



Prototype available here: <https://tinyurl.com/y84s5bpg>

Problem Statement

Coming into a new program in higher education is often overwhelming and confusing, especially for first generation students. University websites contain a multitude of information but can be overwhelmingly large and decentralized, making it difficult not only to navigate mandatory processes but even to find the resources available to help students through the university and through their studies. The problem is replicated on a smaller scale in classrooms, laboratories, and research groups at colleges and universities. This can make for a less-than-smooth adaptation process to a new career environment and create communication breakdowns between students and their professors. My project works to address new students' ease of access to university resources.

Solution Overview

Ultimately, through my design process, I chose to make a student wiki site to meet my target audience's needs. In order to connect students more quickly and intuitively to the resources available to them through their university environment, the website needed to enable students to help each other navigate the institutional bureaucracy by answering each others' questions, keep a record of helpful tips somewhere permanent and easily searchable, and give them an accessible conduit to university staff who can also help. The solution needed to make sure that students can find solutions to their problem quickly and easily because based on personal experience and extrapolating from my research, without this, students will be less likely to use the resource. The research in particular suggested this as the root of the issues students have when trying to find answers on their own without my proposed solution: they might rely on other students because they might have quick answers. And despite the fact that most students have a reasonable level of problem solving skills, a majority of them have felt at some point that it's too much effort to go looking for answers they need. Although its is more complex, the wiki site also is set up in a way that serves students in a way that complements their go-to strategies. So, although the site itself is objectively somewhat complex, users come in with existing knowledge of its structure and functionality on which to bootstrap their learning curve when they familiarize themselves.

Final Design

Functionality

The wiki operates generally very similarly to a wiki site most students will already be familiar with: Wikipedia. It additionally implements some components to encourage and center students' questions

and other students' answers in a portal for asking questions, a feed of new questions with searchable topics, an easy way to start pages that address these questions.

Easy Information Access and Findability

From the beginning of the design process for this platform, it has been a priority to make sure that student resources have an easily accessible place to be found that is, critically, a permanent storage space. Resources that were both easily accessible and permanent was something that was found to be lacking in all currently available (i.e. Facebook, Canvas, the current university website) and alternative (i.e. Slack, open chat rooms) platforms. Furthermore, target audience research showed that students' greatest barrier to resolving their issues as they are meant to through this platform is that the perceived time and effort it would take for them to do so through available resources can be seen to outweigh the benefits of finding a satisfactory solution. I chose to implement a wiki structure because it is something familiar to most students and thus easy to use, searchable and thus can make student query searches more efficient, and critically because resources are permanently stored rather than just a stream of real-time issues that can be easily lost or forgotten. Because student questions are also often vague or based on incomplete knowledge, I also included a category tag based browsing system so students have an easy alternative path if they don't know what to search or their search does not yield helpful results.

Making Queries and Answers Prominent

There is one glaring deficiency in a traditional wiki structure if the goal of the platform is to help students find answers to administrative or campus resource questions: there isn't anywhere intuitive where people can post or submit their questions for others to answer. To address this, I added prominent buttons to the interface sidebar that open forms for users to ask questions, browse these questions, build articles to address questions, and to build new original pages. When a user asks a question, they are asked to tag their query with applicable categories so that when the query is submitted and displays on the question feed, other users can see what the questions are about and search based on their areas of knowledge or expertise. When users choose to build a page to address a question and click the corresponding button on the query they want, it leads to a new article building form, pre-populated with the question text and with the question categories pre-loaded.

Student Network

Another key insight from the target audience research was that students are very likely to ask their peers for help when they run into issues with the university. The wiki structure takes this intuition and directs it to a more efficient system with a broader base of information. Even other platforms like Facebook and Canvas where students ask each other for help, are limited to a subset of students bound by a particular student's social circles, graduation class, or classroom peers. However, as the platform is open access, it necessitated a way to assure relative accuracy and contributor accountability. Wikis often include discussion pages for articles where writers and editors can discuss objections and points of contention, so I included this feature in my wiki. I also included a "profile" function whereby users can hover over a particular user's

name in this chat and the user's qualifying information (i.e. school, major, year, housing status) will appear so users can make informed decisions as to whether a particular contributor is qualified or informed enough to provide an accurate or helpful answer. To make students feel like they have a safe and private environment to ask their peers questions without it impacting their online reputation, the platform requires a university login and will not appear on internet searches. To further protect students and contribute to their comfort with the platform, they can make any part of their profile anonymous on their account page by clicking on checkboxes.

Unimplemented/Under Implemented Features

The prototype doesn't get into deep details or deal with the diverse multitude of information theoretically available on this platform. For instance, article building and editing pages are mainly stand-ins in the current prototype without any text editing or page building functionality. Category tag search is under implemented in some design components, like the question feed page. All questions on question feed link to the same page, and there is only one prototype page of an article (which many components link to/interact to) in the prototype model. In addition, the article prototype is truncated in its current form.

Sketching Techniques and Approaches

Basic sketches on 8.5 x 11 printer paper of the front page of 8 possible solutions were made with captions and feedback was taken from peers in class (examples in appendix). A further 8 sets of 5 panel storyboards demonstrating each solution's practical usage were also made on the same paper and feedback from peers and teaching staff was also taken to narrow down the most useful potential solutions (examples in appendix).

Development Tools

Early sketches were helpful to generate ideas and analyze their advantageousness. These were developed into a paper prototype of sketches made with printer paper and tape (video in appendix). I appreciated this process because it allowed me to think through the necessary components and interactions at a high level without worrying about the details of implementation. It also gave me the opportunity to try different components and interactions using materials that were cheap and easy to make and change at will. The prototype, however, is rather flimsy and it is easy to lose track of individual components

After the development and testing of the paper prototype, I developed the digital prototype using InVision studio based on my paper sketches. I enjoyed this software, but there is a learning curve as someone with no digital graphic design experience. In order to overcome intuitions built on basic image manipulation I'd learned in Microsoft Powerpoint and other similar software, I had to watch several tutorials online to understand the interaction designs of this software and the potential of its functionality. However, once I'd learned how to use the software properly, I found it easy to make interesting designs and program interactions.

Design Process

Initial Stages

After establishing my goals, stakeholders, and some possible solutions, I did a competitive analysis and created user personas. The competitive analysis helped clarify what was actually helpful or unique about my ideas, which encouraged focus on these components throughout the rest of the process. The personas gave immediacy to users' perspectives and were helpful to consolidate ideas about who I was actually designing for. Sketching and storyboarding (as described above) were then implemented to help elaborate upon the details of each idea and elucidate its high-level advantages and disadvantages, which helped narrow down the options. Some field research (a Qualtrics survey distributed via Facebook) was then performed to learn about the target audience's experiences and preferences, which led to the decision to implement the wiki structure.

Paper Prototype

The paper prototype as presented to some potential users helped fine-tune the features and interactions that made it to the final design. On the general level, the students I talked to appreciated the idea of a place for "floating questions" without a clear authority where they could feel comfortable drawing on peer feedback and knowledge and liked the idea of a searchable wiki-type database for these resources. They also affirmed the utility of the profiles, for both accountability and privacy and contributed to the idea that the in-chat profile display should be a hover-over feature rather than a click-through feature as I had originally designed, because the click-through disrupted the experience. As a result of this research, I also did away with a general chat room as they felt it didn't add much and could quickly become overwhelming and chaotic to the point where it would become more trouble to use it than it would be help.

Arrival at Final Design

I believe the final design would have a uniquely functional role in student life, which was the goal from the initial development of the problem statement. The color palette was largely taken from the University of Michigan Style Guide (<https://tinyurl.com/y7xyldrs>) but all other design elements were created from "scratch". The visual and content details like article content and category tags missing from the lower-fidelity prototypes was filled in.

Design Philosophy & Designer Role

My design approaches over the development of this platform were both reflective and participatory (Sengers et al 2005, Spinuzzi 2005). The problem statement itself developed from a concern about how current available resources often do not meet students' needs and are designed more from administrators' perspective than to cater to students' problem solving skills or knowledge states. In

other words, there is a disconnect between student culture and the design of universities' information dissemination systems. To address this, my further research was more participatory: I surveyed students themselves, asked them about their problem solving techniques and specific grievances with the current system. Ultimately, my solution is a highly participatory platform that depends entirely on user contribution and cooperation.

Social Impact

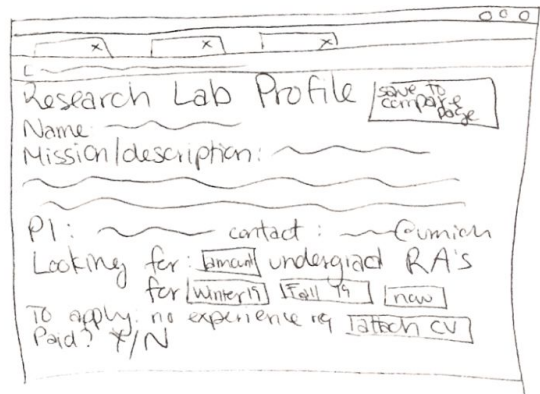
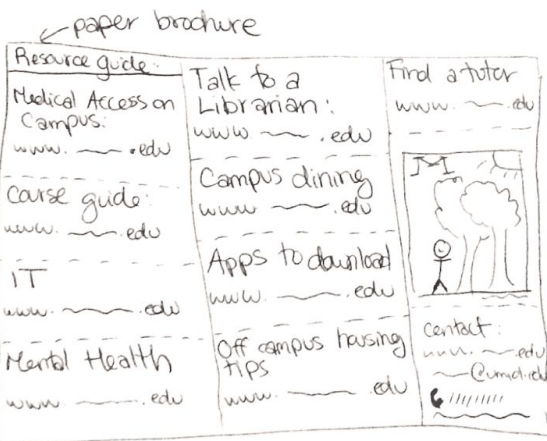
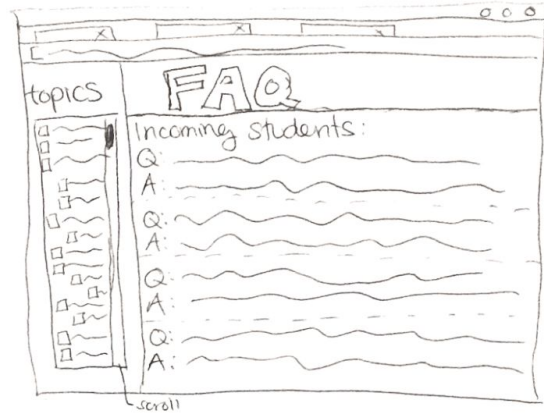
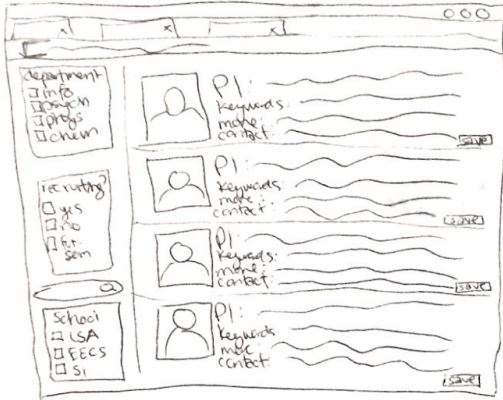
The design is meant to fit as seamlessly as possible into students' current lives and disrupt student culture as little as possible. However, it may move more of students' community and interconnectivity on campus to a virtual space from a physical one. There are potential benefits (obviously) and drawbacks to this change: this could potentially result in a change in campus social structure and weaken students' dependency on their physical friend groups for support through the issues addressed through this platform. However, the platform may also encourage a sense of community and camaraderie on campus if there is a place meant for students just to help each other however they can.

References

Spinuzzi, Clay. (2005). The methodology of participatory design. *Technical Communication*, 52(2), 163-174. Retrieved from <http://proxy.lib.umich.edu/login?url=http://search.proquest.com.proxy.lib.umich.edu/docview/220962011?accountid=14667>

Sengers, Phoebe, Kirsten Boehner, Shay David, and Joseph 'Jofish' Kaye. "Reflective design." In *Proceedings of the 4th decennial conference on Critical computing: between sense and sensibility*, pp. 49-58. ACM, 2005.

Appendix



a) Sketches



b) storyboards



front page

account

browse

new questions

suggest a new page

build a new page

logout

User Profile

Name: Maryam Seifeldin

first name only last name only anonymize

School: LSA, School of Information

hide

Year: BA Alumna, Masters

hide

Housing: Off-campus, Stockwell

hide

Major: Linguistics, Biopsychology, cognition, and neuroscience, School of Information

hide

Minor: N/A

hide



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New Question Feed

category tags: **research** **science** **academic**

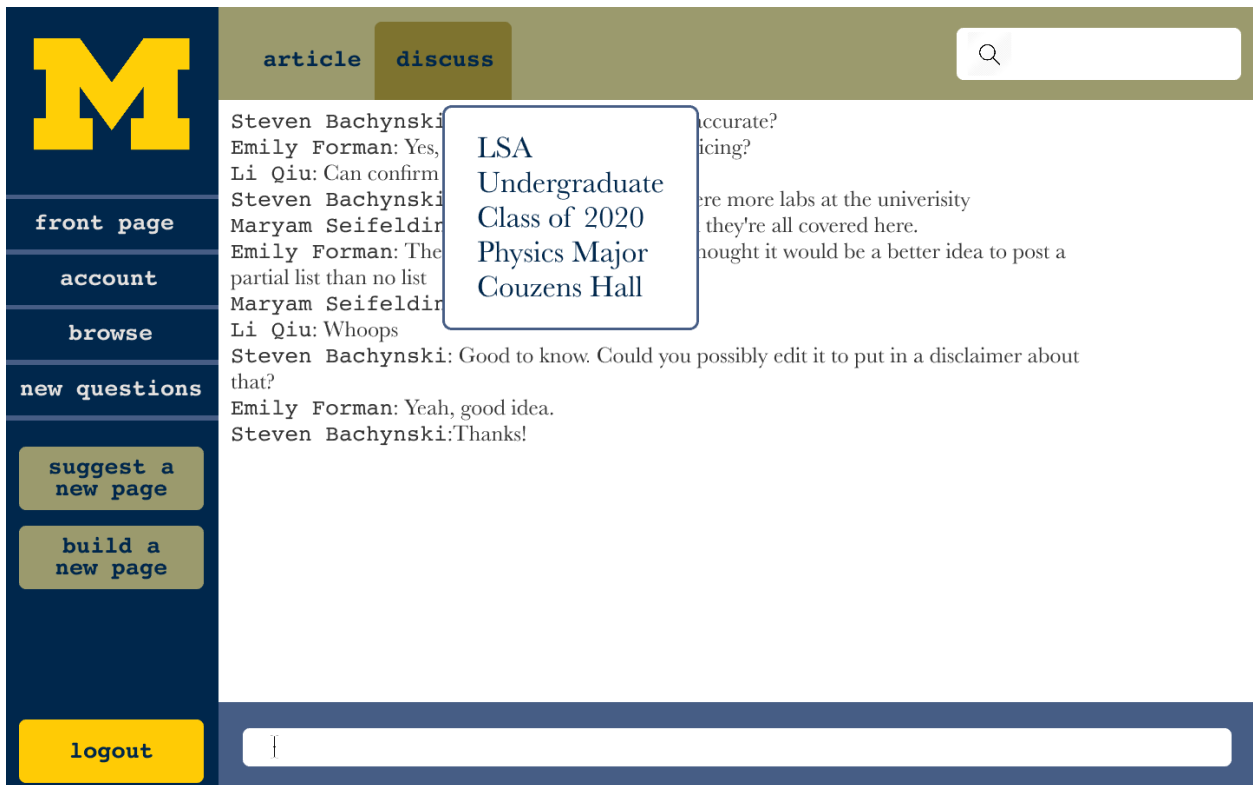
question: I was just wondering how to join a research lab on campus. I have a general idea what I want to get involved with but I don't know which departments house that kind of research or which professors would be the b

category tags: **exercise** **gyms** **campus**

question: I have a question about where I can work out on campus. I know about the CCRB but it's always so crowded. Does anyone have any suggestions about where else to go?

category tags: **physics** **science** **academic**

question: I'm very confused about the secondary requirements for a physics major. I'm currently a second year chem student but I'm thinking about a double major or switching and the website isn't very helpful.



c) digital prototype screenshots

Paper prototype: <https://tinyurl.com/y89twl6o>