



Usability of SIS

An eye-tracking and card-sorting study

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Introduction

It is difficult to organize a website with a large amount of complex information, such as a University management website. RIT's Student Information System (SIS) is particularly difficult to use and navigate. In our study, we will determine what exactly about SIS is difficult using eye-tracking and a questionnaire. We will also use a closed card-sort to suggest a new navigation system that better reflects student's mental models.

Background Research

- **SIS:** A PeopleSoft HR program that is used as a universal management program for the university. Has been customized. Faculty and students find it difficult to use. Many distinct usability issues (back button, formatting, design.) Tiger Center and other websites have been created to avoid using SIS. Has two main navigations.
- **Jakob's Law:** Most of a user's time is not spent on your site. Webpages should have a design that conforms to convention to make UX easier.
- **Eye-Tracking:** Can be used to see the viewing tendencies of participants (specifically how they navigate through a page, where they look, and where they are misled.)
- **Card-Sorting:** Helps determine how a participant organizes a large amount of information based on their mental models. Research has shown that proper use of card-sort data can reduce task completion time and number of errors.

Objectives

- To use eye tracking to determine what about SIS makes it so difficult to use and in what specific ways students are misled when using it.
- To determine how the IA of SIS compares to student mental models.
- To recommend a new, more intuitive navigation that better reflects student's mental models.

Hypotheses

- 1) SIS will prove to be difficult to use, especially for freshmen and sophomores who are newer to the system. Their eye-tracking results will prove that they do not know the correct places to navigate to complete given tasks.
- 2) The card-sort will reveal that the IA of SIS is very different from the mental model of students.

Methodology: Participants

11 RIT students

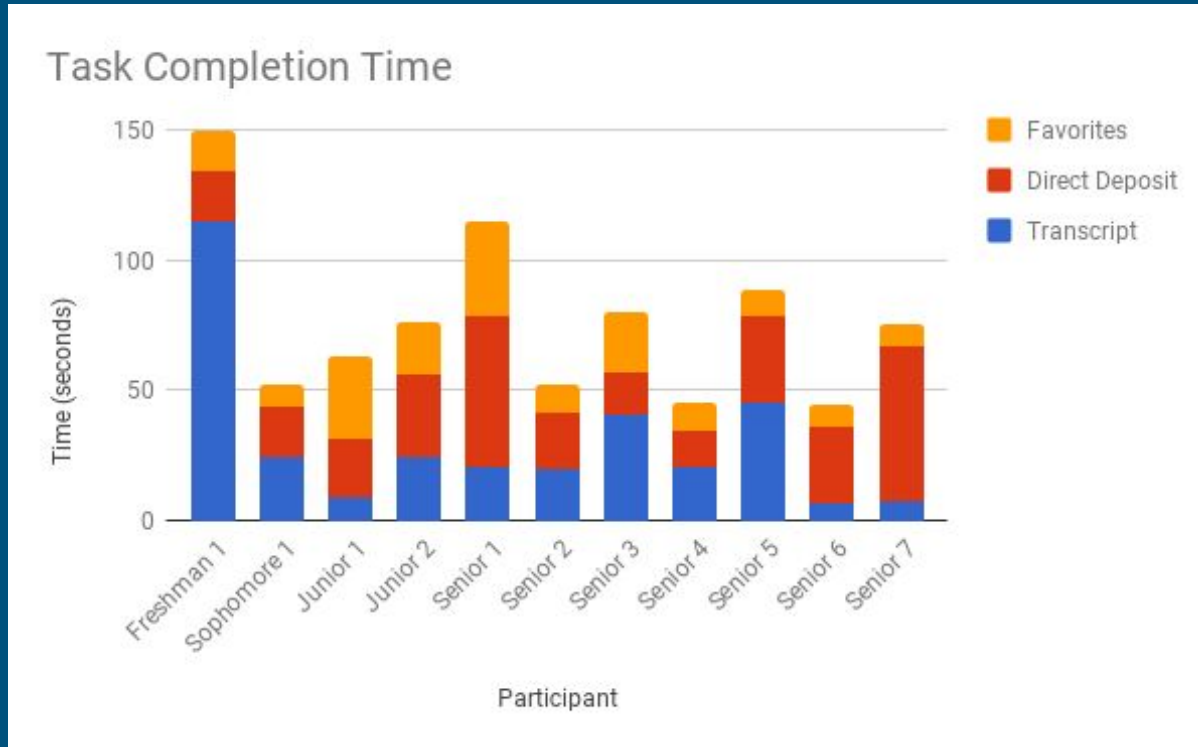
- 1 Freshman
- 1 Sophomore
- 2 Juniors
- 7 Seniors

(We had 1 additional senior participant complete the card-sort)

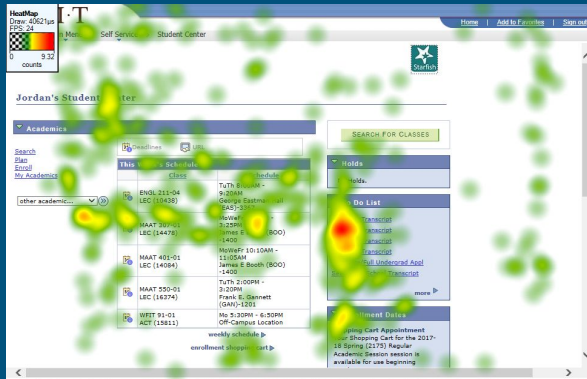
Methodology: Procedure

- Participants read and signed a consent form.
- Participants completed a closed card-sort (online through Optimal Workshops.) The sort had 22 cards and 4 predetermined categories: Student Center, Finances, Admissions, and Resources. The card sort also included a pre and post-experiment questionnaire
- Participants completed an eye-tracking experiment. We assigned three tasks: Request an unofficial transcript, navigate to the “Enroll in Direct Deposit” page, and add the page to your “Favorites.” We recorded the time it took for participants to complete each task.

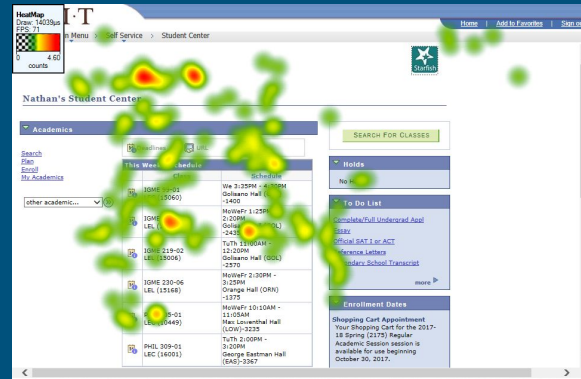
Results: Eye-Tracking



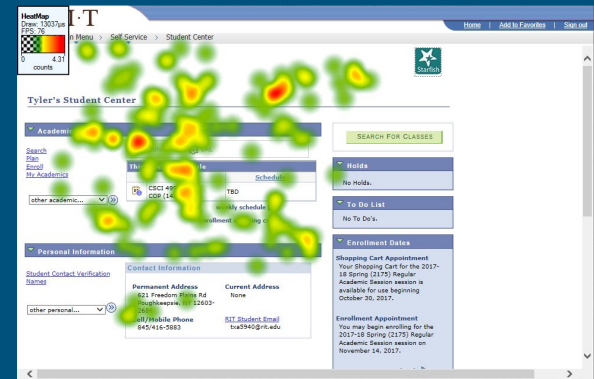
Results: Eye-Tracking (cont.)



Freshman 1

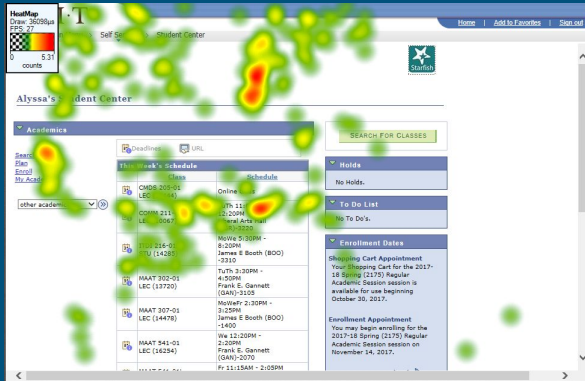


Sophomore 1

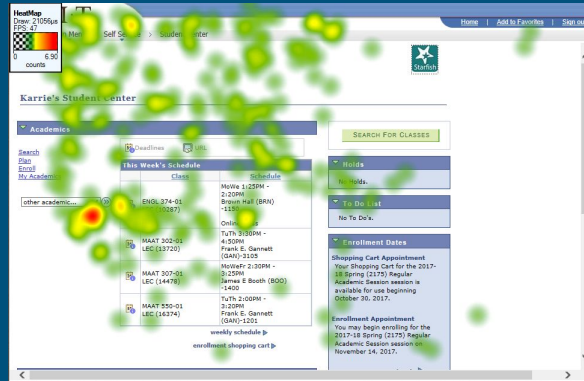


Junior 1

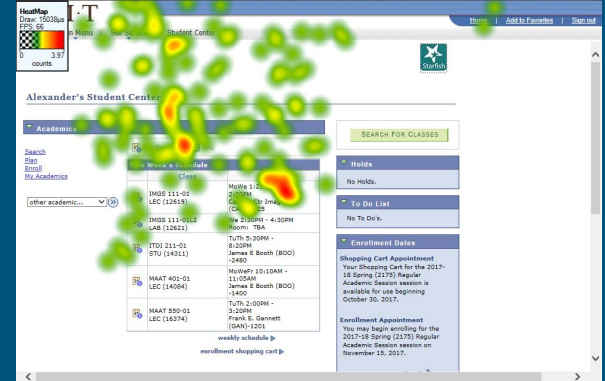
Results: Eye-Tracking (cont.)



Junior 2

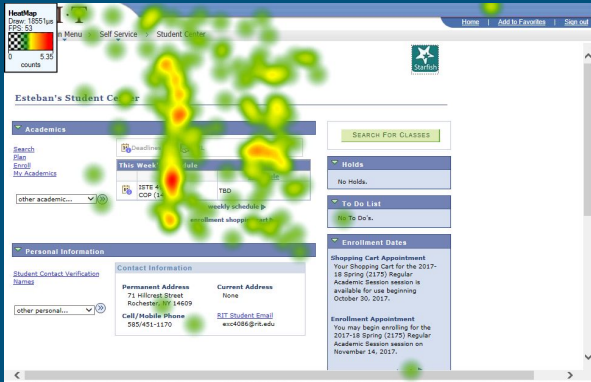


Senior 1

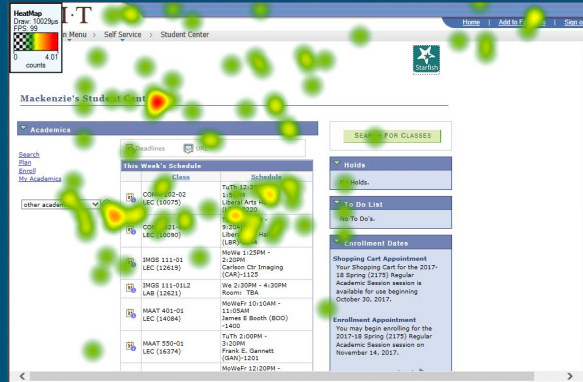


Senior 2

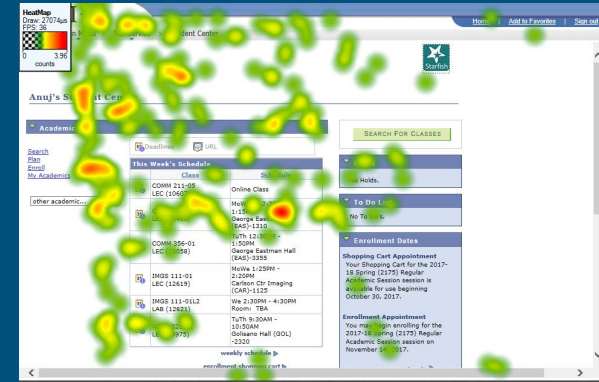
Results: Eye-Tracking (cont.)



Senior 3

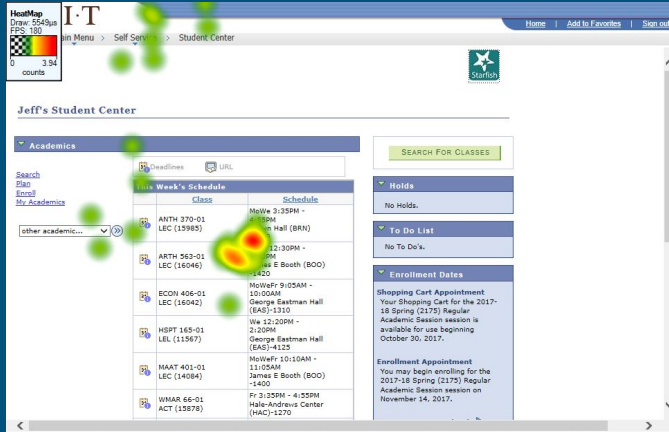


Senior 4

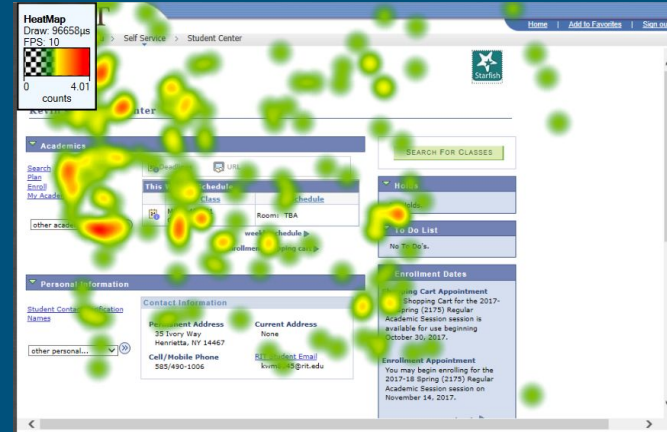


Senior 5

Results: Eye-Tracking (cont.)



Senior 6



Senior 7

Results: Card-Sort

Underclassmen

The Results Matrix [?](#)

	Student Center	Admissions	Finances	Resources
Academic Planner	2			
Academic Requirements		2		
Apply for Graduation	1	1		
Class Schedule	2			
Course History	2			
Enrollment	1	1		
Exam Schedule	2			
Grades	2			
Transcripts	2			
Transfer Credit		1	1	
Personal Information	2			
Holds	1		1	
Search for Classes	2			
Shopping Cart	1		1	
Campus Finances			2	
Request Information		1		1
Advisor Information	2			
Enrollment Dates		1		1
Search for a Facility				2
Online Admissions Application		2		
Quick Links				2
Starfish				2

Popular Placements Matrix [?](#)

	Student Center	Admissions	Finances	Resources
Academic Planner	100%			
Advisor Information	100%			
Class Schedule	100%			
Course History	100%			
Exam Schedule	100%			
Grades	100%			
Personal Information	100%			
Search for Classes	100%			
Transcripts	100%			
Apply for Graduation	50%	50%		
Enrollment	50%	50%		
Holds	50%		50%	
Shopping Cart	50%		50%	
Academic Requirements		100%		
Online Admissions Application		100%		
Enrollment Dates		50%		50%
Request Information		50%		50%
Transfer Credit		50%	50%	
Campus Finances			100%	
Quick Links				100%
Search for a Facility				100%
Starfish				100%

Results: Card-Sort (cont.)

Juniors

The Results Matrix [?](#)

	Student Center	Admissions	Finances	Resources
Academic Planner	1	1		
Academic Requirements	1	1		
Apply for Graduation		1		1
Class Schedule	1			1
Course History	1			1
Enrollment	1	1		
Exam Schedule	1			1
Grades	1			1
Transcripts		1		1
Transfer Credit		2		
Personal Information	1			1
Holds		1	1	
Search for Classes	1			1
Shopping Cart	1			1
Campus Finances			2	
Request Information				2
Advisor Information				2
Enrollment Dates	1			1
Search for a Facility				2
Online Admissions Application		2		
Quick Links				2
Starfish			1	1

Popular Placements Matrix [?](#)

	Student Center	Admissions	Finances	Resources
Academic Planner	50%	50%		
Academic Requirements	50%	50%		
Class Schedule	50%			50%
Course History	50%			50%
Enrollment	50%	50%		
Enrollment Dates	50%			50%
Exam Schedule	50%			50%
Grades	50%			50%
Personal Information	50%			50%
Search for Classes	50%			50%
Shopping Cart	50%			50%
Online Admissions Application		100%		
Transfer Credit		100%		
Apply for Graduation		50%		50%
Holds		50%	50%	
Transcripts		50%		50%
Campus Finances			100%	
Starfish			50%	50%
Advisor Information				100%
Quick Links				100%
Request Information				100%
Search for a Facility				100%

Results: Card-Sort (cont.)

Seniors

The Results Matrix

	Student Center	Admissions	Finances	Resources
Academic Planner	4	1		3
Academic Requirements	4	3		1
Apply for Graduation	3	5		
Class Schedule	6	1		1
Course History	6	2		
Enrollment	3	5		
Exam Schedule	7	1		
Grades	7	1		
Transcripts	4	3		1
Transfer Credit	2	5		1
Personal Information	7			1
Holds	3	4		1
Search for Classes	6	1		1
Shopping Cart	6	2		
Campus Finances			8	
Request Information	3			5
Advisor Information	4			4
Enrollment Dates	4	2		2
Search for a Facility	1			7
Online Admissions Application	1	7		
Quick Links	3			5
Starfish	4	1		3

Popular Placements Matrix

	Student Center	Admissions	Finances	Resources
Exam Schedule	88%	13%		
Grades	88%	13%		
Personal Information	88%			13%
Class Schedule	75%	13%		13%
Course History	75%	25%		
Search for Classes	75%	13%		13%
Shopping Cart	75%	25%		
Academic Planner	50%	13%		38%
Academic Requirements	50%	38%		13%
Advisor Information	50%			50%
Enrollment Dates	50%	25%		25%
Starfish	50%	13%		38%
Transcripts	50%	38%		13%
Online Admissions Application	13%	88%		
Apply for Graduation	38%	63%		
Enrollment	38%	63%		
Transfer Credit	25%	63%		13%
Holds	38%	50%		13%
Campus Finances			100%	
Search for a Facility	13%			88%
Quick Links	38%			63%
Request Information	38%			63%

Data Analysis

Eye-Tracking: Task completion time varied greatly. Freshman participant was the slowest to complete all tasks. There were multiple ways to successfully complete each task. About half of the participants did not look at the top navigation bar. Most participants focused on the center of the page where a large amount of information is found. Many participants did not know about the “Favorites” page.

Card-Sort: Results for Underclassmen, Juniors, and Seniors were very different. Underclassmen had high level of agreeableness (68%). Junior participants had low levels of agreeableness (31.8%). Seniors had at least 50% agreeableness in each category.

Questionnaire: Use of SIS increased over time. Most participants found SIS difficult and inefficient to use. Most participants had used alternative websites. The majority of participant comments about SIS were very negative

Conclusion

- SIS is difficult to use and navigate
- The IA of SIS differs from student's mental models
- Our recommended navigation (based on senior participants' results) is:
 - **Student Center:** Exam Schedule, Grades, Personal Information, Class Schedule, Course History, Search For Classes, Shopping Cart, Academic Planner, Academic Requirements, Enrollment Dates, Starfish, Transcripts
 - **Admissions:** Online Admissions Application, Apply for Graduation, Enrollment, Transfer Credit, Holds
 - **Finances:** Campus Finances
 - **Resources:** Advisor Information, Search for a Facility, Quick Links, Request Information
- We suggest implementing how-to tutorials on the website
- We strongly suggest expanding the study to include more Freshman, Sophomore, and Junior participants
- We suggest conducting a companion study on the usability of Tiger Center

Questions?

