

Elicitation Methods:

For part of the data collection we used the Observation elicitation technique. Observation can be used to identify problem-solving strategies that are not consciously accessible, to identify the tasks involved in a domain and limitations and constraints on those tasks. It involves recording features in naturally occurring settings, as well as the actions and events that occur within those settings. Structured observation is used when the elicitor has already determined what features of the environment are important and records observations according to this prespecified format. [1]

The artifact we'll analyze is the "User testing record", which will serve us for the assessment of how we implemented the observation elicitation technique. (Cook, N.J. 1994) mentions that there are three variants of the observation elicitation technique, with them being active participation, focused observation and structured observation. The one that we stuck the most is the structured observation because on the testing plan we had already determined what points were important for us to take into account. We also implemented the recording of voice to help the elicitor to write the results of the observations once the session was over.

The outcome of the observations are a list of all the problems that the participant had during the test. The type of problems that we should always record are listed on the test plan but it was open for each team member to write any other problem that they found valuable because there was a possibility that any team member would encounter a problem that we haven't thought about yet and arose at the time of the observation session. Indeed problems that we haven't considered arose from the method but also problems that confused us because we didn't know if they were part of the objective. Examples of the problems were: the participant didn't know how to put the "@" because he used another type of keyboard for the test that he was not accustomed to, or concerns about the security of the information that the users needed to give. The variety of the problems that appeared during the execution of the observation session led to a lot of confusion because we didn't know what problems to keep and what problems to discard.

One way we could improve the delay of the deliveries that caused these discussions is to stick to the points of observations that we had already stated and being sure that the points are in concordance with the objectives of the testing. With this approach we could improve the estimation of the time that the sessions would last, we could focus our attention only on the problems that we chose, and we could help the participants with those parts where they were stuck and delayed the session but were not relevant for us to record.

AI Tools

One way we could assess the quality of an interface produced with an AI tool is to use the (Ferreira, J.M. *et al.* 2020) that defines a measure of quality in use by using the efficiency, effectiveness and satisfaction as attributes for evaluating product usability. We'll define the attributes as:

- Effectiveness: degree to which users correctly and completely achieve specified goals.
- Efficiency: resources expended by users to correctly and completely achieve specific goals.
- Satisfaction: degree to which user needs are satisfied by using a product or system in a specified context of use.

We'll also define their measures as:

$$Effectiveness = \frac{Number\ of\ successfully\ completed\ subtasks}{Total\ number\ of\ subtasks\ undertaken} * 100\%$$

$$Eff_{speed} = \frac{StopTime_{milliseconds} - StartTime_{milliseconds}}{1000}$$

$$S = \frac{questionValue_1 + questionValue_2}{2}$$

The AI tool used to analyze will be Chat GPT 3.5 because it is the most popular AI tool available on the market. The overall experience of using ChatGPT 3.5 is very pleasant, depending on the prompt that is given, it can give excellent results in terms of functionality of UI components. The question is to which extend this functionality excellent UI components accomplish the usability attributes described above.

The UX role will definitely change but will not be replaced by AI, it will just be used as another tool. Some articles have shown that when not using conventional AI tools, and with a large amount of data, big tech companies have had success improving UI design using machine learning, more specifically, using CNN (Convolutional Neural Networks). Conventional AI tools like ChatGPT have proven to be an effective tool for creating great UI components in terms of functionality but not in terms of usability, that is and will still be the task of the UX engineer that with help of machine learning will continue to improve the design of interfaces.

Personas:

The category we chose based on the Persona's toolkit is the Familiar with/ Anxious About. Which, according to the text is defined as: "General description of their attitudes and feelings about the task and its context. What are they comfortable with, what causes nervousness?" We chose this item because we needed to see what are the causes of the failure of the participants in completing, our hypothesis was that it was due to the degree of familiarity with similar systems. We also needed to collect how they felt in terms of security about their information that was being asked.

We collected this by recording audio of the session so that we could hear the expressions when doing a certain part of the test. We also made a survey with questions about how they felt with some parts of the test. We gathered the information in a single document where we could graph the distribution of the answers of each question and see what correlations arose for the people who could not finish the test.

By knowing which parts of the UI are the ones that the subjects are having trouble and knowing the reasons why the adult participants quit when performing certain parts of the test can help us to bring a design that changes those parts in correspondence with not causing anxious to the subjects of the test and asking for their information in conformance with the type of applications they're accustomed to.

Usability vs UX

The Special Interest Group on Computer-Human Interaction (SIGCHI) of the ACM defines HCI as the discipline concerned with the design, evaluation and implementation of interactive computing systems for human use, and with the study of major phenomena surrounding them [3]

CS2013 explicitly includes usability as a compulsory core HCI topic ("Usability heuristics and usability testing"). One of the expected learning outcomes is defined as "Create and conduct a simple usability test for an existing software application". Usability is also recommended as an elective topic and is systematically cross-referenced in other CS knowledge areas. User Experience (UX) is not explicitly incorporated as a core HCI topic; however it is implicitly considered in other core and elective topics. [3]

With this information we can set a relation of HCI, Usability and UX with Usability being the core of HCI, and the UX is implicitly considered as an extension of the Usability concept.

Usability focuses on accomplishing attributes such as satisfaction, efficiency and so on, while UX analyzes the emotional response of the user towards the product or system. One example of usability being used in our project would be the percentage of participants who finish registering on the system, it would particularly be an example of the effectiveness attribute of usability. On the other hand, one UX example is the annotations we made about the user's expressions while completing certain parts of the register.

The UX example to implement would be to analyze on which parts the participants are feeling insecure when asking for their information, maybe to improve the language to generate a sense of security among users or to provide more guarantees of their information being safe. It will be measured by asking them how they felt about the security of the information, we should see an improvement on positive answers if this is applied.

References:

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2. Ferreira, J.M. *et al.* (2020) 'Impact of usability mechanisms: An experiment on efficiency, effectiveness and user satisfaction', *Information and Software Technology*, 117, p. 106195. doi:10.1016/j.infsof.2019.106195.
3. Rusu, C. *et al.* (2015) 'Usability and user experience', *International Journal of Information Technologies and Systems Approach*, 8(2), pp. 1–12.
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