

Assignment P4

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1 QUESTION 1

The initial situation is that you have questions for your exam grade and want some clarifications from the professor. So this brings to the ultimate goal of contact the professor to ask for an explanation of the grade and make the professor aware that you have questions for him regarding the grade. There are several methods to achieve the goal, including but not limited to: emailed the professor about the issue, talking to the professor in person, calling and talking to the professor and posting the questions on Ed discussion board. Different operators are needed to finish the task for different methods.

For the first method of emailing the professor, the initial situation might be that the grading issue might be complicated and you want to include a lot of details in the message. So the selection rule becomes that if the message is complex and detailed and you want to write a formal message. For this method, the operator might take 1-3 seconds to open an email, 10 min to write the content and 1 second to click send.

For the second method of talking in person, the initial situation might be that it's almost the deadline to argue the grade and you want to ask the question to professor as soon as possible. Considering the urgency of request, you select the method of talking in person. Assuming the operator is on campus and he needs to walk to the professor's office and talk to him asking about the grading issue. The time for walking might be 10-30 min and the talk might be another 10-30 min process.

For the third method of calling professor by phone, the initial situation might be you are not on campus but the request is urgent. The selection rule is that you want to talk to the professor informally. The operator needs to dial the number which may take 10-30 seconds, and talk to the professor on the phone which may take 10 -30 min.

For the fourth method of posting question on the Ed discussion board, the selection rule is that request is not that time sensitive and the message is detailed but

not as formal as the email message. The operator will open the website and start a new message thread. The process might take 1-10 seconds. Then he needs to type in the content in the message box, taking around 10-15 min. Then he clicks send (1-3 seconds).

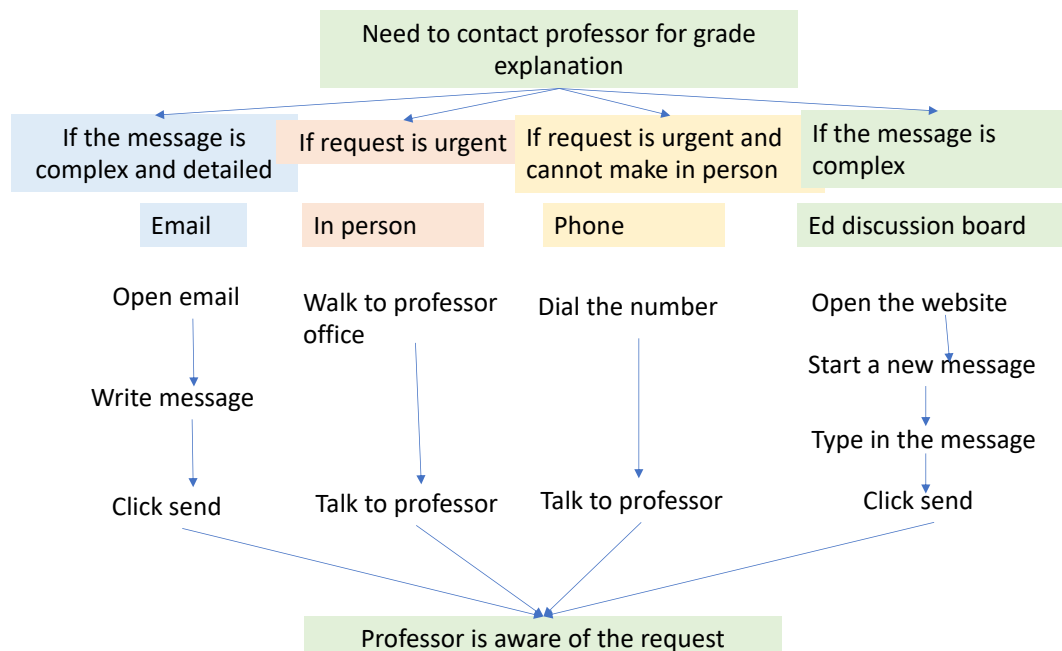


Figure 1—GOMS model for contacting professor for grade questions.

2 QUESTION 2

Submitting this assignment to Canvas and subsequently receiving the grade and feedback can be shown in a hierarchical task analysis. The plaintext outline can be shown as below.

1. Complete an assignment
 - View lecture videos
 - Log into Ed
 - View the lecture video list
 - Click on the videos of 2.7 and 2.8
 - View all lectures
 - If want to skip lecture, click on “next” button
 - View assignment P4 requirement
 - Log into Canvas

- Click on course “HCI 6750” from dashboard
 - Click on assignment
 - Click on assignment P4
 - Click on the link showing “this page of the course web site”
 - Scrolling down
 - Review all the requirements
- Write assignment
 - Open the template
 - Type in the contents
 - Save the work as pdf
 - Click on file
 - Click on save as
 - Click on file format
 - Select pdf
 - click on close button
- 2. submit the assignment on Canvas
 - enter Canvas URL
 - log into Canvas
 - Click on course “HCI 6750” from dashboard
 - Click on assignment
 - Click on assignment P4
 - Click on the button of start assignment
 - Click on the button of choose file
 - Select file from folder
 - Select the folder with the document
 - Select the document
 - Click on open
 - Click on the agreement box
 - Click on the submit assignment button
- 3. Get feedback and grade
 - Receive grade notification email from Canvas
 - Enter canvas url
 - Log into Canvas
 - Click on assignment P4
 - Review the grade section
 - Scrolling down

- Review the comment section

3 QUESTION 3

Before the GPS navigation, people often use their memory, a physical map or the navigation from another person to help with navigation when driving. For this question, a driver, a passenger, a map, a dashboard and road signs are selected as artifacts in the distributed cognition system. The cognition system helps alleviate the cognition load outside the driver's mind and distributes among other artifacts.

For the driver, he has the perceptions of listening to the sounds around him, looking at the road, directions, signs and other situations on the road. Also he has to touch the steering wheel, the gas and brake pedals to control direction and speed. He also needs to use his long term memory to recognize the roads, the road signs that can give him the idea of what to expect in the next turning or cross road. Based on his memory of road sign, for example, when he sees the sign of school zone, his cognitive reasoning is that he needs to be more careful in the school zone. As a result, he slows down the speed and takes more attention of the road situation. For the passenger who helps navigation, she needs to perceive both audio and visual signals outside of the system. Her cognitive load is alleviated by the physical map which distributes her short term memory onto the map. She refers to the map to determine if they are on the right track. If not, she can look at the map to get the right way and give the driver directions. For the dashboard, it offloads the task of driver's cognition for the speed and other driving parameters. It acts as an artifact to offload the working memory for the driver to remember the speed. For the road signs, they are artifacts that offload the cognition from driver and passenger to remember the road conditions and zones. It acts as a reminder to the driver and passenger the road ahead is in what condition and what to expect. It gives the driver a visual reminder and offload the cognition for him to determine the condition based on his own memory and experience.

The system also consists of social cognition in addition to the distributed cognition. The social relationship between the passenger and driver is a married couple. Naturally they will have a trusty relationship between them, while a lone driver using a GPS doesn't have this kind of social relationship. The trusty

relationship will make it easy for the driver to follow directions from passenger. Also the driver might be near-sighted, so the passenger may give navigation directions a bit early to remind the driver the foreseen road conditions. However the GPS alone cannot take that into consideration and the driver might miss the direction from the GPS. The social relationship between the passenger and driver provides extra advantages to the success of the system comparing to the distributed cognition system. As the real situation is more complex than the model, the social cognition shows more social support and offloads the social responsibility from the system, making the system interaction more efficient.

4 QUESTION 4

I chose the task of withdrawing money from ATM machine as question 4 task example. The interface therefore will be ATM machine. The artifacts in the system include the keyboard, the screen, the money dispenser, the card dispenser, receipt, debit card and users who use the ATM.

For the user, he needs to perceive audio and visual messages from the ATM. When he wants to withdraw money from ATM. He needs to insert his debit card into the machine. The use of debit card offloads his cognition load of remembering the information of his banking account, as the card consists of a chip and card number which helps the machine to read user's banking information. The screen shows the request for the user to enter password. Then the user perceives a visual message from the screen showing to enter the password. The user then needs to type in the password using the keyboard. The use of keyboard help the system communicates between user and interface. If the user enter the wrong password number, the screen will show an error message. The user needs to process the message and reason it to make the interaction work. The reasoning behind his mind may be that he typed in a wrong password or the ATM machine did not function properly. So he takes the action to type in a password again and the screen shows the password this time is correct. So he proceeds to the screen showing different banking options and presses the button of withdrawing money. The information shows on the screen offloads his cognitive load of remembering the tasks and transferring his intension to the interface.

With the cash being dispensed in the dispensing box and making the sounds of cash counting, the user knows that his money has been successfully dispensed

from the bank and was being counted by the machine. The user perceives the audio sound and visual message on the screen and his reasoning behind is that his request has been successfully processed. The dispensing box offloads the user's cognitive load of counting the money and remembering the count. The next action is from the artifact of receipt. The receipt keeps the record of the transaction time, account, transaction type and amount and other related information. Receipt helps offload the user's long term memory of this transaction. If in future the user has questions regarding this transaction, he can refer to the receipt to track all the information.