D2L Mobile Site

Introduction

The system that we investigated for this architecting project was the D2L mobile site. It was clear from our previous experiences and initial look at the site, that there were problems with the site that would need to be solved. However, research was necessary in order to narrow down the specific problems that existed within the D2L mobile site so that we would be able to target those specific issues in our proposed solution. In addition, we needed to learn certain facts about the users of the site so that we knew our redesign would avoid alienating them or failing to meet their needs. To this end, the main questions we wanted answered were:

- How often do they use the mobile site?
- When and where do they use it?
- For what purposes do they use it?
- What sort of problems do they have with the current layout? Which elements of the design cause these problems?

We designed our research to answer these questions using the methods below.

Methods
In order to discover the problems of the mobile D2L site, we had to figure out how and why the users were interacting with the current site. To do this, we employed several different methods to yield the most accurate representation of actual use in the results. Daniel put together a short 4 question survey on his iPad in order to receive concrete data from users regarding the site. The survey asked the participants if they knew a mobile D2L site existed, if they had ever used it, what their main purpose for accessing it is, and if the information they were looking for was easy to access. In contrast, Meghan elected to conduct short open-ended interviews with users. She took audio recordings of the interviews, with the knowledge and consent of all the participants. The goal of the interviews was to find specific pieces of information or discover traits about that user’s unique interaction with the site that may uncover facts about how users in general work with the site. To that end, the interview started with a few general questions that were, “how often do you use the mobile D2L site?” and “when you do use D2L on your phone, why do you do so?” From there, based on the individuals responses, the interview moved in differing directions.

After conducting the survey and the interviews, we used the resulting data to lay the foundation for the user tests. We created the tasks we assigned them around this information to replicate an average use case. For the user test, Daniel wrote a script to eliminate any kind of bias between the tests, and kept the environment of the user tests the same for similar reasons. Meghan did not write a script or control for the environments, but she did control for the exact task and phone, having the users complete the test on her phone with one of her classes. After establishing that he would be recording data based on their interaction, instructing them how to effectively think out loud while moving through the system, and ensuring them that we would be
testing the website and not them, we were ready to start the user tests. The goals we assigned the
users was intended to be extremely simple just to illustrate the current poor setup. Daniel asked
the users to access any one of their classes, then go to the syllabus and find out what their next
assignment due is. This is a very basic function of the D2L platform, and a syllabus is considered
essential for a class and therefore should be easily accessed at all times. Meghan asked the users
to find her grade on her PHL 130 midterm, since checking grades is also a simple task on D2L
and one of the tasks that came up in interviews as a common goal of using the D2L mobile site.
We collected data from these usability tests simply by observing the users do the task and taking
notes, since screencasting is difficult on mobile devices. And, to analyze the site better and get a
clearer picture of the overall system to allow for more informed design decisions, we also
conducted a heuristical analysis, looking at the physical traits of the site.

Results

From looking at the results of Daniel’s surveys, we learned that a primary use for quick
D2L access is checking the syllabus for assignment details, due dates and other notifications
from classes, which is why he based his user tests around syllabus access. Daniel also learned
that every person he surveyed knew of the mobile site, but always completely avoided it by
loading the desktop version on their phone and just zooming in to compensate. Whenever users
come up with their own ways to completely avoid a certain part of a system even at the expense
of an inconvenience, this means that the system is so flawed that it holds a completely negligible
amount of usable value. He also learned that people do generally like the D2L desktop site and
don’t have many problems using it, which ultimately influenced our design decisions towards conformity of the two sites.

Meghan’s interviews yielded slightly different results as to the primary uses of the D2L mobile site, but were generally similar overall. Everyone she interviewed placed checking grades as the most common reason they used the D2L mobile site, and placed checking due dates as a close second. One of her interviewees stated that she always skipped to the desktop version, while two others said that they do use the mobile version of the site, although they rarely if ever choose to use it on their phones as opposed to using the desktop version on their computers. They only used it for very quick tasks such as the ones mentioned above, and only at times when they didn’t have immediate access to their computers.

From conducting the user tests, we were able to discover what we believe to be most of the usability problems after only a couple user tests, which follows the principle of the 80% rule. The biggest problem we noticed with the website was the hammer and screwdriver button next to the drop down menu that acted as a menu button for the current screen displayed. In 100% of the user tests, the users didn’t even recognize it as a given affordance, because it wasn’t recognizable as a menu button. Most users believed it to be the settings button, rather than opening the navigation menu, while some thought it was simply a part of the larger course selection diagram. Once they did discover that it was actually pressable and opened it to see the links inside, they saw its function and immediately recognized how to utilize it. This immediate recognition is from current usability standards, because it matches the function of the on screen menu button as seen in many other applications today. The disconnect between the two is a simple graphic design error that doesn’t make it stand out as their primary function of navigation, since the
symbol on the button doesn't match the users natural intuition; instead it seems to represent more of an options/settings type button rather than a menu button.

Another problem encountered frequently was rooted in the information architecture of the site. When you were brought to the home page the information presented is events for all your classes combined into one list without being able to tell which class it belongs to. Then after selecting a class from the drop down menu the same screen remains displayed and therefore doesn’t give any confirmation to the user that they successfully selected a course. The users that encountered this would try selecting the course repeatedly waiting for change on the screen. Once the change didn’t happen, after numerous attempts they began to explore their other options and this is when they would discover the feature of the hammer screwdriver button.

We also did a heuristical analysis of the existing mobile D2L site. While not all the categories or traits of a properly heuristic site were relevant to this case, and there were others that were being demonstrated sufficiently on the site, there were some where we found clear problems with the interface. The first is “match between system and the real world,” and the most egregious case of this heuristic being unsuccessful is the aforementioned tool button as the main menu navigation. This also falls under “consistency and standards”, and also under that category falls the flaws in information layout we pointed out, since these stem from a lack of consistency between mobile and desktop versions. With regards to “visibility of system status,” we noticed that it can be hard to tell which course you are in due to the fact that the course title is often truncated within the dropdown. And finally, there is a lack of “user control and freedom” since there is no back button and no way for the user to efficiently move through the courses without constant backtracking. We believe that all these heuristic problems do, however, fall into
the two main issues presented above. And from these two distinct issues, misinterpreted button and poor information architecture, we had our two problems clearly defined.

Discussion

From analyzing the results of the user tests and the data we gathered we determined what needed to be fixed and how that could be achieved through design. We were shocked at how many difficulties our users experienced using the mobile site, especially since our users were familiar with both the desktop version of the site and with mobile sites in general. And actually, one of our proposed changes made the mobile version more like the desktop site, while the other made it more similar to other mobile sites and apps.

Our first change was purely a design change: changing the navigation button currently represented by the hammer to fit today's general usability standards by making it a hamburger button. These types of buttons are universally recognized as being menu buttons that pull up navigation or other types of common options. Since, during the usability tests, users were easily able to complete the tasks once they realized that the hammer button functioned basically like hamburger buttons generally do, no other changes are needed to this part of the site other than making it visibly recognizable as a menu button. This change would fix the heuristic problem of confusing visuals, as noted above.

Our other main proposed change was somewhat more detailed, though still not overly so. It involves changing the Information architecture of the mobile site to conform to the current desktop site. We believe that, rather than showing events and alerts across all classes, the
homepage should show a list of all enrolled classes with notifications specific to each class below its name. One user we talked to said that they always check the notification menu in the upper right of the site when using the desktop site, and choose not to use the mobile site based on its lack of these notifications. Adding the notifications solves not only the problem of them being missing from the mobile site, but this also solves the problem of the homepage being unclear as to which events belonged to which class, and it solves the problem we saw in usability testing of the main course dropdown being ambiguous as a method of navigation, by replacing it entirely.

Then, once the desired course is selected, it should display content, updates, and events for that specific course with additional options for the course hidden under the menu (hamburger) button. The hamburger button, and redesigned information architecture are illustrated by the three prototype screenshots seen below. Farthest to the left we have what the homepage would look like, displaying all current courses as stated above. In the middle we have the course view, which displays content and grades by default with other options available through the menu button as seen in the right image.
Also to ensure that the user knows where they are within the mobile site we could include a breadcrumb navigation similar to the D2L desktop site as seen above. This will let users know what course page they are on and give them easy access back to the home page or any other desired page. These breadcrumbs solve the heuristic issues of “user control” and of “visibility of system status”. Although these are simple changes, they have the potential to completely change the usability of the mobile site. From surveying, we found out that people still use the desktop site on their phones because they don’t have the patience to figure out the mobile interface. If people completely avoid it at all costs, then the design needs change regardless of how simple the changes. And we believe that the changes we have proposed will make the site much more usable overall.