liked Option 1 for its simplicity, the biggest number of participants preferred Option 2. They explained there was some information they would actually like to see during practice. There were also one participant who liked Option 3 better, but was unsure how it would fit in a normal smartphone screen.
Further ,we were not able to identify statistically meaningful differences in preferences between advanced musicians or beginners.

Test 3:

Both navigation styles were percepted quite positive, with the drawer based one having a bit of an edge.
The detailed results were:

User Overall

Drawer: 4.42
Button: 3.85

User Rating
Drawer: 4.28
Button: 3.28

User Missclick
Drawer: 3.14
Button: 4.14

discussion:
The results of the first test and the discussion afterwards showed that the process of making annotations is irrelevant as long as it's easy to understand. With some commenting on the high density on the screen, we can argue that the information density must not be too high and the information shown should be needed information at the right place (referring to the preference of some users for annotation review on the recordings itself in option 3). Hypothesis 1 tends to be true. Additionally, to get more relevant results, regarding the information density, it would make sense to create the prototypes in the same scale as the final version. Otherwise, results might be skewed due to the fact that on a bigger prototype, more information can be placed without being disturbing. Furthermore it is important to keep the functionalities of pages exactly the same, so differences in preference do not originate from that.

Gamification and Motivation
An A/B test was carried out. For users in Group A we told users explicitly that having 'finished' their practice they were awarded points, and trophies 'appeared' when they marked tasks as completed. The users in Group B were not explicitly told about these features. At the end of the survey we asked users how motivated they felt for their next practice session. We expect users in Group A to report some increased motivation for using the app and their next practice session. However we also suspect that the participants may report being highly motivated due to being evaluated anyway.

Future work:
This design study showed us that we should keep the app as simple as possible. Our test subjects didn't want an app that's too sophisticated to use. Just a simple planning app including everything they have used before in one spot. For the navigation we learned to stick to what people know already, since it's intuitive. Furthermore, having to click through multiple pages to get where they want is not wanted and in this context doesn't makes sense. We therefore try to use a flat design. How functionality availability for the practice screen is somewhat of personal preference, therefore making adding options to change the appearance of the practice screen may be a good idea.