U S A B I L I T Y R E P O R T

DATE: Apr 27, 2017

TO: Chris Hundhausen, CptS 443/543 Professor

FROM: Yang Zhang, Samaneh Aminikhanghahi

RE: EECS Grad Software Usability Test

HIGHLIGHTS VIDEO URL:
HTTPS://WWW.YOUTUBE.COM/EDIT?O=U&VIDEO_ID=9UMKXMAECEC

SUMMARY

Purpose and Scope

On April 22, we conducted a usability study of the EECS Grad Software, which enables one to manage her social and academic life. In the study, participants explore the software to be more familiar with graduate student life here in EECS department and make more friends and socialize. To do this, they will create new account, create new event for different group, search among existing post/ events, send a private message, and keep track of education and graduation process.

Methods

We recruited four participants for this preliminary usability study.

Participant 1 is a Computer Science graduate student at Washington State University. She is a third-year PhD student and female. Participant 1 is very enthusiastic about social media, apps, and using technology in her daily life. Currently she is focusing mostly on her research.

Participant 2 is a Computer Science graduate student at Washington State University. He is a second-year Master student and male. He is in his last semester and focusing in finding jobs. His first priority is finding job and deciding about his future career.

Participant 3 is a Computer Science graduate student. He is a PhD candidate and currently has full time job. Participant 3 is very enthusiastic about using technology in his daily life and his priority is socializing with other graduate students.

Participant 4 is a Computer Science graduate student at Washington State University. She is a first-year Master student and female. She is currently focusing on her courses and being familiar with graduate style life.

We ran the study in AI Lab. Participants run the software on the computer and during the study the screen and audio were recorded using web launch recorder.

We allotted 40 minutes for each study session. At the beginning of the test, participants filled out an on-line background questionnaire. See Appendix A for a copy of the questions and their responses. Next, they completed a warm-up exercise, in which they were given a brief description of the EECS Grad Software.

After the warm-up exercise, participants were asked to use EECS Grad Software to complete a series of five tasks. See Appendix B for a copy of the original task sheet that participants received for the test. As they worked through these tasks, participants were instructed to think aloud by verbalizing their thoughts and actions. If they became silent, or if it was unclear what they were up to, they were prompted to explain what they were doing.

Upon completion of the tasks, participants filled out an exit questionnaire that solicited their impressions of EECS Grad Software. Appendix C includes the exit questionnaire and participants' responses.

FINDINGS

Overview

Overall, we find EECS Grad Software is fast, easy to use, and has accurate response in most cases. It helps user to socialize and help them in their academic life. There is a lot of formatting constraints for example it is better to use calendar or format converter to set date and time. The position of Sign in & Sign up buttons are not good. They could be separate in different lines to make them clearer. The user should be able to add friends without sending messages. Users should be able to add categories. In addition, it is better not to have categories in search part. Finally, all participants like tracking the graduation process.

We begin each subsection below with a brief description of the user subtask to which the problems listed in the subsection pertain. Next, in order of decreasing severity, we describe the associated usability problems, and provide "Severity" and "Scope" ratings[1] based on the empirical evidence. Following the problems, we cite evidence of each problem based on our analysis of the usability study. Each subsection concludes with specific design recommendations that we believe will remedy the problems.

[1] Severity indicates the level of difficulty that the problem caused users (1 = most severe). Scope indicates the range of users that the problem is likely to impact (1 = broadest). See Appendix E for precise definitions of these terms.

Table 1. Summary of key results vis-à-vis the usability and user experience goals we established for our software.

Usability or U.E. Goal	Relevant Empirical Result	Commentary
Users must be able to create account within 2 minutes	Participants wants the app to be fast and straight forward	Users that did not any problem with finding sign up button, create an account in less than 2 min. However, because of lack of visibility 2 participants create an account in more than 2 minutes.
Users must be able to reach the results of search within 5 seconds.	Participants wants the app to be fast	Participants could search within 5 seconds and they were satisfied.
Users must be able to create activity less than 1 minutes.	Participants expect the app to help them for socialize	Because of strict constraints, participants could not create activity less than 1 minute.
Users must rate the app as 9 or higher on a scale of 1-10 in terms of ease of use	Participants wants the app to be straight forward and easy	The average rate was 8.9. Almost near expectation.
Users must rate the app as 8 or higher on a scale of 1-10 in terms of being fast	Participants wants the app to be fast	The average rate was 9.5, which is much higher than expectation.
Users must rate the app as 9 or higher on a scale of 1-10 in terms of accuracy	Participants wants the app to help them in their academic progress and job hunting	The average rate was 9.25, which is higher than expectation.

1. Creating New Account

In this task, users create a new account with following information

Name : John Smith
WSU ID : 12345678
Password : abcd

They will specify your preferences and interests. Specify if they are willing to receive messages from stranger or receive notifications. Finally, log in to software.

Problems:

1. Users were confused about how to choose create new account (Severity = Improvements, Scope = 2).

Evidence:

2 of 4 participants (P1[2]) wrote the information on login box instead of choosing sign up button. The interviewee helped them to click on sign up.

Diagnosis:

Lack of visibility and Lack of adequate signifier

Recommendations:

1. Change the location of “sign up” button to the other line.
2. Change the name of “sign up” to “create a new account”

2. Creating New Event

In this task, users create a new event by going to create new event tab. Then they will create a new public event name “HCI HW” in Category “courses”. Event will be at April 25, from 10 am to 11 am. Finally, they will come back to home page.

Problems:

1. Users did not pay attention to hint about date and time format and they were confused about format constraints (Severity = 2, Scope = 2).

Evidence:

2 of 4 participants tried different formats for date and it cause delay on the task completion.

Diagnosis:

Unreasonable strict constraints and Limitation in human accuracy

Recommendations:

1. Use format converter for date or allow user to insert date from calendar.
2. Make the hints larger and clearer.

[2]When we cite evidence, we indicate the numbers of the actual participants who experienced the problem. If you are interested in further exploring the nature of each problem, you are invited to check the Critical Incidents Log (Appendix D) and to look at the videotapes. The Critical Incident Log contains a separate sheet for each participant. Each entry indicates the approximate time (from the start of the videotape) of the corresponding critical incident. You can use this number to index the videotape.

3. Reduce the amount of constraint.

3. Search among Existing Posts/Events

In this task, users search among existing posts by going to Search tab. They will search for any post related to WSU rec center. Click on the first result and read it. Finally, they will come back to home page.

Problems:

1. Users did not have actual problem in this part.
2. One participant suggests specifying category in search may be inappropriate (Severity = Improvements, Scope = 3).

Evidence:

1 of 4 participants confused about choosing category of rec center.

Diagnosis:

Duplicate Functionality

Recommendations:

1. Remove category from search tab.

4. Sending Private Message

In this task, users send a private message by going to Message tab. They will send a private message to Sara with ID 58963210. After sending the message, they will add Sara to their friend list. Finally, they will come back to home page.

Problems:

1. Users initiate new message by clicking on the name instead of choosing send button (Severity = Improvement, Scope = 3).
2. Participants cannot add friend without sending message to them (Severity = 3, Scope = 3).

Evidence:

2 of 4 participants have issue in adding friends without sending message.

1 of 4 participants tried to send message by clicking on the name.

Diagnosis:

Lack of the functionality and Lack of the signifier.

Recommendations:

1. Make the names clickable.

2. Adding add friends function.

5. Keep Track of Graduation Process

In this task, users go to Track my graduation process tab. Check their courses and QE schedule. Finally, they will come back to home page.

Problems:

1. The date format is not consistent with other parts (Severity = Improvement, Scope = 3).

Evidence:

1 of 4 participants confused about the date.

Diagnosis:

Lack of the consistency

Recommendations:

1. Make all formats consistent.

APPENDIX A: BACKGROUND QUESTIONNAIRE RESPONSES

Participant	1. Briefly describe your educational backgroud and education level?	2. Explain your current and future goal as EECS grad student	3. What are the three software/hardware tools you use most?	4. What tools do you use to post activites or questions and why?	5. What kind of topics are you mostly use when talk to other grad students?
1	Graduate CS student pursing doctoral degree	Finding a software engineering job at companies such as google	blackboard, instgram, facebook	Using facebook to ask question, because she has a facebook class group which can be regareded as target group	Topics related to thesis paper and plans after graduation
2	Graduate CS student pursing master degree	Finding a software engineering job after graduation	computer, Visual Studio, pycharm	He mostly used piazza to ask question, because his instructor hosted the class page on piazza.	Virtual Reality
3	Graduate CS student pursing doctoral degree	Obtain phD degree	computer, smart phone, Visual Studio	He mostly used piazza to ask question, because his instructor hosted the class page on piazza.	Topics related to his classes
4	Graduate CS student pursing master degree	Finding a software engineering job after graduation	Chrome, Photoshop, Premiere	She used twitter to post activies, because most of her friends have followed her on twitter	Political Topics

APPENDIX B: USABILITY TEST TASKS

Participant Instructions

Welcome to the WSU AI Laboratory, and thank you for agreeing to help us with this usability test. We sincerely appreciate your time and effort!

We are designing a new software tool for EECS grad students to manage their social and academic life. In today's test, you will use the tool to work through some basic tasks using this software. We expect that you will need somewhere around 40 minutes to work through these tasks.

As you participate in today's test, please keep the following points in mind:

- The software tool, and *not* you, is the entity under test! Your interaction with our software will help us to better understand our software's strengths and weaknesses, so that we can ultimately improve the software's design.
- You are free to take a break at any time.
- Before beginning each exercise, please read all written instructions aloud.
- When you are finished with a page of instructions, please do not advance to the next page until you are instructed to do so.
- **If you are working alone**: Please read the problem aloud before you begin. As you work through each exercise, please **"think aloud."** Let me know what you are up to by verbalizing your thoughts and actions. In addition, please share any opinions, questions, or concerns that come to mind. If, at any point, you become silent, I will remind you to continue thinking aloud.
- **If you are working with a partner**: Please read the problem aloud before you begin. As you work through the problem, you and your partner should work together as a team. Actively engage in a conversation with your partner. Inform each other of what you're up to. As you work, we may ask you questions about why you have done something or how you feel about some part of the system. This will help us to better understand what you are doing.
- Have fun!

Please await further instruction before going on to the next page.

Background

You are a CS graduate student in your second year. Your advisor change his position and you are just transferring to WSU from another state. You do not know any other student and you are not familiar with academic process here.

You find there is an EECS Grad App here which helps students in their social and academic life. You find the url and you are going to explore the app to be more familiar with graduate student life here in EECS department and make more friends and socialize.

Please await further instruction before going on to the next page.

Access the Software

In today's test, you will be using our new EECS Grad software. The software includes following features:

- Creating account
- Creating new event for different group
- Search among existing post/events
- Sending private message
- Keep track of education and graduation process

In order to access to software, go to desktop, click on shortcut link to HCI-EECSGrad.

Please await further instruction before going on to the next page.

Task 1

Creating an account

1. Create a new account with following information
   Name : John Smith
   WSU ID : 12345678
   Password : abcd
2. Specify your preferences and interests.
3. Specify if you are willing to receive messages from stranger or receive notifications.
4. Log in to software.

Please await further instruction before going on to the next page.

Task 2

Creating an event

1. Go to create new event tab.
2. Create a new public event name “HCI HW” in Category “courses”
3. Make the event public.
4. Event will be at April 25, from 10 am to 11 am.
5. Go back to home page

Please await further instruction before going on to the next page.

Task 3

Search among Existing Posts/Events

1. Go to Search tab.
2. Search for any post related to WSU rec center.
3. Click on the first result and read it
4. Go back to home page

Please await further instruction before going on to the next page.

Task 4

Sending Private Message

1. Go to Messages tab.
2. Send a private message to Sara with ID 58963210.
3. After sending the message, add Sara to your friend list.
4. Go to home page.

Please await further instruction before going on to the next page.

Task 5

Keep Track of Your Academic Process

1. Go to Track my graduation process tab.
2. Check your courses.
3. Check your QE schedule.
4. Go to home page.

Please await further instruction before going on to the next page.

Exit Questionnaire

Congratulations! You have completed all tasks in this usability test. Before you go, we'd like you to complete an exit questionnaire that elicits your opinions on the software you just used.

Thank you for your participation!

APPENDIX C: EXIT QUESTIONNAIRE RESPONSES

Participant	1. On a scale of 1-10, how would you rate the system with respect to ease of use?	2. On a scale of 1-10, how would you rate the system with respect to being fast?	3. On a scale of 1-10, how would you rate the system with respect to courses and academic information being update?	4. On a scale of 1-10, how would you rate the system with respect to accuracy?	5. Which feature did you like the most in the website?	6. Did you find any of the tasks to be confusing? If so, which one? How would you change the tasks to make them easier to understand?	7. What did you like about the software? Why?	8. What did you not like about the software? Why?	9. If you were designing this app, how would you change it so that it worked better?	10. Is their any feature of the app that you would use in your daily life? Why?
1	10	10	5	9	Search function	No	Tracking Graducation process, because it helped her to find out what she need to future graduation	Create new event, because she want a discussion part but in our app the function is curretly missing	She will provide more information about the event such as adding a discussion board	She would use message and tracking graduation features in her daily life

Participant	1. On a scale of 1-10, how would you rate the system with respect to ease of use?	2. On a scale of 1-10, how would you rate the system with respect to being fast?	3. On a scale of 1-10, how would you rate the system with respect to courses and academic information being update?	4. On a scale of 1-10, how would you rate the system with respect to accuracy?	5. Which feature did you like the most in the website?	6. Did you find any of the tasks to be confusing? If so, which one? How would you change the tasks to make them easier to understand?	7. What did you like about the software? Why?	8. What did you not like about the software? Why?	9. If you were designing this app, how would you change it so that it worked better?	10. Is their any feature of the app that you would use in your daily life? Why?
2	7	8	7	8	Tracking Graduation Process	The date/time format in creating new event feature. He would make the system that accept different kinds of formats	Tracking Graduation process, because it helped him to find out what she need to future graduation	Create new event, because he did like that the website only accept one format type for data/time	He would allow user to select data/time from a canlander view	He would use tracking graduation features in his daily life
3	8	10	10	10	Tracking Graduation Process	No	Tracking Graduation process, because it helped him to find out what she need to future graduation	Message system, because he want to adding friends without sending a message	He would a function that allow user to add friend by name or WSU ID directly	He would use tracking graduation features in his daily life

Participant	1. On a scale of 1-10, how would you rate the system with respect to ease of use?	2. On a scale of 1-10, how would you rate the system with respect to being fast?	3. On a scale of 1-10, how would you rate the system with respect to courses and academic information being update?	4. On a scale of 1-10, how would you rate the system with respect to accuracy?	5. Which feature did you like the most in the website?	6. Did you find any of the tasks to be confusing? If so, which one? How would you change the tasks to make them easier to understand?	7. What did you like about the software? Why?	8. What did you not like about the software? Why?	9. If you were designing this app, how would you change it so that it worked better?	10. Is their any feature of the app that you would use in your daily life? Why?
4	10	10	8	10	Tracking Graducation Process	The date/time format in creating new event feature. He would make the system that accept different kinds of formats	Tracking Graducation process, because it helped her to find out what she need to future graduation	Create new event and message, because she think that users should be allowed input different format of date/time and allowed to send the message from friend list	She would add a feature that users can send message to their friends by clicking the name on friend list	She would use tracking graduation features in his daily life

APPENDIX D: CRITICAL INDICIDENTS LOG

Participant 1				
Timer	**Task**	**Subtask**	**Comments**	**Diagnosis**
4:10	. Creating an account	Going to the signup page	Participant ignore the sign up button, inputing register info directly in sign in page	Severity 2, Scope 2
8:24	Creating new event	Setting time	Participant ignore the hint under input box, inputing hh/mm instead of the accept format hh:mm	Severity 2, Scope 2
10:13	Sending message	Send message	Participant tried initial a message by clicking the name not the send message button	Severity 3, Scope 3

Participant 2				
Timer	**Task**	**Subtask**	**Comments**	**Diagnosis**
3:23	Creating new event	setting event start date	Participant ignores the hint under input box, inputing date not in format of mm/dd/yyyy	Severity 2, Scope 2

Participant 3				
Timer	**Task**	**Subtask**	**Comments**	**Diagnosis**
0:26	Creating an account	Going to the signup page	Participant ignore the sign up button, inputing register info directly in sign in page	Severity 2, Scope 2
6:56	Sending message	adding friend	Participant left comment that there should be a button that allow user adding friend without sending message	Severity Improvement, Scope 3

Participant 4				
Timer	**Task**	**Subtask**	**Comments**	**Diagnosis**
5:31	Task 5 tracking graduation	Check QE exam	the Date is in dd/mm/yyyy format which is not consistent with mm/dd/yyyy	Severity inprovement, Scope 3

APPENDIX E: SUMMARY OF USABILITY PROBLEMS

Category	Description	P's affected	Severity	Scope	Examples	Design Recommendations
Lack of visibility	Users ignore / couldn't find sign up button	2 out of 4	Improvement	2	see video of P1 at 4:10	Move signup button to different line or rename sign button with "Create a new Account"
Unreasonable strict constraints	Users ignore hint of input box and concern about the formating constraint	2 out of 4	2	2	see video of P2 at 3:23	Make the hints larger and clearer Allow user to input data from calender
Duplicate functionality	The category option is not necessary	1 out of 4	Improvement	3	Conments from P4	Remove the category option
Lack of functionality	Users click on the name to initial a message	1 out of 4	Improvement	3	see video of P1 at 10:13	Make the name clickable
Lack of functionality	Users can not add friend without sending message	1 out of 4	3	3	Conments from P3	Adding a add friend function
Lack of consistancy	The date of QE exam is in different format	1 out of 4	Improvement	3	see video of P4 at 5:31	Make all date format consistant