Assignment P2 (Summer 2020)

Deepti Venkatesh
dvenkatesh7@gatech.edu

1 QUESTION 1

Table 1—The table contains the tasks I performed in 1 hour.

Task	Goal	Interface	Object
Work on Assignment	To complete the assignment	Overleaf editor	Assignment
Operating Washing Machine	To clean clothes	Washing Machine and it's Controls	Clothes
Using Instant pot	To prepare dinner	Instant Pot and it's controls	Food
Editing Photos	To include it in the assignment	Photo Editor	Photos
Playing Music on YouTube	To pacify my daughter so that I can continue with my tasks	YouTube	Songs

I am using the first 4 tasks for further discussion.

1.1 Work on Assignment

1.1.1 *Directness*

1. I do not feel like there is a distance as I know what steps I need to execute and how to execute and I get instant feedback.

2. I feel like I am directly interacting with my assignment. I can move to whichever part of the assignment with the touch pad and everything feels direct.

1.1.2 *Invisibility*

1. While using the overleaf editor, after the initial set up (which took only a couple of minutes) I did not think about the interface at all. I concentrated only on my task which was to complete the assignment.

2. I was comfortable working on my assignment as soon as I finished the set up. I did not spend any time learning how to use it. Everything was very intuitive

which helped me understand what I needed to accomplish my task. So I think the interface became invisible through design.

3. I thought about the interface only during the initial setup and since then I have not thought much about the interface.

1.2 Operating Washing Machine

1.2.1 *Directness*

1. It is quite far because it is difficult to know how to operate the machine to accomplish your task.

2. I am interacting solely through the interface.

1.2.2 *Invisibility*

1. I spend most of time thinking about the interface than the task. There are so many controls to choose from and figuring out how to operate takes majority of the time.

2. After using it regularly for several years now, the interface has become invisible. Not because of the design but because of learning and experience.

3. Yes, during the initial days of using the machine, I spent a lot of time figuring out the controls of the machine.

1.3 Using Instant pot

1.3.1 *Directness*

1. It is a little far as the user needs some practice to figure out how to operate when he is using it for the first time.

2. I feel like I am operating with the object solely through the interface.

1.3.2 *Invisibility*

1. I spend more time thinking about recipe and cooking (task) rather than the interface.

2. I am able to concentrate on the task now because of using the Instant Pot almost everyday over a period of time. So it is by learning.

3. Yes, during my initial days with the cooker, I though more about the interface.

1.4 Editing Photos

1.4.1 *Directness*

1. I do not see any distance as the steps I need to execute are easily identifiable.

2. I am directly manipulating the photo by moving my fingers on it to write something, pinching it to zoom in zoom out etc.

1.4.2 *Invisibility*

1. I spend more time thinking about the task than the interface.

2. All the options for photo editing are very easily understandable. So I think it is because of good design.

3. No. The options available are very straight forward and let's you focus only on the task.

2 QUESTION 2

The task I would like to select is *Cooking using my GE stove top*

2.1 Components of the interface I used to think about a lot

Figure 1—The figure shows the stove with the single light indicator for 4 coils and the knobs without markings.

There are 3 components with which I struggled.

1. The knobs doesn't have a marking so it is difficult to find out immediately whether the knob is at 0 or 5. Even though there is a slight decrease in width in

the active part of the knob, it is difficult to find out quickly.

2. There is only one light indicator for 4 coils. Which means the light is on when any or all of the coils is turned on. This is not a good design because this does not directly let the user know which coil is on. Instead the user has to look at the knobs, map it to the corresponding coil to know which coil is on. This can be seen in the figure 1.

3. The knobs are placed horizontally next to each other with a small sign which tells us which knob corresponds to which coil. Until the user gets used to this layout, he/she will spend a lot of time looking at the sign and mapping the knob and coil.

2.2 Thought process now and Why I no longer have to spend as much time focusing on the interface.

After using this stove top for about 4 years, I have a mind map that makes it easier for me to map the knob and coil and with just a glance at the panel, I get to know which coil is on. I use the light indicator just to confirm that all the coils are switched off. In short, the reason why I no longer have to spend so much time focusing on the interface is merely because of practice and experience working with the system.

2.3 Redesigning the computational interface

1. The first thing I would do is to have a separate light indicator next to each knob for the corresponding coil. The user does not have to spend any time to figure out which coil is on. This re-design will not cost much as it is just an addition of 3 light indicators. This can be seen in Figure 2.

2. The second thing I would do is to just put a small white marking on the active side of the knob instead of it being just plain black. This will help the user figure out the correct position of the knob easily. This can be seen in Figure 3.

3. Instead of placing the knobs horizontally next to each other, it can be placed in the same way as the coil which makes it very easy for the user to figure out which knob controls which coil. In this case, 2 knobs one below the other on left of the clock display and 2 knobs one below the other on the right.

After incorporating all the above considerations, the controls will look as shown below.

Figure 2—The figure shows the re-designed stove controls .

3 QUESTION 3

The domain I would like to choose is Cooking a meal using Instant Pot.

3.1 Visual

1. When we press a button, the light corresponding to the button lights up indicating that the user has pressed that button.

2. The big display tells the user the time remaining for the food to cook. This area is used to show other messages including errors as well. The font size is quite big and hence easy for the elderly as well.

3. There is also indicators for the pressure levels.

3.2 Auditory

1. When the cooker starts cooking and after the cooking is done, the cooker beeps to alert the user.

2. There are different sounds when the cooker lid is closed successfully and removed. This gives instant feedback to the user that they have securely closed the lid.

3.3 Haptic

1. The user can feel the press of the buttons unlike the buttons on a touch screen. This gives the user immediate feedback.

Figure 3—The figure shows the Instant Pot visual features.

2. When the user closes the lid, he can feel the lid locking. The feeling assures him that he has closed the lid securely.

3.4 Designing type of perception could be used to give feedback about something that does not currently use that modality

3.4.1 *Visual*

1. There should be a provision to track the cooker through a mobile app. The cooker should send notifications to the mobile app with the details of the current state of the cooker.

2. There can also be visual displays to show the current pressure level (while the pressure is building and while the pressure is venting).

3.4.2 *Auditory*

Instead of beeping loudly which would disturb other members around, there can be a mobile app tracking the cooker and the notification can be sent to the phone. Whenever the phone beeps, the user can check on the cooker without disturbing others.

3.4.3 *Haptic*

The mobile app can vibrate which will indicate the user that there is an alert from the cooker. This will help the user get alert even without going to the cooker. This feature will help user to concentrate on other tasks without having

to worry too much about the cooker and respond to the cooker when there is a notification.

3.5 Different kind of human perception

We can use *smell* to figure out the doneness of the food. When the food is smelling raw it means the food is still not ready. With experience we can figure out when the food is cooked completely through smell.

4 QUESTION 4

4.1 Give the user control of the pace

4.1.1 *Interface*

LG TV

4.1.2 *Description of the Interface and Violation of Tip*

In the LG TV I have in my home, entering the channel number is very problematic. If we want to type a channel number which is more than a single digit, we have to do it within a stipulated time. Otherwise, all the numbers we have entered disappears and we have to start entering the numbers all over again. Considering the fact that the user has to look at the remote control every time to enter a number, the allotted time is insufficient. This adds unnecessary load on the user. This is clearly a violation of giving user the control of pace.

4.1.3 *Redesign the interface*

The user should be able to take as much as time he needs to enter the channel number. The user will press *OK* button after he is done entering the channel number and only then the interface should begin processing it.

4.2 Offloading tasks from the user onto the interface

4.2.1 *Interface*

Netflix

4.2.2 *Description of the Interface and Violation of Tip*

The Netflix app does not store the recent searches the user has performed. Storing the recent searches makes it very easy for the user to search an item from

his list of searches directly by clicking on it rather than remembering what he had searched some time or days ago. This adds cognitive load on the user. To ease this, the app should incorporate the *Recently Searched*.

4.2.3 *Redesign the interface*

1. When the user clicks on search icon and clicks on the search text bar, the recent searches can be displayed as suggestions. The user can either select from this list or go ahead and type to find his desired results. In this case the recent searches data is available only until user types something in the search text.

2. To permanently show the recent searches, we can add 2 tabs when user is performing search. One will show the search results for the text he has entered and the other tab will contain the user's recent searches.