

Informatics 132:

Identify Usability Issues

Discussion: Monday 10am-10:50am

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Executive Summary

The following report has been developed with the purpose of identifying usability issues of Freerice, an online non-profit food donation website, in order to guide the evaluation and redesign of the system. The report entails information regarding methodologies used in order to ascertain data and conclusions drawn from this data.

The first step in this process was determining the goals of the system as is in order to obtain a better understanding of the purpose of Freerice. After determining the goals of the system we were able to develop objectives to help guide our study's tasks. The team determined that the research would be guided by the following objectives:

- Determine what drives users to use the system
- Determine why users stop using the system
- Determine whether the type of food being donated affects users' interaction with the system
- Determine whether the knowledge learned from the system is utilized

In an effort to identify usability issues of Freerice, the team used the following two methods: Usability testing and a cognitive walkthrough. The team then developed a series of tasks to drive the usability tests, and a separate set of tasks for the cognitive walkthrough. The purpose of these tasks was to help the team see how users interact with the system when given a task to complete. Through this process we were able to gather data on what steps users took to achieve this goal and how users interact with the system while attempting to complete the given task. This aided in determining whether or not system features are being used as intended and how the system can be improved. The following are the conclusions drawn from this study:

- Often users are unable to properly sign up due to the size and location of the buttons
- Users ability to signup with a desired username is difficult due to lack of feedback from the system when selecting a username, resulting in constantly re-submitting details in order to find an available username
- The "groups" button on the menu blends with rest of site and makes it hard for users to spot the given feature, this not only goes for the groups button but most buttons on the navigation menu
- Leveling system is poorly designed as Users are unable to select a starting difficulty until after having answered the first question

Introduction

Freerice is a non-profit ad-supported system that allows users to play a quiz-like game where correct answers result in the donation of rice through the World Food Programme. For every question answered correctly on the site 10 grains of rice are donated. There are a multitude of subjects available on the system for users to choose from allowing for both learning and donations to occur simultaneously. The system offers users the ability to learn Math, English, Other languages, Sciences and more while donating.

The website extols the vocabulary game as a tool to expand their mental lexicon in ways such as being able to better formulate ideas, write more effective papers, speak more precisely, and read faster. Through this website, users can use their knowledge to help end world hunger. Despite this noble cause, the user interface is clunky and unappealing, and the main activity that allows people to donate rice is boring. The web site's poor execution prevents it from being a product that most users would want to use. The idea of using a web browser game to both increase people's knowledge and contribute to fighting world hunger is a good cause that could be improved upon with some user focused design. There exist a number of other direct competitors that have more appealing user interfaces, features, and functions that place this system at risk. Our goal is to determine where the weak points of the system currently are via user research and usability tests in an effort to redesign and improve the system.

Description of User Population

The target population that our team is interested in is K-12 students, college students, and people who are post studies. For the students who are from kindergarten to high school, assuming they will range from five to eighteen years of age. Common characteristics among the target population include: motivation to study, interest in donating/helping others, and an interest in learning other subjects like languages or pre-collegiate level topics. In most cases not having a steady form of income or in some cases any income. The target population has a basic understanding of how to navigate a website and how to play a question and answer game.

For our target population of college students, our team assumed they would typically range from eighteen to twenty-two years of age. Some of their characteristics will include being very busy and being somewhat of an expert in time-management, and having an internal or external motivation to donate anything to a community. They will typically have an income, however this income may vary and may not be steady. They will most likely be an expert at navigating websites and other forms of technology. This population will also have an understanding of the basic subjects that Freerice uses with their game.

Our last target population will include people who are no longer in school, our team assumes that this group will be at least twenty-three years of age. They will have some characteristics like having some free time and wanting to directly help out people in the community. They will typically have a steady income and have a savings account. This target population may or may not have a higher education past high school but will have a basic understanding of computers but not all forms of technology. They will also have experience in the basics of how games work.

Description of Methods

Our methods were separated into two sections for the usability test and for the cognitive walkthrough. The first section for the usability test was done as separately and only done with one person due to schedule conflicts. It involved asking a user of Freerice that our team had previously used to go through tasks that we had created. We created a total of 6 tasks that were made up of easy and hard actions to perform. The approximate completion of all 6 tasks was supposed to be within 30 minutes, however our tests ranged from 15 to 35 minutes depending on the user.

Our methods for the cognitive walkthrough was much easier than the usability test. We all met up during class and gave each other roles, such as tester, note taker, assistant note taker, and modulator. We had 2 testers who would do only 3 tasks each. One task being from the usability test we previously did and two being new tasks. We had the testers use a computer and try to complete each one. The approximate completion time was between 5 to 8 minutes depending on the testers.

Findings

Freerice is a website that is currently undergoing a restructuring, and as such, certain functions of the website are hard to use. One such example of this is the sign in process. In order to sign up for an account on Freerice, a user must navigate to the new webpage, create an account there, and move back to the original website.

 login | sign up (Important: signing up for new accounts is disabled. Visit beta.freerice.com and make a new account there.)

This takes time, not only because both websites are slow and laggy with this process, but also because there is not a lot of feedback for the input boxes. For example, there is no way of checking if a username is already taken until a user has tried to create an account with that username. Also, many text boxes that need to be filled out take a lot of time to complete or are redundant. Nearly every participant mentioned or experienced lag from the website upon completing this

task, which caused further frustration. This makes the process of creating an account, one of the most basic features that a website would need to create a consistent user base, a huge hassle for any incoming users. Furthermore, joining a group is made more difficult by the moving process. While some users reported being able to join a group without trouble, other users found that they were unable to join existing groups without having access codes or creating their own. One user was unable to find where to join groups in the first place. This shows two problems. First is visibility. The ability to join groups should be placed more prominently if the website wants users to interact with that feature more.

[HOME](#) [SUBJECTS](#) [GROUPS](#) [RICE!](#) [SIGN UP](#) [LOGIN](#) [ABOUT](#) [ENGLISH ▼](#)

This is important because fostering a community would help keep users invested for longer. The second problem is that there is not enough feedback in the process for creating groups. Users aren't told whether they have successfully joined a group in a way that is clear. Other common actions such as changing the levels of questions being answered are also more complicated than they need to be. Freerice has different tiers of questions that are tied to a difficulty level. The ability for users to select a starting difficulty on the web page is at first hidden to users, despite being a key feature.



The only way to change difficulties is to first answer a question on the easiest difficulty. Then, a small text box in an unclear color and font appears.



This makes the ability to choose the level of difficulty for questions seems like an afterthought and would potentially push away users who are looking for more difficult questions to learn from. One of the problems that persisted through each question was difficulty finding where to perform tasks. Important functions are often found in small fonts, hidden away, and in colors that blend into the background.

Limitations

Some limitations imposed upon our user research were as follows: The age group was restricted to primarily students K-12 and collegiate level students and as the site is transitioning some tasks were completed in different ways. Due to only testing kindergarten through collegiate level students our scope for testing may be limited and skewed towards a younger group of users. As Freerice is transitioning to an updated website some tasks were not as clear to complete and the testers had to find out ways to complete tasks that we did not foresee.

Appendix

Usability Test Tasks Descriptions and Evaluation Protocols:

Hello and thank you for participating in today's usability test. Our team wants to learn about how user navigate the given website. We will give you a task and you are expected to complete the task. Please think aloud, this will help us understand your thought process. You will need to take a usability test that lasts 30-45 minutes and has about 4-8 tasks (depending on task complexity and time to completion).

Usability Test

Use the Think-Aloud Protocol, Time-on-Task Metric, and Success Percentage Metric

Task 1 — Please visit www.freerice.com in the browser and change the 'English Vocabulary' subject to 'Chemistry Basic'.

Task 2 — Sign up for an account.

Task 3 — Join a group

Task 4 — Please change the current level to level 15.

Task 5 — Find out Freerices goals/motivations

Task 6 — Find out where Freerice is based

Task 7 — Answer 10 questions of any subject

End test with:

- What did you think of the website?
- Did you find it hard or easy to navigate through the website?
- What did you think of the test?
- What would you recommend be changed if you could?
- Is there anything that we have not covered that you would like to discuss?

Cognitive Walkthrough

Task 1. Create an Account

Task 2. Find the Sponsors/ Partners of FreeRice

Task 3. Look up the top ranked groups on FreeRice

Data Collection Log:

- Participant #: 0
Gender: Male
Age: 22
Description: College, 4th year
Date: 5/13/2019
Time: 12:30pm
Duration: 33 minutes
Location: Irvine, CA
Interviewer: Ailyn Gonzalez

- Participant #: 1
Gender: Male
Age: 11
Description: elementary school, 5th grade, avid gamer
Date: 5/8/2019
Time: 7:50 pm
Duration: 37 minutes
Location: Irvine, CA
Interviewer: Dalia Mills

- Participant #: 2
Gender: Male
Age: 23
Description: College, 5th year
Date: 5/12/2019
Time: 6:30 pm
Duration: 26 minutes
Location: Irvine, CA
Interviewer: Nitin Nallan

- Participant #: 3
Gender: Male
Age: 21
Description: College, 4th year
Date: 5/14/2019
Time: 2:00pm
Duration: 22 minutes
Location: Irvine, CA
Interviewer: Jose Farias

- Participant #: 4
Gender: Female
Age: 16
Description: High school student
Date: 05/14/2019
Time: 3:30pm
Duration: 23 mins
Location: Irvine, CA
Interviewer: Sazeda Sultana