Assignment M1:CS6750

Ajit Kumar Yadav

ayadav85@gatech.edu

Abstract—Towards the HCI Assignment M1, I have selected one of my academic partner websites. The main aim of this website is to get students registered and offer them all the services 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. 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. PROBLEM SPACE

This website was started about 10 years back. That time most of the activities were done manually within the coaching center (physical campus) and the website was primarily used as a marketing tool to make people aware of activities. In between, few technical activities, like changes in interface design and overall look was carried out by the developer. In the present scenario, with changes in time and context (especially the changes in work style brought by COVID-19) forced us to transform this website in all aspects so it can be more fruitful to the students who are working from home. On the other hand, this website is equally important for students in senior secondary schools, they can obtain adequate information about their future career track. From this perspective, the website must be user friendly even for people in other domains (exa. Parents, passing out school students etc). At this stage, following are the major drawbacks in my understanding, *a)* information is not contained within the website standard layout, the user has to move up and down to find all relevant information and it is very time consuming and confusing for novice users *b)* current website is designed only for current user as there is no link for

faculties, future students or any other stakeholders. *c)* buttons can be renamed to make it more universal (relevant to educational sites) *d)* Home button is like any other button and not serving actual purpose *e)* if we go further down in About Us button, faculty name not working and do not provide detailed information about them. Detailed can be found here; *www.civilacademy.in* also shown in Appendices *Figure A and B.*

2. USER TYPES

For our website, I would like to interact and have input from following types of users:

2.1 Primary Users

Primary users are those who are preparing for the exams (in this case IAS & PCS exams). As per our analysis in the past 10 years, we have mostly applicants from Liberal Arts field, and few have technical backgrounds. However, most of the applicants have completed their master's and as per our assumption they should be familiar with academic websites. Applicants are mostly in the early adult phase so by little practice or with help of 'help menu' they should be able to interact with website resources.

2.2 School students

This exam is very popular and prestigious nationwide (analogy can be given in terms of teacher preparatory exam in Finland). So, parents and children from an early stage in school life, start thinking about this and look for an adequate platform for preparation. Looking at this aspect, I feel, school students can be put in the second user category. To get their feedback, I will target students from my own school. It is in the sub-urban, so their technical expertise will be at the basic level or in some cases they might not have internet access in daily life. They are native speakers (mother tongue-Hindi). Age wise it will range from 16 to 20. Also, I will choose few English speaking and technically more expert urban school students in my neighborhood but few in quantity.

2.3 Faculties

Faculties are the people spending a huge amount of time guiding their students inside or outside the physical campus. So, making them part of the evaluation is

very important and I feel they should also take interest because of the importance of the exam. Exam pattern and syllabus gets renewed every 3-4 years, so it requires life-long learning from involved faculties. In that sense, they must be continuously looking for new innovative teaching materials that should benefit the interface design and content of the website.

2.4 My Engineering Batchmate

I will put them in the fourth category. They might not take much interest in doing this as they already have a busy life. But few of them can help us in our endeavor. They are at the mid stage in their career and expert in their own domain . So, this way I will be able to have expert ideas on this matter and cross validate with existing data from naive users.

3. NEED FINDING PLAN 1-SURVEYS

As mentioned in the course, surveys are a quick way to gather data from a large population. Also, in my study, since I am not able to interact with all the participants physically, it would be a good idea to put out a survey in the form of a questionnaire. In my case I feel surveys will bring out the best possible and natural response.

3.1 Survey with Primary Users

As already discussed in the user type section, my survey questionnaire should target all the participants (primary, secondary etc.). But since primary users (current applicant, who are about to take exam) are the most active users, who needs updated information on exams pattern, syllabus, course materials, any upcoming changes etc. on daily basis and because of current COVID uncertainty, they need a platform to get engaged in real time sitting at home. So, they must be able to point out specific details on the website interface, which is facilitating or hindering their work-flow execution through the interface.

3.2 Survey with Faculty

Secondly, surveys will be sent to faculties. After primary users, faculties are another important user of the site, who are going to provide course materials, assignments, class lectures etc. since they are spending lots of time on the website, they must be in position to explain specific technical details while doing

the task. Faculties are also course experts, so they know what other resources to link with. They are coming from different routes in their professional life (for example, some may be in academic, psychology, some in engineering or applied sciences) so this way we will have interdisciplinary understanding of required improvement.

3.3 Survey with School Students

Third, we are including a limited number of school students, who have just completed their senior secondary and are looking for graduate courses to enroll and also have future aspiration for IAS/PCS exams. In this case, we might bring some changes into the survey questionnaire, which is suitable at this stage. They might be interested in the course section of the website, so they can get more clarity about their track in upcoming graduate studies.

3.4 Survey with Recent Graduates

Fourth, we will also include some recent graduates, who are actively searching for the best path to IAS/PCS exam preparation. It is going to be a critical step for them (deciding upon future professional life), so they need many other details along with subject materials. They will be the active users and explorer for the website. They always look for Plan A to Plan B, meaning if something does not happen as planned then what to do next. So, they might be looking for other resources to connect, which might offer them extra help and for us it will give opportunity to connect our services to new topics.

3.5 Survey with Technical People (friends in I.T. Industry)

Fifth, finally we have planned to get our survey done by technical experts (few in numbers) just to get a sense of our prototype and cross-validate our own thinking regarding interfaces.

The best part of this survey method is that the respondents have no direct connection with me (surveyor) so they don't have any thought to impress someone or make them happy. Also, they are paying hefty fees for exam preparation and it is a quite lengthy process (1 year), so they always look for the best possible resources. In that sense they will always come into front and ask for the best platform. I also don't have any pre-judged expectations for them as I

rarely have interaction. So, in my view these points nullify the probability of confirmation bias, social desirability bias or voluntary response bias.

4. NEED FINDING PLAN 2-INTERVIEWS

Headings Through survey, I will be able to gather mostly quantitative data, I am thinking to have some open-ended questions in the survey, still it does not solve the purpose of knowing who, what, where, when, why and how of user interaction. To understand the user's mind in various contexts during execution (for example ;if the user is trying to use it on a public bus etc), I have to take an interview approach. Mostly qualitative data will be gathered through this approach. It will facilitate us to dig deeper into the user's thought process during the task. Interviews will be conducted with primary users (current applicant for exam), secondary users (recent graduates and potential applicants for upcoming exams except school students), and faculties.

4.1 Interview Approach for Primary Users

As discussed earlier, they are the prime users and need services 24/7. Since most of them are not yet settled in life, they might be using various modes of transport, renting apartments and many such scenarios. I can't assume that everyone is using their own computer sitting at home alone. I must understand their requirements depending on the situation and design our interface accordingly. Hence interviews make a lot of sense. Questionnaires may include their difficulty level while downloading course material, typing their feedback to recent lecture video or blog while walking or travelling in public transport. It may also include questions about cognitive load, vision and finger movement while performing specific tasks in given context.

4.2 Interview Approach for Recent Graduates

They are equally important users for our success. Interviewing them may further disclose many details related to 'Why' and 'What', because they are always thinking about future aspects of their career. For example, what other course materials may improve their thinking on current topics. In contrast to current applicants (who already have some existing mental model for preparation and are more focused on available resources due to time constraint), future applicants have more flexibility to think in broader ways. They might link this exam to

other similar competitive exams in case of unfavorable results. So, they bring different perspectives to think about.

4.3 Interview with Faculties

Most of the faculties, who come to coaching classes are those who have been to this exam in the past 20 year or so. So, interviewing them makes a lot of sense in understanding changes in curriculum and courses over time. They are also in position to make a difference about effectiveness between traditional ways of preparation and current virtual platform. It will give us different perspective by interviewing and talking to them in details about their life experiences

5. NEED FINDING PLAN 3-PARTICIPANT OBSERVATION

Finally, I will include Participant observation as the third approach towards data gathering methods. Given the theoretical definition, participant observation is an ethnographic method in which a researcher participates in, observes, and records the everyday activities. I will be joining the group of participants in the study through the virtual platform (website interface) and complete various steps required to fulfill the end objectives (for example, navigation to assignment submission page and analysis of time & complexity level in doing this task). I have also thought to include my academic partner for a second participatory observer. Since he is physically present at the workshop and he can perform various operations sitting in parallel with other primary users, it makes perfect sense by recording the activities in real time. Real time observation can be based on demographic, socio-cultural aspects of users. For example, how the work effectiveness differs during the execution process in interface between our primary users (current student mostly from liberal arts field) and potential users (future applicant from liberal arts or applied science field), similarly we can differentiate on other parameters like age, system use etc.

While performing participatory observation, my emphasis area will be visibility of the interface, efficiency in performing tasks, readability of tasks (how much users understand by their own effort). I might choose any task on a different system (laptop, tab, desktop), different browsers, and different context. My academic partner can ask primary users to bring a laptop in class lecture and do things simultaneously after the workshop session and so on.

Performing activity with a group gives the researcher empathy and greater understanding of the similar task. Sometimes we can cross validate our data obtained from interviews by observing what the user said and what is exactly happening during the task.

Being a participant observer, we are prone to biases because of our own existing mental model and knowledge of the subject. In this case by having two participant observers, we may be able to rectify such biases. I am not a subject expert in this domain beside knowing the technology side. My academic partner is not a technical person at this stage. However, he is a subject expert.

6. REFERENCES

1. Usability and web accessibility. User interview questions. Retrieved From:
   https://usability.yale.edu/understanding-your-user/user-interviews/user-interview-example-questions
2. Stephanie walter design. Cheat sheet for user interview. Retrieved From: www.stephaniewalter.design   )
3. Müller, H., Sedley, A., & Ferrall-Nunge, E. (2014). Survey research in HCI. In J. Olson & W. Kellogg (Eds.) Ways of Knowing in HCI (pp. 229-266). New York: Springer.
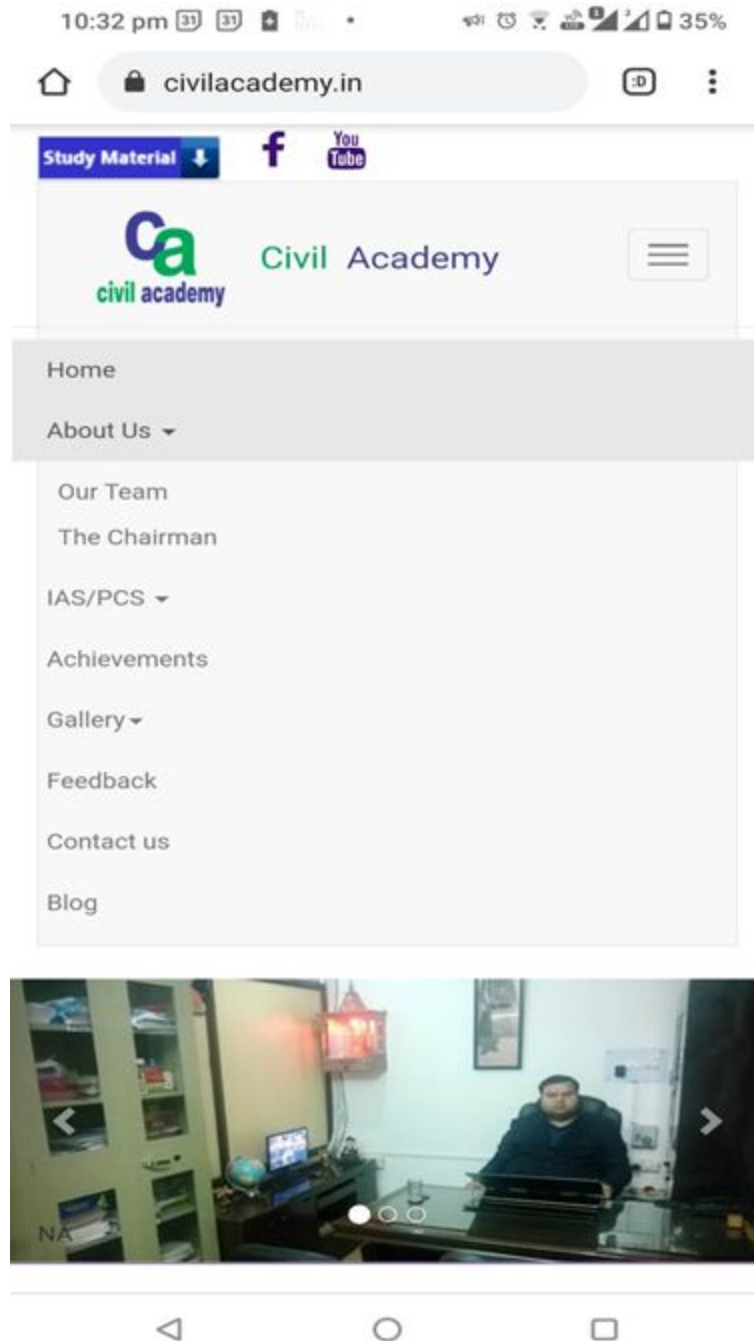
7. APPENDICES

Fig A source : www.civilacademy.in

civilacademy.in/institute.php

Study Material f You Tube

Ca civil academy   Civil Academy

Our Team

Er.Abhishek Sharma (CHAIRMAN)

Founder of Civil Academy and also Faculty of General Studies and Public Administration

Sample Survey Questionnaire

1. How many hours per week do you visit coaching website? (select one)

    a) 0 - 2

    b) 3 - 5

    c) 6 - 10

    d) 11 - 20

    e) 20+

2. When visiting the site, what info are you seeking? (check all that apply)

    a) Assignment

    b) Course materials

    c) Blogs

    d) News updates

    e) Notifications

    f) Exam syllabus

    g) Dashboard progress report

3. What are the sources you look for your exam preparation? (select all that apply)

    a) Social media

b) Lecture videos

c) News updates

d) Other educational websites

4. What is the top communication tool you use to share or receive informatin?

a) Emails

b) Website

c) Telephone

d) Text message

e) Social media

5. What social media you personally use the most?

a) Facebook

b) Linkedin

c) Twitter

d) Youtube

e) Any other ………

6. In the past one month, how much time (hours) have you spent on social media within a week.

a) 0 hours

b) 0 < 1 hours

c) 2 -5 hours

d) 6 – 10 hours

e) 10 + hours

7. Which topic do you want to learn more about?

    a) Learning technology

    b) Counselling resources

    c) History

    d) Geography

    e) Public administration

    f) General knowledge

    g) Any other……..

8. How do you mostly assess the website?

    a) Laptop

    b) Desktop

    c) Smart phone

    d) Tablet

    e) Any other…….

9. What other online tools you use for video lectures or live classes?

    a) Google classroom

    b) Microsoft teams

    c) Edublog

    d) Any other …..

10. Would you download mobile app for this website?

a) Yes

b) No

c) May be later

11. From 1 – 5, rate your satisfaction level with assignment submission section (how familiar you were performing the task) in website.

   a) 01 : highly dissatisfied

   b) 02: dissatisfied

   c) 03: neutral

   d) 04: satisfied

   e) 05: highly satisfied

12. From 1 -5, rate your satisfaction level while downloading the course materials (how familiar you were performing the task) in website.

   a) 01: highly dissatisfied

   b) 02: dissatisfied

   c) 03: neutral

   d) 04: satisfied

   e) 05: highly satisfied

13. Why would you like to choose our service in future over our competitors?

…………………………………………. (open ended with word limit text box)

Sample Interview Questions

1. Please tell me about yourself (major, year of graduating, school etc)

2.   What devices do you use most, are there any challenges you face accessing website?

3.   What are the most important tasks you need to perform while using this website? What would prevent you from achieving your objective?

4.   What other website do you find interesting for your preparation (in terms of course material, links to other resources) and how do they differ from this website?

5.   What do you like about this website?