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M5-Evaluation of MyStatus

Summary

MyStatus is the redesign of the Graduate Student Status page in the Accessplus. The focus of this study are overall graduate students. The goal is to minimize the problems of the current system and make it more usable, useful and easier to use. This new process should be easier and less stressful than the existing processes discovered in the user research, so that graduate students may confidently monitor their graduation process in their academic program. It will be used most often by students who are about or plan to graduate to check their graduation status, edit POS form and apply for graduation. The tasks it will support are mainly 1) Check the overall graduation status such as graduation application status, requirements to take final exam and final graduation checks; 2) Check the graduation application status; 3) Check POS form and make changes.

Evaluation Methods

Methods

My approach to gather quantitative data was through survey and qualitative was through open-ended questions using think out loud technique (Dix, Finlay, Abowd, & Beale, 2007). In this way, I will be able to know if my prototype is presentable to show the features of the design. Also, users can give me feedback on whether there are things to be improved for the website.

In term of survey, I adopted measurement of System Usability Scale (SUS) (Sauro, 2011), a simple, ten-item attitude Likert scale giving a global view of subjective assessments of usability, and Net Promoter Score (Garrity, 2010), a management tool that can be used to gauge the loyalty of a firm's customer relationships. The questionnaire questions are in the Appendix A. Through usability testing, I will analyze data extracted from the survey to know the statistical results of how effective of the prototype is.

Users

There are in total 6 graduate students participated in the user test at this stage. Among them, there were 2 female and 4 females. The degrees that they are pursuing right now are Master's (2) and PhD (4). Most of them are in the program of Human Computer Interaction except one has a major of Integrated Visual Arts (IVA). The familiarity of them to the current graduate student status page varies. Two users haven't used that page to schedule their graduation yet while another two users have already used it for their graduation. There are also two users who don't use that page a lot but they are pretty familiar with that page.

Tasks

The persona used in the design is Abby Brown, who is a M.S. student pursuing concurrent majors of Industrial Engineering and Human Computer Interaction. She plans to graduate in Summer 2016 for both of her degrees. She has already finished her final exam for Industrial

Engineering (IE) and her graduation application is Spring 2016. So she wants to check her graduation application with IE, withdraw her graduation application and apply to graduate in Summer 2016. At the same time, she hasn't applied for graduation and requested the final oral exam for Human Computer Interaction major. Therefore, she wants to check her POS form first to see if it's validate to graduate. Then she needs to apply for graduation in Summer 2016.

The tasks that users will go through in the test are as follows:

1. Check the status of degree. Identify why her graduation is not completed.
2. Withdraw the graduation application for Spring 2016.
3. Check the status of degree 2 (similar to how you checked degree 1).
4. View POS form, add course HCI 521, save and validate form and submit for approval.
5. Apply for graduation for degree 2 (summer 2016).

Testing environment

The tests were conducted in a quiet lab with the computer and a sheet of scenario and tasks. The interface was made using Invision. The questionnaires were deployed using Iowa State's qualtrics platform.

Results

This user test utilized the measurement of System Usability Scale (SUS) and Net Promoter Score to assess their level of satisfaction and perceived usability of the system. Six users participated in the test and all the data was valid.

Quantitative data

a) Task Completion

Table 1 represents the task completion success rates for each participant. A zero (0) indicates experiencing difficulty complete task and a one (1) indicates task success.

Table 1 Task completion of each task for each participant

Participant ID	Task 1	Task 2	Task 3	Task 4	Task 5
P1	1	1	1	1	1
P2	1	0	1	1	1
P3	1	1	1	1	1
P4	1	1	1	1	0
P5	1	1	1	0	1
P6	1	1	1	1	1
Total	6	5	6	5	5
Completion Rate	100%	83%	100%	83%	83%

b) Subjective Assessment of System Usability

Table 2 represents the results from the SUS survey (see Appendix A). Responses are coded as follows: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Table 2 SUS score for each participant

Participant ID	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Score
P1	3	2	4	2	4	3	4	3	4	2	67.5
P2	4	3	4	2	4	4	5	1	4	1	75
P3	1	5	2	1	2	4	3	4	4	2	40
P4	3	2	4	1	4	2	5	1	4	1	82.5
P5	4	1	5	1	5	2	3	1	5	1	90
P6	4	2	5	1	5	1	4	1	5	1	95
Mean											75

After the SUS data has been gathered. Each item's score contribution will range from 0 to 4. For items 1,3,5,7,and 9 the score contribution is the scale position minus 1. For items 2,4,6,8 and 10, the contribution is 5 minus the scale position. In order to calculate the SUS score, sum the score contributions from each item. Multiply the sum of the scores by 2.5 to obtain the overall value of SUS (Sauro, 2011).

The SUS score for each participant can be seen in the figure (Figure 1).
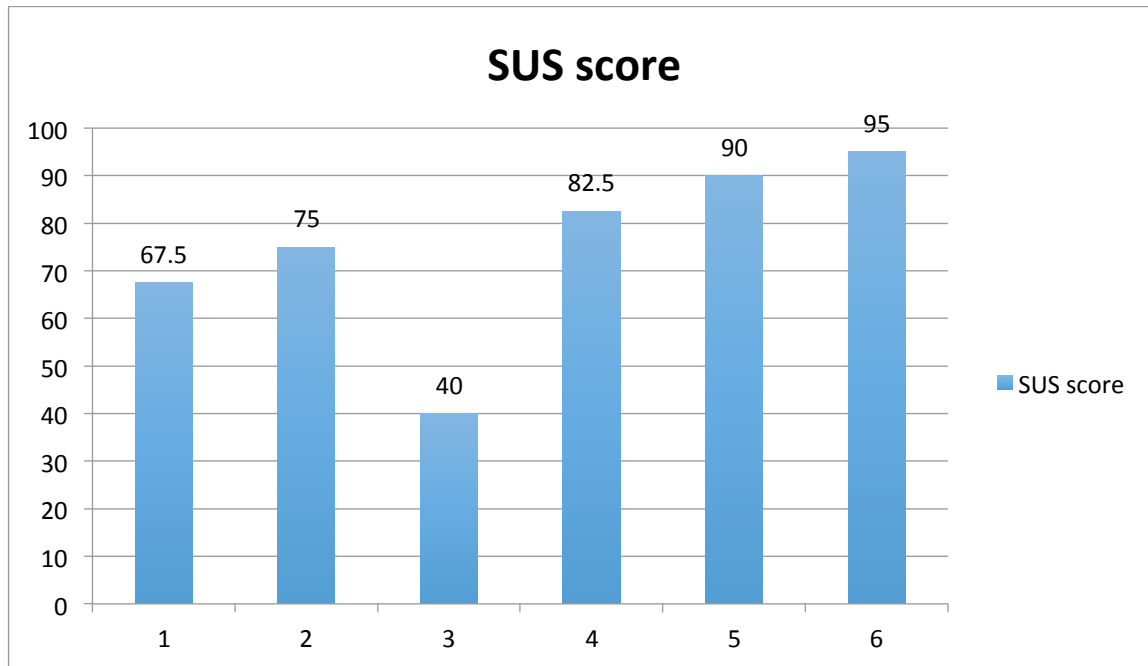

Figure 1 SUS score for each participant

Additionally, the average score for each item across 6 users is shown in the Figure 2.
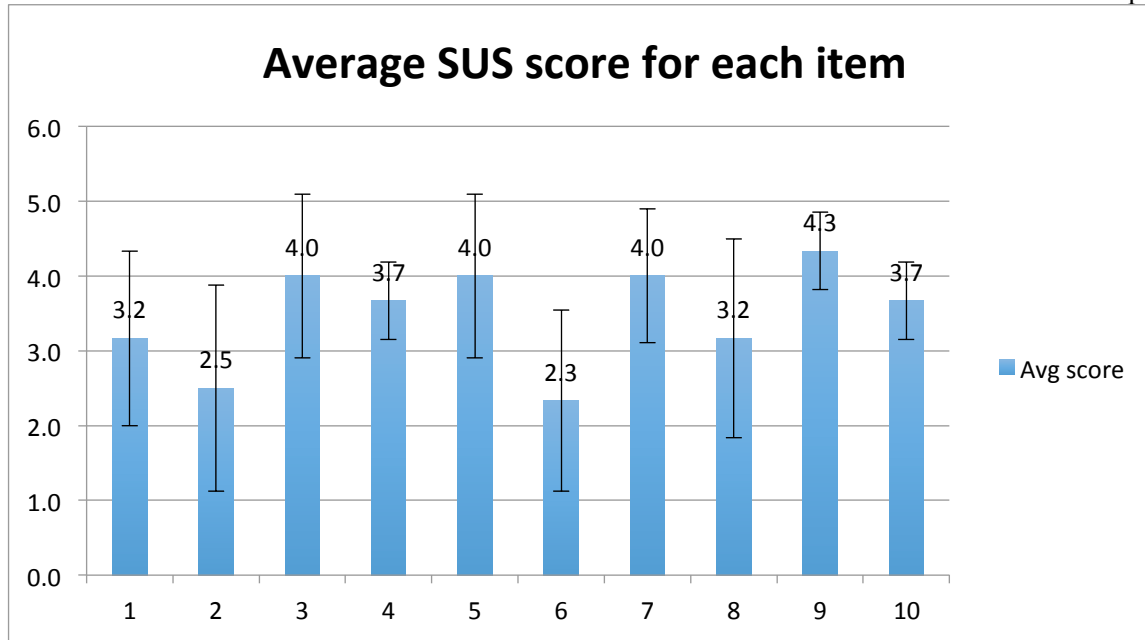
Average SUS score for each item

Figure 2 Average SUS score for each item

c) Net Promoter Score

Net Promoter Score (Garrity, 2010) is a management tool that can be used to gauge the loyalty of a firm's customer relationships. NPS represents how likely is it that you would recommend the system to a friend or colleague? NPS is measured on a 0-10 scale.
Respondents are grouped as follows (Garrity, 2010):

- Promoters (score 9-10) are loyal enthusiasts who will keep buying and refer others, fueling growth
- Passives (score 7-8) are satisfied but unenthusiastic customers who are vulnerable to competitive offerings.
- Detractors (score 0-6) are unhappy customers who can damage your brand and impede growth through negative word-of-mouth.

Net Promoter Score is calculated by subtracting the percentage of Detractors from the percentage of Promoters, which can range from a low of -100 to a high of 100.

The score each participant applied when asking "how likely is it that you would recommend the system to a friend or colleague" is shown in the Table 3.

Table 3 Score on "how likely to recommend to others" for each participant

Participant ID	P1	P2	P3	P4	P5	P6
Score	7	8	5	8	10	9

Thus, NPS is 16.7.

Qualitative Data

At the end of questionnaire, each participant was asked to complete the following open-ended questions.

1. What did you like about the system?
2. What parts were confusing?
3. Do you have suggestions for improvement?

Qualitative data gathered during the test questionnaire and is summarized in the Table 4 below.

Table 4 Open-ended questions

Participant ID	Likes	Confusions	Suggestions
P1	Better grouping of elements, easy to understand and follow	I wasn't entirely sure how to go back, it was mostly by trial and error and hitting the "back" button.	consider "breadcrums" in the system such as saying home > graduate students > graduation form > my POS / this helps to know where in the system I am, or where I was before and how can I go back
P2	Everything of note was on one page. No need to move around a lot	Graduation status button wasn't really clear. It was annoying to get to it since most of the time my cursor wasn't on the box and had to carefully move my cursor towards the button.	Graduation status being an important part probably could be more clear. If there are buttons that are present in the sub menus then they should be the same form factor as the buttons throughout the system.
P3	Cleaner visual representation of graduate student status items.	Items which presented as issues but I was not able to take action on.	No
P4	More engaging interface. Less like a web-afied version of a tired old paper form.	At one point I was clearly working with two different degree applications (Degree 1 and Degree 2) but at the end I saw a page that listed them both. This feels inconsistent.	Floating timer counting down to time-out, with a 'save' button. / Make it clear what "Verify Form" means, and differentiate "Save" from "Submit".
P5	The layout is very clear. Easy to identify what I	The course adding parts.	No.

	need.		
P6	It has a clear design and functions are well integrated.	the button for applying for graduation was not standing out enough from the rest of the items in that section of the page.	No

Discussion

Findings

a) Task completion

Most of tasks across different participants were successfully completed. Only task 2 (P2), task 4 (P5) and task 5 (P4) were not completed successfully right away but these participants were all able to figure that out themselves after they find over the page. Other than these tasks and participants, participants (P1), (P3), (P5) and (P6) successfully completed tasks 1 through 5. In the evaluation, many participants expressed difficulty find the graduation application button, indicating it is not very standing out on the page. Also, some expressed the navigation of the overall page, from graduate student status to graduation application as well as POS form.

b) Subjective assessment of the system

As represented in the SUS score table and figure, scores on the SUS questionnaire varied from a low score of 40 to a high score of 95, with m = 75. Since scores of 68 is considered average (Bangor, Kortum, & Miller, 2008), the mean SUS score of 75 indicated an above average level of user satisfaction and perceived usability of MyStatus. Of note, the participant (P3) who experienced the most difficulty during the evaluation scored the lowest on the SUS, whereas the participant (P6) who experienced the least difficulty scored the highest score.

As noted in the average score for each question, questions 2 (scored 2.5) and question 6 (scored 2.3) were the lowest compared to others, which were complexity and inconsistency of the system. However, the highest score among questions were questions 3, 5, 7 and 9, which means the system is overall easy to use, functions are integrated pretty well so that users don't need to spend a lot of time learning how to use it and feel confident of using it.

c) Net promoter score

NPS for MyStatus is 16.7. According to Net promoter score, There were 2 out of 6 "promoters" while 1 "detractors" in Group B. Fred calculated the average score of 400 companies across 28 industries and got the median Net Promoter Score was 16 (Reichheld, 2003). According to Net Promoter Network (Satmetrix Systems, 2015), the average score for software and app is 19.

NPS calculated for MyStatus is a little higher than the median NPS in the industry while it is a little lower than the average score for software and app is 19. However, as expressed from many of the participants, graduate student status is not like some other websites or software that are

used pretty often. This page is only used a couple of times throughout the graduate study for each graduate student. The function of this page may influence the score participants rate.

d) Qualitative data

The qualitative data was gathered in the open-ended questions in the questionnaire and think aloud technique throughout the testing process. According to the comments participants made, the advantages of MyStatus are cleaner and more engaging layout, functions are integrated well so that they can find what they want easily compared with the current pages. On the other hand, the drawbacks are mainly graduation application button isn't very clear to identify; navigation and POS form still need improvements.

Usability problems and solutions

After analyzing the data from the usability evaluation sessions, several problems were identified that needed attention. Table 5 displays the problems and the proposed solutions. The sequence indicates from most severe to less severe.

Table 5 Usability problems and their corresponding solutions

No.	Problem	Solution
1	Graduation application button isn't really clear and doesn't stand out enough, as it is an important part throughout the system. It is right now in the sub menu under graduate status check.	Make graduation application button on the front page instead of on the sub menu. Making this button right next to "gradation term" in the summary (see Figure 3).
2	Navigation from main page of student status to graduation application and POS form as well as go back to the main page.	consider "breadcrums" in the system such as saying home > graduate students > graduation form > my POS / this helps to know where in the system I am, or where I was before and how can I go back. But considering the overall standard in the accessplus, it can provide future improvements for accessplus redesign
3	For students who have multiple degrees, they have multiple application forms for each degree. It may be confusing that students are not sure whether they can apply for graduation only once.	Regarding this issue, first need to consult the back end people how does graduation application work. Then it could be a suggestion for them to combine multiple application forms so that they don't need to repeatedly to apply for graduation.
4	Although POS page is cleaner than the current page with the classification of different part in the POS form, there are more areas that can improve.	• when adding courses, after choosing the course number, automatically fill the blanks of courses. • Floating timer counting down to time-out, with a 'save' button. • Suggest to come out whether the form is valid or not when click on "submit for approval". No need to have "validate form" button.

Figure 3 Improvement on graduation application button

Reference

Bangor, A., Kortum, P. T., & Miller, J. T. (2008). An Empirical Evaluation of the System Usability Scale. *International Journal of Human-Computer Interaction*, *24*(June 2015), 574–594. http://doi.org/10.1080/10447310802205776

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Appendix A

Questionnaire Questions

How do you describe yourself?

○ Male
○ Female
○ Transgender
○ Do not identify with female, male, or transgender.

What's your current degree program?

○ Master's
○ PhD

What's your major(s)?

Which year are you in the graduate school?

○ first
○ second
○ third
○ fourth
○ fifth
○ about to graduate

Have you ever login to graduate student status page in the AccessPlus and scheduled your graduation there?

○ No
○ No, but I am familiar with it.
○ Yes

Choose the level of agreement for the statements below:

	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
1. I think that I would like to use this system frequently. (1)	❍	❍	❍	❍	❍
2. I found the system unnecessarily complex. (2)	❍	❍	❍	❍	❍
3. I thought the system was easy to use. (3)	❍	❍	❍	❍	❍
4. I think that I would need the support of a technical person to be able to use this system. (4)	❍	❍	❍	❍	❍
5. I found the various functions in this system were well integrated. (5)	❍	❍	❍	❍	❍
6. I thought there was too much inconsistency in this system. (6)	❍	❍	❍	❍	❍
7.I would imagine that most people would learn to use this system very quickly (11)	❍	❍	❍	❍	❍
8. I found the system very cumbersome to use. (8)	❍	❍	❍	❍	❍
9. I felt very confident using the system. (9)	❍	❍	❍	❍	❍
10. I needed to learn a lot of things before I could get going	❍	❍	❍	❍	❍

with this system. (10)					

I would recommend it to a friend

- ○ 0 (0)
- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)
- ○ 8 (8)
- ○ 9 (9)
- ○ 10 (10)

What did you like about the system?

What parts were confusing?

Do you have suggestions for improvement?

Thank you for your time helping us create a great user experience!