HCI: Case Studies

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1 Lab Study

Mary has built a phone app that entertains cats. Similar to the app "Fruit Ninja", her app causes objects to move across the screen and if the cat swats the object the object will vanish and a new one appear.

Mary sets up a lab study with a 12 inch tablet and a video camera. The tablet shows her app and the camera captures the interactions the cat has with the app. She performs the test in the cat's home. She starts by asking the cat's owner a few questions using a structured survey method, including the gender of the cat, if it normally lives indoors or outdoors, and how energetic the cat normally is on a scale of 1 to 10. She uses a "snowball" sampling methodology to find participants where she asks friends with cats to participate in her study and then asks them to recommend other people with cats she could test with. She was able to recruit 20 cat owners, but 4 had complex schedules, and 3 of them had two cats. So she ended up testing on 19 cats.

After completing the data collection, Mary goes through the video and measures how much time the cat was looking at the tablet screen and how many times they swatted at the screen with their paw.

Dependent Variable(s):

Independent Variable(s):

Limitations (External Validity):

Participant Paragraph:

1.1 Alternatively...

Mary sets up a lab experiment in a veterinary office. She asks people with cats in the waiting room if they would like to participate in her study. If they agree she has them bring their cat into the exam room a bit early and has the cat play with the app as described above.

Limitations (External Validity):

2 Interview

For his student project, John decided to create a new user interface for the popular SnapChat app that would make it easier for new users to interact with it. After completing the app he posted on a local discussion forum for SnapChat users to find people willing to beta test the app. He was able to find 10 people who installed the app and used it for a month. After the month was over he setup semi-structured hour-long interviews with each participant.

He started each interview session by asking a set of structured questions including demographics (gender, age, occupation), the frequency they used the app, and how much they enjoyed it compared to the older version. He then asked them to describe what it was like when they first started using his new app. Followed by several more questions about past experiences.

After he was done with the interviews, he used open-coding and thematic analysis to come up with a set of themes involving participants' experience with the app.

Dependent Variable(s):

Independent Variable(s):

Limitations (External Validity):

Participant Paragraph:

3 Cognitive Walkthrough

The employees at Acme Systems are complaining that the new billing software is hard to use. In particular, they dislike the process for entering travel receipts into the system which they claim is hard to do.

To determine what might be causing the system to be difficult to use, Zoe and her team decide to use a cognitive walkthrough. Zoe has a meeting with the billing system developers to find out what what sequence of steps an end-user is expected to use when entering a receipt for train travel. She then creates a document listing all the steps and the four cognitive wakthrough questions for each step.

She then holds a meeting with her team of three HCI experts. Each expert has a laptop with the billing system setup on it and a blank template UAR form. She then shows the team each intended step of the billing entry process on a projector. The team fills out the cognitive walkthrough questions, and for any issues they spot they fill out a UAR form. The process is done in near silence, the team asks Zoe occasional clarifying questions such as if an icon appears elsewhere in the interface.

After the cognitive walkthrough is complete, Zoe's team combines the UAR reports together so they can all see what issues people identified. They then prioritize the issues through a discussion so they can tell their client what issues need to be fixed the most and which can have a lower priority.

Dependent Variable(s):

Independent Variable(s):

Limitations (External Validity):

Participant Paragraph: