CSE 8316 (Spring 2017): Course Project Somya Singh Email: <a href="mailto:somays@smu.edu">somays@smu.edu</a> Student ID: 47304053

## **Table of Contents**

CSE 8316 (Spring 2017): Course Project	1
1. Introduction	3
2. Methodology	3
2.1 STEPS FOLLOWED TO ACCOMPLISHED THE TASKS	
2.1.1 REQUIREMENT ANALYSIS	
2.1.2 DESIGN PROCESS	
2.1.3 FINAL EVALUATION	
2.1.4 RESULT ANALYSIS	
3. REQUIREMENT ANALYSIS	5
3.1 INTIAL SURVEY	5
3.2 EXPERT REVIEW	5
3.2.1. Users profile	5
3.2.2. Assessment Tools	6
3.2.3. Test Procedures	6
3.2.4 Participant Observations	
3.2.5. Data analysis	
3.2.6. Task Scenarios	
3.2.7 Data and Results	
3.2.7.1. Performance Data	
3.2.7.2. Satisfaction Data	
3.3. Usability Findings and Recommendations	
3.3.1. Negative Findings	
3.3.2. Critical Findings	
3.3.3. Major Findings	
3.3.4. Moderate Findings	
3.3.5. Minor Findings	
4. DESIGN PHASE	
4.1. Paper Sketch (low-level fidelity)	16
4.2. Sketch (high-level fidelity)	
About Us	
Admission	19
Courses	
Academics	20
Financial Aid	21
People	21
5. Final Evaluation	22
5.1.Final Survey	22
5.2.Final Expert Review	22
6. Result Comparison	
6.1 Survey	
6.2 Expert Review	25
7. Future Scope	26
APPENDIX	27

Appendix A: Introduction to the Expert review process	27
Appendix B: Background questionnaire for Expert review process	28
Appendix C: First Impression questionnaire for Expert review process	29
Appendix D: Tasks-specific questionnaire for Expert review process	30
Appendix E: Expert Review Site feedback questionnaire	31
Appendix F: Survey questionnaire list	32
Appendix G: Initial Survey feedback	34
Appendix H: Final Survey feedback	39
Appendix I: Screen Shots of original website pages	44

#### 1. Introduction

The project seeks to explore the usability and user experience of a website. In general, this particular website is mostly targeted to schools prospective applicants, who perform information-seeking tasks, like finding details about admission application, division programs, faculty, and facilities. Nevertheless, there are cases that art & design schools decide to include a more "holistic" approach and provide information to current students, alumni, faculty, staff, and the community as well. I believe that this inclusive approach is the appropriate way of generating a "creative community of scholars".

For this project, I was interested in website, <a href="http://art.yale.edu/">http://art.yale.edu/</a>. The site serves as the informational page for anyone looking to gather information regarding School of Art at the prestigious Yale University. US News ranks the College, as the top college in Fine Arts for Graduate Studies. It is an open site (wiki), meaning that any graduate student, staff person, and faculty member of the School can update the website's content or add any content any time.

In evaluating their content, I wish to discover how **information**, **interface**, **and interaction design affect a website's usability**. In addition, the evaluation focused on determining if the needs of the user are met in an easy to understand, useful, and pleasurable manner. My main focus was on improving user experience of this site.

To accomplish my project I implemented following steps: -

- 1. Initial requirement analysis through survey and expert review
- 2. Designing the website prototype using user centered design and Prototype methods.
- 3. Evaluating the final website prototype by using survey and expert review.
- 4. Compare final survey result and expert review with previous obtained result.

## 2. Methodology

The criteria I used for selecting this website was based on my personal experience as a prospective graduate student. Selecting the best school is not an easy task, since so much has to do with the focus of the program and the faculty at the time. These design schools

have the common purpose of training artists and designers who will contribute to and change our culture.

In evaluating the website, I considered the following design aspects:

- *Information:* Whether the website content includes pertinent information to successfully accomplishing a certain task.
- Interface: Whether the website layout affects the (successful) accomplishment of a task.
- <u>Interaction</u>: Whether the website allows efficient navigation for users to accomplish their tasks successfully.

#### 2.1 STEPS FOLLOWED TO ACCOMPLISHED THE TASKS

#### **2.1.1 REQUIREMENT ANALYSIS**

In this phase, to obtained the requirement from the users I performed survey for website <a href="http://art.yale.edu/">http://art.yale.edu/</a>. Questionnaires are attached in Appendix F. I also did early expert review to obtained the necessary data to influence the user experience of the website by arranging a working session with four sample users who were mainly related to arts background asking them to browse the site for a while and report me what problem they are finding as a user of this sites and at end I asked them to fill the questionnaires to obtained the result from them too. Analysis that's I obtained using that I created the "Requirement Analysis Specification Documents".

#### **2.1.2 DESIGN PROCESS**

Design method used in this phase is the prototyping methods. I perform prototyping at different level of my design process first as a Low-fidelity prototype creating paper sketch, followed by the guideline recheck what I specified in my "Requirement Analysis". Finally I design the high fidelity prototypes using Sketch software. While designing the prototype, interaction style mainly focus is on menu style and direct manipulation. Which can easily identify by looking at prototype screenshots. Result of this phase is the "High –Fidelity Prototype".

#### 2.1.3 FINAL EVALUATION

For this phase, I performed final survey and expert review on the resultant prototype obtained in design phase. In survey and expert review procedures, questions are same as I used during requirement analysis.

#### 2.1.4 RESULT ANALYSIS

I used the data gathered from final survey and initial survey as well as final and initial expert review to make the final conclusion for my project.

## 3. REQUIREMENT ANALYSIS

#### 3.1 INTIAL SURVEY

I used Survey Monkey (<u>www.surveymonkey.com</u>) to create a list of 10 questions (attached in Appendix F). The survey was sent to 50 people using email. My target audiences were group of students who were prospective students for Art College and were looking at the different university for their admissions.

The survey questions targeted the look, feel and usage of the site for students looking at the prospective college for admissions.

The questions were divided into 3 sections;

- 1. Eight questions asked students on their opinion with option "a" given a weightage of 5 and option "e" given a weightage of 1.
- 2. One question was to ask user option of missing feature.
- 3. One question was to rate the site on scale of 1 to 10, 1 being lowest and 10 being highest for likely to visit back.

The survey results showed me following results;

- 1. Over 90% of responses were not able to get relevance data they were looking for.
- 2. Over 96% of responses showed they had difficulty in finding the correct pages they were trying to find.
- 3. 96% of people had issues with appealing, color used and graphic used in site. Each page had different background graphics with different color text used on each page.
- 4. Overall based on first 8 questions the site only got average 11 points out of maximum of 40 possible.
- 5. Most of the people complained about the search option missing, and outdated content.
- 6. Over 50% of people rated it as 1 (1 being lowest) out of a scale of 10. The average rating for the site was 3.67
- \* Survey results with questions are attached in appendix G.

#### 3.2 EXPERT REVIEW

#### 3.2.1. Users profile

To ensure that the usability test revealed valid results, careful consideration was placed in selecting participants who were typical end users of the website(s) and whose background and abilities were representative of the websites' target audience. Most users of these websites came from a visual and applied arts background and had varying computer expertise. Their education also varied ranging from undergraduate, graduate students. Four participants from the background of Arts selected for the study. Two participants were graduate students and two were design undergraduates between 19-24 years old. All participants were very experienced in using the Internet (between eight and ten years of

experience), and they indicated they access it daily. The most commonly stated reasons for Internet use among the participants was e-mail, research, and shopping. Two participants defined their computer proficiency as high, while the other two defined it as medium.

This information was obtained from a questionnaire (See Appendix B) the users completed after they were informed about the sites they would be testing. The background questionnaire were modified from the examples provided in Nielsen's "*E-Commerce User Experience: Methodology*" study (Nielsen et al., 2000).

When asked if they have accessed the tested websites previously, three of the participants responded that they have at least seen the website but none have visited any of the site in the last three months. All users had experience using Mac computers, which were used to perform the tests.

#### 3.2.2. Assessment Tools

The materials for assessment were adapted from Nielsen's *E-commerce User Experience: Methodology* guidelines on how to create a successful usability study.

I used the following assessment tools:

- 1- Introduction to the Expert review process (Appendix A)
- 2- Background questionnaire for Expert review process (Appendix B)
- 3- First Impression questionnaire for Expert review process (Appendix C).
- 4- Tasks-specific questionnaire for Expert review process (Appendix D).
- 5- Expert Review Site feedback questionnaire (Appendix E).

#### 3.2.3. Test Procedures

Prior to the test, participants were given a general idea of the usability study when they were invited to participate. They were told they would be looking at Yale School of Art website, to help me determine what makes one site easier to use than others. I also informed them of the expected length of time to complete the test and test location, in order to better meet their schedules. All tests were conducted within two days; hence, no recognizable changes in the interfaces occurred in the tested sites during this period. Moreover, the tests were conducted in one-on-one sessions, because this is the best source of feedback.

They were seated at an Apple Mac workstation (I used my system as test station). A user folder was given to them, which contained the test introduction outlining the study (A), background (B), first impressions (C), task scenario (D) and site feedback (E) questionnaires for the websites. All four users tested the same one sites; used a customized task scenario that was aimed at portraying a student user experience of the sites.

All material used in the test contained the User ID. No Personal information was

collected. In addition, users completed a background questionnaire, asking about their demographic profile, computer and Internet habits. This questionnaire was modeled after Jacob Nielsen's questionnaire (Nielsen et al., 2000).

At the completion of the last task for each site, the participant completed the postquestionnaire providing feedback on impressions and experiences with the site. After testing the website, as a thank you gift, the participant was given a bag with traditional desert of India and were thanked for there time. The entire sessions took between 75 and 90 minutes.

#### **3.2.4 Participant Observations**

Data were collected through direct observation of each participant. As the researcher, I sat with each participant during the usability testing session and took notes on both the decision path taken to address the task, and what the users said and did during the test. The participants were encouraged to think aloud as they attempted to complete each task and they were also told to verbalize their impressions for the site. I asked questions to clarify and better understand the user experience and thought process, nevertheless I refrained from offering any assistance. However, in cases where the participant was unable to complete a particular task, I tried to point out possible solutions to observe how the participant continued the actions necessary to accomplish the task.

## 3.2.5. Data analysis

After the testing was over, I took screen shots of the home page and also of few pages that elicited a strong response, either positive or negative, in the participants. Quantified data was obtained from the questionnaire sets on background user profile and the task-specific scenario survey. On the other hand, the qualitative data was gathered from the open-ended answers of the first impressions survey, the post-questionnaire, and the field notes taken simultaneously while observing the participants. The collected data was synthesized using Excel functions and charts. Because of the scale used in the survey, '4' was considered a neutral rating, while a '7' was a strong positive rating and a '1' was a strong negative rating. After all tests were completed, I read through the observation sheets and categorized them according to emerging findings which formed the basis of the analysis section of this report.

#### 3.2.6. Task Scenarios

Jakob Nielsen in his report E-commerce User Experience: Methodology, stated that "good tasks accurately represent actual use" (Nielsen et al., 2000) served as a model for creating good tasks design. The participants were given three tasks to perform for site, which I imagined would be reflective of what they would do if they visited this site on their own (i.e.: as prospective applicants). The first task was intended simply to record users' initial reaction to the site. The other two tasks were intended to reveal the ease of use of the site functionally. Before beginning the tasks, users were told that they were encouraged to think aloud. The observations, as well as notation of the users' verbal

comments, along with their written response questions, were fundamental to identify usability problems and recommend improvements.

The tasks for each website included the following tasks:

#### Task 1 – First Impressions

The first task users were given was to browse the website freely for five to ten minutes and verbalize their first impression on the site. After they were done browsing, users completed answered the following questions. (See Appendix D)

- 1- What was your first impression on this web site?
- 2- Who is this site for?
- 3- What does this site offer to the users?
- 4- Does it appear that this site would have information that you might want or need?

This task was constructed to get a feel for what the site was about and what it had to offer. It also served to observe the user's immediate first impressions about the site. The user's comments provided an overall perception of the site's information, interaction, and interface designs.

#### Task 2 - Tasks Scenario: Student

In the second task, participants were given a short situation scenario, and they were asked to navigate specific information from the web sites. They were limited to 30 minutes and were asked to note if any information could not be located by that time. Personalizing the task helped them browse different parts of the web site, and get to know about the particular site better. (See Appendix D)

The scenario I asked them to imagine was based on Nielsen's comment about users who are "pursuing their own goals" are self-motivated. This task-scenario leads to a more authentic approach. The scenario script was:

"Pretend that you are applying for the program in Design. You need to know the details of the application process, deadlines, learn more about the school program and faculty. Locate the following information on the web site then complete the survey below. Please limit yourself to 10 minutes per task. Be sure to note if you were unable to locate any of the information requested".

Each participant assumed that they wanted to:

- 1- Find the courses offered for the undergraduate and in graduate program in design.
- 2- Determine if it is possible to search the faculty easily.
- 3- Find the financial aid for the design program.
- 4- Finding the contact and campus map is easy.
- 5- Find the application deadline and application requirement for various program offered.
- 6- Find the link back to the home page.

The participants were observed while they navigate the site. They were also reminded to think aloud as they proceeded to locate all the information. Even though each site

contained the information requested, some users were still unsuccessful at performing certain task in the allotted time. After the time was due, the participants completed the corresponding survey. They rated the Likert-scale type survey ranging from "Failed" (1 pts) to "Very easy" (7 pts).

#### Task 3 – Feedback Questionnaire

The last task the participants completed was a rating survey (See Appendix E). This task allowed the participants to review the site further, letting them evaluate the design and information presented more holistically and giving an opportunity to voice their opinions regarding their overall perceptions of the site. The survey questions were created in such a way as to express the participants' impressions of the site in terms of information, interface, and interaction design components. Furthermore, the questionnaire collected data that provides an indication of the degree to which each participant liked the site, how well the site met their need for design information, and each participant's perceptions of the site's main purpose.

#### 3.2.7 Data and Results

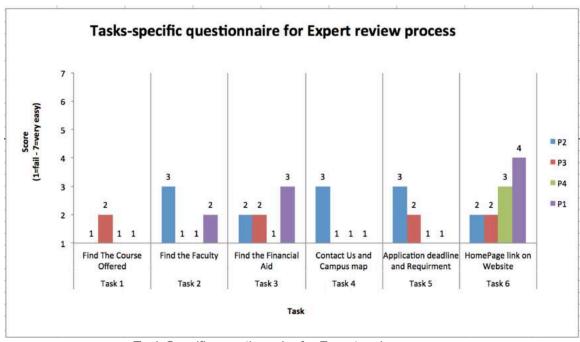
This section visually summarizes both the quantitative and qualitative data collected during the study sessions. It is important in usability studies to address both performance data and satisfaction data, as we are interested in not only "can users complete their tasks", but "do they like the user experience as they do". Thus, this section consists of following parts:

- Performance of the participants while attempting the tasks (task completion percentages).
- Satisfaction of the participants as noted in their post-test questionnaire responses.

In the next section, a prioritized list of identified usability problems and recommended improvements is provided. The problems noted will be given a criticality rating. The higher the rating of criticality, the more significant the problem is to the user's experience or ability to accomplish the task.

#### 3.2.7.1. Performance Data

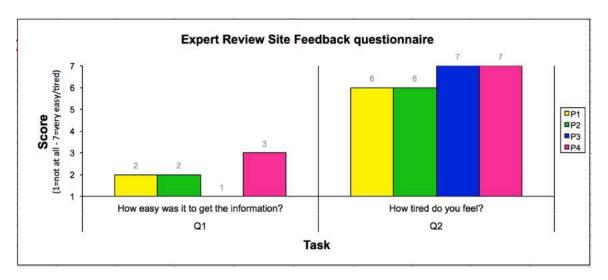
After each task in the task scenario, participants rated how easy it was to perform the task. A score of "1" indicates the participant could not complete the task at all; a score of "7" indicates the participant could very easily complete the task. We did not record time on task data because the "find-and-fix" approach of this test allowed for substantial dialog between the test participant and the test moderator. Therefore, participants were often talking to the moderator instead of directly completing tasks - making such a measure unreliable at best and meaningless at worst.

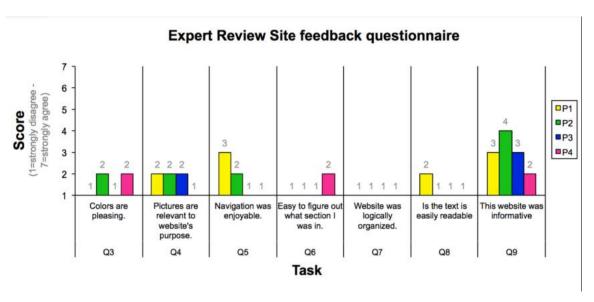


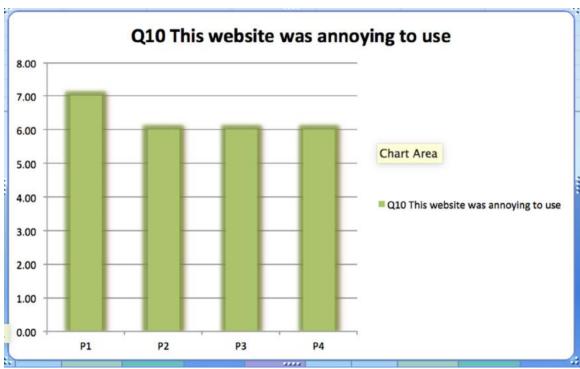
Task Specific questionnaire for Expert review process

#### 3.2.7.2. Satisfaction Data

Participants answered a post-test questionnaire (Appendix E) at the completion of the last task. The charts that follow summarize the participants' responses to the post-test questionnaire.







## 3.3. Usability Findings and Recommendations

As this study was a "find-and-fix" usability study, the following usability findings, compiled from both Expert Review and Survey common the most important. For usability studies such as this, it is important to focus on the particular problems identified, and offer recommendations to fix them.

This section provides a prioritized list of identified usability problems noted by the

researcher and recommended improvements. The problems are prioritized by criticality. "Criticality is defined as the combination of the severity of a problem and the probability that the problem will occur" (Rubin, 1994). The higher the rating of criticality, the more significant the problem is to the user's experience or ability to accomplish the task.

The following findings include a criticality rating as described below:

CRITICALITY Description	CRITICALITY Definition
Critical	<ul> <li>The identified issue is so severe that:</li> <li>Critical data may be lost.</li> <li>The user cannot complete the task.</li> <li>The user may not want to continue using the website.</li> </ul>
Major	<ul> <li>Users can accomplish the task but only with considerable frustration.</li> <li>Non-critical data is lost.</li> <li>The user will have great difficulty in circumventing the problem.</li> <li>Users can overcome the issue only after they have been shown how to perform the task.</li> </ul>
Moderate	<ul> <li>The user will be able to complete the task in most cases, but will undertake some moderate effort in getting around the problem.</li> <li>The user may need to investigate several links or pathways through the system to determine which option will allow them to accomplish the intended task.</li> <li>Users will most likely remember how to perform the task on subsequent encounters with the system.</li> <li>Users expect certain quality aspect from the website (aesthetics)</li> </ul>
Minor	<ul> <li>An irritant aspect.</li> <li>A cosmetic problem</li> <li>A typographical error</li> </ul>

The findings that follow are divided into Critical, Major, Moderate, and Minor problems. Each tells which aspect (information, interface or interaction) of the site it concerns, has a description and an associated recommendation. "The reason for prioritizing problems by criticality is to enable the [potential] development team to structure and prioritize the work that is required to improve the product" (Rubin, 1994). This section has been design for optimal usability to get to facts quickly.

#### 3.3.1. Negative Findings

**Finding 1:** In general, users were not pleased with the website interface, and they found the background image irrelevant to the site's purpose nevertheless they suggested updating them. The sites did not contain the name and logo of the college to verify that it's the authentic site of that college.

**Finding 2:** All participants complained about the organization of data on each page of the site. Its has no order and sequence they have to scroll through whole page to find the essential information even so much space wasted on either side of the webpage. No proper alignment of page there. Main complains related to color and font of text. Color usage on each page of the website is irrelevant and very bright or we can say all web pages of this websites is lack in consistency.

#### 3.3.2. Critical Findings

#### **Critical Finding 1: Course Offered**

#### Area: Interaction

<u>Description</u>: The information in the course section of the site is pertinent to current students there is no mention of courses offered by the college, it was quite confusing for the student. The course list is not at all organized; it is very difficult to search for a particular course.

<u>Recommendation</u>: First divide course descriptions by department what courses they offered. This is helpful for those students who wish to see courses of a particular department especially helpful for new student. They come to know what level classes offered in the Yale School of Arts. Also, make course search option easier.

#### **Critical Finding 2: Faculty Detail Search**

<u>Description</u>: The faculty search and detail was not easy. In cases, participants tried to find a email id, office hours and contact of the professor to arrange an appointment. No information related to that present. Faculty list is not all well organized not easy to search for the particular faculty.

<u>Recommendation:</u> A more robust search function that will pull up faculty based on name, based on faculty status, and field of interest. In addition, display the name of the faculty with its designation and department its belong along with its contact information, email id and office hours as a search results.

#### 3.3.3. Major Findings

#### **Major Finding 1: Financial Aid**

#### Area: Interaction

<u>Description</u>: The financial aid section is not well organized at all regarding tuition fees and general expenses of foreign and domestic student. Other information like student's grants, fellowship and other benefits.

<u>Recommendation:</u> Make "Financial Aid" page more informative and divide into section clearly including sections like tuition fees, grants, teaching assistantship and part-time employment opportunity and etc.

#### **Major Finding 2: Contact and Campus map**

#### Area: Interface

<u>Description</u>: All participants reported that it's too hard to read the contact and address of the college due to the background color and font of the text. Also there is no link to campus map. They also mentioned these all information they usually search in "About us" page but in this website information on "About us "page is not at all relevant. <u>Recommendation</u>: Make "About us" page including college history and goals. Essential information about college like department overview, campus map and contact details should be present.

#### Major Finding 3: Admission deadline, Application Requirement and Application status

Area: Information

<u>Description:</u> All participants scanned the "admission" page quickly, trying to find the deadline and application requirement of international and full-time student to apply to graduate school. It was interesting all of them did not find it while scrolling down, the students had to review the page a few times until they found the deadline at the beginning of one of the paragraphs. No mention of application status. No link to apply application online.

<u>Recommendation:</u> Make the admission deadline, application status more evident by adding color, larger font, and/or placing it inside a separate "highlight" box. First divide admissions information more descriptions by dividing in to section like full time, part time and international student. This is helpful for students to easy get the information they are looking for and understand it easily.

#### **Major Finding 4: Home page link**

#### Area: Interaction/Interface

<u>Description:</u> All participants had to guess (or found accidentally by mouse-over) the location of home page link because it is embedded within a picture. And location of menu bar is not at all appropriate in this site.

<u>Recommendation:</u> Make the home page link more evident. Provide it as additional cross-link at the end and top of each page. Place menu bar at the top of the each webpage make it more evident.

#### 3.3.4. Moderate Findings

#### **Moderate Finding 1: Contextual Information**

#### Area: Information/Interaction

<u>Description:</u> Participants were frustrated by the lack of contextual information presented on each page, too much scrolling needed to find the content no proper order or hierarchical order followed to arranged the information through out the sites.

<u>Recommendation:</u> Implement hierarchy in the information. Divide information in section and subsection. Implement menu bar with hierarchy and place it at the top. Use proper space of the web screen. Reduce scrolling.

#### **Moderate Finding 2: Information**

#### Area: Information

<u>Description:</u> Several pages had out of date information (e.g. the Design Division Computer Lab).

Recommendation: Create a system so information is routinely checked for accuracy.

#### 3.3.5. Minor Findings

#### **Minor Finding 1: Images**

#### Area: Interface

<u>Description</u>: All participants thought the photographs used on the site were relevant and gave a good feel of the program by showing spaces and people they could identify with. However, participants commented that the photos looked "old", "could be more eyecatching", and "didn't look professional".

*Recommendation*: Redo photographs on the site so they provide a more polished feel.

#### **Minor Finding 2: Information**

#### Area: Information

<u>Description</u>: Many participants complained about having to read through long sections of text to find pertinent information. And though some headings are present, they are often not as easy to distinguish from the surrounding text. Background of each page makes text unreadable.

<u>Recommendation:</u> Trim paragraphs down to only the most pertinent information and make sure they are separated by white space so it is easy for users to differentiate paragraphs. In addition, include headings tags (and make them highly visible) so users can easily scan pages to find information they are searching for. Furthermore, providing anchor links from the top of the page may reduce scrolling.

NOTE: I USED THESE ABOVE MENTIONED POINTS AS REQUIREMENT FOR DESIGN PHASE FOR FURTHER IMPROVEMENT.

#### 4. DESIGN PHASE

From requirement analysis, I created the Requirement Specification Documents. In this phase using this document I designed the prototype for the sites using Prototype Method. I used two prototype design, First I made the paper sketch to come up with the low-fidelity prototype and after that analyzing some short comes from that prototype I designed high-fidelity prototype using Sketch Software.

Points that I considered after obtaining finding and recommendation from requirement analysis phase are as follows: -

#### **Negative Findings Points**

- 1. Elegance and Simplicity-Unity Refinement
- 2. Scale, contrast and proportion
- 3. Organization & visual structure, grouping hierarchy, relationship and balance.
- 4. Consistent Background Color
- 5. College Logo and Name at the top of each web page of the site.
- 6. Text Color and font size of text.
- 7. Navigation bar
- 8. Label each page in multipage displays to shows its relation to others.
- 9. Add Search option and user login option on each page of the website.
- 10. Use short and simple sentences.
- 11. Left justifies columns of alphabetic data to permit rapid scanning.
- 12. Use short affirmative sentences.
- 13. Put information in an appropriate place not on unexpected place.
- 14. Logical organization of information.
- 15. Limits the number of color used.
- 16. Use color change to indicate status change.
- 17. Maintain consistent visual format and placement.
- 18. Using symbols to represent certain things in place of text.

- 19. Use color-coding that user can distinguish rapidly. Among several categories of data.
- 20. Add information that needed for particular page and related to user reducing extra and long paragraphs.

#### **Critical Finding Points**

- 1. Providing advanced search option to user using Five-Stage frameworks
- 2. Categories the information according to the department, courses etc.

#### **Major Finding Points**

- 1. About us page designed containing information about college, college details, contacts and campus map.
- 2. In admission page included Application Status and Apply Online option.
- 3. Application requirement divided into categories –Full Time, Part-time and International student.

#### **Moderate Finding Points**

- 1. Organized data and information uniformly to avoid long scrolling.
- 2. Spread data throughout the screen avoid wasting the screen space.

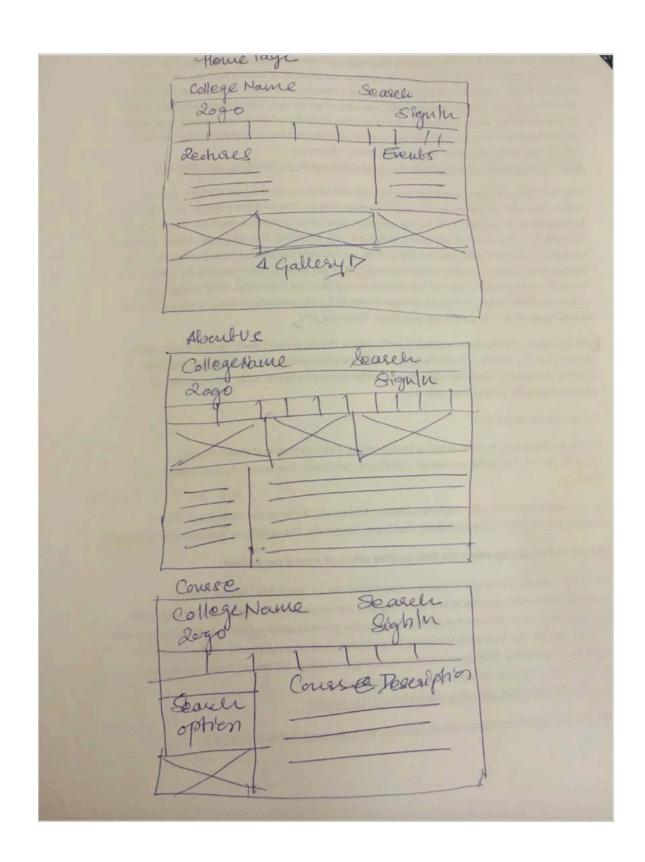
#### **Minor Finding Points**

- 1. Put refined and up-to date information.
- 2. Proper image quality on websites related to particular page.
- 3. Small, Concise and Better understandable paragraph. Different text size and highlighting essential information.

## 4.1. Paper Sketch (low-level fidelity)

For this phase of design using the current requirement and findings that I obtained mentioned above I used a Paper prototyping to design the initial prototype. Paper prototyping saves time and money since it enables developers to test product interfaces (from software and websites to cell phones and microwave ovens) before they write code or begin development. This also allows for easy and inexpensive modification to existing designs, which makes this method useful in the early phases of design. Another benefit of paper prototyping is that it feels more comfortable being critical of the mock up because it doesn't have a polished look.

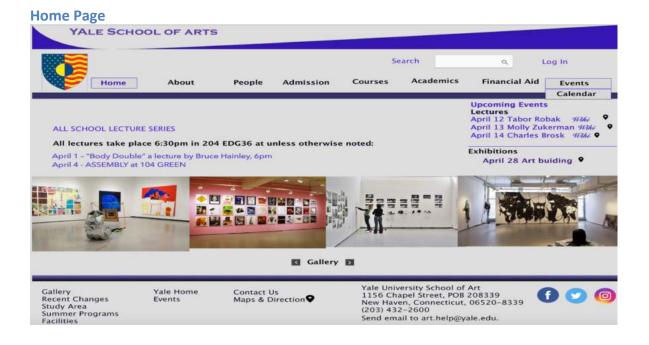
Below is my paper sketch as start-up I did the same for each page.



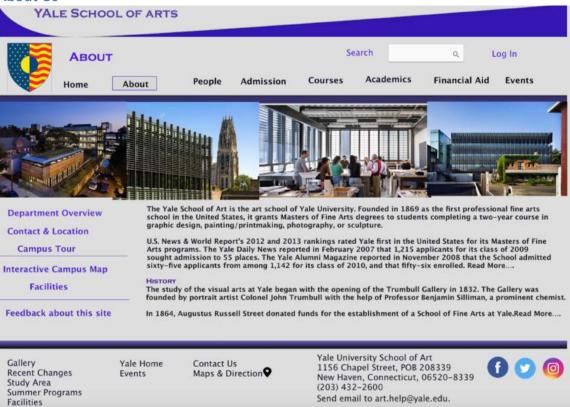
## 4.2. Sketch (high-level fidelity)

For this part of testing I used the open source software Sketch (<a href="https://www.sketchapp.com/">https://www.sketchapp.com/</a>) that is used for prototype design on a Mac system. The tool gives many unique tools and collaborative choices to design a prototype.

Below you can find the screenshots of the final prototype design I created. I selected seven pages and created the prototype keeping the requirements and analysis I got from initial survey and expert review mentioned above. To keep the pages consistent all the pages used the same background color and each page text font and color was consistent. Each page included the top navigation with School logo and name on each page. Also search bar was added on top right corner giving user a quick option to do search. I also included footer section on each page and it was consistent on each page. The footer contained the address for the college and their social media links. It also included link to maps and contact us making easier for visitor to contact college.



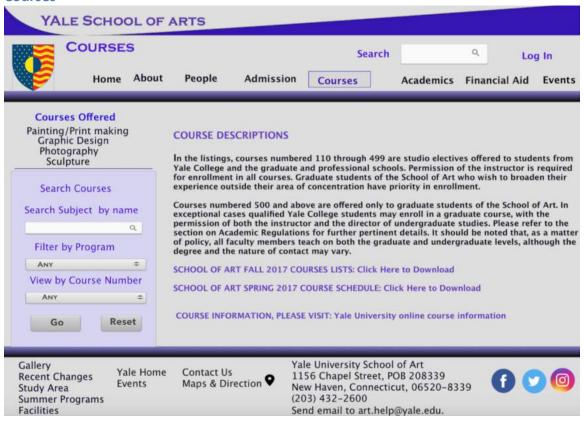
#### **About Us**



#### Admission



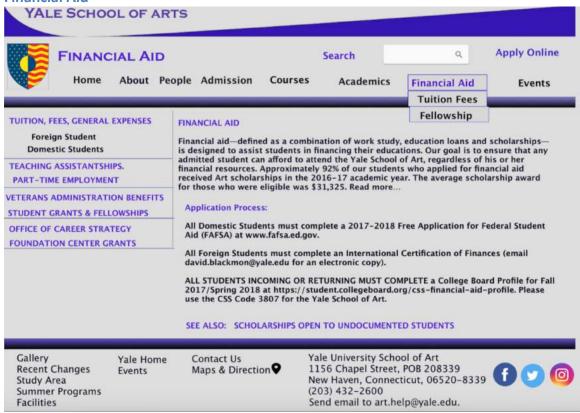
#### Courses



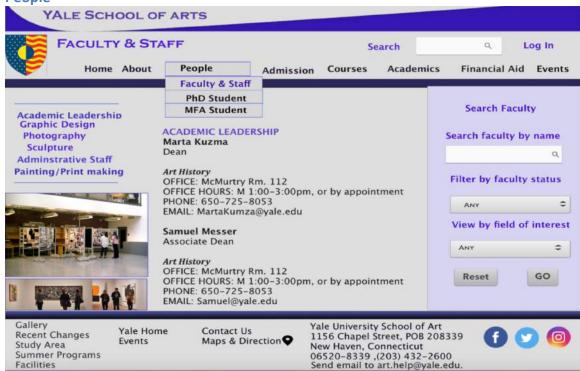
#### **Academics**



#### **Financial Aid**



#### **People**



#### 5. Final Evaluation

#### **5.1.Final Survey**

Once the prototypes for new pages were ready I send out the same survey and the box link to the folder where I kept all the final prototypes design. In order to obtain better comparisons I selected the same group of people that I distributed the initial survey. The results show a great improvement to user experience.

The survey results showed me following results;

- 1. 94% of responses rated site meeting there needs with content and clear view.
- 2. 96% of responses showed they were able to search for the content they were looking for.
- 3. 80% of people found the pages appealing with background color and text color more enjoyable and readable.
- 4. Over 90% of responses showed the graphics used on the site were more pleasing compared to original site
- 5. The idea of search options on course and People pages gave positive feedback.
- 6. The average rating for the prototype compared to original site was 7 out of 10
- \* Survey results with questions are attached in appendix H.

#### **5.2.Final Expert Review**

Similar to Initial Expert review defined in section 3.2 I again asked the same four volunteers to come in and take the survey one more time. I did inform them this time they will need to look at the prototype design and answer the question. I asked them to imagine the prototype as it was a real working website with information as needed present on the respective pages. They were asked to consider only the seven pages prototype and when answering the questions compare them to original site.

Same scale of rating and questionnaires were used here and we can see the ratings did improve significantly this time. All the four volunteers did rate the prototype more enjoyable and favorable to navigate. The task questionnaires showed volunteer were able to find the prototype navigation options and options more favorable compared to original site.

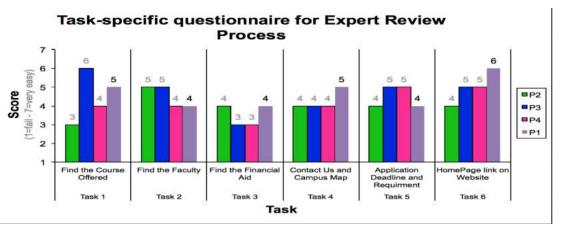
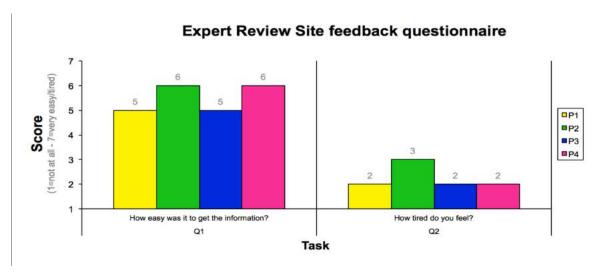
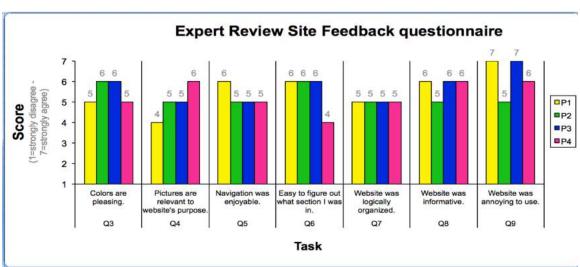


Fig: Final task specific Expert Review Response.





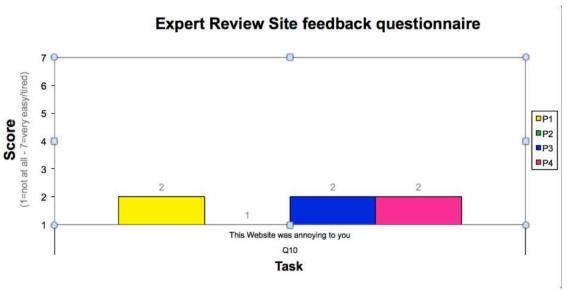


Fig: Final Site feedback Expert Review Response.

## 6. Result Comparison

#### 6.1 Survey

Responses showed participants were more easily to see the content on the page. Feedback showed pages are looking more uniformed with background images less painful. Responses also showed adding search option and top navigation proved that it was more favorable for user experience. Below is the comparison of initial and final survey and it shows users were more pleased with the prototype and had less issues compared to original pages. I was able to see over 50% improvements on the site experience

	Average Score (out of 5)			
	Initial Survey Results	Final Survey Results		
Question 1	1.5	3.9		
Question 2	1.4	4.2		
Question 3	1.4	3.9		
Question 4	1.3	3.9		
Question 5	1.6	4.3		
Question 6	1.3	4.1		
Question 7	1.4	4.1		
Question 8	1.4	4.2		
Overall out of 40	11 (28 %)	33 (82%)		

#### **6.2 Expert Review**

The results were more favorable with volunteer expressing the site was much better compared to original site and more favorable. The experience this time was much easier and they were able to complete the task quickly.

For Task specific questionnaire I saw over three times improvement. The volunteer response showed the site was very easy to navigate and the content was more clear and precise.

	Average Response (maximum 7)					
	Task Specific Feedback					
	Initial Expert Review Final Expert Revi					
Task 1	1.25	4.5				
Task 2	1.75	4.5				
Task 3	2 3.5					
Task 4	1.5 4.25					
Task 5	1.75	4.5				
Task 6	2.75	5				
Overall Average	1.83	4.375				

Satisfaction data questionnaire also shows there was great improvement and satisfaction with site navigations. The volunteer were satisfied with the prototype. Below we can see these comparisons.

	Average Response (maximum 7)					
	Site Feedback					
	Initial Expert Review Final Expert Revi					
Q1	2	5.5				
Q2*	6.5	2.25				
Q3	1.5	5.5				
Q4	1.75	5				
Q5	1.75	5.25				
Q6	1.25	5.5				
Q7	1	5				
Q8	1.35 5.75					
Q9	3	6.25				
Q10*	6.25	1.75				
Overall Average	2.625	4.775				

<sup>\*</sup> Smaller values is preferred value

## 7. Future Scope

We can implement the design moving to implementation phase and perform further evaluation for better user experience.

In future, more features can be added according to the evaluation like

- 1. Dynamics look and feels in the web pages can be added.
- 2. Better Response option can be added for timely task performance.
- 3. Categorization of data and information can be improved.

Several Tests can be performed for further enhancements: -

- 1. Task oriented tests
- 2. A/B Testing.
- 3. Competitive Usability testing with other sites.

#### **APPENDIX**

## **Appendix A: Introduction to the Expert review process**

Thank you for your time helping me. I am conducing a usability evaluation on the Yale School of Arts web site for a class project. Usability evaluations seek to determine if people can easily and quickly use a web site to accomplish their own tasks. Evaluations are designed to solicit feedback from participants, focusing on areas of concern. An evaluation typically involves several participants, each of whom represents a typical user. Once all evaluation sessions are completed, we compile the feedback received from each participant, along with our notes. We then prepare a final analysis report.

This evaluation is intended to measure how easy it is to use the Yale School of Arts web site, in addition to comparing it to other two similar kinds of websites. For each sites you test, you will asked to perform 3 to 4 tasks following an evaluation scenario. In the beginning, you will have a few minutes to get used to the site, after that you will be asked to perform various tasks, some are more specific than others. Remember that you are evaluating the website information, interface and interaction. You are not being evaluated in any way. Take as much time as you need. It does not matter if you complete any of the tasks. We expect that it will perhaps take about one hour to complete the tests of all three sites.

During the test, the study administrator will be sitting next to you, to observe how you use the sites. You will be encouraged to work without guidance; nevertheless, you may ask a question when anything is unclear. Since the purpose is to understand what makes it easy or difficult to use, we would like to know what you are thinking while you are browsing the sites. So during the test we will ask you to verbalize your thoughts ("think aloud") or say whatever comes to your mind, such as something that frustrate you, something that you like, and something that surprise you. Please think aloud as much as possible because the more you speak, the more data we can collect.

As a demonstration of our appreciation for your voluntary participation in this study, we would like to give you a sample of candies for you enjoy.

In the report of this testing, we will not use your real name at all. All information we collect concerning your participation in the session is confidential. Further, all the results will be discussed in terms of the usability of the sites, rather than your skills.

## **Appendix B: Background questionnaire for Expert review process**

Thank you very much for participating in this research study. Before you start your usability testing, please answer the following questions. This information will be kept strictly confidential. Please select the appropriate answer.

Ι.	PARTICI	PANT INFORMA	ATION				
	Age: Gender:	18 or younger	19-24 Female	25-30	31-35	36 or o	lder
		ccupation: stud		faculty	staff	other	
4-	If you are	a student, plea	se check all	that apply			
	College	Under-gra	iduate	Graduate so	chool >	Master stude Ph.D. stude	•
5-	Please sta	te your field of	study/resear	rch:			
II.	Сомри	TER KNOWLEI	<b>O</b> GE				
1-	About ho	w long have you	been using	the Internet	?		
		n do you access you use the Inte			J	Weekly	Less
	nail .	Research	Shopp			please specify	

## **Appendix C: First Impression questionnaire for Expert review process**

This is an exploratory exercise. Please take 2-3 minutes to just browse the web site. Please jot down your first impressions of this web site in the space provided below. Please be honest in your responses, your objective opinion will only support the purpose of this project.

1. What was your first impression on this web site?
2. Who is this site for?
3. What does this site offer to the users?
4. Does it appear that this site would have information that you might want or need

## **Appendix D: Tasks-specific questionnaire for Expert review process**

Pretend that you are applying for the program in this college. You need to know the details of the application process, deadlines, learn more about the school program and faculty. Locate the following information on the web site then complete the survey below. Be sure to note if you were unable to locate any of the information requested.

- 1- Find the courses offered for the undergraduate and in graduate program in design.
- 2- Determine if it is possible to search the faculty easily.
- 3- Find the financial aid for the design program.
- 4- Finding the contact and campus map.
- 5- Find the application deadline and application requirement for various program offered.
- 6- Find the link back to the home page.

Rating: Not at all (1) – hard (2) – unclear (3) – not so easy (4) – manageable (5) – easy (6) – very easy (7)

1-	Find the co	ourses offere	d for the und	dergraduate/	graduate pro	gram in des	ign.
	1	2	3	4	5	6	7
2-	How easy i	is it to find the	he faculty?				
	1	2	3	4	5	6	7
3-	How easy i	is it to find the	he Financial	Aid for the	design prog	ram?	
	1	2	3	4	5	6	7
4-	How easy i	is it to deterr	nine the con	tact and can	npus map for	r the graduat	te design
	program?						
	1	2	3	4	5	6	7
5-	How easy	is it to find	the applica	ition deadlir	ne and appli	cation requi	irement for
	various pro	grams?					
	1	2	3	4	5	6	7
6-	How easy	was it to find	d the homepa	age link on t	his website?	)	
	1	2	3	4	5	6	7

## **Appendix E: Expert Review Site feedback questionnaire**

After browsing this website for Tasks 1, please rate your satisfaction regarding the following aspects of the site you have just finished working with by circling the appropriate number.

1.	How easy	was it to get	the information	tion you we	re looking fo	r?	
	1	2	3	4	5	6	7
2.	After work	ing with this	site how tir	ed do you f	eel?		
	1	2	3	4	5	6	7
3.	The colors	on this webs	site are pleas	sing.			
	1	2	3	4	5	6	7
4.	The picture	es on this we	bsite are rel	evant to this	website's p	urpose.	
	1	2	3	4	5	6	7
5.	Navigation	throughout	this site was	enjoyable.	I		
	1	2	3	4	5	6	7
	_						
6.					e I was locat		
	1	2	3	4	5	6	7
7.	This websi	te was logic					
	1	2	3	4	5	6	7
_	· ·						
8.		is easily read					
	1	2	3	4	5	6	7
_							
9.	_	te was inform					
	1	2	3	4	5	6	7
4 ^							
10		te was anno	•				
	1	2	3	4	5	6	7

## **Appendix F: Survey questionnaire list**

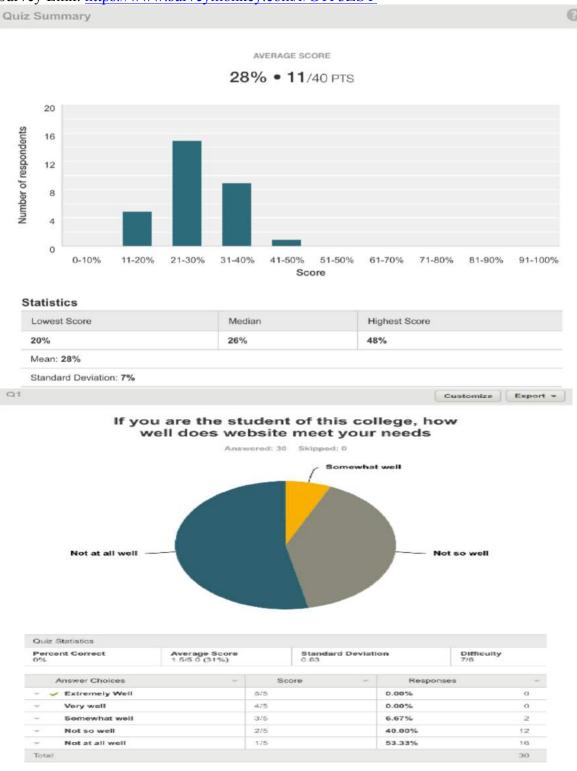
- 1. If you are the student of this college, how well does website meet your needs
  - a. Extremely Well
  - b. Very well
  - c. Somewhat well
  - d. Not so well
  - e. Not at all well
- 2. How easy was it to find what you were looking for on our website
  - a. Extremely Well
  - b. Very well
  - c. Somewhat well
  - d. Not so well
  - e. Not at all well
- 3. How visually appealing is website
  - a. Extremely appealing
  - b. Very appealing
  - c. Somewhat appealing
  - d. Not so appealing
  - e. Not at all appealing
- 4. How easy is it to understand the information on our website?
  - a. Extremely easy
  - b. Very easy
  - c. Somewhat easy
  - d. Not so easy
  - e. Not at all easy
- 5. Clicking on links takes me to what I expect
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
- 6. The graphics on this web site are pleasing.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
- 7. How easy was it to understand the titles on each page you accessed?
  - a. Extremely easy

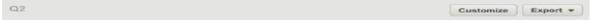
- b. Very easy
- c. Somewhat easy
- d. Not so easy
- e. Not at all easy
- 8. Did it take you more or less time than you expected to find what you were looking for on website
  - a. A lot less time
  - b. A little less time
  - c. About What I expected
  - d. A little more time
  - e. A lot more time
- 9. Is there anything missing on this site?
- 10. If you were to review website what score would you give it out of 10?



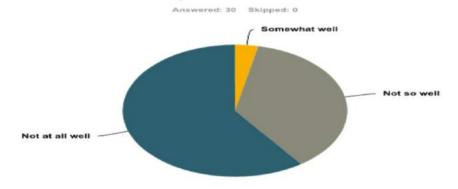
## **Appendix G: Initial Survey feedback**

## Survey Link: https://www.surveymonkey.com/r/GTF3ZSY

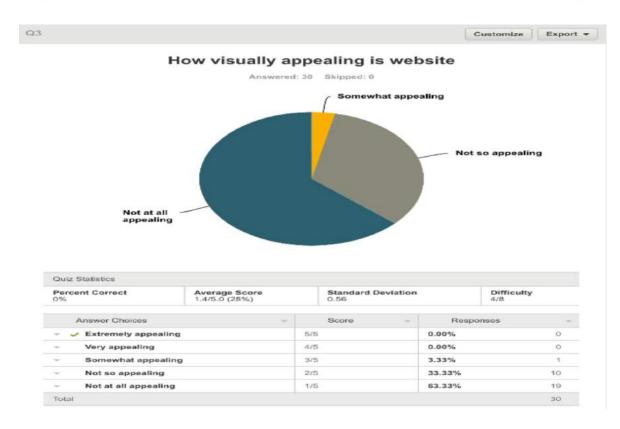


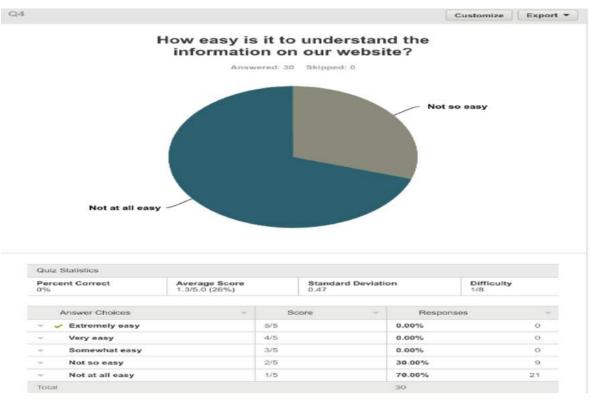


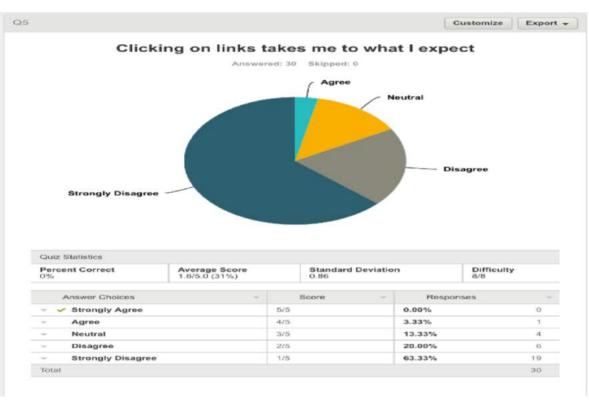
# How easy was it to find what you were looking for on our website

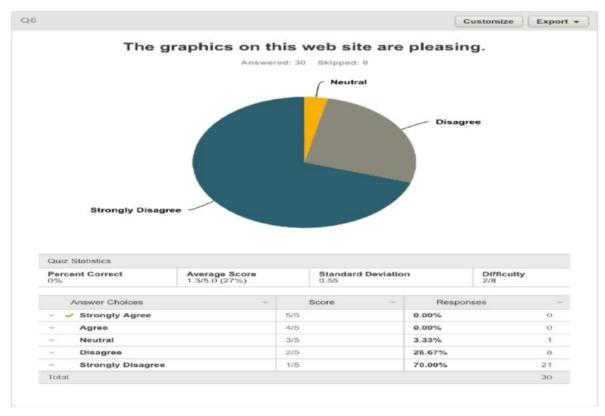


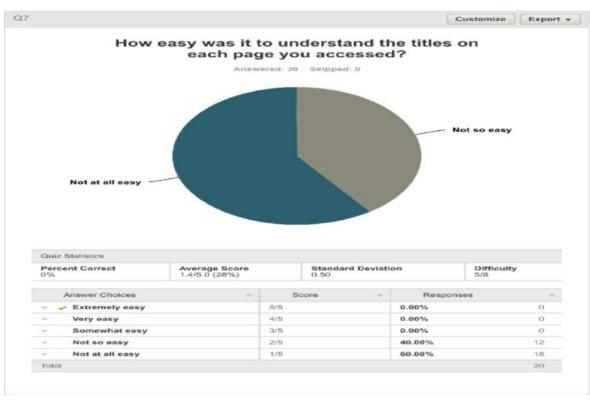
Percent Correct )%	Average Score 1.4/5.0 (29%)		Standard Deviati 0.57	on	5/8
Answer Choices	100	Soc	re -	Responses	
<ul> <li>Extremely Well</li> </ul>		5/5		0.00%	0
Very well		4/5		0.00%	0
Somewhat well		3/5		3.33%	1
Not so well		2/5		36.67%	11
Not at all well		1/5		60.00%	18

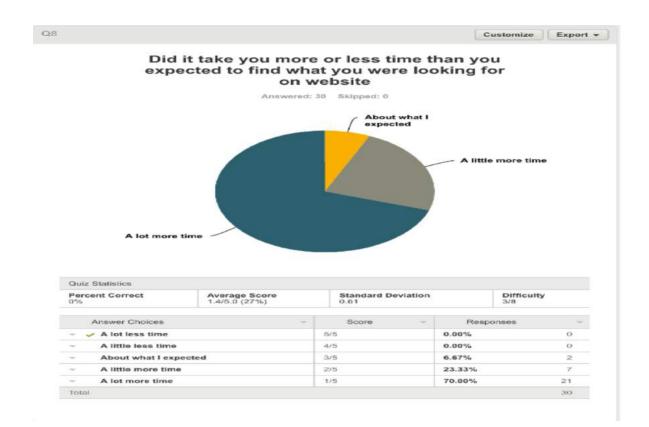




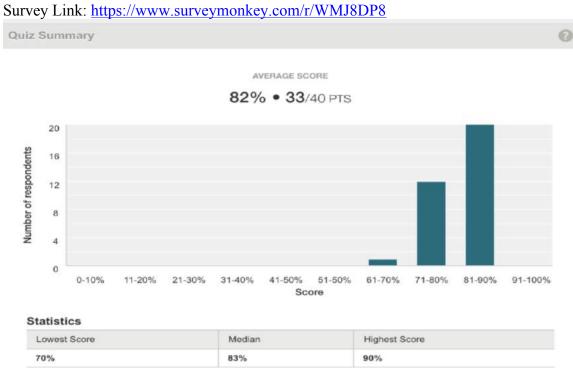




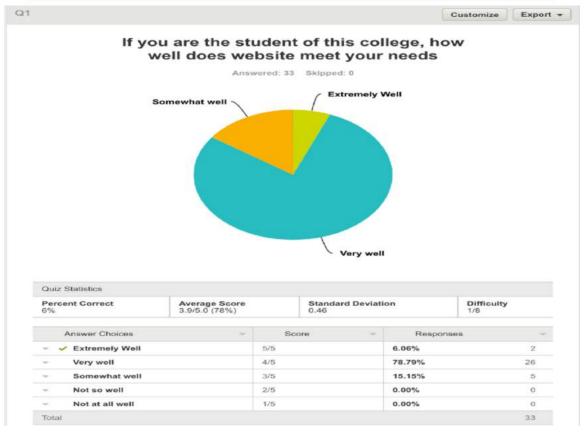


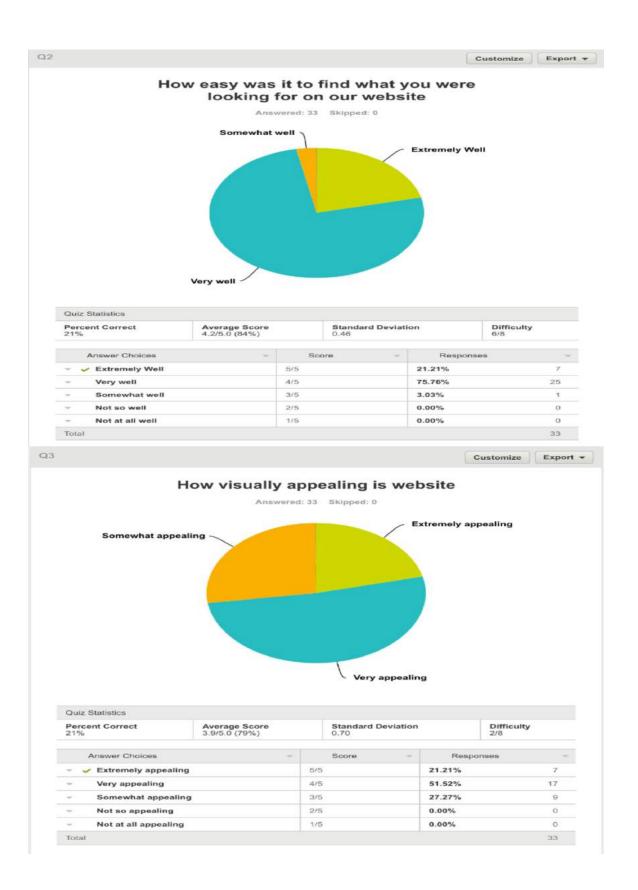


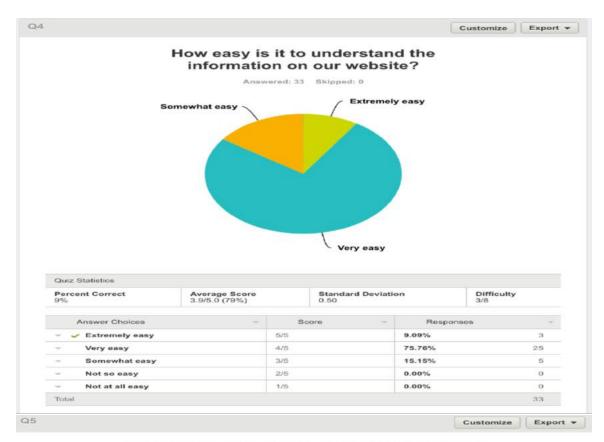
## **Appendix H: Final Survey feedback**



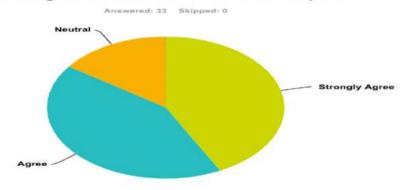




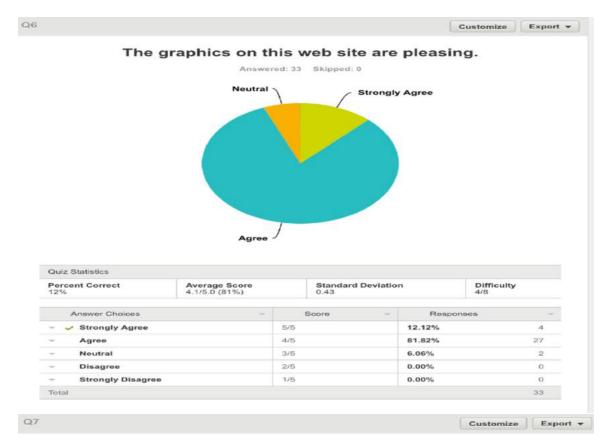




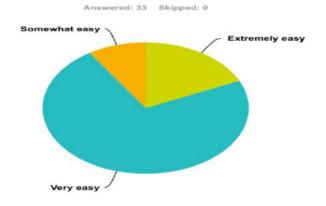
#### Clicking on links takes me to what I expect



Percent Correct 42%	Average Score 4.3/5.0 (85%)		Standard 0.72	Deviatio	n	8/8
Answer Choic	es ~		Score	-	Response	15
<ul> <li>Strongly A</li> </ul>	gree	5/5			42.42%	14
Agree		4/5			42.42%	14
<ul> <li>Neutral</li> </ul>		3/5			15.15%	5
Disagree		2/5			0.00%	0
- Strongly D	isagree	1/5			0.00%	0



## How easy was it to understand the titles on each page you accessed?

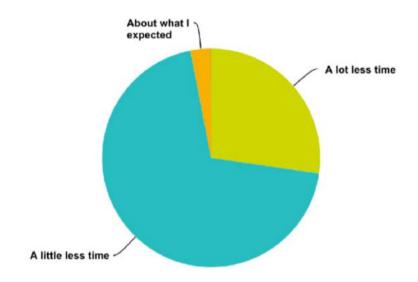


Percent Correct Average Score 18% 4.1/5.0 (82%)		Standard Deviation 0.52		on Difficulty 5/8	
Answer Choices -		Score -		Respons	es
<ul> <li>Extremely easy</li> </ul>		5/5		18.18%	6
Very easy		4/5		72.73%	24
Somewhat easy		3/5		9.09%	3
Not so easy		2/5		0.00%	0
Not at all easy		1/5		0.00%	0
Total					33



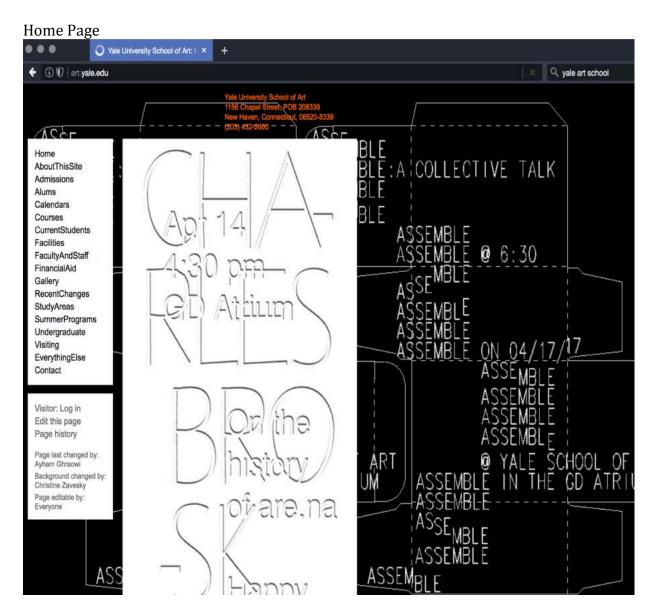
# Did it take you more or less time than you expected to find what you were looking for on website

Answered: 33 Skipped: 0

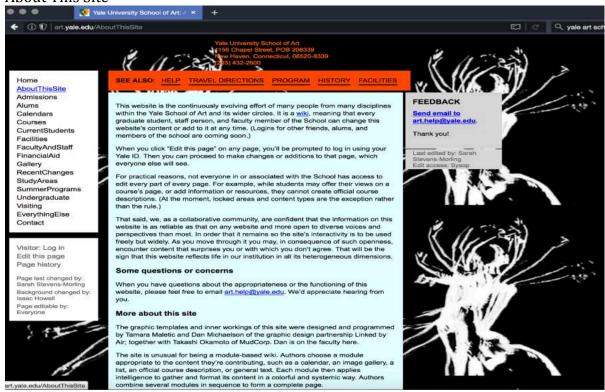


Percent Correct         Average Score           27%         4.2/5.0 (85%)		Standard Deviation 0.50		Difficulty 7/8	
Answer Choices		Score	~	Responses	
✓ A lot less time		5/5	27	.27%	9
- A little less time		4/5		.70%	23
About what I expected		3/5		13%	1
A little more time		2/5		00%	0
A lot more time		1/5		10%	0

## **Appendix I: Screen Shots of original website pages**



#### **About This Site**



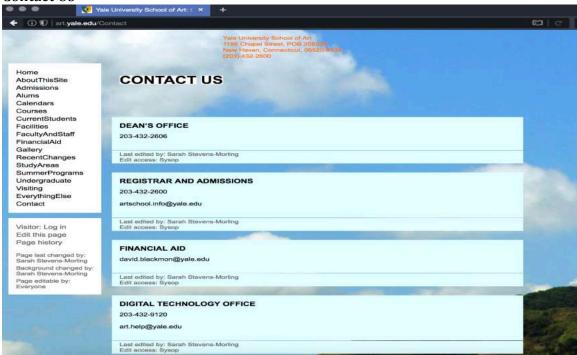
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#### Courses



#### Contact Us



#### Financial Aid

