Diary Methods in Games User Research for Inexpensive Data Capture

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Abstract

Diary methods traditionally require little budget in terms of lab space and equipment, and therefore can be a highly desirable method for GURs (games user researchers) in small companies. Our results and past HCI research shows there can be great benefit in terms of actionable insights and the collection of rich artifacts to tell the users' stories. However, the major risk with diary methods is poor execution and lapsing participants. To reduce the potential risk, this paper presents an overview of guidelines for conducting a diary study in games user research, and providing an effective but inexpensive method for the community.

Keywords

games user research; diary study; qualitative methods

Introduction

A diary study typically involves around 10-30 participants who record their daily activities for a pre-determined time period. During this time, participants are encouraged to record experiences in context and as they occur. In this way, diary studies allow researchers to study users in a natural setting and capture data points over extended time periods.

Diary studies have increased in popularity within the Human-Computer Interaction (HCI) field during the last decade. Such growth has been largely driven by the availability of always-on-devices (e.g. smartphone),

RQ1:	What motivates these users to play?
RQ2:	How do online NHL users find and organize their clubs?
RQ3:	How do online NHL users interact with the new [progression system]?
RQ4:	What are social behaviors of NHL users?

Table 1: NHL16 Beta Study's Research Questions

which provides researchers with a means to capture in-situ experiences [e.g. 1,2]. In comparison to other discount research methods which are meant to be fast and inexpensive, such as heuristic reviews, the GUR community has not focused on diary methods. Therefore, we feel these guidelines can be of particular interest to GURs in small companies, as the method has traditionally been used as an inexpensive means of data collection [e.g. 4,6] and, in our example, demonstrates value in capturing rich, game-specific artifacts.

Guidelines for Diary Studies in GUR

The guidelines we present are derived from a NHL 16 beta study completed at Electronic Arts (EA) in August 2015. This diary study is used as an example throughout the document and, along with past HCI research, was used to inform the following guidelines:

Research Questions
As diary studies collect data daily, as player's play at their own pace, within their own environment, and over a set time period, the diary method is best suited to tackle research questions focused on testing extended gameplay (e.g. testing the UX of progression systems), or an authentic game experience (e.g. identification of the user's habits/routines [5] or how users interact within their social groups [6]).

In the NHL16 Beta study, the main objectives were to gain a deeper understanding of users' motivations; their social interactions and the overall UX of a new progression system of an online game mode (see

Mixing Methods
We recommend incorporating additional methods to collect data for triangulation. At a minimum, scheduling

a debrief session with the participant to review their diary entries should be implemented. Within this paper we discuss this process as a semi-structured interview. This gives the researcher an opportunity to ask questions about: the users' overall experience, reflect on past experiences (e.g. Tell me about the first time you played NHL?), and provide the researcher an opportunity to dive deeper into identified areas of interest.

Other methods that traditionally have been applied to diary studies include: questionnaires, surveys, telemetry and mind maps (see Figure 2). Recording video of the interviews is also recommended so they can be used to illustrate findings in the final report.

In the NHL 16 example, the diary study was paired with a final semi-structured interview and mind maps (where users draw out a map depicting their social circle, as per [6]), and the data was further combined with a large scale survey distributed to all users who downloaded the beta (n=3166). We describe this further in the *Procedure Section*.

Schedule
Creating a schedule for a diary study helps the researcher allot a sufficient amount of time for each step of the process.

In the NHL16 example, analyzing the data took five work days. On the sixth day, the findings were presented to the client. The development team was aware of this turnaround time before the study began to ensure they had time to use the findings as inputs for design changes for the next development cycle.
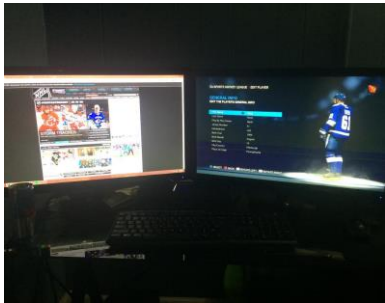
Figure 1: P20's Playing Environment which showed a second screen. Submitted on day 5.
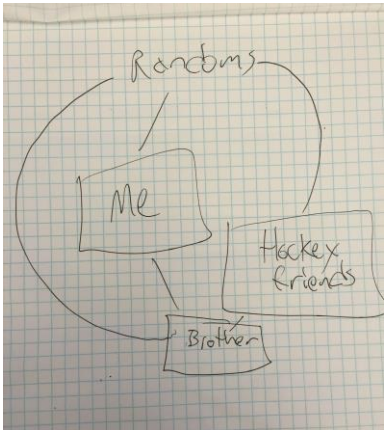

Figure 2: P15's Mind Map illustrating his social connections for multiplayer gameplay. Submitted on day 10.

Further, underestimating the time required to execute the method can lead to participant drop-offs. In our experience, participants can get confused or simply lose interest fairly quickly. However, properly selecting, preparing, and following up with participants can help to ensure they remain committed to the study. This is discussed more in the next section.

Recruitment
For recruitment, standard screening procedures can be used to recruit participants: identify the user profile(s), create a screener survey, and distribute it through the appropriate channels. The screener should clearly explain the expected time commitment. Define both the overall period of engagement (e.g. one week, two weeks, etc.) and the particular requirements for each component of the study. For example: a pre-meeting (15 minutes), daily diary (5-10 minutes a day), a final meeting via video conferencing (45-60 minutes).

Diary studies are applied remotely, so there is minimal effort or risk required to recruit participants from diverse geographical locations. Participants can easily complete each stage of the process (e.g. recruitment signup, briefing, diary entries) from any location by using video conferencing technology (e.g. Skype) and web/mobile based forms (e.g. Qualtrics).

Procedure
In this section, we discuss general guidelines for the three main phases of the study: 1) pre-meeting, 2) diary phase, and 3) the semi-structured interview (debrief).

1) Pre-meeting. Meet with each participant before the study starts. Tell the participants about the components of the study. Be sure to review the expected time

commitment and compensation, and give them an opportunity to ask questions. While logistical information can be sent to participants via email, the pre-meeting gives GURs an opportunity to connect with the participants. This helps to build a rapport with the participant which, in turn, can reduce the likelihood of participant drop-off.

Expect questions from the participants on how their feedback will impact the game. In the NHL example, we found this was common because participation effort often does not equal the reciprocation of payment.

2) Diary Phase. Once the diary portion of the study begins, automatic reminders can help keep participants on track. They allow GURs to touch base, encourage participants to form a habit around filling out the diary, and ensure the link to the diary study is always at the top of their inbox.

Diary studies collect a variety of artifacts. These artifacts can be collected with a confirmatory mindset (looking to answer specific research questions) or an exploratory one (simply investigating the phenomenon). GURs might ask the participants to share their playing environments, share the players they have created, etc. In the NHL16 example we asked participants to send us a picture of their playing environment on day five (see Figure 1), to share an image of the player they created on day seven (see Figure 3), and we allowed them to upload any video or images they found interesting on the other days. In all cases the users could upload via a browser file uploader at the bottom of the diary form. Asking participants to perform tasks also breaks up the monotony of filling out the daily diary form.

Figure 3: P10's player, submitted day 10 (logo removed for copyright).

3) Semi-structured Interview. Final interviews provide an opportunity to discuss participants' diary entries, to ask questions around their overall game experience, and to ask additional questions around their history of playing the game. The final interview also gives GURs a chance to thank the participant and allow participants to provide open feedback. We also felt that sending the participants' their own diary entries prior to the interview helped jog their memory.

In the NHL16 case, we wanted the participants to be prepared to draw a mind map of their social circle (see Figure 2 for NHL study example), so we instructed them to have pen and paper ready.

Data Analysis and Reporting
When analyzing the NHL data, we looked to identify themes and used the data collected from the multiple methods to triangulate and add depth to our findings. Exploring the overall UX lead us to learn about how teams are built, how users communicate with teammates, how teams grow and shrink, and how teammates air their grievances with one another. To illustrate these findings we used mind maps, quotes from the participants, and videos of the participants during the interviews and descriptive stats.

Conclusion
In this paper we presented lesson learned from an inexpensive diary study on NHL16. We illustrated guidelines around: selecting research questions, scheduling, recruitment, overall procedure, and data analysis. We believe these guidelines lay a preliminary foundation for diary methods in games user research to help navigate a successful diary study. We are currently testing the guidelines with GURs in order to further reflect on the method.

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Author Biography
Dr. Serena Hillman currently works as a Games User Researcher at Electronic Arts in Vancouver, Canada. Prior to this she earned her PhD from Simon Fraser University's School of Interactive Arts and Technology as a member of the Connections Lab. Here she studied mobile and social commerce for her doctoral dissertation and Tumblr culture as a post-doctoral researcher. She has contributed numerous publications within the areas of Human-Computer Interaction (HCI) and Computer Supported Cooperative Work and Social Computing (CSCW), all focused on understanding the user's motivations, behaviours and routines, with the goal of improving UX.