Motivation to Self-report: Capturing User Experiences in Field Studies

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Abstract. User experience (UX) refers to the feelings people have when interacting with a product or service. UX design aims to enable certain experience through the development and testing of prototypes, therefore methods are needed to capture and evaluate user experience at different stages of use. Experience Sampling Method has been used to capture user experience on a moment-to-moment basis and in the context they are elicited. One mayor drawback of this method is the high load on participants, which often results in lowering participation in the study. Based on a literature review on motivational theory two design concepts are presented to illustrate how different motivators could influence different qualities of participation. Initial explorations of these concepts address opportunities and challenges of motivational mechanisms in the development of UX design and research methods.

Keywords: UX, Motivation, Self-Report, Long-term Field Studies

1 Introduction

Momentary experiences are important to inform the design of technologies that aim to support daily life practices [2]. However capturing momentary experiences is challenged by traditional methods like questionnaires and interviews, as they rely on participants ability to recall past memories which often results in inaccurate information. Experience Sampling Method [1] has been used in longitudinal field studies to evaluate people moment-to-moment experiences with respect to a particular situation. By prompting people several times a day to report on their experiences detailed and fine grained overview of human experiences and its variations are collected over time. Whereas recalling effects are minimized, ESM puts a high load on participants. Undesired interruptions cause annoyance, and repetitive prompts evoke feelings of burden and boredom, ultimately resulting in a negative experience for participants [3].

One way to address these issues is to minimize the aforementioned barriers. For example, minimizing interruptions by making the sampling process adaptive to participants' preferences and context of use. We argue that there are other

more meaningful ways to influence participants that may result on more lasting motivation to participate. This paper reports on a User Centered Design approach that brings knowledge into the design of motivational strategies for self-report measurement tools. Based on eight motivators derived from a literature review on motivational theories two design concepts are described to explore qualities of participation that could influence the experience of self-reporting. We discuss the initial insights obtained and the implication of these interventions in the wider context of field studies are presented.

2 Design Concepts

Literature research on motivational theories resulted in a selection of biological and cognitive factors that drive people's actions. The outcomes comprises a list of 8 motivators clustered in 3 themes: *Fun* described by curiosity, surprise and joyous; *Personal Benefit* described by self-actualization/reflection, accomplishment and contribution; *Control* described by independence/autonomy and tranquility/safety.

2.1 FamilyConnector - The MailPrise

FamilyConnector is a home based awareness system that connects an older person with their adult child using touch screen displays. The aim of the system is to increase connectedness by subtle means of communication [4]. To evaluate the system, an evaluation corner based on ESM was integrated in the FamilyConnector's displays to visualize the prompts which will be linked to a physical booklet to provide the answers.

MailPrise redesigned the evaluation corner and the booklet using the metaphor of a mailbox to explore qualities of control, fun and personal benefit (see Fig. 1). Digital and physical numbered envelops (orange) are used to represent time-based prompts, exploring surprise, joyous and curiosity, as prompts have to be physically search in the mailbox (fun). Digital and physical non-number envelopes (blue) are offered as free-based self-reports to bring a sense of autonomy (control). Similarly the options to accept/reject/postpone a prompt aim to provide a feeling of tranquility (control). Finally, ribbons and a mailbox filled with answered envelopes are offered as feedback to acknowledge and quantify participant's contribution (personal benefit).

2.2 ESTHER - The MoodGarden

ESTHER is a research tool designed to capture the experience of hip replacement patients when recovering at home [5]. A tablet is provided to randomly asked patients 3 times a day their mood of the moment and a short report regarding their recovery experience. At the end of the day an overall mood is asked together with a reflection of their experience of the day. The input modalities are text and voice recording using the same tablet.

Fig. 1. Left 2 pictures: MailPrise, evaluation corner and mailbox, Right 2 pictures: MoodGarden, bouquet of flowers and garden

The MoodGarden includes a small box with seven holes (one per day) to represent the garden and a bouquet of paper made flowers of different lengths, shapes and colors, with their top wrapped and numbered to link them to different moods (see Fig. 1). After the patient reports their overall mood a message is generated with the number linked to that mood inviting the patient to pick and unwrap the flower exploring qualities of curiosity and surprise. Placing the flower in the garden provides a visualization with the purpose to evoke achievement and reflection by gradually seeing the garden getting complete, and observing daily changes of one's mood states.

3 Discussion

Both concepts are initially explored in two field study evaluations. Mailprise was deployed in a 2 weeks pilot study for the evaluation of FamilyConnector with a senior woman and her adult daughter. MoodGarden was deployed in a 1 week exploratory study using ESTHER with one THR patient (male, 70 years old) during his first week of recovery. Logging data of participants interaction with the concept and exit interviews were collected to unveil participants' experience with the concept.

Fun elements were reported by participants as strong motivators for them to continue reporting. In particular the older adult using the MailPrise reported that the envelopes on screen felt like receiving a small letter which invited her to take the moment to react to it. As reported by the participant using MoodGarden the extra effort and dedication needed to do the reporting was balanced out by the benefit of becoming a game with his grand daughter who visited him almost every evening to pick a flower and place it in the garden together. Elements related to personal benefit also seemed to influence motivation. The garden triggered the participant to reflect on his recovery progress, as it provided a memory cue about his mood states over the week. An important effect of the garden was that it drifted the attention from contributing in the researcher's

goal to a personal goal (completing the garden). Control was also appreciated. The adult child reported that she accepted almost all prompts often leaving the envelope to a side to answer it later. The blue envelops allowed her to catch up with her pile of unanswered questions, at moments when she could find time to give a response, thus reducing her feeling of guilty due to missing prompts.

Rogers [6] discusses the need for new methods to support research and design practices in the complexity of real settings to bring knowledge into how new technologies are accepted and adopted in the existing practices of people. Understanding the importance of active participation in field studies a key challenge is user motivation. Aware of the limited size and length of the interventions, these preliminary insights acknowledge the need for methods that incorporate motivational mechanism to ensure the participation on long term field studies. Several participation qualities have been explored to stimulate participation from a different perspective than traditional reward mechanisms. They serve as a starting point to look at participation like any other interaction that deserve a user centered approach to design solutions that empower participants and increase the quality of their reports.

4 Conclusion

MailPrise and MoodGarden are two concepts to explore participation qualities in ESM studies. Future work will report on the analysis of using MailPrise to evaluate FamilyConnector in a field study of four weeks with three couples. The analysis will focus on the effect of MailPrise in users' participation, as well as the quality and richness of the data obtained compare to interview techniques.

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