

INFO/COMM 3450

Group Assignment #5a

Evaluation Report

Project Title: Find a Buddy

Group Number: 201_U_04

Group Members:

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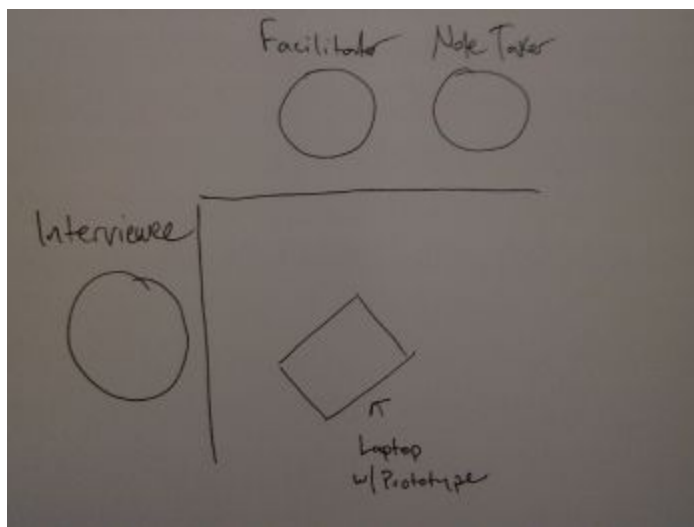
Evaluation and Improved Design Report

Description of the evaluation session:

The goals for our usability testing study were to identify problems in the high-fidelity prototype so that we could prioritize what to change before the final iteration. We also wanted to understand if our prototype was conveying the designed solution well and if it was an effective solution to the problem we identified. These study goals relate to our project goal such that our users are able to meet new people they don't typically interact with and clearly understand how our design works. In asking users to do several tasks that cover the functionality of our app, we are attempting to see if the app meets their needs. To measure our progress towards the goals, we tracked a few relevant metrics: effectiveness, learnability, error rate, and satisfaction. To measure effectiveness, we observed participants' abilities to complete tasks they are given. To measure learnability, we measured the amount of time it takes participants to complete a task they have never seen before without having had time to explore the prototype beforehand. To measure the error rate, we counted the number of incorrect actions the participant takes before they are able to achieve their goal. To measure satisfaction, we presented participants with a survey after the tasks to gather information about their experience using the prototype and what they believe to be positives and negatives about the app overall.

The participants of the study were members of the target audience of the app, upperclassmen at Cornell. They were students from a mix of backgrounds in terms of major, year, gender, and experiences at Cornell. These participants were recruited primarily by word of mouth and were selected because they fall in the target demographic for our design.

The interview sessions took place in Collegetown eHub, Starbucks, or Duffield Hall. These locations were suggested by the interviewers and decided on by the interviewee based on where they spend the most of their time between classes. These locations were selected because it made the interviews contextual and would be a setting in which they often hang out and would use the app: find people to eat with between classes, things to do, or chat with people. Each session lasted about 15 min and was conducted on the weekend or after classes. The set up for the usability interviews included the facilitator, note taker, and interviewee sitting around a table with the prototype in the middle, visible to all, as seen in the diagram below.



During the interviews, each interviewee was asked to complete a series of tasks followed by some survey questions. The three tasks asked are as follows:

1. A while ago, you were feeling adventurous and wanted to check out some of Ithaca's surrounding areas. You joined a group of people to go hiking at Watkins Glen on October 31, but now that the day is approaching, you are feeling unwell and no longer want to go. Cancel your reservation.

2. Your last morning class of the day is in Statler and ends at 12:05 pm. You have a break between this class and your next one, which starts at 1:25 pm and is also in Statler. Find some new people to eat lunch with during your break that is in the same building you are already in so you won't have to leave and come back.
3. You have recently finished watching Black Mirror on Netflix. You are really excited about what has happened and want to discuss it, but you've already been over the same speculations and ideas with your friends over and over, and you want some new opinions and ideas. Join a group to talk to some new people about Black Mirror.

We asked these three because they included functionality from across the different screens and features of the app and they are contextualized to give help us measure the metrics defined earlier. These tasks specifically help us to evaluate the usefulness of our design in meeting the needs of the users and addressing the problem to help students meet more people. The survey questions asked included general feedback about the design, solution, likes, dislikes, and how they would use the app.

Evaluation Findings

The metrics we used to achieve our evaluation goals were effectiveness, learnability, error rate, and satisfaction. The results of our evaluation showed that most participants displayed moderate levels of each metric. Effectiveness was measured by observing participants' abilities to complete tasks given, which most were able to do. However, we found that the Food page was most clearly lacking in effectiveness, as multiple participants had trouble completing the task to

find people to eat lunch with. This task also had the highest error rate, highlighted by the number of UPIs we found stemming from it. Participants did not have nearly as much trouble with either of the other tasks, some of which were completed with no errors. We also found that learnability was generally high, as most tasks were completed in less than 30 seconds, but learnability for the Food section was low. Although some participants were able to backtrack from their mistakes and successfully complete the task, others were not. We attributed this to inconsistencies in the UI of the Food section compared to the other sections. Lastly, our surveys showed that participants were mostly satisfied with the app's appearance and simplicity, but expressed concerns regarding anonymity and clarity on how to join events.

| UPIs | Source | UDP | Severity Level | Design Problem Group |
|--|----------------|---|----------------|----------------------|
| Clicked Food time slot as if it were a button | Natalie | Time slots appear to be buttons but are not | 3: Major | Food page problems |
| Thought time slots were start/end times on Food page | Cordelia | | | |
| Time slots unclear | Ryan | | | |
| Tried to add a Food event from Activities page | Natalie | Distinction between Activities and Food unclear | 3: Major | |
| Looked for Food events on Activities page | Cordelia | | | |
| Tried to create a Food event on Activities page | Rebecca | | | |
| Navigated to Activities section to find meal times | Ryan | | | |
| Questions about how to verify people went to events | Poster session | Profile page function unclear | 3: Major | N/A |
| Safety concerns | Poster session | | | |
| Concerns about anonymity | Ryan | | | |

| | | | | |
|---|----------------|---|-------------|--------------------|
| Had to click + button next to Food time slot more than once | Natalie | Buttons to join time slots are too small/unclear | 2: Minor | Food page problems |
| Confusion about small + buttons on Food page | Ryan | | | |
| Clicked entire card for eatery | Rebecca | Inconsistency among functionality across sections | 2: Minor | |
| Expected entire card to go to a new page in Food section | Grace | | | |
| UI could use more graphics | Poster session | App is too text-heavy | 1: Cosmetic | N/A |

UDPs

1. Time slots appear to be buttons but are not
 - a. Summary: When asked to join a food event, multiple participants from our usability tests were under the impression that the time slots displayed below the names of the eateries were buttons. They clicked directly on the time slots for each eatery rather than the plus sign buttons next to the time slots.
 - b. Impact: This caused confusion when nothing happened and delays to the successful completion of the task. Users saw the box around the time as clickable similar to the boxes around the events.
 - c. Suggested solution: Make time slots on Food landing page clickable.
 - d. Estimated cost: Moderate
 - e. Decision: Not implemented. The priority ratio was $3/2=1.5$. Changes we made to address UDP #5 indirectly addressed this problem as well.
2. The distinction between Activities and Food was unclear

- a. Summary: During our usability tests, we found that when we asked participants to join a food event, many participants attempted to do so from the Activities section. Their understanding was that eating with others is also considered an activity and did not realize there is a separate section for Food.
 - b. Impact: This caused confusion as participants would attempt to add an event on the Activities page only to realize that it was not possible and retrace their steps to look for alternative actions.
 - c. Suggested solution: Remove text labels of sections in the menu and replace them with icons that are more intuitive.
 - d. Estimated cost: Easy
 - e. Decision: Implemented. The priority ratio was $3/1=3$. We made this change because this was a major problem we found during our usability tests that caused a great deal of unnecessary confusion. We believe it will significantly impact user experience by removing labels that may convey misleading information.
3. Profile page function unclear
- a. Summary: During the class poster session, many students asked about accountability, the incentive to go to the events users sign up for, and how to ensure the option to be anonymous or not is not abused. This revealed gaps in understanding the existence and function of what is available in the profile page.
 - b. Impact: This affects users' basic understanding of the purpose and function of the app as well as their desire to use it. Some users may sign up for events for the

points and never attend, or feel uncomfortable that anonymous users know of their identity but not vice versa.

- c. Suggested solution: Remove the option to add personal information. All users will be anonymous so everyone knows what exactly to expect. Create a unique QR code for each person who downloads the app, so hosts of events can scan each person's code for attendance instead of taking down personal information.
 - d. Estimated cost: Difficult
 - e. Decision: Implemented. The priority ratio was $3/3=1$. Although this is lower than the priority ratio of other UDPs, we decided to make this change because the problem affects initial decisions about whether to use the app at all, as well as users' real-life experiences with others as facilitated by the app, the goal of our design solution in the first place.
4. Buttons to join time slots are too small/unclear
- a. Summary: Participants did not understand that the small + icons next to each time slot on the Food page were supposed to be used to join a group to eat at the corresponding eatery at the time listed.
 - b. Impact: This delayed the successful completion of the task. One participant also had to attempt to click on the button more than once to successfully complete the task because she missed the clickable area the first time.
 - c. Suggested solution: Make + buttons larger. List time slots vertically with + buttons next to each time for clarity.
 - d. Estimated cost: Moderate

- e. Decision: Implemented. The priority ratio was $2/2=1$. This change was made as part of our solution for UDP #5. We decided this change was important as it affected the user experience of multiple participants in our usability tests and we received direct feedback about it from some participants in the survey portion.
5. Inconsistency among functionality across sections
- a. Summary: Our original prototype had lists of events in the Activities section and chats in the Groups section that were clickable, leading to another page where users could confirm the action of joining the event or group. However, the Food section was different in that time slots were listed directly below the names of the eateries and users could join specific time slots directly from the landing page. Clicking on the card for the eatery did not lead the user to another page. Therefore, the UI was not consistent across all the sections of our app.
 - b. Impact: This confused our participants because they expected to be able to join Food time slots the same way they joined chats or activities. Some clicked on the entire eatery card expecting to be led to a new page to join an event. This then required some participants to reevaluate what other actions were possible, hindering successful completion of the task.
 - c. Suggested solution: Make the card for each eatery in the Food section clickable, leading to a new page where users can view and join all time slots.
 - d. Estimated cost: Difficult
 - e. Decision: Implemented. The priority ratio was $2/3 = 0.67$. Although this was the lowest priority ratio, we decided to make this change because it also solves the

problems identified in UDPs #1 (time slots appearing to be buttons when they are not) and #4 (buttons to join time slots are too small and unclear). We believe this is the most impactful change because it makes the UI of the Food section consistent with the other sections, which we believe will clear up a lot of the confusion participants encountered during usability testing.

6. The application is too text-heavy

- a. Summary: The menu of our original prototype displayed the sections with text labels. The only visual in our app was the profile icon.
- b. Impact: The app requires users to read a great deal. Some text labels were also misleading and caused confusion for users.
- c. Suggested solution: Add images for events. Add more icons throughout the app.
- d. Estimated cost: Moderate
- e. Decision: Partially implemented. The priority ratio was $1/2 = 0.5$. Our solution to UDP #2, which changes section labels in the menu to icons, also addresses this problem. We chose not to add images for events as it would require the addition of a feature for users creating an event to add a photo, or we would have to source the photos from a third party based on analysis of the text entered by the user creating the event. We decided this solution is too difficult for a change that would not affect the fundamental functionality of the app.

Explanation of Improved Prototype

5 Users from Final Usability Testing: A, B, C, D, E.

(Interviewed by: A = Rebecca, B= Grace, C= Cordelia, D= Ryan, E= Natalie)

For our improved prototype, we implemented three major changes.

First Major Change

The first major change we made was to our food page. We made several changes to the page because we gained the most feedback from the usability testing on this page. For one, we removed the “plus” button that was originally next to every time slot. Users B, C, D, and E had all shared that they were confused about the small “plus” button’s purpose, as there was also a larger “plus” button at the bottom right corner of the page (which is used to add a new food event for a location that is not yet listed). In addition, we made the entire box for each location clickable - pressing on the location would lead to information about the location and event, as well as the different time slots available. We feel that this change would clear up a lot of the confusion about the multiple icons and clickable buttons on the screen - users can more easily follow the flow of the application since they can only press on one thing on the screen that will lead to more options, instead of a clutter of options from the start.

Next, we made it so that when a food event was selected, e.g. Terrace, the time slots for that location would show up. This was to prevent clutter on the initial food page, something a user had made a comment about. Additionally, user C was confused about the time slots. User C thought that the two time slots we had on our initial prototype were the start and end times of the

one food event. To prevent this confusion from happening, we made the change to display all time slots for a location once the location is selected. This also provides more clarity for the user.

We removed the initial information button as well because user D seemed to be confused by the different icons, including the information, people attending, and plus sign icons. We still wanted to include information about food events, so we arranged the page so that the information about a location is displayed once the location is selected.

Finally, we added a mini-header that tells the user that the events are for the day the user is using the application. Since we had dates on our events page, user C had mentioned that it was a little confusing that the food events did not have dates. This was an inconsistency in design on our part, so we changed it so that each meal event is for the current day.

Second Major Change:

The second change we made to our application was to edit the user profile. We first removed the anonymous slider. This was because, during our poster session, we received feedback that the option to be anonymous or not may further prompt a user to question the safety of using the app. We decided to make the application entirely anonymous so that users do not get to choose. This would put all users on the same page.

Additionally, we added a QR code scanner. User C had questioned the incentive of using the application, and after finding out that there are points that are granted to users after completing

each event, commented that there should be a way for event hosts to “take attendance.” Thus, we added a QR code for users. This would be scanned at the beginning of an event, to ensure that people are actually attending events. A QR code replaces the need for a user to share their name and gender on the application, which is why we also removed this information as part of the user profile changes. Furthermore, during the poster session, some people asked us questions about how hosts would be able to ensure accountability for event attendees. As a host, the user would be able to scan each attendees QR codes instead of taking down their names and information.

Third Major Change:

For our third change, we added icons to our pages. This was a very important change as multiple users, including user A and user C, were confused about the titles of the pages. User A commented that “activities should be events and food could be eateries.” With this comment, we realized that our pages could be a little confusing at first glance. To make it easier on our users, we replaced the worded titles for pages with universal icons that we feel our users will easily understand. For the events page, we used a calendar icon that says “events” specifically. For the food page, we used a knife and fork. And for the chat page, we used a chat/speech bubble. We believe that this change would allow users to understand the difference between the events page and the food page better since some of the users had made the mistake of navigating to the events page when asked to join a meal event.

Design:

Invision: <https://invis.io/8VPIY0D56TQ>

Video: <https://drive.google.com/open?id=1FJGwZf8rrLbL-KOZFWkFWEqRYuz1M5wW>

Team Members' Contributions

For this assignment, Cordelia was in charge of recruiting participants and scheduling evaluation sessions, running a session, helping to analyze the data, working with team members to determine design choices, writing the explanation of the improved prototype for G5a, writing the main claims for our proposed solution for G5c, organizing team meetings and coordinating the delegation of work.

Rebecca recruited participants and conducted an interview and took notes for another one. She helped analyze the data collected from the interview. Rebecca, additionally, redesigned the Sketch screens according to user testing. She then created an Invision prototype with the new designs. Then she created a movie displaying before and after videos of the prototype. Lastly, she attended team meetings and help delegate the work.

Ryan helped to recruit participants for the usability studies and participated in both the facilitator and note taker roles for the interviews. Ryan also helped to analyze the interview data from across the participants and decide what problems should be fixed, writing the insights for the poster, describing the design process for the final report, and evaluation process. Additionally, Ryan participated in group meetings and shared ideas and feedback.

Natalie helped recruit and schedule participants for the usability tests and acted as the facilitator for one usability test and notetaker for another. She also analyzed data from usability tests, identified UDPs from the UPIs, and organized and described evaluation findings, severity levels, solutions, estimated costs, and implementation decisions in the G5a report. She wrote descriptions, identification of problems, and impact of changes made for the video and contributed to the design process section of the G5c report. She also contributed to design decisions, attended team meetings, and helped coordinate distribution of work.