

# Assignment M2: CS 6750

Ajit Kumar Yadav  
ayadav85e@gatech.edu

**Abstract**—Towards the HCI Assignment M, I have selected one of my academic partner websites. The main aim of this website is to get students registered and offer them preparation material required to successfully complete IAS/PCS professional exams (entry exams to get in administrative services at Country and State level). This website has been in use for the past 10 years, now we are in the process to get it renewed, so we can bring more features to our students. In this phase, we will be redesigning the ‘Study Material’ section (*as shown in Appendices Figure B*) of the website. Until now the primary website owner has explained his requirement to the developer, but no action has been taken to get input/feedback from actual users (students), faculties and other stakeholders, I will be doing that part by using the Design Life Cycle given in our HCI course. So, we can fulfill the expectations of all the stakeholders.

## 1. NEED FINDING EXECUTION 1- SURVEY

Survey was sent out to faculties, students. Out of 15 faculties, we received responses from 4 faculties, out of 50 students in class, we received responses from 12 students, in this case we can not generalize the majority view and we should wait for more responses in order to reach a conclusion. Based on responses (as shown in *Appendices Figure A*) as of now, we can summarize the following points:

- a) They want to have more options to save the downloaded materials that would be easy to access later on.
- b) Most of the students suggest having broader criteria for search, if we go through their answers, it seems they prefer to search the notes by Subject, we may find some other search criteria in future with more responses.

- c) It seems that the overall process of finding the course material section and executing the task can be further improved for students . They want to enhance the accessibility of the materials, so they can get it wherever required.

### **1.1 Limitation with Survey**

As already mentioned above, we did not get enough responses (as anticipated). Because of unavailability of the chairman (who supervises all the activities) in the initial stage, students did not get the survey at the right time. But in future we are expecting more responses to come. So, it will give us more clarity as to exactly what to include in our website's course section.

### **1.2 Potential Biases During Survey - Confirmation Bias**

We did not get enough data so there are chances to relate students' requirements (with few responses) with our own thought process and come to a conclusion. However, this bias was not expected in the previous stage.

### **1.3 Steps Taken to Mitigate Confirmation Bias**

In order to come to any conclusion regarding changes. We are waiting for more responses and not trying to predict any action as of now. We have a demographically diverse population and different academic backgrounds. So getting more responses will help us in our future decision. Also during the interview we came to know that certain questions were not clear to participants so they could not fill up proper responses, so we will be rephrasing our few questions in future. Naturalistic interviews will also be helpful in this direction.

## **2. NEED FINDING EXECUTION 2 - INTERVIEW**

Following the survey, I got the opportunity to talk to two primary users (candidates, who are preparing for the exam, one male and one female), two

faculty members (who are taking classes at campus), and also my academic partner (chairman of the campus).

I started the interview process following the survey questionnaire, except one faculty all were involved in the previous phase of the survey. My objective was to understand their thought process behind filling up the survey questionnaire. Following points were summarized:

- a) They liked the idea of advanced search (especially the students) to download course notes. Sometimes it gets difficult to navigate notes which were provided 3-4 months back, if the desired material was not downloaded at that time. However, not all the faculties (two faculty responded) and the chairman mentioned it. Since the faculties and the chairman interact with the site as administrator on a daily basis. So, being an expert they might easily recall the topic name later on.
- b) Students liked the idea of voice assistance software. But in the survey questionnaire, they did not understand the exact working of this software and so unable to respond on this point. According to them it will help in revision (travelling in public transport), especially during exam period. To do so, willingness was not shown by the chairman, the reason could be extra resources that will be needed.
- c) Students also liked the future option to create personalized lists of notes for later use. During the survey, they were not clear on this, the exact purpose of having a personalized list. In our discussion, they understood the things and gave very positive feedback, especially if it can be incorporated in the website page itself. They also want to have other options for exporting notes like Google Drive etc.

## **2.1 Limitation with Interview**

I could personally interact with only two students from a class of about 50. So at this point, I am not in position to generalize my findings. Faculties were also not

willing to disclose themselves openly, so it was a bit tough to understand their actual understanding at this stage.

## **2.2 Potential Biases During Interview - Social Desirability Bias**

During my conversation, I felt that few faculties hesitate to open themselves before me. They might want to be good in the eyes of the chairman. Whereas a few faculties shying away in giving natural response. They might feel disrespect for me in giving unwanted criticism (unknowingly). It is also possible that they don't want to initiate this process and let the chairman take the lead.

## **2.3 Steps Taken to Mitigate Social Desirability Bias**

In order to mitigate this bias, in future we all (faculties, student representative, chairman, and the researcher) have to participate in a recorded group meeting. Objective of this whole exercise must be clearly explained (further improvement in the existing website study material section). Since it benefits all the stakeholders and does not put any stakeholder in bad shape, this way problems can be resolved. At this stage, we did not call any group meetings and it might be the reason for not getting more natural responses. We may also keep anonymity of faculties and students, if some of them want to. Purpose is to bring diversity of view that gets fulfilled with more responses.

## **3. NEED FINDING EXECUTION 3 - PARTICIPANT OBSERVATION**

Participant observation was carried out by my academic partner and myself. Our objective is to cross validate the questions asked during the survey and interview phase. My academic partner arranged one workshop of about 15 minutes during his class and asked students to download certain materials (which was posted about 5 months ago). I found that it was a tough task and it was required to go down the list for 2-3 minutes before someone can locate the exact material. So, this way we were able to verify the demand of students for search criteria by 'subject name' as mentioned in most responses in the survey. As per our

observation with students (me and my partner), cognitively it was very demanding for novice users.

### **3.1 Potential Biases during Participant Observation- Observer Bias**

Till date, this problem was not understood by the chairman as he is the expert of the domain. Browsing materials was a subconscious process for him and he could not differentiate the effectiveness among various users while performing the task (novices and experts). I had not anticipated this bias in the previous phase.

### **3.2 Steps Taken to Mitigate Observer Bias**

To mitigate this bias, I may need to sort out some prototypes with better search and storage options and let the users do the task in a natural environment. Further we need to have multiple interviews (recorded scripts) with different students about the changes that have been brought by improved prototypes. Before coming to conclusion.

## **4. DATA INVENTORY**

<b>QUESTIONS</b>	<b>RELATED ANSWER AND CATEGORY</b>
Who are the users?  (age, academic background, sex etc)	Most of the students are under age 20-30 in Liberal Arts background with a bachelor's degree. 63% are females and rest are male students. 81% students have bachelors and 19% with master degrees. (Source: Survey)
Where are the users?	70% of students are using websites through mobile phones, 10% on

(system used to access course notes)	laptops and the rest 20% are using Tablets. <i>(Source: Survey)</i>
What is the context of the task?  (if website is used outside the workshop)	Download during live lectures or travelling respondents are 60%, out of 60% respondents, only 25% said that the process of download was fine. No one responded very well. It indicates that most of the users complete the task either in the workshop or at home. They are not comfortable doing it outside along with other tasks. <i>(Source : Survey)</i>
What are their goals?  (find out relevant course notes)	Based on responses from surveys and Interviews, browsing relevant notes from the course section is not simple. They need additional features to refine their search and downloads. <i>(Source: Survey and Interview)</i>
What do they need?  (to find the course notes and save it for later use)	To achieve their objectives, they need other integration on the website (access to Google drive etc.). This will provide them better accessibility to content at a later stage. However, we need more responses to get certain as to what additional features to include in future developments. <i>(Source : Survey)</i>
What are their tasks and sub-task?  (download the material and read it whenever needed)	As discussed above, additional features (personal playlist and external storage) are required to fulfil their task. Advance search is of utmost importance. Additionally, they also like to have voice assistance to

	read the materials. ( <i>Source: Survey &amp; Interview</i> )
--	---

#### **4.1 Suggested Improvements**

In this phase, students do not get enough time to respond and the objective was not properly conveyed. Also we are waiting for more responses that will give us more clarity. I have to rephrase a few questions in the survey that can be understood in the participant's context. For example, many students were not completely aware about the voice assistance, but when given the example of 'Audible' from Amazon, they were in a better position to answer the same question. Similarly questions related to system use were not conveyed properly in my view. I should elaborate my questions with more examples in daily life.

### **5. DEFINING REQUIREMENTS - NEXT ITERATION**

Engagements at task, Load time, and Attraction of the Website would be the main criteria to evaluate our future prototype. But at this stage, information obtained from all the three needfinding exercises suggest the following requirements for next iteration:

#### **5.1 Functionalities**

It should offer advanced search criteria (not currently present). Integration of external storage and voice assistance. However, more responses may bring additional functionalities into picture.

#### **5.2 Accessibility**

As indicated by the student's interview, they feel more satisfied if they have more options to access the materials on demand. We also have to think about user experience as many students are using mobile phones but are not fully satisfied.

#### **5.3 Learnability**

Our focus would be towards novice users, as we are trying to incorporate new features. As of now, execution time and efficiency should not be a matter of concern. So, in this sense we should have help resources in the menu bar.

## 6. CONTINUED NEED FINDING

With the addition of new functionalities, our next survey and interview questions must revolve around *different groups (based on expertise), time taken to complete the task*, which may help us in defining future strategies about the effectiveness of the working system.

## 7. REFERENCES

1. Faste, H., Rachmel, N., Essary, R., & Sheehan, E. (2013, April). [Brainstorm, Chainstorm, Cheatstorm, Tweetstorm: new ideation strategies for distributed HCI design](#). In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 1343-1352). ACM.
2. Yang, M. C. (2009). [Observations on concept generation and sketching in engineering design](#). *Research in Engineering Design*, 20(1), 1-11.
3. Rogers, Y., Sharp, H., & Preece, J. (2011). [Chapter 6: The Process of Interaction Design](#). In *Interaction Design: Beyond Human-Computer Interaction*. John Wiley & Sons.



## 8. APPENDICES

2/15/2021

Survey to Redesign Study Material Section of the Website

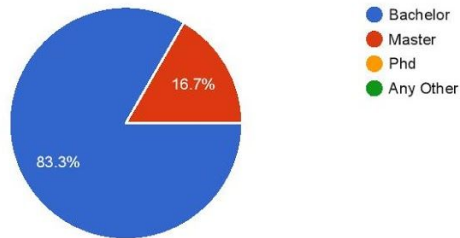
### Survey to Redesign Study Material Section of the Website

12 responses

[Publish analytics](#)

1) What is your educational qualification?

12 responses



2) Following question no 1, if you choose Any Other, kindly mention your degree

6 responses

B. A

Pursuing graduation in law.

BSC MLT

Msc

Bsc

BA (Hons.) English

<https://docs.google.com/forms/d/1iAdD4Pm41R4i1TuiJBsTBUfBBqYTOo78oDNK7Ijxh6A/viewanalytics>

1/8

## 3) What was your main subject of studies?

8 responses

Economics, Political Science, History

Physics, Chemistry, Mathematics

Economics

Economics, law, G.S., .

Public administration

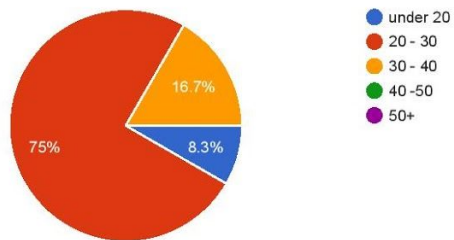
Computer Science

B.sc(it)

English Literature

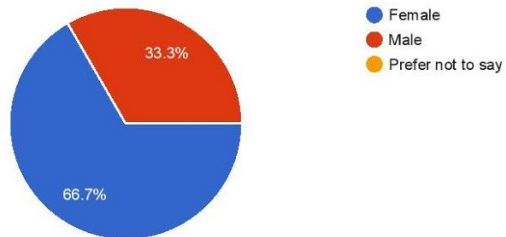
## 4) What is your age?

12 responses



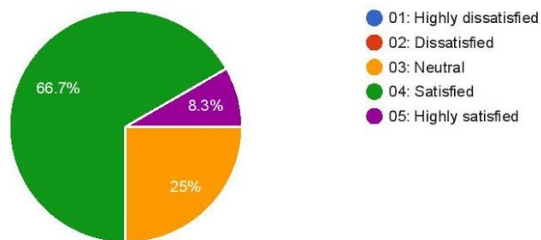
5) What is your gender?

12 responses



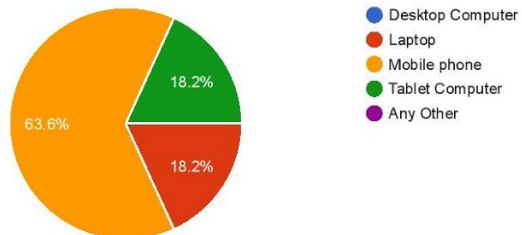
6) How satisfied are you with current process of downloading the study material from the website?

12 responses



7) How do you mostly access the website to download study materials?

11 responses



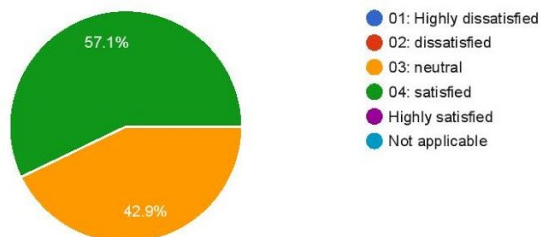
8) If you choose Any Other option in question 7, kindly provide the name of system.

1 response

HP ProBook i7

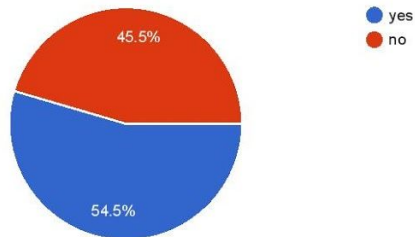
9) If you clicked Mobile phone in question 7, please explain how satisfying was your experience?

7 responses



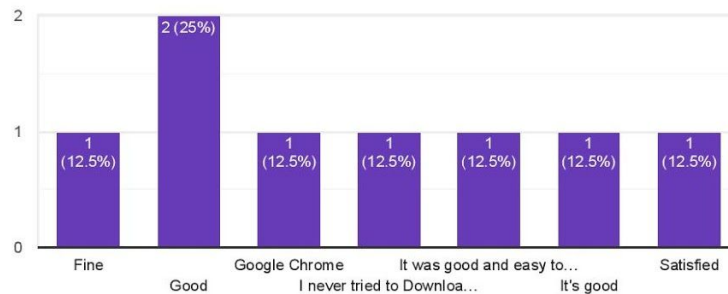
10) Have you ever tried to download the study material while in travelling or during live lectures?

11 responses



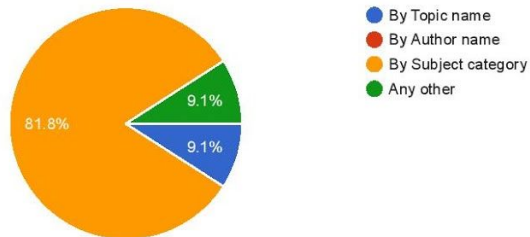
11) Based on your answer to question no 10, How is your experience browsing the material?

8 responses



12) Would you like to have some other search criteria to find the relevant course notes?

11 responses



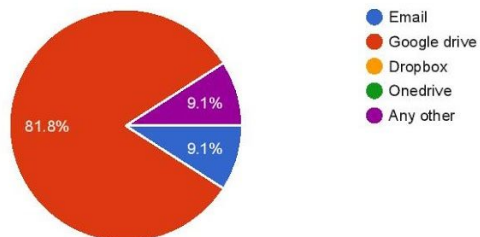
13) If you clicked on any other in question 12, pls specify the search option

1 response

Like current month wise,section wise ,gs paper wise

14) Would you like to export study materials to any other place (for exa. Your inbox, Google drive etc.)? (Hint: currently local hard drive is only option)

11 responses



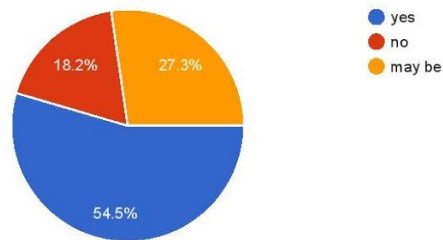
15) If you clicked any other in question 14, kindly mention name

0 responses

No responses yet for this question.

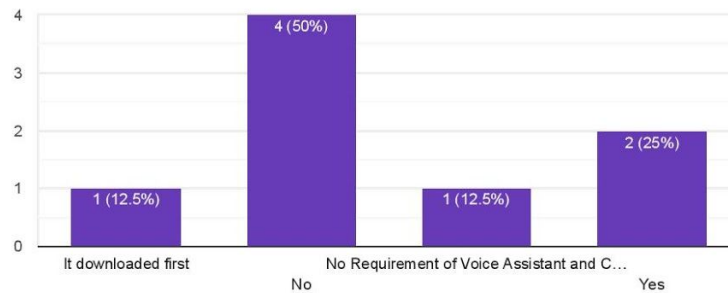
16) Would you like to have option to read the material in separate browser by right click (currently it downloads first)?

11 responses





17) Following the question no 16, would you like to have voice assistance for reading?

8 responses



*Figure A Survey Questions*

Study Material (downloads.php)  (<https://www.facebook.com/er.abhisheksharmaacademy/>)  (<https://www.youtube.com/channel/UC0mbcyFFeU5KMCfVnID88fA>)

## Download

#	Title	Download
1	Current Affair 13 February 2021 in Hindi	Download (uploads/team/kA40BgSaY5nrK50watCwzNN8WwdbAcYHf0AQzasDi+QXINHk0aSm1mXEYf9NAZ1.pdf)
2	Current Affair 13 February 2021 in English	Download (uploads/team/kA40BgSaY5nrK50watCwzNN8WwdbAcYHf0AQzasDhS196ozYgw81(19319)8wgMOIGA1.pdf)
3	Current Affair 12 February 2021 in Hindi	Download (uploads/team/kA40BgSaY5nrK50watCwzP8(19319)EaaAdffWqCd+zQu7l8sg(19319)Nj1zpc0c2xr(19319)M12c1.pdf)
4	Current Affair 12 February 2021 in English	Download (uploads/team/kA40BgSaY5nrK50watCwzP8(19319)EaaAdffWqCd+zQu7l9pvCAvS1jltqH8e(19319)Bbr(19319)c1.pdf)
5	Current Affair 11 February 2021 in Hindi	Download (uploads/team/kA40BgSaY5nrK50watCwzP09o3fS3CZWba6SIBqW+dJ7xDMv3yEFB06w6PnlbFDc1.pdf)
6	Current Affair 11 February 2021 in English	Download (uploads/team/kA40BgSaY5nrK50watCwzP09o3fS3CZWba6SIBqW+dL4f9AAI+CMr(19319)dhTWxmaHZ1.pdf)
7	Current Affair 10 February 2021 in Hindi	Download (uploads/team/kA40BgSaY5nrK50watCwzD9vjm55EzYSjgvrLnyTqYJaogbeS(19319)WDLb7k6tBO8MKM1.pdf)
8	Current Affair 10 February 2021 in English	Download (uploads/team/kA40BgSaY5nrK50watCwzD9vjm55EzYSjgvrLnyTqYZvseT(19319)7fdHrftwsJnUQ1D1.pdf)
9	Current Affair 09 February 2021 in Hindi	Download (uploads/team/(19319)Gwh3eAmJa6Rg++9Ot5kiR8IQW6CQUIN1Qv2H4Z6rYOy05Aa8OyadilhY6f8w0UB1.pdf)
10	Current Affair 09 February 2021 in English	Download (uploads/team/(19319)Gwh3eAmJa6Rg++9Ot5kiR8IQW6CQUIN1Qv2H4Z6rYORsRyNyqm40KCHIDfSYrKQ1.pdf)
11	Biology Disease Notes in Hindi	Download (uploads/team/pPRt8cfwOUNSNtk900hFQ==1.pdf)
12	Biology Disease Notes in English	Download (uploads/team/HfMsb(19319)dzK1j8vgLWmp0kO+xIwcJEXw618oxYPzL9(19319)A=1.pdf)
13	Current Affair 07 and 08 February 2021 in Hindi	Download (uploads/team/(19319)Gwh3eAmJa6Rg++9Ot5kiYF4SSimwnjwilOpWejqU7nJQsPFGHrsihltgEFQk(19319)Qe1.pdf)
14	Current Affair 07 and 08 February 2021 in English	Download (uploads/team/(19319)Gwh3eAmJa6Rg++9Ot5kiYF4SSimwnjwilOpWejqU7m0RMpl+4Ploax40MGGJxQF3gwDd2TV53p+YthgR4sw=
15	Current Affair 06 February 2021 in Hindi	Download (uploads/team/(19319)Gwh3eAmJa6Rg++9Ot5kiSYkPa8zYPL+xiZZo8ylkZ4sMRqSUsjyk0ZxNzBB8u1.pdf)
16	Current Affair 06 February 2021 in English	Download (uploads/team/(19319)Gwh3eAmJa6Rg++9Ot5kiSYkPa8zYPL+xiZZo8ylkZ4sMRqSUsjyk0ZxNzBB8u1.pdf)
17	Public Administration MIS Notes in Hindi	Download (uploads/team/eiyBhLmmMbDk(19319)QyYgFJi8A==1.pdf)

Figure B source: [www.civilcademy.in](http://www.civilcademy.in)



