

A2: Thinking About Stakeholders

How can a new system support communication for primary care physicians?

Recommended: Rapid Ethnography

The benefit of rapid ethnography is we can get a more wholistic picture of the routines and practices of primary care physicians. It's possible that physicians prefer to check messages both from work and from home, and this would allow us to see physicians at home as well. In addition, rapid ethnography can help us understand specific language physicians use, which will be helpful in thinking about the conceptual model for any new form of communication.

Recommended: Cognitive Task Analysis

Cognitive task analysis provides a summary of a user's "sensory inputs, decision points, and actions" (IDEO). Primary care physicians are busy people that are inundated with many important messages and requests throughout the day they must then remember accurately and act upon. The consequences of error are big. Cognitive task analysis is appropriate because it seeks to understand the sources of cognitive load for physicians and could thereby help to design a system to mitigate error in performing critical tasks.

Recommended: Role Playing

Role playing would fill in a missing piece, supplementing the cognitive task analysis by having designers feel and gain empathy for the tasks physicians juggle while on the job. This might be done in a controlled lab environment with the goal of universalizing this system to other health centers. This method also has the advantage of getting many members—design, development, product, research—teams involved and in the mindset of primary care physicians.

Not Recommended: Camera Journal

Camera Journal has the users write a record a diary related to the activities they undertake. There are many reasons why this technique would be inappropriate in this context. Stopping to take photos and write impressions throughout the day would be highly interruptive to a physicians' day. Furthermore, it may be infeasible since physicians may not be able to take photos while interacting with their patients for confidentiality reasons.

How can a mobile system help hikers find resources they need, sights that are interesting, and monitor environmental conditions?

Recommended: Personal Inventory

To design an app that meets the needs of hikers, it will be helpful to examine the objects they use and see as important, as a personal inventory does. The mobile system aims to give hikers useful resources and find interesting sights. Understanding what hikers surround themselves with and what they find useful will help designers empathize with the hikers' goals and values, and provide more relevant content in the mobile system.

Recommended: Social Network Mapping

The hikers I know in my life often communicate with each other to share helpful resources, sights and warn each other of environmental concerns. For this reason, social network mapping could be a useful and interesting tool to gain insight into how different hikers communicate with each other. Some hikers are peers, but others have different statuses—perhaps a novice seeking advice from a professional hiker. This tool could help designers build a mobile system that addresses communication needs of different people in the hiker network.

Recommended: Surveys and Questionnaires

The mobile system centers around providing resources to hikers that are relevant and interesting, so it makes sense to directly ask hikers what they want these resources to be, and what format they should take to be most useful. Surveys and questionnaires are especially appropriate for getting feedback from a large number of users. Since hikers exist around the world and have many different needs, something like an online survey would be a cost-effective way to gather useful insight about what is helpful to a wide variety of hikers.

Not Recommended: Usability Testing (in a Lab)

It would not be effective to run usability testing from a lab environment for hikers given the variability of the context in which hikers would be using the mobile system. There may be context about the location of hikers using the app that it is important for designers to understand (such as spotty cellular connection that prevents a hiker getting access to a resource she needs). Testing the wide variety of contexts of use would likely be expensive and impractical to produce in a lab setting.

How can a video game help students with autism learn social skills?

Recommended: Empathy Tools

According to the autismspectrum.org, some on the autism spectrum have “sensory sensitivities” and “[avoid] everyday sounds and textures such as hair dryers, vacuum cleaners and sand” (autismspectrum.org) Designers might simulate these sensitivities to sensory input with tools that increased the volume and harshness of sounds and magnified textures. For example, a small rumble on a video game controller may feel overwhelming to a person with autism. Designers can gain empathy for these sensory experiences to inform their design.

Recommended: Fly on the Wall

Observing students with autism playing video games without interfering with this activity could provide designers insight into differences in game play between students with and without autism. It would help designers understand specific contexts like location of game play and the role the parents have (if any) in mediating the game experience. Fly on the wall relies on direct observation, instead of asking for verbal or written accounts from students, which may be challenging for students with autism.

Recommended: Scenarios

Scenarios are recommended because it will be important for designers to understand and consider the various situations students with autism need social skills. It will help the video game be tailored to address these scenarios, such as recognizing facial expressions of a store clerk, or interpreting the tone of voice of a school teacher. These scenarios help inform the environment and ‘characters’ present in the video game.

Not Recommended: Narration

The aim of narration is to understand the users’ “motivations, concerns, perception, and reasoning” (IDEO). However, children with autism can have difficulty articulating these thoughts verbally. Designers could instead use other methods to get at

motivations and reasoning such as direct observation, interviewing parents and guardians, and literature review.

Reflections

By selecting broad techniques, I can see an effective pattern of using an observational tool to inform and lead to an empathy-building tool for the designers. For example, a design team can first use *fly on the wall* or *contextual inquiry* to observe the environmental conditions surrounding hikers using a mobile phone. Then, the designers can use that information to gain empathy by trying to locate a waypoint on a map in heavy rain. A universal challenge of using the outputs of one technique to provide the inputs of another is that bad assumptions and error can propagate through the design process if unchecked.

It was interesting to see how various tools attempt to mitigate this error through triangulation. For example, survey results can be better understood with contextual inquiry or rapid ethnography. Surveys are great for users to self-report their opinions. But without contextual inquiry, designers may come up with erroneous assumptions for the motivations for those assumptions. By observing users in-person, we can get insight into factors that influence the opinions of users.

Considering the opportunities and challenges of these techniques highlight some trade-offs. The designer is trying to “get inside the user’s head”. For the techniques that rely on the designer using his power of observation (such as *fly on the wall* and *personal inventory* above), the interpretation must necessarily be filtered through the lens of the designer. (As Gillian said, the research is only as good as the tool, and we are the tool.) The designer may see a situation from a certain lens or omit important facets of behavior because he is not looking for them. For techniques that rely on the user to record her own observations (such as the *camera journal*), the level of insight is influenced by the time and efforts of the user. The richness and depth in media and insight provided by the camera journal technique requires lots of effort and interruption on the part of the user. Doing this assignment reminded me to consider not just budgetary and time constraints, but the limitations of stakeholders’ energy and patience.