Contextual Inquiry

Assignment Description

In this assignment, you will practice the steps involved on conducting a contextual inquiry (CI). As we learned in class, CI is a method for gathering, analyzing, and modeling data on people's tasks as they are performed in the context of the task. The readings and lecture slides will guide you through this process. Holtzblatt & Beyer (1993) provide a good summary of the overall CI and design process. Chapters 3 and 4 of Beyer & Holzblatt (1998) provide the principles of CI and practical techniques for conducting a CI. Chapter 6 describes and exemplifies how to create work models from your data. Lecture slides summarize all this material. Links to these materials are below. Make sure that you make the most of these resources in completing your assignment.

You will work on this assignment in teams and have the same team members you have for your project. Remember, contextual inquiry requires rigorous teamwork. Make sure that your team has a leader who will moderate the communication and make sure that the tasks are completed and discussions stay focused. For your group meeting sessions, make use of Zoom or equivalent tools, as well as the online tools provided on Canvas intended to help teams review data and support the brainstorming and modeling activities.

Team members should try to equally contribute to the assignment, maintain a positive, constructive attitude, and facilitate communication. Your grade will be affected by your teammates' evaluations of your contribution to the teamwork. If you have conflicts in your team, you can schedule a time to meet with me.

Because you will be collecting data, I suggest that you start early. Expected outcome is a four-page write-up of your process and findings along with the raw data, models, and design ideas you developed in the process.

Step 1. Identify Users & Conduct Interviews

The problem domain of your assignment will be the problem domain of your project and your findings will feed into your project process. If your problem domain is web-based "search" interfaces, start your CI by identifying users whom you can interview on how they perform their search tasks in the context that they perform these tasks. You should plan to conduct **3 interviews** with users with a diverse set of search needs and goals. Each interview should take **10 minutes** on average.

Remember, the power of the CI method comes from observing user activities in the context of the activity. Make sure that you identify your users and plan your interviews with the physical and task context in mind. This *DOES NOT* mean you necessarily need to be in-person. Consider conducting contextual inquiry with people you live with if you'd like, but also explore the various kinds of online tasks that exist in todays world (e.g. game streaming, online education, video dinner parties, online religious ceremonies, etc.) Some of the tasks might be too open ended. For instance, there are a wide variety of tools used for social networking/bookmarking. You will need to identify a focus for such broad problem domains. For instance, you can conduct a CI of "how people publish status updates." Another method is to start with an unfocused CI (with the first couple of users) and then focus your CI (with your next set of users) as you identify interesting problems, and opportunities in analyzing your data from the first set of CIs.

It is important that you conduct your CIs in both the physical and task contexts of the activity. You *ARE NOT* expected to violate COVID-19 best practices, nor be in-person (keep social distancing!). However, paying attention to (and asking participants to share) their physical context will ensure that you are capturing the dynamics of the physical context (e.g., the user might also be looking through physical books) as well as the task context (e.g., the user might be using a word processor, a dictionary, an IM client, etc. while they are conducting the search).

During the interviews, adopt the master/apprentice model. That is, rather than trying to memorize a bunch of interview questions, you will act as the apprentice of the worker. This will help good questions come to you naturally. Conduct your CIs with at at least two people on your team present. Identify a single interviewer for each CI. You can change interviewers between CIs. In fact, I encourage every team member to practice conducting CI interviews.

While the apprentice is conducting the inquiry via observation and questions, the partner should be taking notes, sketching, and making reminders for later follow-up. You should be capturing the CI session using a video camera or recording the video call. Most phones and digital cameras can record video. Most laptops also have video recording capability.

Remember that you are more interested in what people do than what people say. Often, what people say they do, and what they actually do, are different. Watch for those moments. Make sure that you capture these subtle behaviors.

In particular, look for breakdowns, workarounds, unusual uses, customizations, problems that arise, and sources of possible trouble where a new design could help. New design ideas may come to you quite quickly. Do not discuss these with your informant directly, but make notes for later reflection. Instead, focus only on being a good, observant apprentice with your "master" informant.

The outcome of this first step will be video recordings, pictures, notes that you captured from your interviews.

Step 2. Transcribe & Annotate Your Data

In the next step of your assignment, you will transcribe your data into a spreadsheet (e.g. Google Sheets is easy for collaboration). Consider each turn, utterance, idea unit, or action unit as one entry in the transcript. Make sure that you mark line numbers and who is speaking. Annotate your lines with other behaviors, actions, indicators you might have observed from the video data or during your interview. Your data should look like the following table. Add additional columns to code the lines for any workarounds, breakdowns, unusual uses, customizations, design opportunities, and other concepts and ideas you find to be important for CI.

Line #	Speaker	Transcript	Annotations
280	Participant	Good.	
218	Participant	I wonder if I'll see them in the editing window?	
282	Participant	See this is why i wanted it to be a smaller image. Because it is taking forever for me to upload it, so it will take forever for other people to see it.	Points at the image upload progress bar.
283	Interviewer	…to see it.	
284	Participant	Yeah.	
285	Interviewer	Do you put images in all of your posts, or just in some?	
286	Participant	Just in some. In fact I had put hardly any —	
287	Participant	— lets see what happens, preview — ah, I can preview.	Seems confused at first.

The outcome of this step should be a transcribed, annotated dataset in an Excel document. Each interview should be in a separate sheet.

Step 3. Group Interpretation & Affinity Diagramming

In this step of the assignment, you will — as a group — start analyzing the data to identify, share, discuss, and represent ideas, concepts, actors, artifacts, environmental factors, motivations, incentives, beliefs, goals, tools, etc. that arise from the data. Remember, the team interpretation has to happen within 48 hours of the data collection. All members of the team should do this analysis exhaustively. I suggest you use mind-mapping software (e.g., open source XMind, Gantt Project, FreeMind, or Compendium) over Zoom for remote collaboration. If you and your team-members are able to do this in person (e.g. because you share a residence), post-it notes on a wall or white board work very well for this process too. The next step in your analysis should include categorizing these elements into meaningful themes, groups, and clusters using affinity diagramming. The lecture slides include example affinity diagrams. While analyzing your data to identify important elements is an individual process, the affinity diagramming should be done as a group through discussion toward building a consensus of what themes, clusters, categories are meaningful and important.

The outcome of this step should be an exhaustive set of important elements that emerged from your data and affinity diagrams that build relationships among these elements. Make sure that you document these elements and affinities by taking pictures of your post-it notes and diagrams or by saving your digital mind-maps as letter-sized PDFs.

Step 4. Modeling

In the next step of this assignment, you will build the five work models described in the Chapter 6 of Beyer & Holtzblatt (1996) — flow, sequence, artifact, culture, and physical models — from your data. These models will be abstract representations of your understanding of how your users carry out their activities in the problem domain you are looking at.

The outcome of this step should be five models that are represented as diagrams. You can use the diagramming tools mentioned in the previous step or the graphical tools in PowerPoint to create these models. Make sure to save these models as letter-sized PDFs.

Step 5. Identify Design Opportunities & Focuses

In the final step of your assignment, you will use the work models and themes, categories, and clusters of breakdowns, workarounds, etc. to identify focuses and design opportunities. As Chapter 3 of Beyer & Holtzblatt (1996) indicates, you will adopt an inevitable focus of the inquiry (pp. 61-64) — something that stands out. It is okay if this is narrower than the user's "entire work." In fact, it must be narrower, or you will feel like a boat lost at sea without a compass. Let the focus unfold during the course of your observations, data analysis, or discussions. For instance, you might find that ordering of search results is something that stands out in a CI on search. You can identify problems or design opportunities related to this concept as one of your focuses. Follow the structure for a CI as described on pp. 64-66.

The outcome of this step will be descriptions of focuses and design opportunities you identified. These could be a-few-sentences-long descriptions of problem areas that you identified (focuses) or design ideas that could address these problems.

Final Step. Write-Up & Submission

Write a four-page report of your process. The report should describe the decisions you made at each step of this process, your findings, and your reflections on the process. In particular, make sure that the following items are covered in the report:

Overview of the problem domain and the users you studied. Give a brief description of the users' goals, tasks, the physical and task contexts in which you observed them. Do not include your participants' real names, but provide a description of their occupation and high-level goals.

Summarize the data you obtained in your CI including, but is not limited to, discussing communication flow, sequence of actions, artifacts in use, culture, policies, and expectations, and the physical space in which the work took place. What was successful? Where did breakdowns occur? What workarounds were employed? Be descriptive and accurate, and to the point.

Write a one-paragraph description of each work model. Highlight the main points of each model you developed.

Describe some important areas of importance to the users' tasks and problems in these areas (focuses). Speculate on the possibilities for a new technology that could help remedy one or more of the problems or challenges that you identified. Describe this technology (e.g., web-based software) and how it would work easier or more satisfying for the informant you observed.

Finally, reflect on the experience of doing a CI. What was easy? What was hard? What did you expect? What was surprising? How often did you ask a question? Did you ask too many? Did you ask too few? What types of questions worked best? Which lead to poor answers? Which lead to in-depth answers? What did you learn?

Attach to your report the following materials.

1. Representative snapshots from your videos — 2–3 images for each video — placed in a document and save as PDF,
2. A copy of your transcripts, annotations, and any other coding you have done — Excel document with separate sheets for each interviewee,
3. A copy of your affinity diagrams — pictures of physical diagrams or digitally generated diagrams in PDF format,
4. Copies of your work models — letter-sized PDF files for each model.

Files:
- Report-LastNamesStartingWithTeamLeader.pdf
- Snapshots-LastNamesStartingWithTeamLeader.pdf
- Transcripts-LastNamesStartingWithTeamLeader.xls
- AffinityDiagrams-LastNamesStartingWithTeamLeader.pdf
- Models-ModelName-LastNamesStartingWithTeamLeader.pdf

Assignment Grading

Identifying problem area, users, and context for the CI — 10%

Conducting and properly documenting the interviews — 20%

Data transcription and annotation — 10%

Data interpretation, identifying concepts, affinity diagramming — 10%

Creating work models — 20%

Identify design opportunities & focuses — 10%

Quality of the overall report — 20%