

Assignment P1:

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1 QUESTION 1

To answer this question, I chose Canvas as an interface that I regularly use as a Georgia Tech student. Canvas is a tool that is currently being used at Georgia Tech for different purposes. For instance, students can benefit from the features this tool has to get access to registered course contents as well as viewing their grades. Canvas also is a bridge of communication between the students and the teaching team, including the instructors and teaching staff. In this section, Canvas users (i.e., students) are first discussed from the perspective of the processor and predictor model. After that, comparisons are made between the insights provided for each of the two models.

1.1 Student as a processor model

Canvas can be discussed as an interface from the perspective of the processor model of the students. For example, students watch recorded video materials uploaded to Canvas regularly. In order to understand how much time is required to watch videos for each section of the course (this is the objective), one must click on all sub-sections, go to the video part of that sub-section and add up the time length for all of them together (this is the measurable outcome). This is the only way to calculate or figure out the time needed to finish watching videos of certain course sections and is not efficient since it takes a lot of time and effort. This implies that the design considered the student as a processor model because this task is something a computer can easily do but it is not easy and efficient for a student to do.

1.2 Student as a predictor model

Canvas is a tool that has several features which are designed considering the user as a predictor model. For the similar example of course videos, students can simply track the point to which they watched the content. They can continue watching the videos from the point they left. Another example is the calendar integrated in the Canvas system. With this calendar, one can visualize the important to do items such as assignments, registration phases deadlines as well as

their due dates. Also, the other feature of the calendar is that if one submits an assignment, the assignment is crossed out from the list. Such features of the Canvas interface give the students the opportunity to predict the future.

1.3 Comparisons

With the processor model, one can examine how much more efficiently one Canvas interface is regarding accessing the course materials, tracking student's progress and grades as opposed to another interface. With processor model, improvements can be made in terms of visualization, and data accessibility at a higher level. For example, the total time of the lecture videos for each section of the course can be added in front of the section names. More details about the time are also useful to be added for sub-sections. Another example is a Canvas interface that navigates the students to the most recent tab used with one click might be a great improvement that elevates the satisfaction rate of the students. On the other hand, predictor model focuses more on the user's process of thoughts. Therefore, with this model, improvements can be made at a lower level by adding extra features or options to reduce the cognitive load from the user. For example, adding a certain feature such as calendar enables the students to plan ahead for important dates.

2 QUESTION 2

To answer this question, I would like to discuss about the activity monitoring app interface of my Apple watch. My Apple watch is a device that I am constantly wearing throughout the day and night. There is an app that is called activity monitoring on my watch. This smart app monitors my physical activity, heart rate, and oxygen level in my blood and notifies me if I need to do certain things such as physical activity, drinking water, or meditation.

2.1 Different contexts, constraints and challenges

The activity monitoring app on my Apple watch is used in various contexts, each cause a different challenge to use the app interface.

For example, I spend about eight to twelve hours of the day sitting behind the desk working with a computer. In this context, I need to stay focused on multiple work tasks and prefer not to be disturbed by the notifications constantly reminding me to do certain things such as doing exercise or do meditation.

A different context is that when I am doing exercise (e.g., yoga, running). In this context, I believe the app interface requires to constantly give me feedback on the calories burnt, my heart rate, and oxygen level. It is not very convenient to read the notifications on the watch while exercising as it distracts you from the activity. You might even need to change a certain yoga position for example to turn your wrist and be able to see what is written on the watch.

Another context example is driving. When driving, you are engaged in different cognitive activities such as focusing on the road, being aware of your surroundings and other cars, as well as reading the map that gets you to the destination. Getting constant notifications on the Apple watch in this context can be disturbing and might cause you to lose concentration and miss an exit or even hit other cars on the road.

2.2 Design interface depending on the context

The interface design for the activity monitoring app requires to be different for each context depending on the constraints and challenges associated.

For instance, for the context of work, while sitting behind a computer desk, the best design for me is for the app interface to enable me to set time limits in the day allowing the app to send notifications only during those pre-defined time limits. This reducing getting constantly distracted from the tasks I am focused on. On the other hand, it reminds me of my body's certain needs that I require to respond to (e.g., stand up to allow better blood circulation in body or meditate to lower stress, blood pressure and increase oxygen level in blood).

For the context of exercising, I would prefer the interface to give me regular voice notifications. This allows me to adjust the pace in my exercise. Also, hearing the notification instead of reading it on my watch helps me to focus better on the positions required for the exercise. For example, I do not need to come out of a yoga position to be able to turn my wrist and read the notification on my watch.

For the context of driving, I would like the interface to only notify me about the critical notifications. I also prefer a voice notification in this context as well as it allows me to stay more focused on the road. Also, I like the interface to be interactive. For example, instead of the app to send me notifications, I like to be able to ask the app about certain things such as my heart rate at certain times when I feel safe while driving. In addition, it would have been great if the interface

could also interact with my car and show these critical notifications on my car's screen. This would be helpful in the cases of emergency. At this time, I can stop the car and call emergency services to help me.

3 QUESTION 3

For this question, I discuss the three stages of the gulf of execution as well as gulf of evaluation in Ed Discussion.

3.1 Gulf of execution

The first stage in gulf of execution is to identify the goal (get the answer to a question) of the user (me as a student) in the context of the system (Ed Discussion). At this stage, I specify my intent in terms of the Ed Discussion interface as asking the question on Ed Discussion's interface.

The second stage in gulf of execution is to identify the actions necessary to accomplish the task of asking a question. I think the current interface does a decent job regarding the second stage. There is a large blue button indicating "New Thread" as well as a pen and paper. Although it attracts the user's attention in the very first place, it is not trivial to know whether you can ask questions by clicking on this button or this button leads you to some places where you can participate in course-related discussions. If I click on this button though, it brings up a window with the title of "New Question". In the first row, it is trivial to understand that you need to click on the "Question" button to ask question. Next, you need to specify a title for the question which is obvious as it is similar to letters and emails, all having the same format. After that, in the new row, it is also trivial that you are required to specify a category for your question. This might not be what the user was thinking about in the first place, but I put it in the context of forward planning. Then, there is a Microsoft Word-like window that is also understandable for people who at least did write a simple text or sent an email using a computer. Finally, one needs to specify whether they want to post this question in private or anonymous mode. This requires a bit of background knowledge on course guidelines. One needs to know which questions need to be asked in private mode or in which cases they can post anonymous questions. After that, to submit the question, one needs to hit the "Post" button.

The third stage in gulf of execution is to execute the actions identified in the previous step within the Ed Discussions interface. Therefore, for the purpose of executing the above-mentioned actions, I first need to press the “New Thread” button. After that, I press the “Question” button, I then specify the title and category that best fits my question. After that, I need to write down my question using the formatting options (buttons) that exist, check one of the boxes beside private or anonymous if I need to and then click post. To me, although all steps do not seem to be trivial to execute, it is still possible to figure out how to post (ask) a question in a matter of minutes even if someone is new to Ed Discussions.

3.2 Gulf of evaluation

The first stage in the gulf of evaluation is to identify the Ed Discussion interface output. This means to identify what the interface did to demonstrate that the question is posted. Or identify whether anyone posted an answer to that question. Currently, the interface is designed in a way that after submitting the question, it immediately brings up a window showing the title one chose for the question, the category, name of the student, as well as other options for editing, deleting and visualizing the number of views. I believe this is not a good design in terms of the first stage in the gulf of evaluation. A new user for instance might not immediately know if the question is posted. There is no text or sound indicating that. However, when one writes feedback to the question, the student will immediately know as the bell button on the top right corner rings and shows a notification regarding this.

The second stage of the gulf of evaluation is interpretation. This means that can the student interpret the meaning of the new window that pops up after submitting a question. I believe Ed Discussion interface does not do a good job on that either. The new window does not help the user understand whether the question was posted or not. One should be familiar with the interface to know about this. On the other hand, interpreting whether one answered the question is cumbersome. Not all notifications that pop up on the bell are related to the question asked. Students need to read the notification details to be able to interpret if it was related to that certain question or not. A buffering icon might help the user to have a better interpretation.

The third stage of the gulf of evaluation is evaluation. This means that if the students can use their evaluation to examine whether or not the question is

answered. In order to do this, one needs to read all notifications thoroughly, interpret if the question was answered and read through the answer to evaluate if the question was answered. This is not a very efficient system in terms of evaluation but gives the opportunity to the user to do the evaluation.

4 QUESTION 4

In order to answer this question, I decided to discuss and compare my oven and blender. These are the two devices that I regularly use in my kitchen.

4.1 First activity

The first device that I see a large gulf of evaluation for is my blender. I use this blender to make smoothies every morning. The blender has two buttons. One button to turn it on and the other to turn it off. I usually put some fruit and vegetables in it and press the on button to mix everything together. After some time, I use the off button to turn it off and pour my smoothie into a glass.

I see a huge gulf of evaluation for this device. First, there is no indicator (e.g., light, text) that shows that device started working after pressing the on button. If for example, the device got stuck, it is not trivial to know if it was because of a large piece of fruit or there is something wrong with the rotating parts. The device however might cause some noise showing that it is trying to mix but it is still hard to interpret if it is rotating or not. And if not, what the reason is. In addition to not indicating the output and the output being not easy to interpret, it is hard to evaluate when all the fruits and vegetables are mixed completely, and the smoothie is ready to be consumed.

4.2 Second activity

The second device that I would like to discuss here with a lower gulf of evaluation is my oven. This device is embedded with a light indicator, a sound indicator, and a number of buttons. If I press the on button, it immediately plays a beep sound and turns on the light indicator to show that the procedure started. It is easy to interpret these indicators. In addition to these, you can increase or decrease the temperature using a sliding bar. There is a light bar indicator designed next to this sliding bar that becomes brighter as you increase the temperature. This is useful to indicate the output (i.e., increase in temperature) and interpret it easily. Also, my oven has a sensor that indicates when it reached to a certain

temperature that I wanted. This also gives the benefit of easily evaluating if the desired output was achieved.

4.3 Lessons learned

My oven has certain features that narrows the gulf of evaluation. The following points are useful in my mind: 1) having a light and sound indicator for pressing the on button is of great importance since it enables the user to interpret and evaluate the task (i.e., turning the oven on) easily; 2) indicating the changes in the temperature using a bar light is also of great interest for the user since it enables to visualize, get notified about the output and interpret it easily; 3) the temperature sensor embedded in the oven also helps the user to both interpret and evaluate if the oven reached to a desired temperature. These features can be translated into similar features that can be used in the blender and are discussed in the following section.

4.4 Application improvement

The blender's design can be improved with certain features inspired by the design of my oven. The following are some examples: 1) A light indicator can be added on the blender's body to show if the device started the mixing process. This will help with output indication and interpretation; 2) A bar light can be used to indicate the speed of the rotor. The higher speed the rotor has, the lighter the bar light becomes. This also eases the output indication and interpretation; 3) A sensor can be embedded in the blender to indicate that the rotor reached to a certain desired speed. This will also help in narrowing the gulf of evaluation by easing the evaluation process.