Date: December 12th, 2017
To: University of Washington-IT
From: Truc Ly Le, Researcher
Tsewone Melaku, Researcher
Ian Russell, Researcher
Finn Thompson, Researcher
Subject: Final Report for University of Washington MyPlan Usability Study

Attached is the complete report regarding our usability study, in which we researched the overall effectiveness of the University of Washington's MyPlan in supporting students with course planning and registration. The purpose of this report is to give a step-by-step understanding of our process in creating and conducting this study. Our intentions are to give thorough feedback and analysis on ways that UW-IT can improve the overall usability of MyPlan in order to better support students and their academic advisors in managing their time more effectively.

In order to successfully conduct our study, we created three comprehensive tasks that test various components of MyPlan. To gather our participants, we sent out pre-screening surveys through Google Forms on various social media platforms. As our participants completed these tasks, there was one moderator to guide the participant through the tasks, as well as, at least one notetaker and technologist. We also had a pre-test questionnaire, took notes on the participant's behaviors throughout the study with a data logging form along with visual, audio, and screen recording, as well as through post-task and post-test questionnaires for each participant. After conducting our study, we collectively analyzed the results through affinity diagramming and coded our data.

Our findings suggest that MyPlan could be improved in order to better serve students. We found that MyPlan places an unnecessary cognitive load on students and the 'Build A Schedule' feature does not clearly display errors and does not load at all if there are any issues with a particular schedule. Although requirements were displayed on their respective pages, we also found that course and degree requirements were unclear or confusing. Lastly, we found that some participants preferred to use tools outside of MyPlan to assist in their academic planning.

Based on these findings, our overall recommendation is to increase the visibility of features and content available through tooltips and visual feedback.

Thank you for giving us the opportunity to learn more about the usability of MyPlan and explore ways to improve students' experiences. Please read the full report for more details.

University of Washington: MyPlan Usability Study Results Report

Prepared for: University of Washington IT

Prepared by: Truc Ly Le - trucly@uw.edu
Tsewone Melaku - tmelaku@uw.edu
Ian Russell - iansr@uw.edu
Finn Thompson - nnifinn@uw.edu

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Executive Summary

On October 11th, 2017, our proposal was granted to conduct a usability study on the University of Washington's MyPlan to improve advisor effectiveness and student autonomy when planning and registering for courses. MyPlan does a good job of introducing new features for students to plan and register, though users sometimes struggle when attempting to complete these tasks. In this report, we lay out recommendations to address the following:

- Students not knowing all that is required for graduation
- Students being unable to find classes to satisfy requirements
- Students being hindered by conflicts and other scheduling issues
- Students unable to meet advisors due to high demand
- Classes being under or over offered for a quarter

With 579 different degrees each with unique criteria, schedule planning and registering at the University of Washington can be extremely complex [1]. In our individual evaluations, we found that MyPlan fails 65% of usability heuristics, as loosely based on Nielsen's usability heuristics [2]. Based on these evaluations, we decided to focus on auditing degrees, finding classes, and planning a schedule.

In our study, we discovered opportunities to enhance the MyPlan experience in these areas:

- Positive findings
    - Most participants used MyPlan features as expected.
    - All participants were satisfied with what they accomplished on at least one task.
- Low concern
    - All participants wanted to use non-MyPlan tools.
    - Course time-filter slider only allows for selection of one time span.
- Medium concern
    - Degree credit and course requirements can be unclear.
    - MyPlan does not make features readily accessible post-homepage.
- High concern
    - MyPlan places cognitive load on users.
    - Schedule Builder often displays unclear errors instead of loading.

From the findings in this study, we recommend the following:

- Make search capabilities consistently intelligent across functions.
- Increase the time slider's ability to filter multiple blocks of time per search.
- Add a "total credits required" piece to the degree requirements information section.
- Adjust the navigation bar to always be visible and display options clearly.
- Include visual feedback showing users what has or has not been already viewed.
- Add additional course information to popup modals in degree audits.
- Add popup modals to the Schedule Builder's error messages with links to solutions.

We elaborate on these primary recommendations and more in the body of the report. For each recommendation, we suggest further testing to ensure that the result is helpful to MyPlan users.

Introduction

Our client is the University of Washington's Information Technology support team. Their goal is to provide MyPlan as an easy-to-use and convenient online tool for academic planning and course registration. Additionally, our client wants MyPlan to be a collaborative tool for academic advisors and students. Our team's goal in evaluating MyPlan is to provide the client with design recommendations that will increase MyPlan usage, address usability issues, and improve the overall user experience.

In conducting our initial research on MyPlan, we sought to identify ways in which the University of Washington can improve MyPlan. MyPlan is designed to eventually be the primary method by which students register, replacing MyUW's Time Schedule registration feature. As such, we believe that through improving this service, the university can enable students to act independently, thereby reducing the strain on academic advisors that are paid by the university to answer standard questions. Furthermore, by streamlining MyPlan, the university can shift student focus from planning their schedule to executing their plans in pursuit of excellence.

In order to comprehensively test the overall effectiveness of MyPlan's course planning and registration, we centered our usability study around the following three research questions:

1. Are students satisfied with their ability to plan their schedule and register in MyPlan?
2. Do students understand the information in a degree audit?
3. Does the path they take to complete a task alter their effectiveness?

By focusing on these questions, we wanted to ensure that multiple components of MyPlan were explored through our prepared tasks and as many potential usability issues could be discovered and addressed as possible.

In this report, we will describe the various methods we used to conduct our study, the metrics we used to accurately collect our data, and the findings from our study with detailed analyses of those findings and their respective recommendations. In closing, we will define next steps UW-IT can take with our final recommendations. At the end of this report, you can find supporting documents if you wish to replicate this study in the future.

Methods

This section includes descriptions of our participants, test environment, researchers' roles, test procedure, and tasks.

Participants

We conducted the usability study with eight participants: six male and two female, all between the ages of 18 to 23. The participants were all undergraduate students at the University of Washington, Seattle campus. Each participant stated that they use MyPlan and are familiar with it. Table 1 summarizes the demographics of our participants.

Table 1 - Participant Demographics

Participant #	Sex	Age	Major/Intended Major	Years at UW
1	Male	18	Mechanical or Electrical Engineering	1
2	Male	23	Psychology	< 1
3	Female	21	Human Centered Design and Engineering	≥ 4
4	Male	22	Human Centered Design and Engineering	≥ 4
5	Female	21	Computer Science	2
6	Male	21	Human Centered Design and Engineering	≥ 4
7	Male	21	Geography	≥ 4
8	Male	21	Mathematics	3

Recruitment

Although MyPlan is available to both undergraduate and graduate students across the three University of Washington campuses and non-students, we limited our study sample to undergraduate students at the UW Seattle campus. This group was most accessible to us as we are UW Seattle undergraduate students ourselves.

To recruit participants, we created a Google Forms survey and shared it on social media. The survey included questions about the respondent's demographics, enrollment status at UW Seattle, familiarity with academic planning tools, including MyPlan, offered by the UW, and interest in participating in our usability study. If the respondent expressed interest in participating in our usability study, they received follow up questions included asking for their first name and email address for further communication and potential meeting times to conduct the study.

The survey received 16 responses. Every respondent was qualified for the study because they were all currently enrolled students at the UW Seattle campus. We successfully scheduled and conducted the study with eight of the survey respondents.

Test Environment

All of our usability testing sessions were conducted in private rooms throughout the University of Washington Seattle campus. We reserved private rooms to prevent participants from getting distracted and to ensure our recordings would have minimal background noise. Although it would have been ideal to do the tests in the same location, we were unable to book the same room multiple times due to limited room availability. The following list enumerates where each participant did their usability test:

- Participant 1: Odegaard Library Study Room 316
- Participant 2: Odegaard Library Study Room 322
- Participant 3: Sieg Hall Room 420
- Participant 4: Sieg Hall Room 420
- Participant 5: Foster Library Study Room 9
- Participant 6: Health Sciences Library Study Room T202C
- Participant 7: Odegaard Library Study Room 316
- Participant 8: Foster Library Study Room 6

Researchers' Roles

Each usability test required at least two researchers present with three roles to be filled. There must be one moderator and at least one notetaker. The technologist role could be filled by any of the researchers as a secondary role. This section describes the roles required for each usability test.

Moderator

Of the researchers present in each usability test, the moderator was the one that interacted with the participant the most. The moderator facilitated the test by informing the participant of the test procedure, conducting the pre-test questionnaire, handing out the consent form and post-task questionnaires, answering the participant's questions, and giving hints if the participant got stuck during any of the tasks.

Notetaker

The notetaker used UXCloud to take timestamped notes during each usability test. UXCloud's functionality allowed the notetaker to separate notes according to the tasks they corresponded with. Notes included the participant's responses to the pre-test questionnaire and post-test interview as well as their actions, comments, and questions throughout the test. Additionally, the notetaker filled out a data logging form for each task to track the participant's understanding and completion of the task, positive comments, errors encountered, and hints given. Even if multiple notetakers were present, only one notetaker was in charge of filling out the data logging forms.

Technologist

The technologist role was a secondary role played by any of the researchers present for each usability test. The technologist's responsibilities included setting up UXCloud for the participant and researchers, ensuring that the UXCloud screen and audio recordings were working properly throughout the test, and troubleshooting any technical problems encountered.

Test Procedure

The following section describes the procedure for each usability test:

- Study introduction
- Test administration
- Data recordings

The procedure was kept as consistent as possible for each usability test to ensure participants had similar experiences to control data. This section elaborates on that procedure.

Study Introduction

Upon arrival, the research team greeted the participant and thanked them for agreeing to participate in the study. The moderator began by explaining the study's purpose, the names and roles of the researchers present, the participant's role as a tester of MyPlan, and how the test would be administered. The moderator read this information from a script to ensure each participant had a consistent introductory experience. Additionally, the moderator explained that UXCloud would be used to capture video, audio, and the participant's screen and assured the participant that all data collected would remain anonymous. The participant had to sign a consent form to agree to the recordings before testing could begin. Once the participant signed the consent form, the technologist proceeded to help the participant and other researchers setup UXCloud and verify that UXCloud's video, screen, and audio recordings were working properly.

Test Administration

Once UXCloud was fully set up, the moderator administered the pre-test questionnaire verbally to gain information about the participant's demographics as well as their familiarity and recent use of MyPlan. The participant was then asked to complete a set of tasks based on prepared task scenarios. Each task scenario was on a separate piece of paper to prevent the participant from seeing subsequent tasks ahead of time. The participant completed a written post-task questionnaire after each task to rate how easy the task was, how satisfied the participant was with their task completion, and how confident the participant was that completing the task helped them achieve their academic goals. After all three tasks were completed, every researcher had an opportunity to ask the participant questions they wrote down throughout the test based on their observations. Finally, the participant was thanked for their participation, given a $5 Starbucks gift card and escorted out of the room so that the researchers could reflect on the session and prepare for the next session.

Data Recordings

Each participant signed a consent form, agreeing to video, screen and audio recordings through UXCloud. The moderator administered the pre-test questionnaire verbally while the notetaker(s) recorded the participant's answers in UXCloud notes and a Google Form. The notetaker(s) recorded the participant's actions, comments, and questions as timestamped notes using UXCloud as well as tracked the participant's understanding and completion of the task, positive comments, errors encountered, and hints given with a data logging form for each task. For each task, the participant rated three variables on a printed post-task questionnaire: how easy the task was, how satisfied the participant was with their task completion, and how confident the participant was that completing the task would help them achieve their academic goals. For the post-test interview, the participant verbally answered the researchers' questions and the notetaker(s) typed their answers into UXCloud.

Tasks

This section summarizes the three tasks included in our usability study.

Task 1

The participant was asked to find out what courses they could take to fulfill the Classical Studies minor degree requirements.

Task 2

The participant was asked to add courses that count for the Classical Studies minor to their Winter 2018 plan so that their plan included at least 20 credits total.

Task 3

The participant was asked to view and compare possible schedules based on the courses they had in their Winter 2018 plan.

Metrics

This section describes the types of data (qualitative and quantitative) collected during each usability test.

Qualitative Data

We measured qualitative data by taking extensive notes on each participant's actions, comments, and questions during each usability test. Additionally, we recorded each participant's responses to the open-ended questions in the post-test interview.

Quantitative Data

We measured quantitative data with our screening survey, pre-test questionnaire, post-task questionnaires, and data logging forms. These sources consisted of closed-ended questions where answers were categorical or numerical. The post-task questionnaires consisted of three Likert scale rating questions:

1. Was this task easy?
   Response: Very Hard / Hard / Neither / Easy / Very Easy

2. How satisfied are you with what you accomplished in this task?
   Response: Very Dissatisfied / Dissatisfied / Neither / Satisfied / Very Satisfied

3. How confident are you that completing this task will help you achieve your academic goals?
   Response: Not at all Confident / Not Confident / Neither / Confident / Very Confident

Both types of data were valuable in understanding our results and supporting our findings and design recommendations.

Analysis

As mentioned in the Methods section, we collected several types of data in this study: video and audio recording, screen capture, surveys, observation notes, and tables. To synthesize these different types of data, we created graphs, used affinity diagrams, and coding. In order to incorporate the hand written material we received from the Likert scales given to our participants, we averaged the results from each task to produce the graph shown in Figure 1.

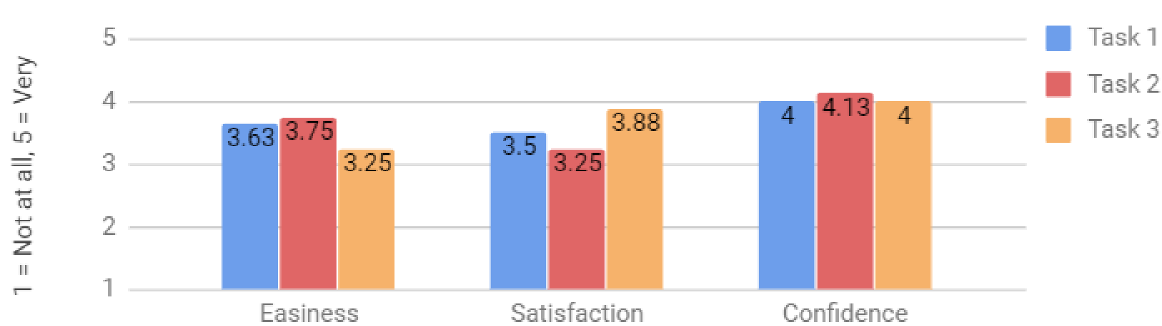


Figure 1: Results from Likert scale post-task questionnaire delivered to participants.

In addition to creating graphical representations to analyze our numerical data, we used affinity diagrams to interpret our qualitative data. We reviewed our notes and recordings collected from our study and discussed as a team what behaviors and features stood out. As a team, we discussed each new point, considering it before committing it to a sticky note. Once we gathered significant factors from our initial analysis of the qualitative data, we proceeded to organize the sticky notes. By organizing and reorganizing the sticky notes, we isolated specific behaviors. Our final affinity diagrams are displayed in Appendix 4.

As a second pass over our qualitative data, we organized and color coded our notes to further isolate specific behaviors. We did this to provide quick access to specific examples and to extract any additional opportunities that may have been overlooked by the affinity diagrams. We did this coding process by making a key that contained different colors to address the significance and tone of each note, as shown in Figure 2. With the key, we organized each note and later copied each coding category to its own sheet to make quick work of scanning for specific examples of any behaviors we were seeking information on. This method of analysis did not yield any additional findings but did allow us to easily find examples to definitively support our findings.

Coding Table
Bad
Good
Sad
Goals
Interesting
Pre-Test
Intervention
Quote

Figure 2: Our data coding key.

Findings and Recommendations

We organized our findings into four categories: positive, low severity, medium severity, and high severity. Positive findings highlight what we found works well in MyPlan.

Positive Findings

- Most participants used MyPlan features as expected.
- All participants indicated in the post-task questionnaires that they were satisfied with what they accomplished on at least one of three tasks.

- On average, participants indicated that were confident that MyPlan will help them achieve their academic goals.
- Several participants indicated that they enjoyed features once they worked properly.
- P8 noted that the new course search design is helpful and that MyPlan has improved over his time at UW.

Low Severity

This section covers issues we observed that slightly impacted participants' ability to use MyPlan but should still be addressed given enough development time.

All participants wanted to use non-MyPlan tools

Throughout our test sessions, we observed that every participant wanted to use a feature outside of MyPlan for one reason or another. Half of the participants (P1, P2, P3, P6) indicated during task 1 that they would normally use Google to find the Classical Studies department in order to determine what the minor program requirements are—in each case, we asked them to complete the task within MyPlan. P3 did first attempt to use MyPlan's "Find Programs" feature, but she was overwhelmed by the following page that provides a dropdown to select specific schools or colleges. A search function is reachable through another tab, as shown in Figure 3.

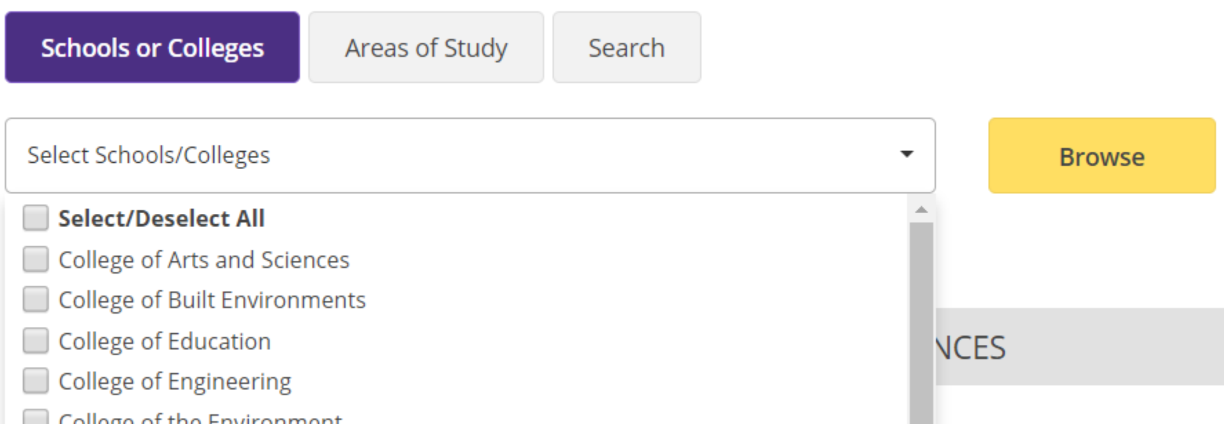


Figure 3: The "Find Programs" feature, which defaults to searching by schools or colleges.

When P3 returned to the page and used the Search function, she searched for "Classical Studies," yet it was displayed several options down in the list of results, as MyPlan provided in alphabetical order every program that has either "Classical" or "Studies" in its name or description.

P4 asked if he could use MyUW's Time Schedule feature, which shows in one page all courses in a department and what day-times they are offered. P7 clicked the "View more details" link in several courses on MyPlan to see additional requirements or restrictions (i.e. limited to underclassmen or CLAS majors) which opens a page in MyUW. P5 and P8 both wanted information about the professors teaching the classes: P5 had a browser plugin that inserted RateMyProfessor information into the course page, and P8 shared that he previously had made a similar plugin but no longer uses it. It may be inappropriate, however, for MyPlan to incorporate professor ratings and reviews into the course page due to lack of control over user-submitted ratings and reviews.

Design Recommendation

To enable participants to accurately and easily find the information they are looking for, we recommend two changes:

- The search option should be the first to appear on the programs page rather than the current “Schools or Colleges” option.
- Program search results should be sorted by relevance rather than alphabetically. Furthermore, the page should suggest programs as the user types, similar to how it does in the course search page.

Course time selection slider only allows for selection of one time span

While she was finding courses to add to her schedule during task 2, P5 wanted to use the time selection slider, as shown in Figure 4, to filter results to only display classes in the morning and classes in the late afternoon, as her schedule was already full during the middle of the day.

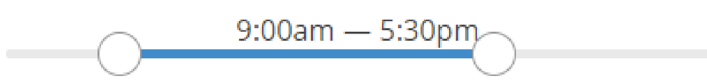


Figure 4: The time selection slider, set to filter out any classes outside of 9:00am - 5:30pm.

The time selection slider, however, only allows for one segment of time to be selected at once (i.e. from 9:00am to 5:30pm), thus requiring users to conduct two separate searches in order to find the results they want.

P5 was one of four participants (P3, P5, P7, P8) to use the time selection slider to filter results to avoid conflicting classes.

Design Recommendation

To minimize the number of actions required to retrieve results within multiple, yet specific, time slots we recommend two changes:

- Upgrade the time slider function to allow for multiple time restrictions in a single search, as shown in Figure 5.
- Add a checkbox that allows users to filter out any classes that conflict with their existing plan, as we observed that this was participants’ primary use for the slider.

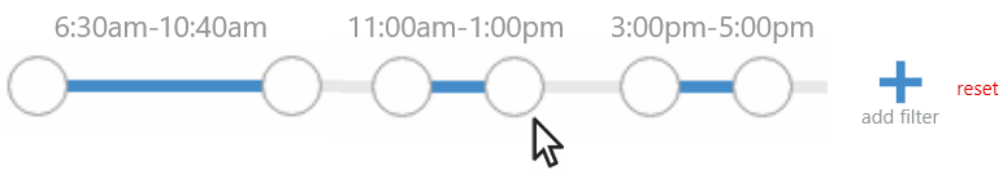


Figure 5: Our recommendation for the time selection slider, set to filter for multiple time slots at once.

Medium Severity

This section covers issues we observed that impacted participants' ability to use MyPlan without requiring extra awareness or effort to successfully complete tasks. These issues should be addressed after high-severity issues are resolved.

Degree requirements can be unclear

While we did not specifically test whether participants understood the degree requirements or not, we learned that one of our participants may have misunderstood what the minor required. For reference, the Classical Studies minor requires 25 credits from a given list of courses, of which 15 credits must be at the 300-400 level.

Of the seven participants (excluding P2) that successfully completed task 1, five shared out-loud their understanding of the requirements. Four participants (P5, P6, P7, P8) either had completed or had in progress a class counting towards the minor and thus the page displayed a value for "Earned" and "Needs" credits, as shown in Figure 6 below. P5, P6, and P8 all correctly interpreted that the "Needs" value is how many additional credits they need to fulfill the minor's requirements. However, P7—who saw the image shown in Figure 6—believed that the "Needs" value is how many credits total are required and thus incorrectly thought that he only needs 15 additional credits to fulfill the requirements, as we learned from his out-loud thinking.

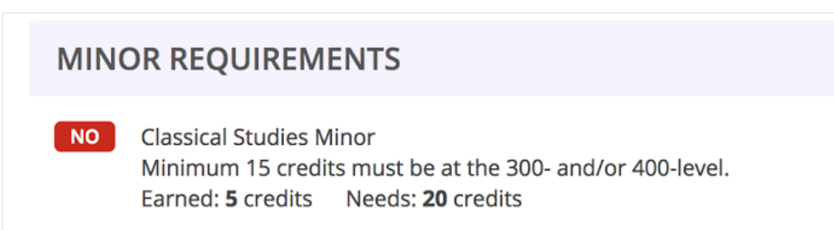


Figure 6: The degree requirements page shows "Earned" and "Needs" credits.

Design Recommendation

To make this information more clear, we recommend introducing a required credits field into the page, as shown in Figure 7.

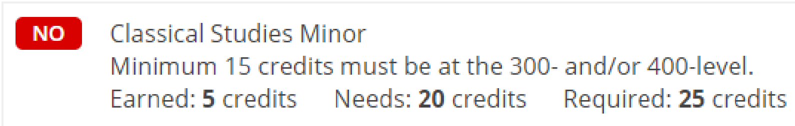


Figure 7: Our recommendation for the degree requirements element, adding a “Required” value.

Program course requirements are not displayed in a useful format

Of the seven participants (excluding P2) who completed task 1, several noted that they could not comprehend or use the data being shown in the course list on the minor requirements page, as shown in Figure 8.

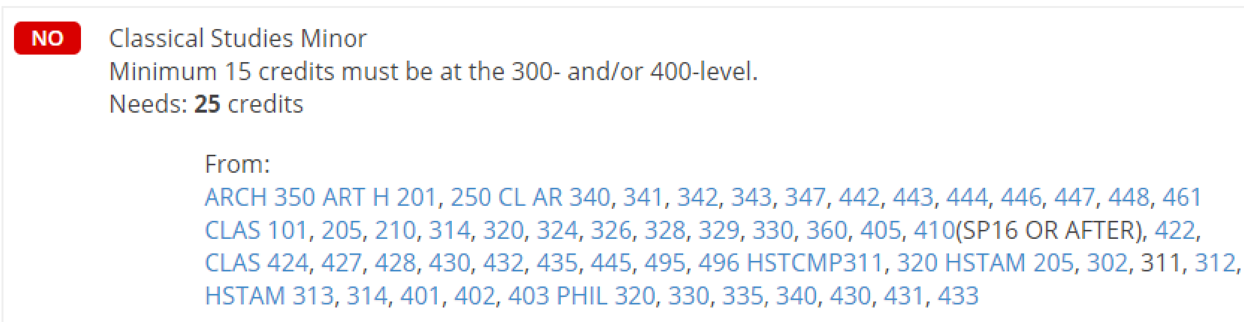


Figure 8: The Classical Studies minor course requirement list in the “Audit Degree” feature.

The list has courses from several departments listed by their course code without any separation between departments. P4 commented that the list is “crammed together” and exclaimed that all of the information was in capital letters (such as “SP16 OR AFTER”). P8 explained in the post-test interview that the list was messy so he glossed over it. Five participants (P1, P3, P5, P6, P7) specifically commented that they did not know what the course codes correspond to because the list does not include course titles. While individual courses in this list can be clicked to see the course title and links to add the course or view more details (bringing the user to the course page), four of the participants who made this comment later used the Find Courses feature and searched by the Classical Studies department code (CLAS) instead of using this list of requirements. In doing so, these participants ended up limited to requirements within the Classical Studies department, rather than including courses from other departments in their search, because they did not directly use the list in the requirements page.

Design Recommendation

To make this course requirement list easier on the eyes and more clear when scanning, we recommend reformatting it as shown in Figure 9. This format organizes courses by department, adds course title and credits, and reduces unnecessary capitalization to lowercase while overall making the list more readable.

NO Classical Studies Minor
Minimum 15 credits must be at the 300- and/or 400-level.
Needs: **25** credits

From:
- Architecture (ARCH)
    - ARCH 350 - Architecture of the Ancient World (3, 5)
- Art History (ART H)
    - ART H 201 - Survey of Western Art-Ancient (5)
    - ART H 250 - Rome (5)
- ...
- Classical Studies (CLAS)
    - ...
    - CLAS 410 - The Classical Tradition (3-5) (SP16 or after)
    - ...

Figure 9: Our recommendation for formatting the course list, showing department and course names. Ellipses indicate courses skipped from the unformatted list in Figure 6.

MyPlan does not make features readily accessible post-homepage

MyPlan's homepage (after logging in) displays a well-organized list of features, categorized with icons labeled "Explore," "Manage," and "Track." These features are accessible through the navigation bar shown in Figure 10.

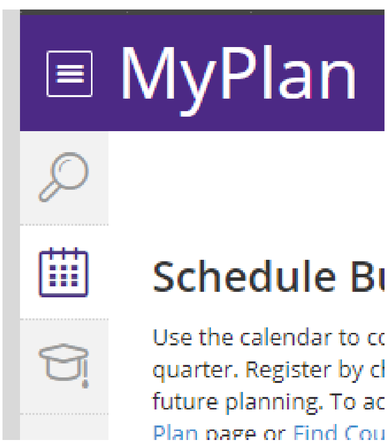


Figure 10: MyPlan's navigation bar, which expands to show options upon mouse over.

When a user mouses over the three icons on the left, the full navigation options panel expands out, allowing the user to navigate to the feature of their choosing. As the features are not immediately obvious here, some participants had trouble navigating through MyPlan. P2, who is a new student and was unable to complete task 1, said at the end of the test session, "I wouldn't be able to use MyPlan because I don't know how it would help me find the required courses for the minor"—he never found the "Find Program" or "Audit Degree" features. P7 also briefly struggled despite being an experienced MyPlan user; he specifically commented that the sidebar keeps disappearing so it's hard to see, so he forgot where "Build a Schedule" is.

Design Recommendation

To aid users that are less familiar with MyPlan, we recommend that a navigation bar be permanently visible to allow users to seamlessly navigate from one task to another and back. This navigation bar could look like the current navigation bar but always be expanded and stay visible as the user scrolls down. As keeping the navigation bar expanded on the side may eat into valuable page space, perhaps a top-placed navigation bar would be more appropriate, as shown in Figure 11, but this idea would require additional testing.

Figure 11: Our recommendation for MyPlan's navigation bar, scrolling with user to always be visible.

High Severity

This section covers issues we observed that prevented participants from using MyPlan features or otherwise severely impacted their ability to successfully plan and create a course schedule. These issues should be addressed before anything else.

MyPlan places cognitive load on users

In several ways, MyPlan places cognitive load on users by lacking integration between features or designing page elements in non-standard ways, forcing them to remember information as they navigate between features. When a course is clicked in the course requirement list on the degree audit, a popup modal opens to show the course name, quarter offered, prerequisites, a view more details link, and a Add to Plan button, as shown in Figure 12.

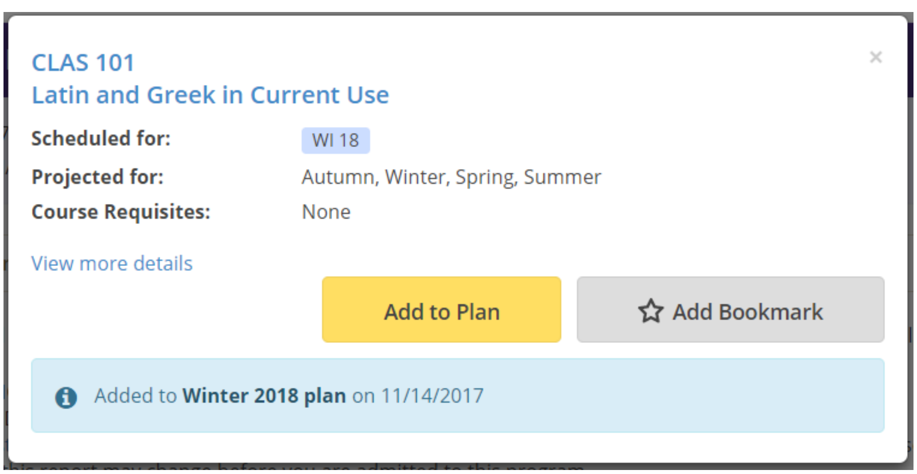


Figure 12: The popup modal that appears when a clicking course in degree requirements.

No participants used the “Add to Plan” button here, as they instead clicked “View more details” to see additional information they would need before adding a class such as the course description and when and where class sections will be offered. Furthermore, the course requirements do not change color once they have been clicked. As a result, the four participants (P3, P4, P6, P7) who used this requirement list to add courses each had to click aimlessly through the list if they could not remember where they left off. Additionally, the requirement list includes courses that are offered various quarters, so these participants became frustrated when they continuously clicked on courses that are not offered in the quarter they are planning for.

Six participants (P1, P2, P3, P5, P7, P8) at some point used the “Find Courses” feature and searched for courses by the CLAS department code instead of adding courses from the degree requirements list. As mentioned in an earlier finding, users who find courses in this manner limit the course results to only courses in the Classical Studies department, excluding courses participants could take from other departments that count towards the minor. This approach additionally displays courses in the Classical Studies department that do not count towards the minor, such as CLAS 239 (“Greece: From Ancient to Modern”), requiring users to remember—if they notice this detail—which courses are in the minor on top of showing only courses from one department. In the post-test interviews, we asked P7 and P8 if they were confident that the classes they added to the plan counted toward the minor, and they both explained that they would typically double check later; P8 noted that he had previously encountered similar discrepancies in planning for his degree in Mathematics.

Five participants (P3, P4, P5, P6, P7) kept the degree audit open in one tab while opening courses in new tabs to cross-reference which courses count toward the minor, leading them to have a messy browser workspace with several tabs to keep track of, as seen in Figure 13.

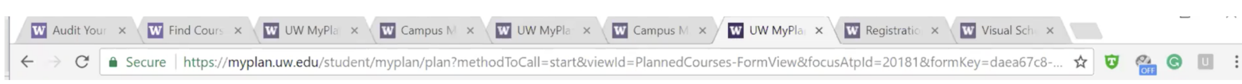


Figure 13: P5 was one of several participants to open several tabs while completing task 2.

Design Recommendation

To reduce cognitive load on users as they find courses that apply towards degree requirements, we recommend three changes:

- Add visual feedback to indicate to users which courses have already been clicked on by changing the color of those links.
- Add a filter-by-degree option to the “Find Courses” feature, allowing users to find the courses they need without having to cross-reference the audit page.
- Add more information to the popup modals that appear when courses are clicked from the degree requirements page.

- These improved popup modals, as shown in Figure 14, should contain the course name, course description, the quarters it is offered in, if the course is open for registration, and how many seats remain if the course is open.
- This recommendation would prevent users from needing to open several tabs as they add classes that meet a degree requirement.

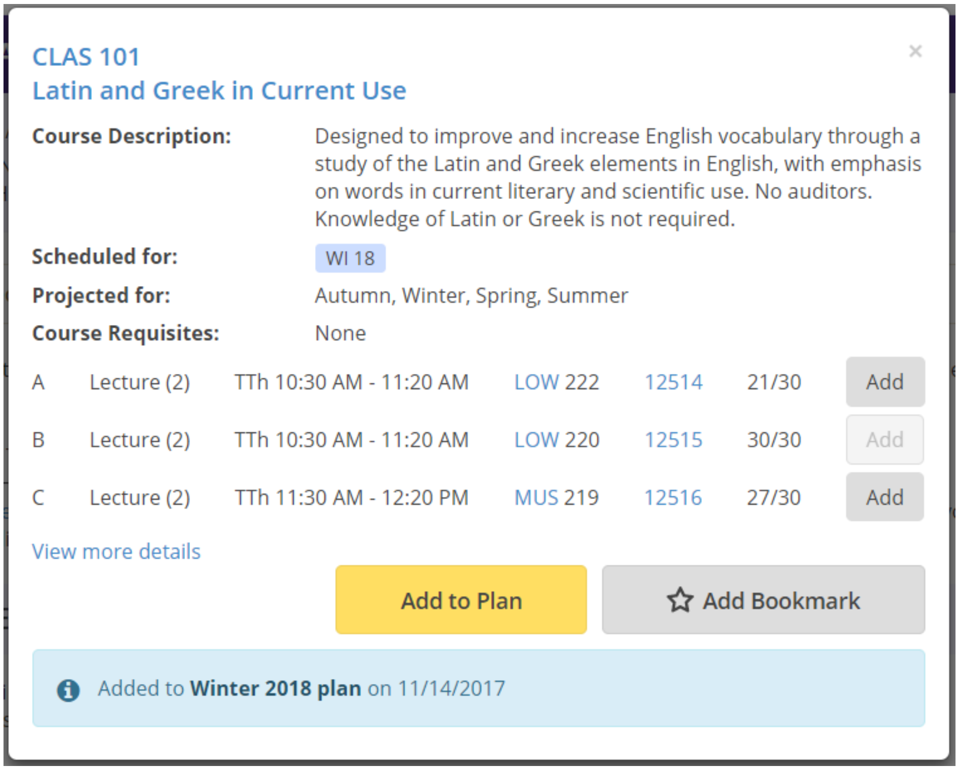


Figure 14: Our recommendation for the popup modal for additional information in the audit page.

Schedule Builder often displays unclear errors instead of loading

The Schedule Builder feature frustrated several participants in our study. Six of our eight participants (excluding P1 and P2) had used the Schedule Builder before, so we expected they might be able to use the feature successfully, yet only one participant (P4) loaded the Schedule Builder successfully on his first attempt. For context, the Schedule Builder feature displays all courses in a user's plan in a visual weekly calendar, with multiple options shown for any courses that have multiple sections to pick from at different times, as shown in Figure 15.

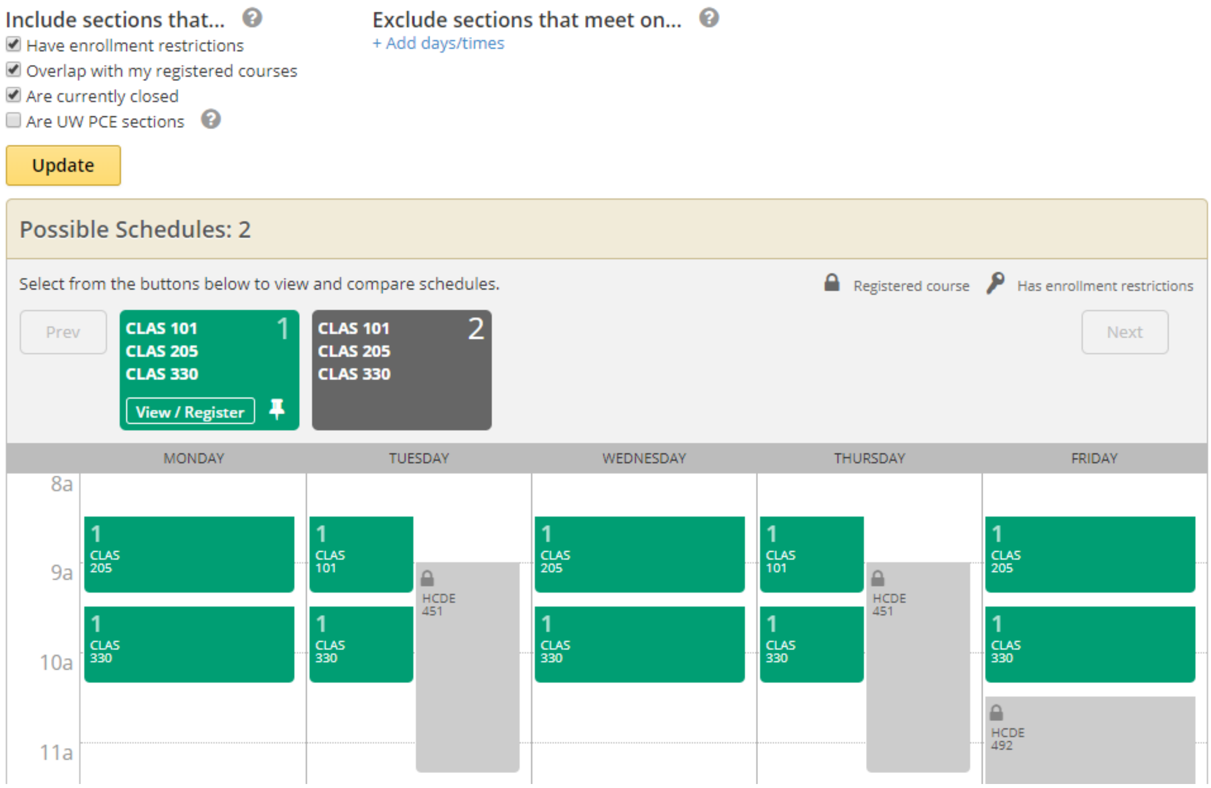


Figure 15: The Schedule Builder, displaying registered courses as well as schedule options.

If the user's plan has any conflicting or closed sections planned, the Schedule Builder will not load and instead shows an error message in grey, as shown in Figure 16. Consequently, seven of the eight participants in this study were hindered by these errors for varying lengths of time.

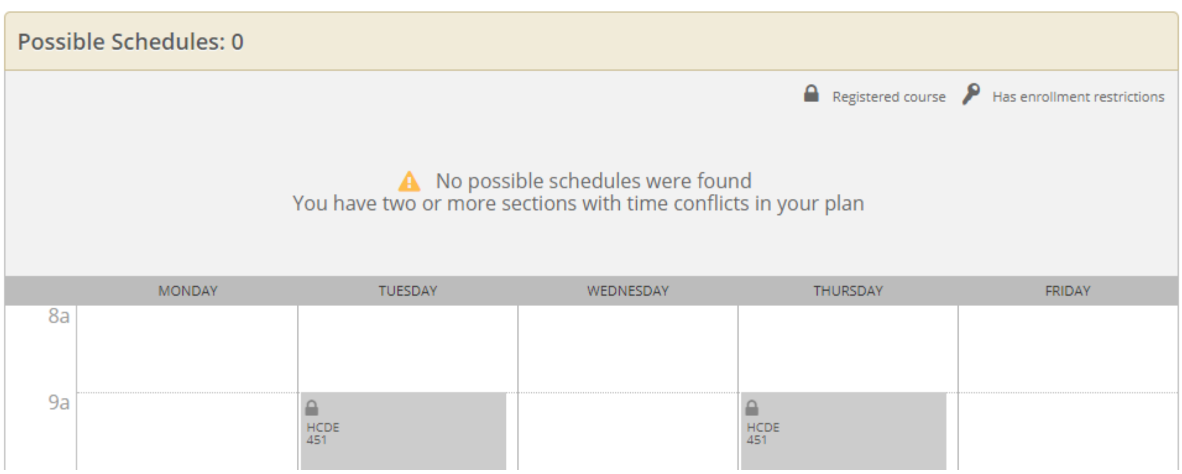


Figure 16: The Schedule Builder displaying a conflict error message.

Design Recommendation

Since users are likely to experience an error when loading the MyPlan scheduler, we recommend a popup modal that boldly expresses the error and provides potential solutions, replacing the existing alert section. The modal would tell them the error, such as "Three of your scheduled classes are conflicting," and list those classes and their times with a means to remove one or more of them.

To further improve the issues experienced when facing the Schedule Builder not loading, we recommend making the "include closed sections" option selected by default and then include a visual clue on the possible schedules indicating that those sections are closed. Perhaps this could be done similarly to how the visual calendar currently represents registered classes by a lock icon and classes with prerequisites by a key icon: A red "X" or red "Currently Closed" on the displayed class could indicate the class is closed.

Conclusion

MyPlan does a great job introducing new features to support planning and schedule building for students at the University of Washington. These features are especially valuable to those who know how to use them properly. Through the methods we used in this study as well as our analysis of the data, we found areas we believe will build upon these positive attributes while achieving our goals. Our recommendations are directed toward reducing cognitive loads, stressors and other obstacles users may experiences while using the platform. In addition, we believe these recommendations will empower students to plan more effectively using MyPlan, reducing the strain on advisors to execute nominal tasks.

The next steps in the process of improving MyPlan for university staff and students is to implement the recommendations we have listed based on ability and impact. Once the features exist, further testing should be conducted to ensure that the results do not negatively impact the positive features that already exist within MyPlan as well as satisfy the needs addressed by our participants. Finally, to ensure that the goals of this study are met, surveys should be distributed after making adjustments. The surveys would help determine if both students and staff are experiencing positive benefits from the changes that have been made.

If these adjustments prove to be as effective as we hypothesize, another feature may be warranted beyond the scope of our study. As the usability and usefulness of MyPlan increases, having a link accessible from the quick links tab on the University of Washington's homepage could further improve the service's traffic. Though, at this time we recommend focusing on the recommendations laid out by the findings in this study.

Reflection

If we were to do this usability study again, we would do some things differently. In order to ensure our results are representative of the population UW's MyPlan serves, we would commit more time to recruiting a diverse participant pool and making a conscious effort to recruit using additional social media platforms.

When it came to conducting the study, we were unable to obtain a control or blank account, which meant that participants had to use their own UW account. This raised the issue of their grades and other personal information potentially being visible during the study (three participants each had one grade that became visible). Along with addressing privacy issues, having a blank account would maintain consistency across testing. Additionally, collecting more quantitative data would have solidified the foundation of our findings.

After conducting the study, we noted components that would have benefited from better analysis and more comprehensive data. If we included a fourth task requiring participants to audit their plan, we would have had the opportunity to observe participants verify that the courses they added counted towards the minor from the previous tasks. Lastly, we would have a backup recording method to ensure all session recordings were clear and complete in the event that our primary recording method failed or recorded low-quality audio.

Although we were able to successfully conduct the study and collect valuable data, if we were to do this study again, adding these suggestions would greatly support collecting and analyzing our data to be comprehensive of the entire UW student community and ensure the recommendations benefit UW MyPlan's users.

References

[1] University of Washington Fast Facts: 2017. (2017). [ebook] p.1. Available at: https://opb.washington.edu/sites/default/files/opb/Data/2017_Fast_Facts.pdf [Accessed 9 Dec. 2017].

[2] Nielsen, J. (2017). *10 Heuristics for User Interface Design*. [online] Nielsen Norman Group. Available at: https://www.nngroup.com/articles/ten-usability-heuristics/ [Accessed 11 Dec. 2017].

Appendix 1: Participant Profiles

Screening Survey

Participant #	Sex	Years at UW	Familiarity w/ Time Schedule	Familiarity w/ MyUW	Familiarity w/ MyPlan	Preferred Operating System
1	Male	1	Never heard of this tool	Use this tool & is familiar with it	Use this tool & is familiar with it	Windows
2	Male	< 1	Never heard of this tool	Use this tool & is familiar with it	Use this tool & is familiar with it	Windows
3	Female	≥ 4	Use this tool & is familiar with it	Use this tool & is familiar with it	Use this tool & is familiar with it	No preference
4	Male	≥ 4	Use this tool & is familiar with it	Use this tool & is familiar with it	Use this tool & is familiar with it	MacOS
5	Female	2	Use this tool & is familiar with it	Use this tool & is familiar with it	Use this tool & is familiar with it	Windows
6	Male	≥ 4	Use this tool & is familiar with it	Use this tool & is familiar with it	Use this tool & is familiar with it	No preference
7	Male	≥ 4	Use this tool & is familiar with it	Use this tool & is familiar with it	Use this tool & is familiar with it	No preference
8	Male	3	Use this tool & is familiar with it	Use this tool & is familiar with it	Use this tool & is familiar with it	Windows

Pre-Test Questionnaire

Participant #	Age	Major	Used MyPlan for Winter 2018?	Last used MyPlan?	Meets w/ advisor how often?	Used Schedule Builder?	Has Audited Degree?
1	18	Mechanical or Electrical Engineering	Yes	< 2 days	Never	No	No
2	23	Psychology	Yes	< 1 week	2-3x	No	Yes
3	21	Human Centered Design and Engineering	No	< 1 month	5x	Yes	Yes
4	22	Human Centered Design and Engineering	Yes	< 2 weeks	6x	Yes	Yes
5	21	Computer Science	Yes	< 1 week	Only when unable to get into a class	Yes	Yes
6	21	Human Centered Design and Engineering	Yes	< 1 month	1x/quarter	Yes	Yes
7	21	Geography	Yes	< 1 week	Every other quarter	Yes	Yes
8	21	Mathematics	Yes	< 2 weeks	1x	Yes	Yes

Appendix 2: Post-Task Questionnaire

Participant #	1	2	3	4	5	6	7	8	**Average**
Task 1									
Was this task easy?	4	2	2	3	5	4	5	4	**3.625**
How satisfied are you with what you accomplished in this task?	4	3	3	4	3	5	3	3	**3.5**
How confident are you that completing this task will help you to achieve your academic goals?	3	3	5	4	3	5	5	4	**4**
Task 2									
Was this task easy?	5	4	1	5	3	3	4	5	**3.75**
How satisfied are you with what you accomplished in this task?	4	5	1	3	1	4	3	5	**3.25**
How confident are you that completing this task will help you to achieve your academic goals?	3	4	4	4	5	5	4	4	**4.125**
Task 3									
Was this task easy?	3	3	2	5	3	3	2	5	**3.25**
How satisfied are you with what you accomplished in this task?	4	3	4	5	5	3	5	2	**3.875**
How confident are you that completing this task will help you to achieve your academic goals?	4	3	5	5	5	4	4	2	**4**

Appendix 3: Post-Test Interview

Participant 1 Transcript

Researcher 1: When you got to the Schedule Builder page, you commented that it was kind of confusing?

P1: Yeah because it really was. Cause I already - this is how I did before. It was just looking at classes, what times they were, and that looked like that would kind of do a similar thing but I just thought it would be quicker to do it the way I usually do it then try to figure out how to do that.

Researcher 2: If you were to try the task over again, are there any changes you would make or things you would do differently?

P1: No, I don't think so.

Researcher 2: And then I guess, overall experience, do you feel like MyPlan, like the experience was simple… challenging?

P1: Yeah, I mean, it's pretty straightforward. It was kind of - at first, when I first used it, before this quarter, it didn't have the - or maybe it did, I just didn't see it - the list of all the different things and different - below when you clicked on Find Courses and then it's got the whole list of different classes but I may have just didn't see that but I don't think it was there so then I didn't really know what I was really looking for and I searched stuff and now it's kind of confusing.
30:10

Researcher 2: Yeah, it's not what you pictured right, when you were first introduced to MyPlan?

P1: Yeah but overall I think it works really well. There could be a better way of figuring out classes in your schedule. Cause I keep all the times in my head and then figure it out.

Participant 2 Transcript

Researcher 1: If you could just go back to the Build a Schedule first… There's that error message right there, did you see or read that error message while you were trying to - or when did you realize that the schedule wouldn't load?

P2: Yeah, I've seen that before. For the 205 classes, it makes sense. It just didn't make sense for the 101 class cause I don't have anything available - I don't have any class during that time and I'm free so if I plan for it, it should show up rather than just have blank and show me "no possible schedules."

Researcher 1: The checklist options, go to that one and include closed sections. I'm just curious if it'll show the - (Schedule Builder loaded)

P2: Oh it shows! Yeah, that's probably why I wouldn't be able to. That's just a little weird. You'd think that would be checked from the start just so you can see what's going on and then you can uncheck it.

Researcher 2: How would you have gone about that and figure out which courses are required for the minor?

P2: I honestly wouldn't be able to cause I wouldn't know which classes are required for the minor. Off the top, I would assume the 101 and the 205 would be required but I wouldn't know which 300 or 400 level classes I would have to take or even which ones that are available to me to take as someone's who undeclared for instance because I'm technically still undeclared.

Researcher 3: Do you think any of these (Referring to the sidebar) would help with that information?

P2: Probably the Audit Degree or Audit Plan? But I'm not familiar enough to know if Audit Plan would work with minors because you'd have to be signed in by your advisor to say you're allowed to declare a minor, if I'm not mistaken.

Participant 3 Transcript

Researcher 1: What were the advantages that you were seeking when you went off of MyPlan to find out about Classical Studies? What were the advantages for how you went about that?

P3: So what I have done for HCDE to plan my actual course requirements is just look at their list of course requirements and I know where it is on their website. I didn't have any knowledge of how I would do that through MyPlan so I guess I decided to do the thing that I have done before and I assumed that the Classical Studies major would have something on their website and so I went to look for that just like a list of classes.

Researcher 2: If you go back to the section where you can see the classes you can take in the program listings.

P3: The Classical Studies page? (On Classical Studies page through Find Programs)

Researcher 2: So if you click that minor and from here, click one of the classes that is offered, such as CL AR 347 in the top row. Did you see this Add to Plan button on the page? I noticed you clicked on view more details every time to go add the class but I was curious what did you think of this Add to Plan button? What did you think it did? Or did you notice it?

P3: I did actually notice it and the reason I didn't directly just add it to my plan is I did want to see more information about the class and know when it was and really any sort of detail about it. More specifically when it was.

Researcher 1: Have you ever used an audit to find classes?

P3: I have not.

Researcher 1: I was wondering if you have ever…

P3: I actually might change that… I might have used an audit to find - not - I didn't audit my degree with the intention to find classes but I did probably if there IS information about auditing classes. And then there were classes then I probably did look at them but I didn't use that explicit to do that.

Researcher 2: Do you still have that Schedule Builder page open? Up at the top bar, see how it's got all five classes listed in that box right under Possible Schedules? What do you think would happen if you press View/Register there? And once you have answered the question feel free to do it.

P3: I would see a list of the classes with something that would - is there just sections that are open - yeah it is it is because there are people registered - so I would probably see something about the classes and “click this to register.” I don’t think I would be able to register because some of them are full. So I think maybe it will inform me of that challenge. I’m gonna click it now. This is about what I expected, I think.

Researcher 2: Did you see the error message with the Schedule Builder when it wouldn’t load the first few times you did it?

P3: Yes, I got this mixed up I guess it said include sections that have enrollment restrictions, two of them are checked off when I first got to the page. And so that kind of made it seem like I needed… I don’t know exactly how to explain my thinking on that but because there were some options that were chosen, I just kind of automatically thought that there were restrictions. I was choosing things that like modify what was on my screen then I unchecked everything, updated it, and that made it worse. And I realized at a later point that I had to check something which was are currently closed.

Participant 4 Transcript

Researcher 1: Did you intentionally pick classes that fit into your schedule?

P4: No. I only looked for classes that - I think the first priority is to look for classes that's open in winter quarter because it's such a huge list. I think that's the first priority because I know there could be other options. I usually add whatever I can take or I wanna take to my plan and just play around with it to see which one is available, does not have the prerequisites, will have the prerequisites I already have. I think my first priority is if it's open for winter quarter, second priority is if I like the class, interested in the topic, and third is if the professor who's teaching this class is someone I want to take the class from so I'll check Rate My Professors or Course Catalog (Does he mean the Course Evaluation Catalog?) to see people's reviews. I think the schedule is not my priority because it could change.

Researcher 1: When you were looking at the different classes from the degree requirements and clicking on the numerical codes, were you looking for something specific or what were you thinking as you clicked on them?

P4: The first thing is I'm looking for is if the class is offered in winter quarter and then I'm looking at the title because the abbreviation for the class is not very clear because I'm not familiar with those abbreviations not like HCDE, I know what's HCDE but for the rest, I don't really know the meanings of those abbreviations so I clicked to see the full name of the class. I want to see a short description of what this class is about and maybe - not really the time - because I didn't really pay attention to the time because I know I can see the time later in the Time Schedule.

Researcher 1: In the specific class page when you clicked view restrictions on a section where it brought you back out into Time Schedule, what information were you looking for when you clicked view restrictions?

P4: I'm looking for the left bottom there's the restrictions - the restrictions is always there like Philosophy.. I just read before… no freshman.. when they will give out the add codes, and who you should email to get the add codes. I guess I wanted to see what's the restrictions first, when they gonna release the add codes, who to contact.

Researcher 2: So the paths that you followed through each of these tasks, is it similar to the paths you've taken in your own registration and experience with MyPlan?

P4: It will be a little different. So for my major, I'm doing the HCI option so audit my degree. the HCI option classes… we have a new version HCI option classes we can take but the one on audit my degree is old so I will use that to find out if I've got all the general requirements like science and VLPA credits but for HCI credits I will just use the class sheet Alex gave me and compare that to the classes I’ve taken and then decide what classes I’m going to take for the next few quarters.

Researcher 2: So you use outside tools to assist you?

P4: Yes, I’m not sure for other major but for HCI option at HCDE is not up-to-date so I like to use outside sources to figure out the classes I want to take.

Participant 5 Transcript

Paraphrased from notes and recordings, as recording audio for P5 is muddled.

Researcher 1: When you were filtering course results, you noted that you dislike the time filter slider. Why is this?

P5: When I use a trackpad it can be hard to use to select the correct times. I also want to be able to fill in multiple time slots instead of one continuous time slot.

Researcher 1: If you were actually registering for next quarter and wanted a class that was closed, what would your course of action be?

P5: I would add the class to backup/planned courses, subscribe to seats, and use text not email notifications as text are faster, and find semi-full other classes temporarily.

Researcher 1: When you were approaching 20 credits in your plan, were you keeping track of your credit count yourself or using info in MyPlan for reference?

P5: I usually know because I have to keep track of my credits to make sure I have at least 12, which is the international student minimum.

Participant 6 Transcript

Researcher 1: I noticed you used the class sections dropdown to see which sections to add when you were in View Winter 2018. Click on Plan View Winter 2018, you clicked on Show all scheduled sections, is this to look at the times of these classes?

P6: I don't really remember seeing this screen from when I last used this. If I was clicking on it, I'd probably to see if it's open. I don't think I was looking at the time.

Researcher 1: How do you normally go through scheduling as far as making sure all of the times fit together?

P6: I use probably not the most efficient way but I don't really like MyPlan because I can't remember which buttons do what. I think it did it once freshman year. I think it's just easier for me to - at least now obviously now that I'm in HCDE there's not many variations to my schedule when I was a freshman there was like math and science, you get like 5 different schedules built - now there's only one or two classes to register for - what I do is I open the Course Catalog and I type in HCDE graduation requirements into Google and I open the page that has all the classes we have to take. I go to the Course Catalog and - I didn't use to do this but I now click Autumn or Winter to see classes that are scheduled for Autumn or Winter or Spring. I look at what classes might be interesting. Normally this is the morning of registration if I remember to wake up for registration. I will try to remember or write the manual SLN codes. If I'm really on top of my game like I was last registration period and I have the SLN codes in notepad and I'll copy and paste them over.

Researcher 1: What is your understanding of the Classical Studies minor requirements?

P6: I'm not sure if it's 25 credits or 20 credits. I'd probably wanna talk to a Classics advisor. I'm not sure if the 320 counted but it counted for arts.

Researcher 2: You said that you used the Audit Degree before to audit your degree. I was wondering why you chose to use Audit Plan for minor requirements instead of audit degree.

P6: Normally I'm on the MyUW homepage and there's a quick link. It just says MyDARS and it pops up and what I just did.

Researcher 1: Is it the same interface?

P6: Yeah, I think it takes you to this page. Generally if I'm going to MyPlan I don't go to Audit Degree but I think it's the same. I see it says Audit Your Plan up top.

Researcher 2: You mentioned you added a bunch of classes before considering time location. Why is that?

P6: I have Tuesdays and Thursdays booked pretty much. I wanted to add classes that were Mondays and Wednesdays to see my options. It was weird it wouldn't show me that many options. Normally, if I really wanted to see if my schedule would work, I would do the old way with the SLN codes and Course Catalog. I'm not sure if MyPlan would do audit your minor. I guess it would.

Participant 7 Transcript

Paraphrased from notes and recordings, as recording audio for P7 is muddled.

Researcher 1: In the degree audit results, you asked if we could increase text size; was all text too small or was it specifically some element in MyPlan that was too small?

P7: There were lots of different sizes of elements; only some were too small.

Researcher 1: You have a lot of classes planned but not registered. Are you actively trying to get into these classes? If so, what is your process to do so?

P7: I can't decide which I want to actually take. I use NotifyUW to get into full classes.

Researcher 1: When the Schedule Builder wouldn't load, did you see the error showing that you have conflicting classes?

P7: I didn't see that error until the end when removing courses.

Researcher 1: Have you had issues with the Schedule Builder not loading in the past?

P7: I don't think so, I haven't used it much since early college.

Researcher 1: Was the build a schedule feature where you would expect?

P7: I couldn't remember if it was in the collapsed bar on the left or on top.

Researcher 2: When you searched for courses by the CLAS program code, did you know which courses qualified for the minor?

P7: No, but I would check after adding them. It would be nice if it said which counted.

Participant 8 Transcript

Paraphrased from notes and recordings, as recording audio for P8 is muddled.

Researcher 1: How often do you use RateMyProfessor when selecting classes or sections?

P8: I used to use them more when he used a plugin that I created to add professor ratings into MyPlan. I haven't done it actively since when I got a DMCA takedown request from the company behind RateMyProfessor.

Researcher 1: Why did you filter to only show 300-400 level classes when you were adding courses?

P8: I was trying to fulfill the minor requirements, though 5 credits could be outside higher level.

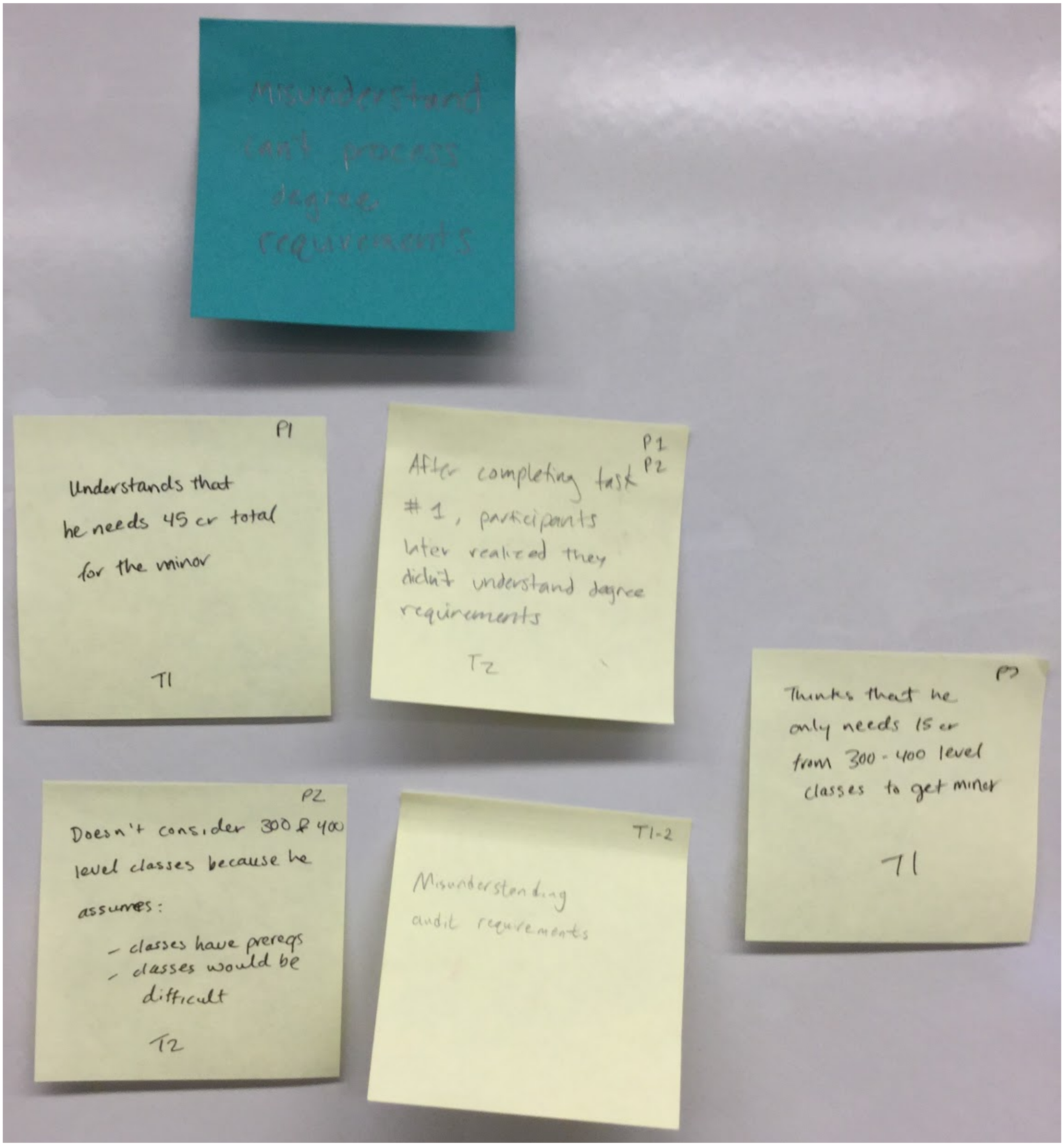
Researcher 1: Did you see that there are department codes other than CLAS that count towards the minor?

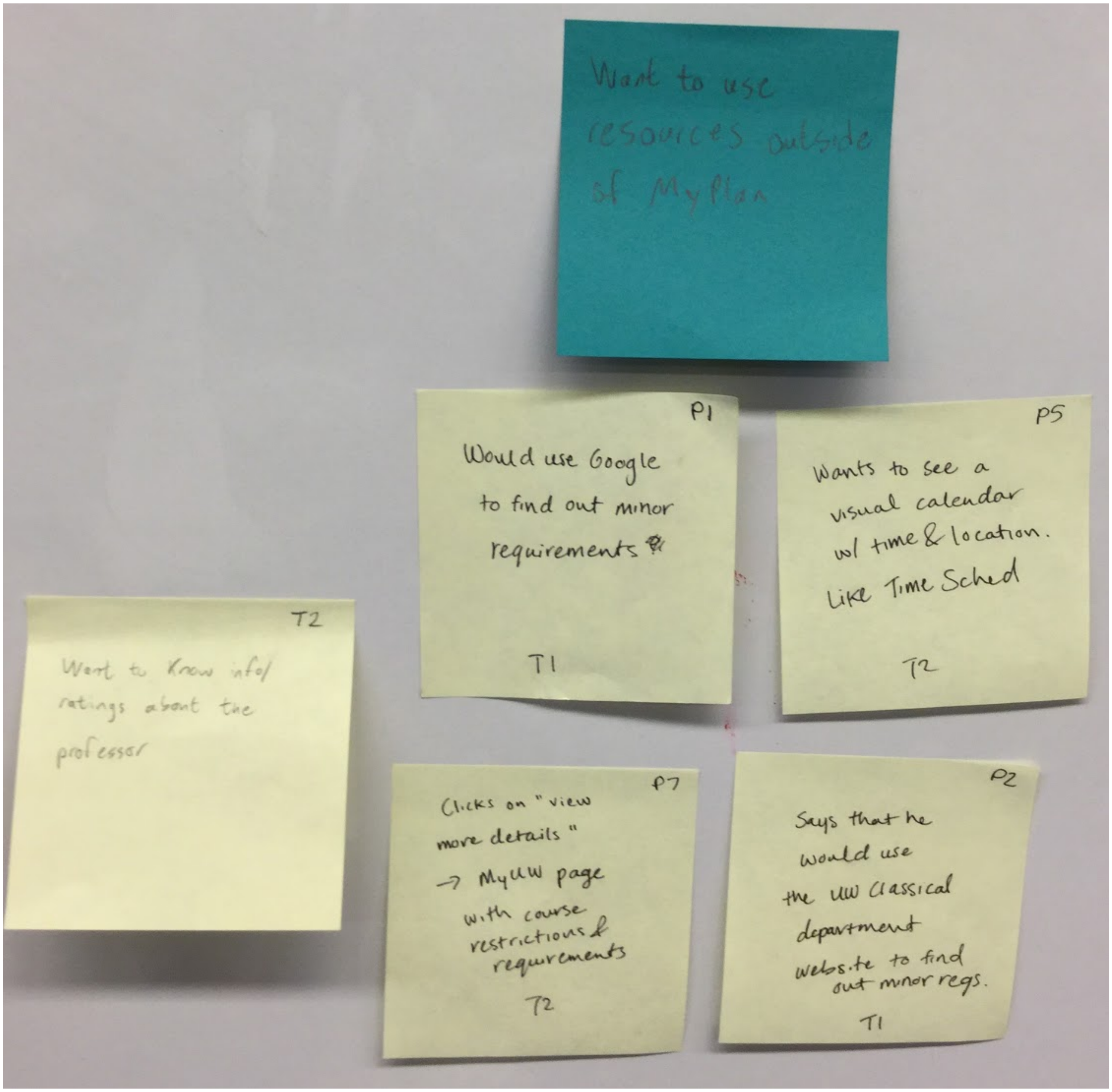
P8: I glossed over it. The info seemed messy so I only searched for CLAS.

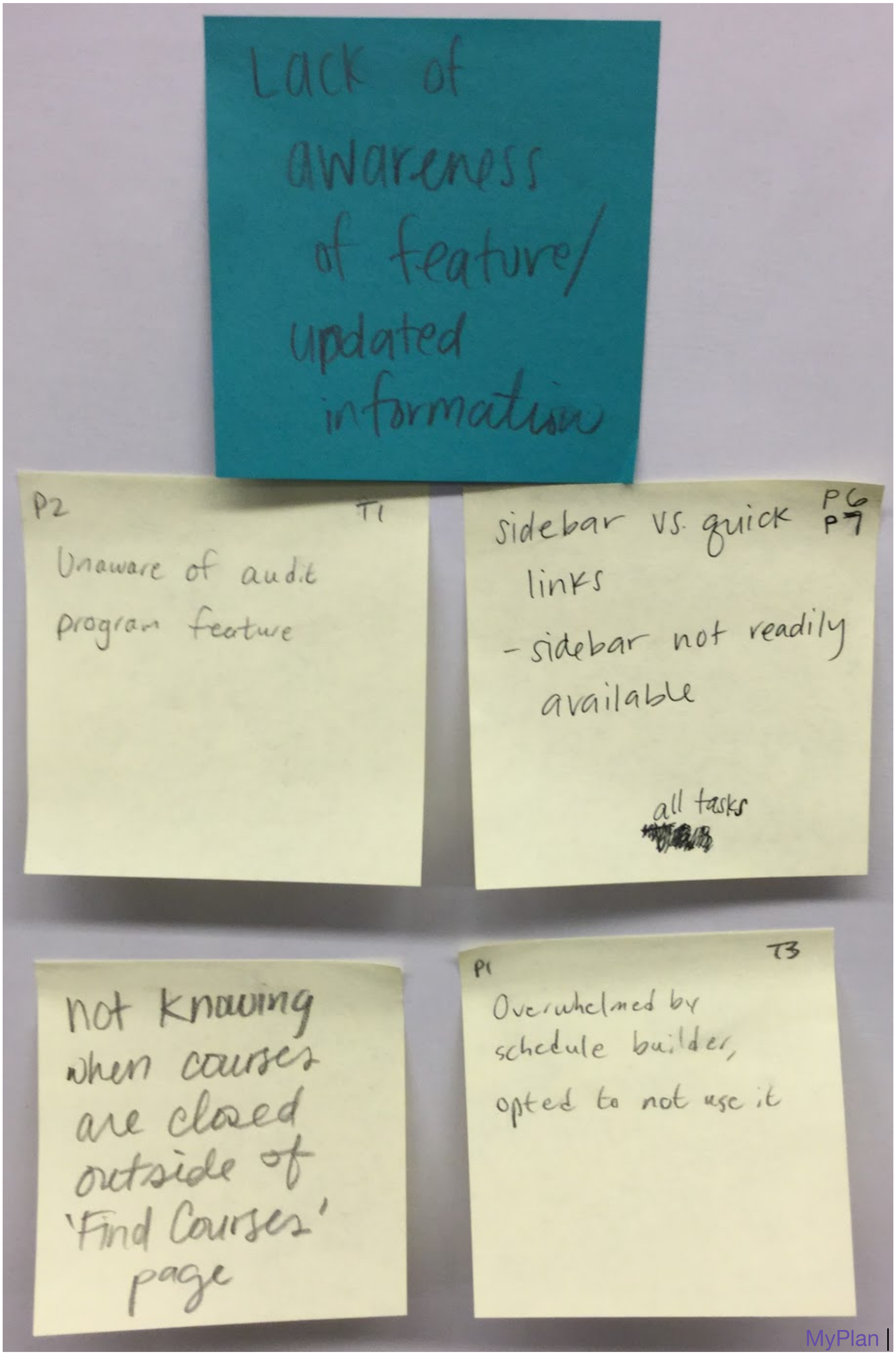
Researcher 1: If a CLAS class fit in your schedule, would you be confident that it would count towards the minor?

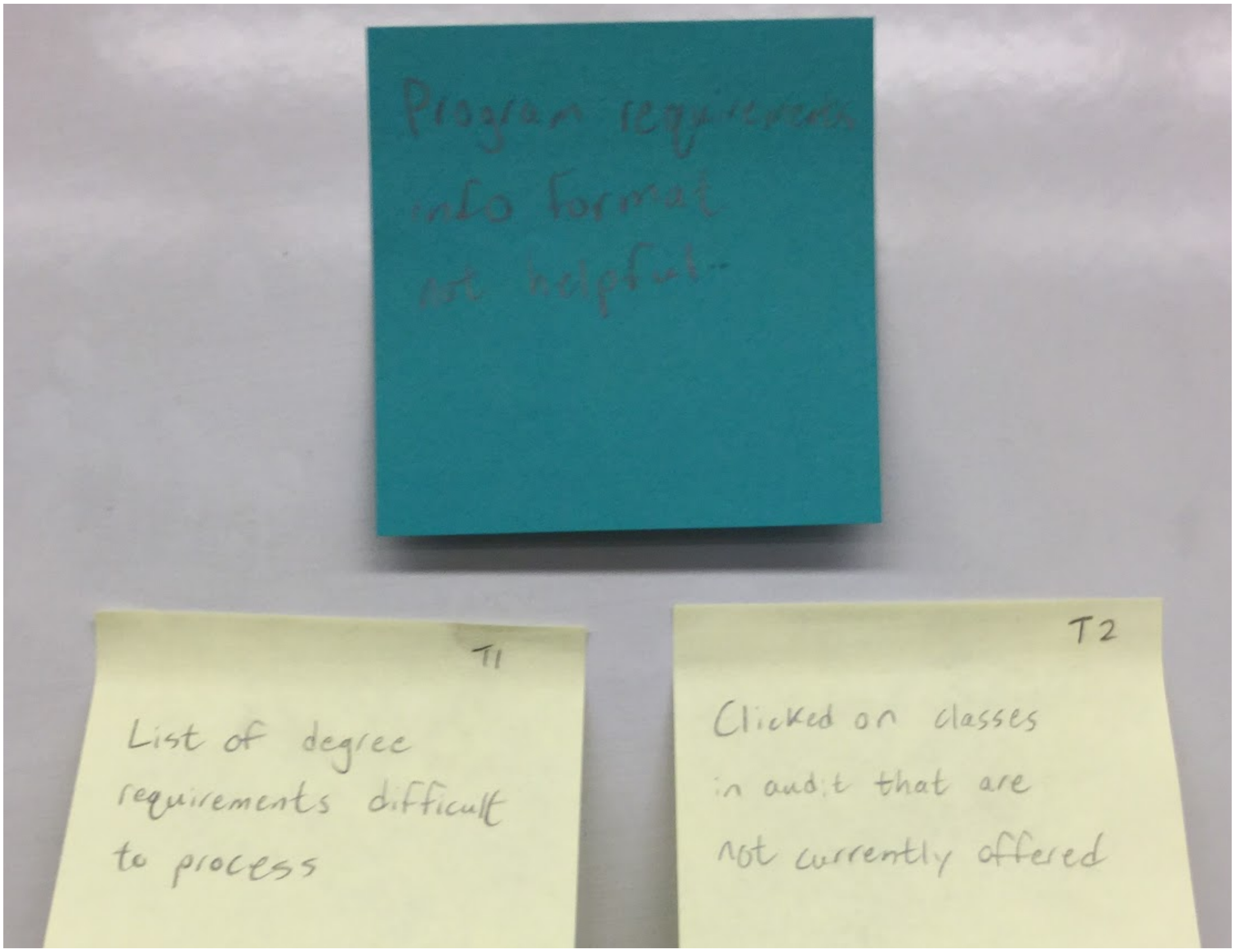
P8: In the math major I've experienced some lack of clarity so I would double check.

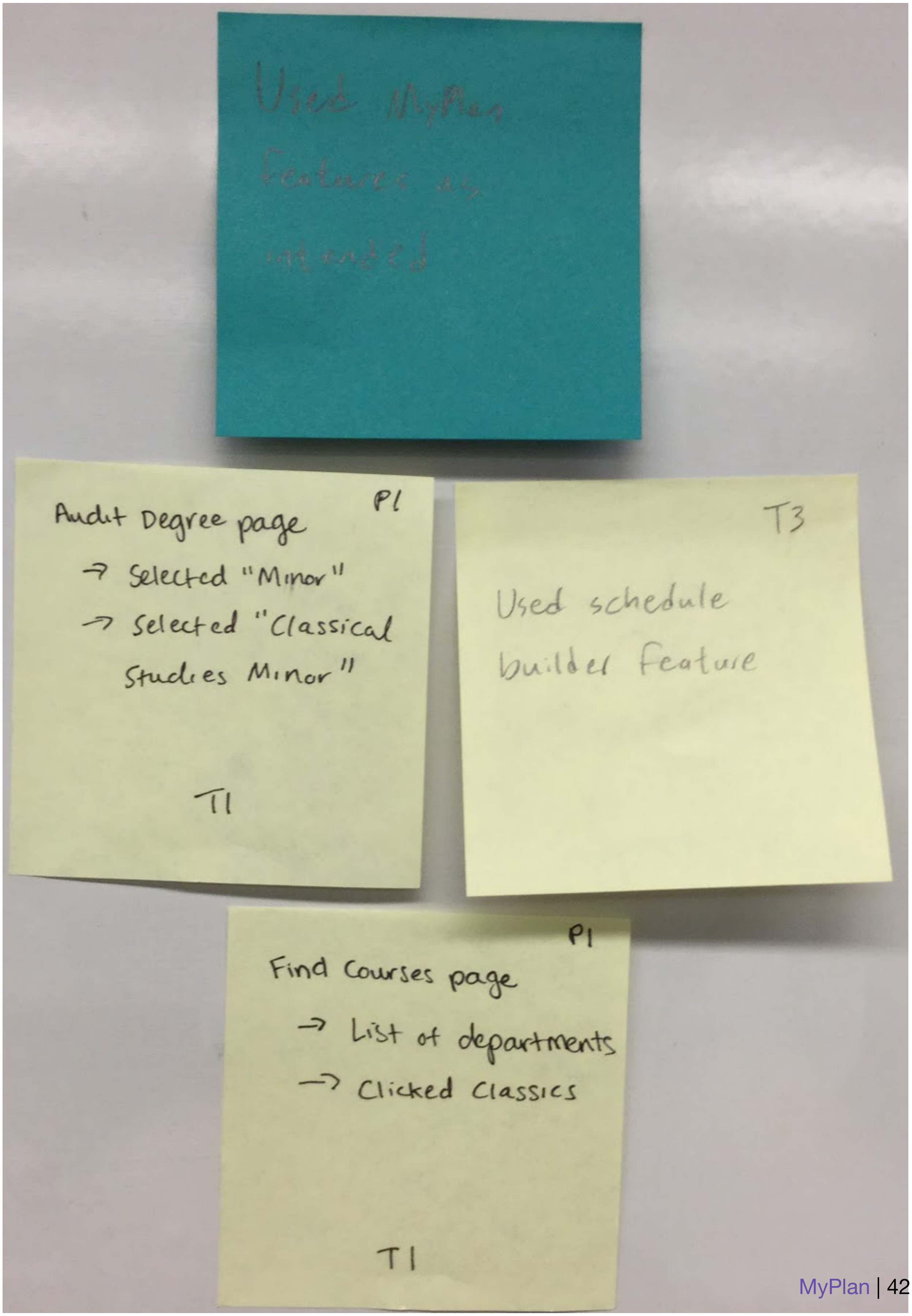
Appendix 4: Affinity Diagramming

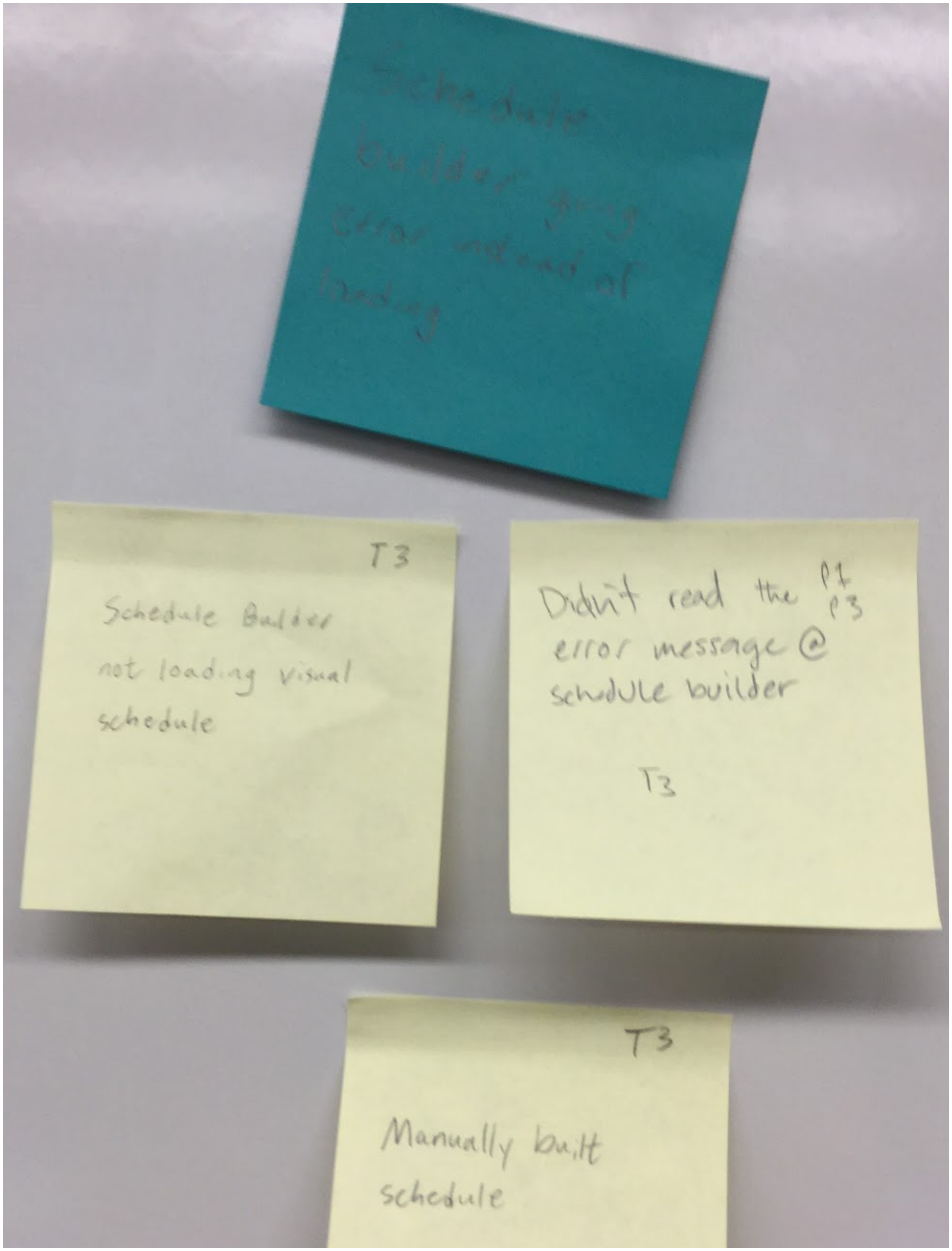


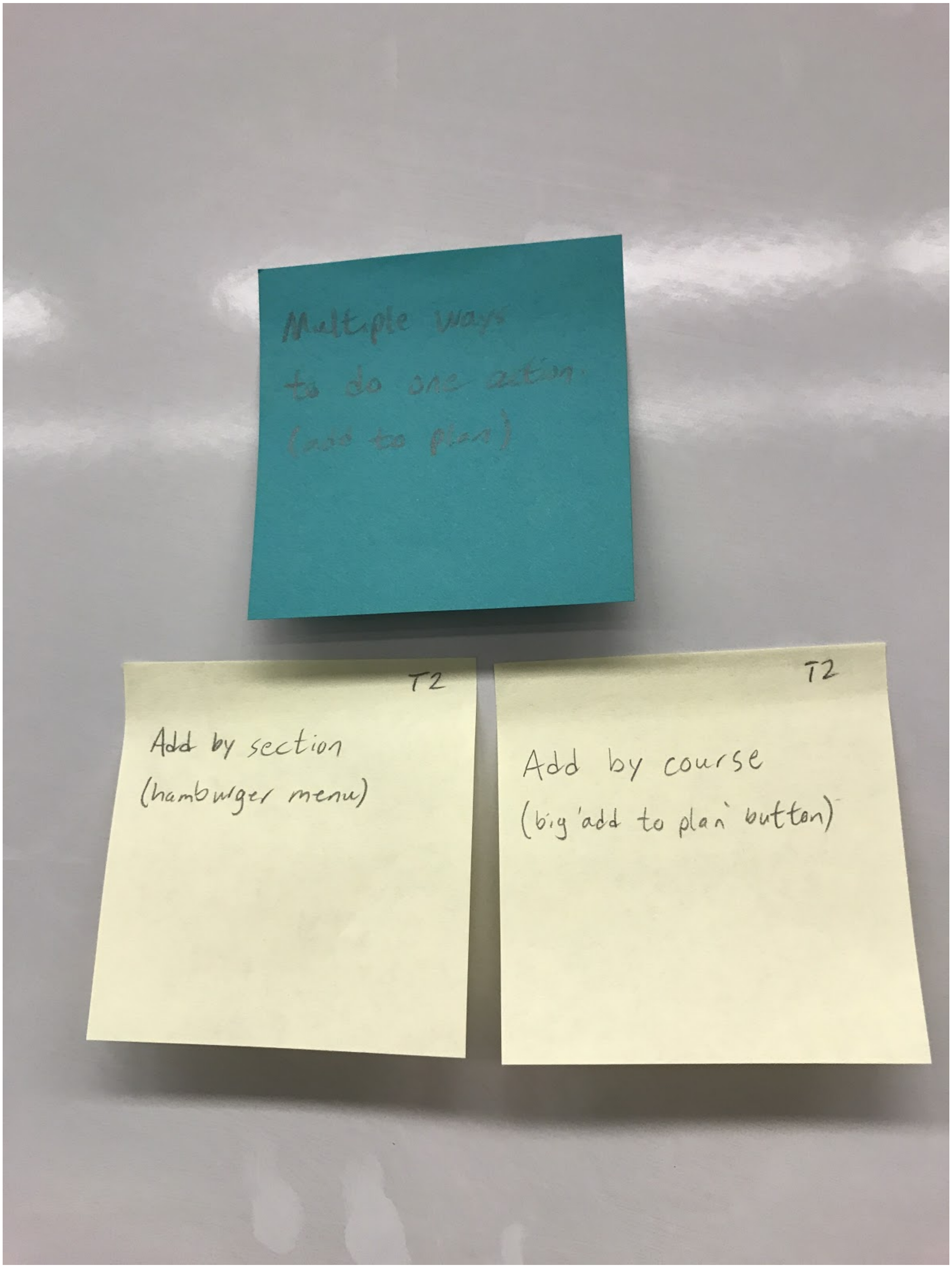

Want to use resources outside of MyPlan
P1
Would use Google to find out minor requirements
T1
P5
Wants to see a visual calendar w/ time & location. Like Time Sched
T2
T2
Want to know info/ ratings about the professor
P7
Clicks on "view more details" → MyUW page with course restrictions & requirements
T2
P2
Says that he would use the UW Classical department website to find out minor reqs.
T1

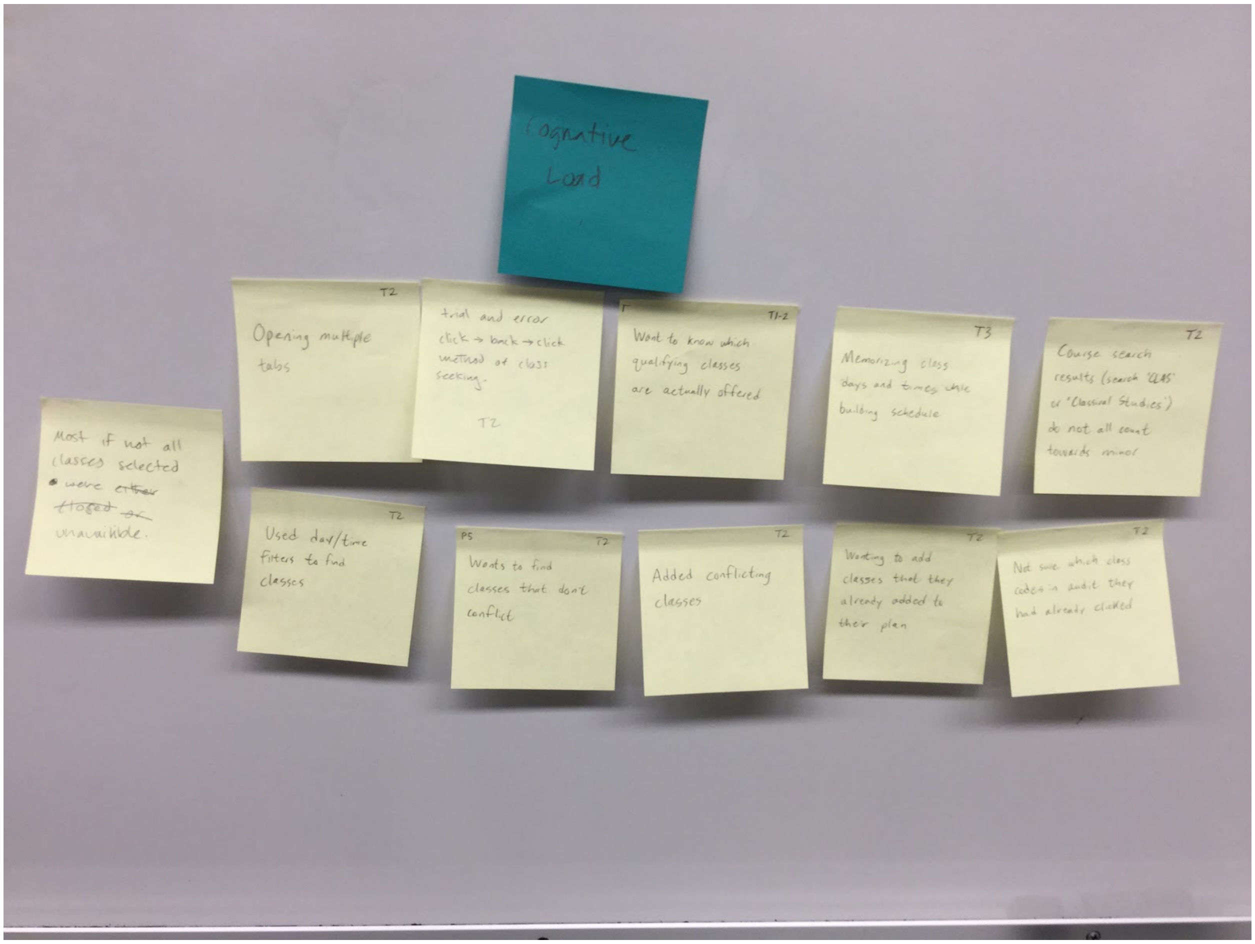

Lack of awareness of feature/ updated information
P2
T1
Unaware of audit program feature
sidebar vs. quick links
P6 P7
- sidebar not readily available
all tasks
not knowing when courses are closed outside of 'Find Courses' page
P1
T3
Overwhelmed by schedule builder, opted to not use it


Program requirements info format not helpful.
T1
List of degree requirements difficult to process
T2
Clicked on classes in audit that are not currently offered


Used MyPlan Features as intended
P1
Audit Degree page
→ Selected "Minor"
→ Selected "Classical Studies Minor"
T1
T3
Used schedule builder feature
P1
Find Courses page
→ List of departments
→ Clicked Classics
T1


T3
Schedule Builder not loading visual schedule
Didn't read the error message @ schedule builder
P1
P3
T3
T3
Manually built schedule


Multiple ways
to do one action
(add to plan)
T2
Add by section
(hamburger menu)
T2
Add by course
(big 'add to plan' button)


Cognative Load
Most if not all classes selected were ~~either~~ ~~closed~~ ~~or~~ unavailable.
T2
Opening multiple tabs
trial and error click → back → click method of class seeking.
T2
T1-2
Want to know which qualifying classes are actually offered
T3
Memorizing class days and times while building schedule
T2
Course search results (search 'CLAS' or 'Classical Studies') do not all count towards minor
T2
Used day/time filters to find classes
P5
T2
Wants to find classes that don't conflict
T2
Added conflicting classes
T2
Wanting to add classes that they already added to their plan
T2
Not sure which class codes in audit they had already clicked

Appendix 5: Test Kit

Contents

To standardize our MyPlan usability test protocol, we have created a test kit with the following components. This test kit will allow our team to conduct similar tests across all participants, regardless of which team members are able to be present.

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Purpose

In conducting research on MyPlan this quarter, we seek to identify ways in which the University of Washington can improve MyPlan. MyPlan is designed to eventually be the primary method by which students register. As such, we believe that through improving the service, the university can enable students to act independently, thereby reducing the strain on academic advisors that are paid by the university to answer standard questions. Furthermore, by streamlining MyPlan, the university can shift student focus from planning their schedule to executing their plans in pursuit of excellence.

Research Questions

1. Are students satisfied with their ability to plan their schedule and register in MyPlan?
2. Do students understand the information in a degree audit?
3. Does the path they take to complete a task alter their effectiveness?

Screening Questionnaire

Through the screening questionnaire, we will determine in advance which participants are appropriate candidates for our study. Participants must be current students. The remaining questions will allow us to source participants with varying experience with MyPlan and prepare their test experience appropriately (e.g. MacOS/Windows). To view the online version, click here.

Evaluating an Online Academic Planning Tool - Screening Survey

Hi, we're a team of students studying Human Centered Design & Engineering at the University of Washington. We are interested in evaluating the overall effectiveness of an online academic planning tool. Particularly, we want to understand how users navigate the tool for their academic planning and scheduling needs.
If you are interested in being a participant, please fill out this short screening survey. Respondents will be contacted based on their compatibility with our study's intended user groups.

This study is for educational purposes only and participation is voluntary. Participants must be able to come to the study site. The study will take place at the University of Washington in Seattle (UW Seattle) and will require a commitment of up to 45 minutes.

Note: The test session will involve screen and audio recordings. All identities will remain anonymous.

*** Required**

1. **Are you currently a UW Seattle student? ***
   Mark only one answer
   - Yes
   - No *go to Thank You page*

2. **How many years have you studied at the UW? ***
   Mark only one answer
   - Less than 1
   - 1
   - 2
   - 3
   - 4 or more

3. **How familiar are you with each of the following academic planning tools?**

Mark only one answer for each row

	I have never heard of this tool	I have heard of this tool but have never used it	I use this tool and am familiar with it
Time Schedule			
MyUW			
MyPlan			

4. **We are interested in evaluating the overall effectiveness of an academic planning tool. Are you willing to participate in a 30-minute observational usability study? ***
   Mark only one answer
   - ○ Yes *go to Contact Information section*
   - ○ No

Contact Information

5. **Please provide your first name: ***

   ____

6. **If you are selected, we will contact you. Please provide your email address: ***

   ____

7. **Which of the following operating systems do you prefer? ***
   Mark only one answer
   - ○ MacOS
   - ○ Windows
   - ○ No preference

Time Availability

Testing occurs from Monday, November 13 to Thursday, November 16. Please indicate your time availability for this week.

8. **Please indicate which times you will be available on Monday, November 13:**
   Check all that apply
   - ○ Mon, Nov 13 at 11:30 AM
   - ○ Mon, Nov 13 at 12:00 PM
   - ○ Mon, Nov 13 at 12:30 PM
   - ○ Other: _______________

9. **Please indicate which times you will be available on Tuesday, November 14:**
   Check all that apply
   - ○ Tue, Nov 14 at 9:30 AM

- Tue, Nov 14 at 10:00 AM
- Tue, Nov 14 at 10:30 AM
- Tue, Nov 14 at 11:00 AM
- Tue, Nov 14 at 11:30 AM
- Tue, Nov 14 at 4:30 PM
- Other: ________________

10. Please indicate which times you will be available on Wednesday, November 15:

Check all that apply

- Wed, Nov 15 at 10:00 AM
- Wed, Nov 15 at 10:30 AM
- Wed, Nov 15 at 11:00 AM
- Wed, Nov 15 at 11:30 AM
- Wed, Nov 15 at 12:00 PM
- Wed, Nov 15 at 12:30 PM
- Wed, Nov 15 at 1:00 PM
- Wed, Nov 15 at 5:30 PM
- Wed, Nov 15 at 6:00 PM
- Wed, Nov 15 at 6:30 PM
- Other: ________________

11. Please indicate which times you will be available on Thursday, November 16:

Check all that apply

- Thu, Nov 16 at 10:00 AM
- Thu, Nov 16 at 10:30 AM
- Thu, Nov 16 at 11:00 AM
- Thu, Nov 16 at 11:30 AM
- Thu, Nov 16 at 4:30 PM
- Other: ________________

Thank You Page

Thank you for taking the time to fill out our survey. We will contact you shortly if you match the criteria of people we are looking for to complete our usability test.

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Participant Number: ________

Consent Form

I agree to participate in the study conducted by the MyPlan Usability Test Group at the University of Washington, Human Centered Design and Engineering Department.

During this study:

- I will be asked to perform certain tasks on a computer
- I will be interviewed regarding the tasks I've performed
- I will be **recorded through audio and video** during the session

I understand and give permission for the MyPlan Usability Test Group at the University of Washington to use the video and audio recordings. I understand that the information gathered during the test and any recordings made will be used for solely research. All the information gathered and recorded during the usability testing will remain confidential. My identity will also be protected. I understand that my participation is voluntary, and that I have the ability to withdraw from the study at any time for any reason.

Participant Consent

I have **read and understood the information on this consent form** and have indicated this with my signature below.

Date: ___________________

Participant's printed name: ____________________________________

Participant's signature: _________________________________

Thank you!
We appreciate your participation.

Test Facilitation Script

Prepare the study area (desired computer, start page, UXCloud)

Hello __________, and thank you for your participation in our research study. My name is __________ and I will be accompanying you through this study. This is _________, ________, and _________), they will be taking notes throughout this study.

The following information and instruction will be read from this page to ensure that each participant receives the same information.

What we will be doing today is ask you to use MyPlan to design a class schedule for the Winter 2018 quarter. We are seeking to discover ways in which the University of Washington can improve MyPlan. Your participation will help us find ways to improve MyPlan. This evaluation should take less than 45 minutes.

In this study, we are not testing you. Our focus is on the website, so feel free to be open with your comments. MyPlan is not our product, so you will not hurt our feelings.

You can ask questions, though we may not be able to answer all of them due to the nature of this activity and the necessity of keeping the experience as authentic as possible.

To participate in this study we will need you to complete the consent form. The purpose of this consent form is to ensure your anonymity and allow us to use UXCloud. UXCloud is a software that records audio, video and screen capture. These recordings will be used for the sole purpose of creating high-quality anonymous data to support our findings.

During this study you will be using a non-student account, keeping your personal information out of the study.

Give and explain the consent form

Start UXCloud recording

In addition to performing tasks we will ask you to think out loud during the exercise to assist us in seeing things as you see them. To get you warmed up, we have a quick activity, are you ready? How many windows are in your home? Can you describe where they are, what they look like? Walk us through the process of counting the windows in your home.

While the participant is performing the think-out-loud activity, one researcher should set up the non-student MyPlan account on a laptop with the participant's operating system preference. Leave the MyPlan homepage open.

Well done, you were thinking out loud.

Before we begin the tasks, I am going to ask you a few questions:

1. What is your major or intended major?
2. Have you used MyPlan to plan out your classes for Winter 2018?
3. How recently have you used MyPlan?
4. How often do you consult with an advisor about class planning?
5. Have you used the Schedule Builder feature in MyPlan?
6. Have you audited a degree in MyPlan?
7. What is your age?

Hand the participant Task 1.

Great, we can move on to the tasks. Please read the first task. Do you have any questions about the task or anything else? Feel free to be open with your comments, ask any questions that come to mind, and take breaks whenever needed.

Remember to think out loud as you perform each task and when you're ready you may begin. Let me know when you have finished.

Verify that the participant has completed the task.

Great, now please complete the brief questionnaire attached to your task list.

Pass the Task 2 sheet to the participant.

Okay, we can move on to the next task. Please read the second task. Do you have any questions?

Remember to think out loud as you perform each task and when you're ready you may begin. Let me know when you have finished.

Verify that the participant has completed the task.

Great, now please complete the brief questionnaire attached to your task list.

Pass the Task 3 sheet to the participant.

Okay, we can move on to the third and final task. Please read the third task. Do you have any questions?

Remember to think out loud as you perform each task and when you're ready you may begin. Let me know when you have finished.

Verify that the participant has completed the task.

Great, now please complete the brief questionnaire attached to your task list.

Excellent, now that the tasks are complete I'd like to ask you a few follow up questions about your experience.

Examples:

> *Why did you (the user) take the path you chose?*
> *Can you explain the thinking behind that decision you made?*
> *If you were to try again what changes would you make?*
> *Did you notice this (section that lead to the error) during (the task)?*
> *Where would you expect to see this option?*

Observers' questions

Stop recording

Thank you for your participation.

Between studies, one researcher must remove all classes from the testing account's plan.

Pre-Test Questionnaire

Through the pre-test questionnaire, we will record how familiar the participant is with MyPlan and any factors that may impact their familiarity with, or usage of, MyPlan. We will ask the participant these questions and fill them out in a Google Form.

1. What is your major or intended major?
2. Have you used MyPlan to plan out your classes for Winter 2018?
3. How recently have you used MyPlan?
4. How often do you consult with an advisor about class planning?
5. Have you used the Schedule Builder feature in MyPlan?
6. Have you audited a degree in MyPlan?
7. What is your age?

Task Scenarios

For the tasks evaluation, we will observe and record the participant as they complete three tasks that we have laid out to draw out specific features or issues of MyPlan. We will show participants one task at a time, as printed on the following pages, to prevent them from working ahead.

1. You are a student who has already registered for Winter Quarter 2018, but you recently became interested in the Classical Studies minor. Find out what classes you could take to fulfill this minor's requirements.
   a. Successful completion: The participant has completed a degree audit for the Classical Studies minor, displaying what classes count toward its completion.
2. You are excited to take Classical Studies classes, but you still want to take any classes you already had planned. Now that you know some of the classes you can take, add classes that count for the Classical Studies minor to your Winter 2018 plan until you have at least 20 credits.
   a. Successful completion: The participant has at least 20 credits planned.
   b. It is acceptable for the participant to have added credits that do not count towards the minor, as the purpose of this study is not to observe the participant's ability to remember which classes count towards a minor's requirements that they are likely unfamiliar with.
3. View and compare possible schedules based on the classes you have selected.
   a. Successful completion: The participant selects and views a schedule that works with the classes they added.
   b. MyPlan's "Build a Schedule" feature is designed to make this process simple, but some participants may be unaware of it and instead attempt to manually find what section times work together. If the participant never finds the "Build a Schedule" feature, they have failed this task.
   c. If the participant has already added specific class sections in the previous task, the Schedule Builder will not load. In this event, some participants may remove the specific sections from their plan before trying again. If the participant asks what to do and already has a complete schedule, the moderator may prompt them to remove the class sections from their schedule in order to allow the Schedule Builder to work.
   d. If the participant selects classes that have conflicting time slots, the Schedule Builder will not load and will provide an error message noting that there are conflicts. In this event, some participants may go back a step to find additional classes, and others may turn to the moderator in confusion. If the participant asks what to do, the moderator should instruct them to proceed as if they have encountered this issue without anyone around. If they continue to struggle, the moderator may prompt them to remove some classes and add others. MyPlan does not display which classes conflict, however, so the participant may struggle to determine which classes they need to modify.

e. If the participant selects classes that are full, the Schedule Builder will not load and will provide an error message noting that a class in their plan is closed (full). In this event, some participants may find the toggle to include sections that are closed, which will allow the Schedule Builder to load. If the participant asks what to do, the moderator should suggest they try and resolve the problem. If they continue to struggle, the moderator may prompt them to look at the “Include sections that...” filter controls.

Task 1

You are a student registering for Winter Quarter 2018 and you are interested in the Classical Studies minor. Find out what classes you could take to fulfill this minor's requirements.

Was this task easy?

(check the box that best represents your experience)

Very Hard - 1	Hard - 2	Neither - 3	Easy - 4	Very Easy - 5

How satisfied are you with what you accomplished in this task?

(check the box that best represents your experience)

Very Dissatisfied - 1	Dissatisfied - 2	Neither - 3	Satisfied - 4	Very Satisfied - 5

How confident are you that completing this task will help you to achieve your academic goals?

(check the box that best represents your experience)

Not At All Confident - 1	Not Confident - 2	Neither - 3	Confident - 4	Very Confident - 5

Task 2

You are excited to take Classical Studies classes but you still want to take any classes you already had planned. Now that you know some of the classes you can take, add classes that count for the Classical Studies minor to your Winter 2018 plan until you have at least 20 credits.

Was this task easy?

(check the box that best represents your experience)

Very Hard - 1	Hard - 2	Neither - 3	Easy - 4	Very Easy - 5

How satisfied are you with what you accomplished in this task?

(check the box that best represents your experience)

Very Dissatisfied - 1	Dissatisfied - 2	Neither - 3	Satisfied - 4	Very Satisfied - 5

How confident are you that completing this task will help you to achieve your academic goals?

(check the box that best represents your experience)

Not At All Confident - 1	Not Confident - 2	Neither - 3	Confident - 4	Very Confident - 5

Task 3

View and compare possible schedules based on the classes you have selected.

Was this task easy?

(check the box that best represents your experience)

Very Hard - 1	Hard - 2	Neither - 3	Easy - 4	Very Easy - 5

How satisfied are you with what you accomplished in this task?

(check the box that best represents your experience)

Very Dissatisfied - 1	Dissatisfied - 2	Neither - 3	Satisfied - 4	Very Satisfied - 5

How confident are you that completing this task will help you to achieve your academic goals?

(check the box that best represents your experience)

Not At All Confident - 1	Not Confident - 2	Neither - 3	Confident - 4	Very Confident - 5

Post-Test Questionnaire

Through the post-test questionnaire, we will record each participant's overall impressions, details of their interactions with MyPlan, and any suggestions or comments they have towards improving it. We will decide what questions to ask based off of the participant's experience during the tasks evaluation. Depending on the participant's interactions with MyPlan, topics to explore include workarounds, unexpected results, and unresolved issues:

1. Why did you (the user) take the path you chose?
2. Can you explain the thinking behind that decision you made?
3. If you were to try again what changes would you make?
4. Did you notice this (section that lead to the error) during (the task)?
5. Where would you expect to see this option?

We will record the questions we ask and responses we get in the form after the following section in this document.

Data-Logging / Note-Taking Forms

We will record

- Session notes using UXCloud's live time-stamped note taking feature
- Post-task entries, post-test answers, and usability data quicksheets in a Google Doc for each participant
- Google Forms screening survey and pre-test responses in a Google Sheets document with a separate sheet for each participant (see next pages)

Prospective participants will fill out the screening survey on their own prior to being selected for the study, and we will fill out the pre-test questionnaire as we ask each participant the questions comprising it.

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Participant Number: _________
Observer: ____________________
Date: _________________________

Post-Test Questionnaire Sheet

1.

2.

3.

4.

5.

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Participant Number: _________
Observer: ___________________
Date: ______________________

Usability Data Quicksheet

	Yes	No	Notes
Task 1			
Completed Task			
Understood Task			
Positive Comments			
Errors Encountered			
Hint/Hints Given			
Task 2			
Completed Task			
Understood Task			
Positive Comments			
Errors Encountered			
Hint/Hints Given			
Task 3			
Completed Task			
Understood Task			
Positive Comments			
Errors Encountered			
Hint/Hints Given			