**ITIS 6400/8400 Human Computer Interaction**

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**CA01 – Needfinding Techniques**

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This activity has 2 parts. In the first you will practice one of the techniques – participant observation. In the second part, you will fill in a matrix of the various needfinding techniques on their advantages, disadvantages, and critical issues.

**Part 1: Participant Observation (~30 minutes)**

This activity is to give you a flavor of what it is like to observe participants perform a task. Choose one person to play the role of the participant (P). Choose another to lead the observation (O). The rest are note-takers (N). The participant will use a weather app or website on their (or someone’s) mobile phone.

O should create 3 tasks for P to perform. Do not tell P ahead of time what these tasks will be. Do not help P perform these tasks, unless P gets stuck. Example tasks might be: check today’s forecast to decide whether it will be good weather for a picnic on Saturday, or check when it is likely to rain again.

**Tasks: Our group created the trailing tasks for the Participant:**

1. Planning errands and activities of jobs that need outdoor tasks/activities for the next couple of hours. For instance tasks involving Construction.

2. How the location could impact the users day.

3. How long the user will be out in the weather conditions.

Ask P to “think aloud” as he/she performs these tasks. Silently observe P, while the note-takers mark down any observations. When completed, the note-takers should summarize what they saw with 2 key lessons: either problems or usability issues that the user seemed to encounter, or ways that the app could be improved to help the user with these tasks.

**Key Lessons:**

The two key lessons of observing and listening was how the user interacted with the different scenarios. The lesson of how the choice should be made based on the conditions. The second lesson was interesting of how the user interacts with the conditions based on the different locations, if going out of a twenty mile radius from the original destination. Working around from the inception of this application solution through the design process the above aspects should be kept in mind and more data should be gathered to derive an optimum solution for the same.

**What data could you gather to provide concrete evidence to convince a development team of these issues?**

Data to aid concrete evidence for a development team would be as trailing:

1. The amount of time user spends to accomplish each task and its sub parts, how accessible common functions and navigations are.
2. It is desirable for the most trivial and frequent functions to be easily accessible over the application. Snapshots from the interface could help aid this documentation.
3. The streamlining of the navigation and layout of the application based upon the observations.
4. The typical use cases the user performs to accomplish a task and sub-tasks.
5. The ease in finding current conditions for a specific period of time and a provision to facilitate the same in the application.
6. The provision of using the app for a specified destination that is not same as the current location. The user interface friction can be documented to record this information.

Everyone should create a small set (3-5) of interview questions that you would ask a participant after such an observation to learn more about what the user thinks of their experience to help you design a new mobile weather app. Have P answer them briefly.

**Questionnaire:**

1. How much user interface friction are you facing in navigating through the app to determine the weather for a specified period of time?

2. How do you spend your free time?

3. How much experience do you have with mobile devices?

4. How knowledgeable are you with the weather patterns?

5. How much time does it take to plan for the activity for a period of 7-8 hours based on the weather?

**To answer the following, consider how you would do this same evaluation on a larger scale to inform the re-design of this mobile weather app.**

1. What kinds of tasks would you ask people to perform?

How the location, length of journey’s, length of time and clothing choice would impact the users plan of daily events.

2. Beyond the simple notes you took here, what kind of data would you want to gather to provide evidence of issues?

How the conditions are currently, will they change? How long will the user be out of the house or shelter? What outfit is best for the following conditions? Rain, snow, sleet, sunny, cold, and hot.

3. How many participants do you think would be sufficient to inform this redesign?

We believe that at least a minimum of 100,000 users per 200 square miles would be needed to conduct a successful amount of data.

**Part 2: Needfinding Matrix (~30 minutes)**

Complete the matrix on the next page with the key advantages, disadvantages, and issues for each of the needfinding methods.

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| --- | --- | --- | --- |
| **Technique** | **Advantages** | **Disadvantages** | **Critical Issues for success** |
| Observation | See actual behavior as it occurs. We can observe multi users at the same time. | Under-observation people perform differently from their reality. Observation depends on time condition and place that we observe and maybe we can not find a general fact. | Being able to observe the “right” set of tasks.  · |
| Interviews | · This helps in dynamically identifying the problems users face, their experience while interacting, their requirements and any errors they are facing with the existing functionality.This would aid in unbiased discussions and collection of data. | It may sometimes present the negativity of the application.It would eventually affect the popularity of the application too.  Users may have a history of using the application in a certain way, that might introduce some biases on how they want the application to behave and perform, rather than evaluating the modified features. | Critical issues is focusing on both positive and negative feedback to better the overall interaction and experience of the application. |
| Focus Groups | We can control and find the focus groups easily because they are specified before.  You can ask them more question and you can expect they have some tasks you design to test | Being under a focus group could cause people to behave differently from regular behaviors. They could modify their actions and behaviors. Finding focus group that include all of thing we wanted to test, will be consuming a lot of their time. | The critical issue would be the focus group can be open and controlled for the overall feedback for the users. |
| Surveys (Questionnaire) | The biggest advantage of surveys is the individual responses from the users. | The biggest disadvantage is a user giving negative responses because the user has a lack of interest. | The largest critical issue is proper polling of the data from the surveys to prevent bad data. |
| Diary Studies | How well the application is helpful to multiple users over a long period of time. | What are the frustrations the users have with the application over a long period of time versus a short period of time. | Daily logging of success and failures are critical for a successful application. |
| Analyze existing system | How does this compare to other applications on the market. Being Similar, different, functionality, and colors could help the users. | The applications look alike, are not user friendly, and difficult to navigate around. | The critical items would be how alike are the applications, and does it help in functionality. |