
The Office of International Student and Scholar Services (ISSS), is the administrative office that serves international students, research scholars, and visiting professors at the University of North Carolina at Chapel Hill. ISSS spent the fall 2013 – spring 2014 academic school year redesigning their website using user-centered design methodologies with the assistance of a SILS graduate student. User-centered design is an approach where the needs and requirements of the users are put in focus throughout each stage of the design process. This study describes how user-centered design principles were incorporated into the final design of the website.

In addition, this study examines to see if incorporating user-centered design methodologies in the redesign of the website can allow for international students to successfully complete common tasks on the website at an above average user task completion rate of 80% or above. The study tested the task completion rate by conducting a series of user-testing sessions on the redesigned ISSS website with eight UNC international students.

Headings:

Web design

User interface design

Usability study
USING USER-CENTERED DESIGN METHODOLOGIES TO REDESIGN THE OFFICE OF INTERNATIONAL STUDENT AND SCHOLAR SERVICES WEBSITE

by
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Approved by

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INTRODUCTION

The Office of International Student and Scholar Services (ISSS), is the administrative office that serves international students, research scholars, and visiting professors at the University of North Carolina at Chapel Hill. The office assists these individuals by doing such tasks as issuing visa related documents, counseling individuals on immigration matters, and conducting various types of orientation and cultural programs. Currently, the office serves an estimated 3,200 students, scholars, and visiting professors from over 100 different countries around the world.

For information rich organizations such as ISSS, having a presence on the web is no longer a luxury, but a necessity. In fact, the web now serves as a primary source of information for individuals. According to the Pew Research Center, 85% of American adults use the internet, of which 78% use the internet to get information about services they are interested in learning more about (Pew Research Center, 2013).

The popularity of the web has also contributed to the rise in user expectations of websites. Users expect faster, richer and more up-to-date web applications (Jakober, 2012). Therefore, it is important that the ISSS website be a place where questions can be answered, resources can be gathered, and where important updates can be displayed in an informative, easy to understand, and engaging manner.
The incorporation of concepts taken from user-centered design disciplines such as visual design, system analysis, and human computer interaction has been suggested to add value to websites (Nielsen, 2007). According to the Usability Professional’s Association, user-centered design is defined to be “an approach to design that grounds the process in information about the people who will use the product. User-centered design processes focus on users through the planning, design and development of a product” (Usability Professionals’ Association, n.d).

It is often difficult for university departments such as ISSS to incorporate and test user-centered design concepts on their website because there is often a lack of technical skills, design expertise, and time among staff members. However, because ISSS is located at a major research university, there is ample opportunity for ISSS to obtain assistance from knowledgeable students, faculty, and staff, located in other departments on campus, in incorporating and testing these principles on the ISSS website. ISSS is a particularly interesting organization to conduct this study with because its users represent over 100 countries around the world, and thus the website must appeal to a broad audience.

BACKGROUND

The old ISSS website had proven to be ineffective in several ways. Resources on the website were not easy to locate, the site was difficult to maintain, and the site as a whole was not attractive.
A poor website led to a number of problems for the office such as an increased workload for the staff since individuals called or visited the office for questions that could easily be answered online. In addition, international student, scholars, and visiting professors were frustrated with not being able to locate information that they needed in an easy and quick manner. Results from a spring 2013 UNC international student focus group report showed that several international students expressed that they found the process of finding and using resources to be challenging and that they desired that resources be presented to them in a checklist and or consolidated format (Heiser, 2013).

At the beginning of the 2013 – 2014 academic year, ISSS expressed interest in redesigning their website because users had expressed dissatisfaction with the current site. Based on the positive experiences that certain organizations have had with using a user-centered design approach in the redesign of their website (Nielsen, 2003), it was suggested that ISSS seek the assistance of the campus community in incorporating user-centered design practices on their website. ISSS contacted the School of Information and Library Science and was able to find a graduate student in the Information Science
program to help redesign the website using user-centered design principles. The graduate
student spent the academic year redesigning the ISSS website.

PURPOSE

Thus, the purpose of this project was two-fold. One was to redesign the website using user-centered design principles, and the second purpose was to see whether incorporating these user-centered design principles on the ISSS website allows users to achieve an above average task completion rate during usability testing of the website. An above average task completion rate is defined to be a task completion rate of above 78%, since 78% is considered to be the average task completion rate (Measuring Usability, 2011). For simplicity’s sake, the goal will be to achieve a task completion rate of 80%. The task completion rate is an important measure because most websites are designed so that users can complete various tasks on the website. Thus, the task completion rate will be used to measure the success of the incorporation of user-centered design principles on the website.

RESEARCH QUESTION

Does incorporating user-centered design principles in the redesign process of a website help users obtain an average task completion rate of 80% or above?
LITERATURE REVIEW

Taking a look at past research studies involving the goal of creating websites that are user-centric is an important way to gain a better understanding of the various viewpoints and concepts that have been raised in relation to developing a user-friendly website. In the subsequent paragraphs, literature dating back to the early 2000s to the present will be reviewed concerning user-centered design practices for websites. The literature reveals that factors such as the method one uses, how information is organized, the content management plan, aesthetics, and user design needs are fundamental to redesigning a website that will increase the satisfaction of users.

Methods to Redesigning a Website

Redesigning a website takes a lot of effort and planning. Organizations have to plan their redesign in a way that is least disruptive to users, balances the needs of stakeholders, and follows a timeline that is feasible to live up to. As a result, the approach and strategy an organization decides to undertake is critical to the success of a website redesign project. The literature discusses the importance of adopting an approach that is feasible, that allows for user feedback, and allows for the website to be easily modifiable.

Building a website through an iterative process that incorporates user testing has been a theme echoed throughout the literature. Many readings bring up the idea of using
the Agile methodology when developing a website. The Agile method proposes that software be built in an iterative and incremental approach through the use of rapid and reactive prototyping (Braun, 2005). According to Braun, this type of approach is suitable for the creation of a user-centered website because rapid prototyping allows for constant user feedback, the development of well-defined goals, and allows for exploration before one fully commits themselves to a certain idea (2005). It is believed that the Agile framework is a natural fit for user-centered design because user-centered design practitioners can work hand in hand with developers to ensure that the end product caters to needs of the user (Williams & Ferguson, 2007).

Reviewing website redesign case studies, one sees that organizations that have incorporated user testing throughout the design process were able to create a website that truly reflected user preferences rather than a website that was based on assumptions about the user. (Becker & Yannotta, 2013). Jeff Wisniewski mentions that certain organizations such as libraries often favor completely tearing down their existing site and rebuilding from the ground up. She argues that this approach is oftentimes impractical because it requires organizations to devote more time and energy to the project than they have and can be disruptive to the user since the user will suddenly have to adapt to the new website, when they might be used to accessing the website in a certain way (Wisniewski, 2008). Thus, based on the literature one can see that it is recommended that one adopts an adaptable and user-centric approach when redesigning a website.

*Information Organization*

It is important to review the literature to learn effective strategies for how to organize web content since how content is organized is an instrumental factor in
determining how easily the user can locate resources on a website. Organizing information on a website can be tricky because each website has unique requirements based on its users’ needs. Thus, the literature places an importance in taking the user into consideration when planning the content management strategy of the website. Users have been found to be task oriented and believe that the categories used to organize information on a website should map to their goals and tasks (Davidson, Bernhardt, McLeo, Rife, & Grabil, 2008). Thus, organizations should create user profiles to better understand the types of users that will be visiting their website (Proctor, Vu, & Salvendy, 2002).

A website’s navigation bar, use of hyperlinks, categories, and tags are often used to organize web content. The navigation bar is used to help steer the user to the information they are looking for. A website’s navigation has often been found to be a root of most major web usability problems since improper navigation can result in the user getting lost on the site and not finding the resources they are looking for (Rahmat & Zulzalil). Therefore, it is important that the navigation of the website be highly visible to the user and that navigational text avoid jargon (Proctor & et al., 2008). In addition, the literature cautions that users can feel frustrated when they encounter broken links and outdated information since accuracy and the timeliness of information on the website is critical to the user (Titoko & York, 2005). The importance of proper placement of objects in a website has also been emphasized in the literature (Kothainayaki, Sivakumaren, & Gopalakrishnan, 2012).

It is also important for organizations to be cognizant of the types of information that are made available on an organization’s website. The literature advocates that organizations conduct a content inventory when redesigning their website. A content...
inventory can allow an organization to uncover patterns, spot any inconsistencies, outdated information, etc. on the site (Davidson et al., 2008). In addition, a content inventory can allow an organization to easily share their findings with other staff, learn about who is responsible for what content, and provide an overview of the site’s content problems (Blakiston, 2013).

Content Management Plan

Once a website’s content has been organized, the literature stresses the importance of creating a sustainable content management plan. Titoko and York advocate a less is more approach by avoiding unnecessary “bells and whistles” so that only the most important pieces of information on a site need to be updated (2005). Because many organizations are unable to have a dedicated staff that can be responsible for managing the website, it is important to adapt a distributed and collaborative approach to maintaining the website since this approach allows for information to be updated in a timely fashion by the most knowledgeable individuals in an organization (Slater, 2008).

Aesthetics

One of the most important elements to consider when designing a website is the overall aesthetic of the site. In fact, a study conducted showed that adding some type of aesthetic treatment to content on a website increases the perceived credibility of the website for the first few seconds that a user is on the webpage (Robins & Holmes, 2007). Other literature similarly state that the overall look of the website is an important factor in determining how a user will perceive the organization (Thorlacius, 2007).

The literature shows that the design of the website should be simple and consistent. The website should require a minimal amount of effort, not overwhelm the user with too much information, should provide metaphors to help orient the user to
where they are on the site, and should manage guess work (Guenther, 2004). The design of a website should be catered to the site’s different audiences. An example was provided of how Nike’s website is organized into sections that each contain different design elements based on a section’s intended audience (Thorlacius, 2007).

The literature also discusses the use of color as being an integral part to the overall look of a website and recommends that color choices be made so that content is readable, is accessible, and that important points are highlighted (Holtze, 2006). From the literature, we can see that a website’s design choices should be kept simple, be purposeful, and be mindful of the user’s needs.

User Design Preferences

When designing a website that is user-centered, one should take steps to learn about how to cater to the design preferences of the user. In this study, the focus will be on international students, so it is important to look at the literature to see how culture can affect website design preferences. In the study Gevgoryan and Manucharova conducted, it was found that users from collectivist societies may prefer website features such as blogs, chat rooms, etc. (2009). High context societies in a different study were found to enjoy having animation, images promoting a collectivist society, an exploratory navigation, and many sidebars on their web pages (Wurtz, 2006).

Societies that display a high power distance appreciate website features that provide a sense of authority such as an organization’s vision statement (Gevorgyan & Porter, 2007). In addition, it is believed that high power distance societies might prefer websites that provide information organized in a hierarchy, whereas low level power distance societies might prefer that the website be organized in a fashion where resources can easily be found off the homepage (Luna, Perachio, & de Juan, 2002).
The literature also mentioned the importance of being cognizant of graphics used on websites such as icons and gave an example of how a mail icon could be interpreted in different ways depending on the user’s culture since different cultures can have different symbols for mail (Amant, 2005). A study that compared university websites from different countries had some interesting findings that further confirm how certain design features such as the page orientation, color scheme, and use of graphics can differ among the countries (Callahan, 2006). Thus, the literature shows that when one is designing a website that targets different cultures, one should be aware that cultural differences should be taken into consideration when designing a webpage.

Based on the literature review one can see that the methodology one adopts, how information is organized, the content management plan, the aesthetics, and user preferences are important to redesigning a website that satisfies and fulfills user needs. The information from the literature review was incorporated into formulating a plan to complete this study.
METHODS

The research question was addressed by using a mixed-method approach, utilizing both quantitative and qualitative approaches. The qualitative aspect of the study provided in-depth user insight into the website during the redesign process, whereas, the quantitative aspect of the provided measurable outcomes to the usability testing phase of the study.

REDESIGN PROCESS

The first step of the study was to redesign the ISSS website using user centered design principles. User-centered design principles was incorporated into the design phase of the new website through several ways.

Selecting a Platform for the Website

A major decision of the redesign process was to select a platform to build the website upon. The designer felt that it was important to keep the needs of ISSS staff members in mind since the staff members would ultimately be responsible for maintaining the site. Many of the ISSS staff members lack technological skills and also do not have the time to invest and learn a highly technical system. Based on staff needs, it was decided that a content management system, with technical support, would need to be chosen as a basis to build the website upon.
As a result, the web.unc.edu platform was chosen. The web.unc.edu platform is a service provided to the UNC community that assists with the creation of Wordpress websites. Wordpress is a content management system that allows multiple users to update information in a user friendly manner. The web.unc.edu service has a staff of individuals who are well-versed in Wordpress technology, who help ensure that the latest version of Wordpress is installed and answer any technical questions asked by UNC users.

The designer selected the Avada theme offered by Web.unc.edu. The theme was selected because it provided ample customization opportunities and features. In addition, the theme is responsive, which is particularly important for the ISSS website since the website will be accessed by individuals all around the world using various devices.

**Personas**

Once the platform for the website was built, the next step was to develop personas for the primary users of the website: current students, prospective students, current scholars and prospective scholars were created (Appendix D). These personas helped give the redesign process a personal touch as each persona was given a name, age, occupation, a story that provided context to what they would use the website for, and an image. Throughout the redesign phase of the website, the personas were consulted and provided a mechanism of checking to see if the website was meeting the needs of the users created through the personas.

**Task Analysis**

A task analysis was also conducted to examine common tasks that users would need to complete on the website. A task analysis for prospective students, current students, and current scholars were created (Appendix H). A task analysis for prospective scholars was not created because the process is similar to prospective students. A task
analysis takes one common task for each type of user and outlines this task into a series of sub-tasks. The task analysis helped provide focus to the redesign process because the outlined tasks provided a deep understanding of what type of content and structure would be needed to support common tasks for various users.

Content Inventory

Third, a content inventory was conducted on the old ISSS website to assess what resources are currently made available on the website and how they are organized. The content inventory was very important and provided a lot of insight. This content inventory was used to figure out an organizational schema for the website (Appendix I). Based on the content inventory, the left sidebar content of the page was determined. For example, after doing a content inventory of pages geared towards prospective students on the old ISSS website, it was determined that the information could be broken down into a series of steps that students could follow.

Iterative User Tests

A series of informal user tests were also conducted throughout the redesign process. These tests asked users to casually browse through the site and provide their honest opinions on certain components of the site. In addition, sometimes users were asked to complete a simple task to gauge whether the information was being organized in an effective manner. One profound finding from these informal tests were that the student employment section should be its own separate menu item in the navigation bar. In previous draft versions of the site, the student employment section was contained in the current students section. However, users found that this organizational structure was unnecessarily complex and long. In addition, many of the users mentioned that they often
visited the website for employment related questions. Thus, it was decided to create a separate student employment section on the website.

MAJOR DESIGN DECISIONS

During the redesign process several design decisions had to be made related to the layout of pages on the site such as the homepage, subpages and resources page, the structure of the navigation menu, the color scheme of the site, etc.

Homepage

The homepage is the place that provides users with the first impression of the website. Thus, a lot of time and thought was given to determining the design needs of this page. The staff wanted an easy way to display announcements on the homepage and wanted to include text on the page that introduced users to ISSS. After going through various options, it was decided to put the announcements on a slider. The slider would contain relevant images and then a text overlay on top of each image that includes the announcement text. A slider allows the opportunity to display a lot of information and images in a compact manner on a webpage, while also providing visual interest to the page. Beneath the slider, a paragraph that contains introductory information on ISSS was included. Below one can see a wireframe of the layout of the homepage.
Figure 2: Homepage Layout
A considerable amount of effort was given in determining the layout of all subpages. Two types of layout were proposed by the designer. The first layout was a three column layout. In this type of layout, the left sidebar is where the main navigation of a section would be placed. The main content area would be in the middle of the page and the right sidebar would contain any secondary links that apply to a particular page.

The second type proposed layout was the two column layout. The two column layout would be comprised of a left sidebar that would contain a particular section’s navigation.
menu and to the right of this sidebar would be the main content area, where the body of the page would be placed.

Figure 4: Subpage Layout 2
In the end, the two column layout was chosen for two major reasons. First, Ockham’s Razor states that given a choice between two functionally equivalent designs, the simplest design should be selected. A three column layout can be confusing and distracting to the user since they are surrounded by links to the right and left of the page. The content might overwhelm and frustrate the user. A two column layout is simpler, easier to understand, and cleaner (William, Holden, & Butler, 2010).

Second, a three column layout requires users to exert more mental effort in order to process the content on the site because a three column layout has more information on the page and can make the page feel more cluttered. Putting more cognitive load on the user would impact how easily users find the content and complete tasks on the website (William, Holden, & Butler, 2010). Third, cursory user tests with users found that many of the users found the three-column layout confusing and preferred the simplicity of the two-column layout. Thus, a simpler two column layout was chosen.
Resources Page

The ISSS staff was very concerned about creating a user-friendly page that displayed resources for the international community at UNC. Other departments at UNC were also particularly interested in the design of this page because they wanted a place to point their international student and scholars to informative resources that can assist them with adjusting to life in the US. There were two proposed designs for the resources page. In the first layout, the various categories of resources were featured using a tab layout. Within each tab, there was a list of sub-categories that list links to the various resources. In this layout, different colored icons would be used to represent the various resources.

Figure 5: Resource Layout 1
In the second layout, each resource category has its own page and one can access these pages using the left sidebar navigation. Each resource category page features subcategories that would use unordered lists to display links to resources.

Figure 6: Resource Layout 2
The first layout was chosen for several reasons. First, when elements are arranged in a straight line, they are perceived as related. The tabbed layout, instantly provides a sense of cohesiveness to the various resource categories. It allows the resources section of the site to look more like a tool-kit, rather than a series of pages. In addition, a top blue border would be displayed on the active tab, whereas the inactive tabs would have a grey background color. This was thought to help differentiate what resource is being viewed.

Second, tabs allow for related information to be grouped together in an easy to understand user interface. Tabs allow the user to easily view different categories of resources, without worrying about issues such as a new page loading. Third, using icons in the tabbed page layout, allows for the page to be more visually appealing and allows for users to easily recognize what a link is about. For example, a link to the housing page at UNC would use an image of a house as the icon. Using icons, is particularly important, because the website will be used by an international audience who have varying degrees of English proficiency. The type of icons used on the site were carefully chosen with an international audience in mind.
Navigation Menu

For the navigation, the decision was between two different options. The first option was a drop-down menu. If a user hovers over a menu item in a navigation bar, then a drop-down menu would appear with links to sub-pages that fall under that section.

The second option was to not have a drop-down menu but rather have subpages for the section be displayed in a navigation bar on the left-hand side of the page.

*Figure 7: Navigation Option 1*

*Figure 8: Navigation Option 2*
A navigation bar without drop-downs was chosen for several reasons. First, the Nielsen Norman Group has noted that nearly every test session they conducted showed that users found drop down menus to be annoying (Nielsen, 2007). Second, drop down menus should be used sparingly as they cause confusion to the user since options come and go depending on where the user clicks or hovers their mouse. In addition, if the list of options are long, it doesn’t allow the user to easily see all their options at one glance (Nielsen, 2000).

Third, user tests show that drop down menus often cause cognitive strain for the user because they require the user to use their motor skills to successfully select a particular item from the navigation menu. Many drop down navigation menus require that users keep their cursor in the drop down selection area while they select a particular menu item. This process can be particularly difficult for very long drop down menus (Nielsen, 2013).
**Color Scheme**

A monochromatic color scheme was chosen for the foundation of the site because it is simple and makes the site cohesive. However, pops of color in the form of the icons were added to provide visual interest and highlight important links.

Top Navigation Bar and Link Color: #56A0D3

Left Sidebar: #E8E8E8

Main Navigation: #364049

Icon Color, Header Background Image Color, and Footer: #3c4862
Icon Color: #c2c045

Icon Color: #E9A024

Icon Color: #F3764D
Quick Links

Another decision was to determine how to highlight important links. Options such as a simple text underline and a right sidebar for these links were considered. However, ultimately, it was decided that these links should be highlighted in a similar manner to how resources were highlighted by using a set of color icons that contain hyperlinks to a particular page or form.

USER TEST METHODS

Once the website was redesigned (See Appendix G for screenshots of pages from the redesigned website), a usability test was conducted to test whether the user-centered design principles can help result in a website where users can complete tasks at an above average rate.

Subjects were recruited via a convenience sample for the usability study. For this study, the only criteria that was used to determine if one can participate in the study was whether the user was a current international student. Students were recruited voluntarily for the study by sending out an email through the ISSS’s international student mailing list. The email contained information about the study and allowed interested users to schedule an appointment and location with the researcher to conduct the test. See Appendix B to view the sample email that was sent out to students on the international student mailing list.

While the users of the website include scholars, departments, and other individuals from the UNC community, it was decided for the sake of simplicity that only students should be recruited for the study and that only the student sections of the website would be tested. In addition, focusing on students and their respective sections helped
provide clarity and focus to the study because the student population and student sections of the website are the most popular and important part of the website.

Eight students ended up being recruited for the study. This range is a suitable amount because research shows that 5 users is a sufficient amount of users for usability testing (Nielsen, 2000). The study was completed on a Macintosh laptop, so that the researcher could meet participants at a convenient location on campus. Meeting participants at a location of their choice helped boost recruitment numbers, since the researcher found it difficult to recruit international students during the summer.

The usability study was completed as follows. An informed consent statement was given to users before the start of the user testing session (Appendix C). The informed consent form told users that their participation in the study is voluntary and that their identifying information will be removed and will be replaced with an id number that will help link responses. The informed consent statement also told users about the purpose of the study, how long it will take for users to complete the survey, that all questions are optional, and that all responses will be kept confidential and will not be linked to identifying information.

Next, users were given a pre-test questionnaire that asked demographic questions and questions to gauge their comfort level with technology (Appendix E). Then, users were given a set of ten tasks that they were asked to conduct on the redesigned website. These tasks were evaluated using a binary scale, where 1 means that the task was completed successfully and 0 means that the task was not completed successfully. Thus, if 6 individuals were able to successfully complete a task, then the completion rate for that task was considered to be 60%. Research shows that 78% is the average task
completion rate (Measuring Usability, 2011). Thus, the study aimed to see if users can get above the average task completion rate when user centered design principals are used.

Ten tasks were chosen that covered a range of different aspects of the website (Appendix A).

The first task asked users to list out the ten steps a student need to take to come to the UNC in a student immigration status. This question was asked to see if students were able to understand that the student visa process was broken down into a series of steps on the website.

The second task asked users to locate the chart that describes the differences between an F-1/J-1 Visa. Users were asked to complete this task to since ISSS staff members have mentioned that students are often confused by the differences between the two visas.

The third task asked users what items new international students needed to bring in to check in with ISSS. This task was asked to see if users were able to locate this information quickly since students often forget to bring the correct documentation with them to check in.

The fourth task asked users to pretend as if they were new international students, who were preparing to arrive to the US, and needed to find a motel they could stay in temporarily. The task asked them to locate at least one expensive motel that they could spend the night in. This task was asked to see if users could locate the information via a tabbed interface.

The fifth task told users that they were current international students who wanted to travel and needed to locate what documents they needed to bring with them while they
traveled. This task was asked because ISSS staff members mentioned that it is a question asked frequently by international students at UNC.

The sixth task asked users to provide a definition of a dependent. Users were asked to complete this task to see if users were able to locate the definition highlighted in a light blue box at the top of the page.

The seventh task asked users to pretend as though they were current students who were interested in finding information on the site about how to change their major. This task was asked to see if users were able to scroll all the way down to the end of the page and locate the paragraph about changing one's major.

The eighth task asked users to find where on the site information about how many hours per week students can work on campus was located. Users were asked to complete this task to see if they were able to determine that this information was organized under the student employment category section of the site.

The ninth task asked users to find out where information about campus wellness resources could be found on the site. The task was asked to see if users were able to locate the resources category in the navigation bar and if they were able to understand the tabbed interface of the resources section.

The final task asked users to provide a list of programs that ISSS offers to the international community at UNC. Users were asked to complete this task to see if they were able to find information located at the top navigation bar.

As the users completed the tasks, the screen they used to access the website and the conversation they had with the researcher were recorded with QuickTime player. After users completed the task portion of the test, users were given a post-test questionnaire that asked users their overall impression of the website (Appendix F).
During the study, all responses, recordings, and feedback from the surveys and from the user testing were kept on an external hard drive. Qualitative feedback obtained during the user testing was evaluated by examining notes and by replaying the recording from user actions during the task based portion of the study to uncover common themes and patterns. At the completion of the study, all information related to the study was destroyed.
RESULTS

Participant Demographics and Background

Eight Participants participated in the usability test between June 6th and July 1st. The average participant age was 27 years old and 62.5% of the participants were male, whereas 37.5% were female. All 8 participants described themselves as Asian and said that they were graduate students at UNC-Chapel Hill.

The majority (62.5%) of participants said they spent 6-9 hours on the internet each day and the majority of participants (75%) said they used Chrome as their primary web browser. The remaining participants used Fire Fox and Internet Explorer. The majority of participants (62.5%) said that they used the ISSS website on a monthly basis.
Pre-Test Questionnaire Technology Skill Level Overview

<table>
<thead>
<tr>
<th>Question</th>
<th>1 (No Experience)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (Expert)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant Skill Level with Computers in General</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>4.0</td>
</tr>
<tr>
<td>Participant Skill Level with the Internet</td>
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<td>0</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>4.625</td>
</tr>
<tr>
<td>Participant Skill Level with Watching Videos Online</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>4.375</td>
</tr>
<tr>
<td>Participant Skill Level with Blogging</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>0</td>
<td>3.375</td>
</tr>
<tr>
<td>Participant Skill Level with Social Media</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>3.75</td>
</tr>
</tbody>
</table>

As a part of the pre-test questionnaire, participants also listed a number of UNC-Chapel Hill affiliated websites that they considered to be their favorites. The UNC Career Service, the UNC School of Information and Library Science homepage, and the UNC Libraries homepage were three websites that were mentioned by more than one participant. Some other websites that were listed by participants were the:

- UNC Sakai website
- UNC Writing Center’s website
- UNC Campus Health Services’ website
### Summary of Task Completion

**Note:** The top row shows each participant. Example P1 means participant 1.

<table>
<thead>
<tr>
<th>Task</th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
<th>P4</th>
<th>P5</th>
<th>P6</th>
<th>P7</th>
<th>P8</th>
</tr>
</thead>
<tbody>
<tr>
<td>You are a new international student. List out the 10 steps you need to take to come to the US in a student immigration status in order to attend UNC.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>You are a new international student, locate the chart that describes the differences between F-1/J-1 Student Visas.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>You are a new international student, what items do you need to bring to check in with ISSS?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>You are a new international student who needs to prepare for your arrival to the US. List one most expensive motel you can stay in.</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>You are a current international student who wants to travel. What are the required travel documents?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>You are a current international student who wishes to bring a dependent to the US. What is the definition of a dependent?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>You are a current international student, who wants to change your major. Go to the page that discusses the process.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>How many hours per week can a student work on-campus at UNC-Chapel Hill?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>You are looking for resources to help you adjust to life at UNC. You want to find more information on wellness resources at UNC. Where is this information located?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>List the programs that ISSS offers to the international community at UNC?</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Task Completion Rate Per Person**

<table>
<thead>
<tr>
<th></th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
<th>P4</th>
<th>P5</th>
<th>P6</th>
<th>P7</th>
<th>P8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Completion Rate</td>
<td>90%</td>
<td>90%</td>
<td>90%</td>
<td>90%</td>
<td>90%</td>
<td>80%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
### Post-Test Questionnaire Result Overview

<table>
<thead>
<tr>
<th>Question</th>
<th>1 (Strongly Disagree)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (Strongly Agree)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I think that I would like to use this Website Frequently</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>4.25</td>
</tr>
<tr>
<td>I found the website unnecessarily complex</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1.75</td>
</tr>
<tr>
<td>I thought the website was easy to use</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>4.5</td>
</tr>
<tr>
<td>I thought there was too much inconsistency in this website</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>2.125</td>
</tr>
<tr>
<td>I would imagine that most people would learn to use this website very quickly</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>I found the website very cumbersome to use</td>
<td>5</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.375</td>
</tr>
<tr>
<td>I needed to learn a lot of things before I could get going with this website</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.5</td>
</tr>
</tbody>
</table>
ANALYSIS

Based on the results, one can see that the average task completion rate for the participants was 91.25%, which exceeds the goal of 80% that this study sought to achieve. In addition, one can see based on the post-test questionnaire, that the overall impression of the site was generally positive. After taking the test, the majority of users said they would like to use the website frequently, that they considered the website to be easy to use, they thought the website to not be complex, and that the website was not cumbersome.

In addition, participants made several positive comments about the design of the website. Several participants appreciated the color scheme, layout of the website, and the use of pictures. One user said she appreciated the organization of the website and said that it was clear that the website was organized in a hierarchical fashion. Finally, most of the participants appreciated the content made available on the website.

It can be said that incorporating user-centered design principles played a key role in helping users achieve an above average task completion rate and a favorable impression of the website. Throughout the redesign process, user needs were considered to be a priority. Engaging in activities such as writing personas and conducting user research helped ensure that the user’s voice was present while designing the website. In addition, the design process was purposeful in that the goal was to create a website that achieved user satisfaction in a variety of areas such as the aesthetics, page layout and
information organization of the site. Not only did the user testing sessions help provide two measurable ways of determining how user friendly the ISSS website is, but the user testing session also helped provide valuable feedback on how to further improve the website.

**Major Problem Areas**

There were two major problems areas discovered during the user testing sessions. The first problem area involves the top navigation bar on the website. Out of 8 participants, only 3 students were able to complete the task involving locating information on this bar. As can be seen from the screenshot below, many users simply scrolled down the page at a point where the top navigation bar was no longer visible.

![Top Navigation Bar goes missing when user scrolls down the site](image)

Participants who were unable to complete the task involving the top navigation bar were genuinely surprised when the researcher pointed out the top navigation bar since they couldn’t believe they missed it when it was simply at the top of the page. Interestingly, the top navigation bar was one area of the design that was not tested through informal user-testing sessions during the redesign phase of the website.
Thus, one can see that engaging in user-centered design practices such as informal 
user tests are important so that problem areas such as this one can be mitigated.
Fortunately this problem area can be easily solved by either completely doing away with 
the top navigation bar or by only including secondary information in the top navigation 
bar.

The second major problem area discovered was use of wording on the website. While for the most part users said the website was very clear and straightforward, some 
of the wording used on the site caused users confusion. An example of this can be seen 
with task number 3, where users were asked to find an expensive motel they could stay 
in. As can be seen from the screenshot below, one of the users arrived to the correct 
location on the site, but was not able to figure out that the tab entitled “lodging” was 
where the information on motels was located and instead clicked on the “housing” tab. 
After the researcher showed the participant the correct answer, the participant explained 
that he was confused by the word “lodging”.

This problem can be solved by simply changing the word “lodging” to a word like motels and or hotels. However, to ensure that other areas of the site do not contain language that might be confusing to an international audience, it is recommended that additional user tests (formal or informal) be conducted with international students to resolve any similar issues.

Suggestions for Improvement by Participants

While users were able to complete the majority of tasks with ease, during the user testing sessions, some of the participants brought up a few important points that can be used to improve the website. One suggestion was to increase the size of the words “International Student and Scholar Services” in the logo. Even though the participant was able to determine the correct audience for the website, she believed that some users could get the impression that the website was for Global Studies instead of for the international community at UNC. Another suggestion was to have a site map page on the website so that users can get a quick overview of the contents available on the website. Participants
also believed that ISSS should market the website more to UNC international students. Finally, one participant would like to see more resources be available in the resource section of the website.

LIMITATIONS

The study had several limitations. First, the redesigned version of the ISSS website was subject to certain constraints since it used web.unc.edu’s Wordpress platform, which does not allow for much customization in terms of layouts and plugins used. Thus, the redesign of the website had to be adapted to whatever was made available through web.unc.edu. Second, the user tests only tested international students and not scholars. Students were tested because they are generally more available and willing to participate in a user test in comparison to international scholars. As a result, only the student sections of the website were primarily tested. In further user tests of the site, scholars should also be recruited.

Next, when users were asked to conduct tasks during the user testing phase of the study, the conditions under which a user typically would conduct tasks on their own was difficult to reciprocate and may consequently have impacted the task completion scores.

Third, the task completion scores and user feedback may have been affected by user motivation at the time of the study. Finally, since a convenience sample was used, users who tested the site, may not have been representative of the international community at UNC. For example, all the participants were Asian graduate students and the majority of which were in their mid-late twenties.
CONCLUSION

The long-run goal of the project is to make the ISSS website a usable and a valuable resource for the international community at UNC-Chapel Hill. The completion of this project has helped ISSS move one step closer towards this goal. User-testing of the ISSS website shows that ISSS website is a usable website based on the above average user task completion rate of 91.25% and post-test questionnaire answers. In addition, the user-testing sessions of the website have provided further ways to improve the ISSS website with user needs in mind.

From a design and technical point of view, user-centered design is an important methodology that should be used when designing all types of websites since it can help pin-point problem areas before they become major problems that are costly to fix and because they can help create an end product that satisfies user needs.

A usable website benefits ISSS in many ways, the most important being that users of the website are now able to find and learn about international policies and regulations in an easier manner.

The insights gained from this research study can be used to assist UNC organizations similar to ISSS with creating a user-centered website. Usable websites will benefit UNC-Chapel Hill since it can help create a campus community that can utilize technology to become more informed about departmental and university wide programs.
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doi:10.1109/AGILE.2007.61


APPENDICES

APPENDIX A:

Tasks Given to Users during User Testing Sessions

Note: Users were given a 0 if they completed a task and 1 if they did not complete a task.

1. You are a new international student, locate the chart that describes the differences between F-1/J-1 Student Visas.
2. You are a new international student, what items do you need to bring to check in with ISSS?
3. You are a new international student who needs to prepare for your arrival to the US. List one most expensive motel you can stay in.
4. You are a current international student who wants to travel. What are the required travel documents?
5. You are a current international student who wishes to bring a dependent to the US. What is the definition of a dependent?
6. You are a current international student, who wants to change your major. Go to the page that discusses the process.
7. How many hours per week can a student work on-campus at UNC-Chapel Hill?
8. You are looking for resources to help you adjust to life at UNC. You want to find more information on wellness resources at UNC. Where is this information located?
9. List the programs that ISSS offers to the international community at UNC?
APPENDIX B:

Recruitment Email Used for User Testing Sessions

Note: Template Adapted from Usability.gov

Hello,

My name is Madeeha Khan, and I’m helping to run a usability study of the UNC Office of International Student and Scholar Services’ (ISSS) website. In an effort to improve the website, we’re looking for people to participate in a research study, where users will be asked to test a redesigned version of the ISSS website and provide feedback after using it.

What will I be doing in a usability study?

You will be asked to do several short tasks using the ISSS website. As you go through the tasks, the computer screen that you will be using to access the site and the conversation you have with the researcher will be recorded. You will also be asked questions about your experience and perceptions of the website.

How long is a session?  30-45 minutes

When and where?

You will be asked to participate in person by scheduling a time and location with the researcher via email.

Interested in participating?

Please reply to this email with your contact information and a few dates/timings of when you will be available. I’ll email you some questions to help us determine if you qualify for the study.

If you have any questions, please contact me at khanm@live.unc.edu

Thank you for interest,

Madeeha Khan

UNC School of Information and Library Science
APPENDIX C:

Consent and Recording Release Form for User Testing Sessions

University of North Carolina at Chapel Hill

Consent to Participate in a Research Study

Adult Participants

Consent Form Version Date: 5/12/14

IRB Study # 14-1321

Title of Study: Usability Test of the Office of International Student and Scholar Services Website at UNC-Chapel Hill

Principal Investigator: Madeeha Khan

Principal Investigator Department: School of Information and Library Science

Principal Investigator Phone number: 919-672-1825

Principal Investigator Email Address: khanm@live.unc.edu

Faculty Advisor: Ron Bergquist

Faculty Advisor Contact Information: bergr@email.unc.edu

What are some general things you should know about research studies?
You are being asked to take part in a research study. To join the study is voluntary. You may refuse to join, or you may withdraw your consent to be in the study, for any reason, without penalty.

Research studies are designed to obtain new knowledge. This new information may help people in the future. You may not receive any direct benefit from being in the research study. There also may be risks to being in research studies.

Details about this study are discussed below. It is important that you understand this information so that you can make an informed choice about being in this research study.

You will be given a copy of this consent form. You should ask the researchers named above, or staff members who may assist them, any questions you have about this study at any time.

What is the purpose of this study?
The purpose of this research study is to see if incorporating user-centered design principles can result in a redesigned Office of International Student and Scholar Services’ (ISSS) website that allows for international students to successfully complete common tasks on the website.

You are being asked to be in the study because you are an international student at UNC-Chapel Hill.

**Are there any reasons you should not be in this study?**
You should not be in this study if you are not an international student currently enrolled at UNC-Chapel Hill.

**How many people will take part in this study?**
There will be approximately 5 people who will partake in user testing sessions with the researcher.

**How long will your part in this study last?**
This study will take an estimated 30-45 minutes.

**What will happen if you take part in the study?**
You will be first given some background information on the study by the researcher. Afterwards, you will answer a series of short questions that will provide the researcher with some general demographical information and information on your internet usage. Next, you will be taken to the ISSS website and will be asked to complete a series of tasks on the website. Audio and screen recording software will be used to analyze your thought process as you go through each task. Once you have finished completing the tasks, you will then be asked to complete a follow-up survey that will gauge your overall impression of the site. At any time during the study, you may choose not to answer a survey question or complete a task for any reason.

**What are the possible benefits from being in this study?**
Research is designed to benefit society by gaining new knowledge. You will not benefit personally from being in this research study.

**What are the possible risks or discomforts involved from being in this study?**
You will be asked to complete tasks on the website. It is important to remember these tasks are not a test of your aptitude, but rather they are used to assess the design and organization of the website.

There may be uncommon or previously unknown risks. You should report any problems to the researcher.

**What if we learn about new findings or information during the study?**
You will be given any new information gained during the course of the study that might
affect your willingness to continue your participation.

**How will information about you be protected?**

Survey data will be secured by allowing only the principle investigator access to the data using a password protected account. Survey data and the account on which the survey is stored will be deleted at the completion of the study.

Each user will be assigned a number so that identifying information will be not be stored alongside information obtained through the study. The linkage file between names and numbers will be stored securely on a separate external memory stick that will be destroyed at the conclusion of the study.

Participants will not be identified in any report or publication about this study. Although every effort will be made to keep research records private, there may be times when federal or state law requires the disclosure of such records, including personal information. This is very unlikely, but if disclosure is ever required, UNC-Chapel Hill will take steps allowable by law to protect the privacy of personal information. In some cases, your information in this research study could be reviewed by representatives of the University, research sponsors, or government agencies (for example, the FDA) for purposes such as quality control or safety.

The audio and screen recordings software will be stored on an external memory stick that only the principle investigator and faculty advisor will have access to. At the conclusion of the study, this memory stick will be destroyed at the completion of the study.

During the study, you may request to turn the audio and screen recordings off for any reason.

Check the line that best matches your choice:

_____ OK to record me during the study

_____ Not OK to record me during the study

**What will happen if you are injured by this research?**

All research involves a chance that something bad might happen to you. This may include the risk of personal injury. In spite of all safety measures, you might develop a reaction or injury from being in this study. If such problems occur, the researchers will help you get medical care, but any costs for the medical care will be billed to you and/or your insurance company. The University of North Carolina at Chapel Hill has not set aside funds to pay you for any such reactions or injuries, or for the related medical care. You do not give up any of your legal rights by signing this form.
What if you want to stop before your part in the study is complete?

You can withdraw from this study at any time, without penalty. The investigators also have the right to stop your participation at any time. This could be because you have had an unexpected reaction, or have failed to follow instructions, or because the entire study has been stopped.

Will you receive anything for being in this study?
You will not receive anything for participation in the study.

Will it cost you anything to be in this study?
It will not cost you anything to be in this study.

What if you are a UNC student?
You may choose not to be in the study or to stop being in the study before it is over at any time. This will not affect your class standing or grades at UNC-Chapel Hill. You will not be offered or receive any special consideration if you take part in this research.

What if you have questions about this study?
You have the right to ask, and have answered, any questions you may have about this research. If you have questions about the study (including payments), complaints, concerns, or if a research-related injury occurs, you should contact the researchers listed on the first page of this form.

What if you have questions about your rights as a research participant?
All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject, or if you would like to obtain information or offer input, you may contact the Institutional Review Board at 919-966-3113 or by email to IRB_subjects@unc.edu.

Participant’s Agreement:
I have read the information provided above. I have asked all the questions I have at this time. I voluntarily agree to participate in this research study.
Signature of Research Participant

Date

Printed Name of Research Participant

Signature of Research Team Member Obtaining Consent

Date

Printed Name of Research Team Member Obtaining Consent
APPENDIX D:

Personas

Prospective Student

Name: Zei Wang
Age: 18

Zei is a prospective international student who lives in Shanghai China with his family. He has one older brother, who is 25 years old and is working in Beijing as a banker. He is very close with his family and has a number of interests such as painting, writing, biking, and spending time on social media websites.

Zei’s parents have made academics a priority for their children and have invested a lot of money in ensuring that their children get the best education as possible. While, Zei enjoys his studies, he feels a lot of pressure due to his heavy academic load and his parents consistently asking him about his college plans.

His daily routine consists of school, private tutoring sessions, and doing extracurricular activities, so that he can make sure that he gets admitted to a good college. Getting admitted to a reputable college is very important for Zei because he wants to be a social entrepreneur someday.

Zei has started to look at different colleges. As he does when trying to find any type of information, he first relies on using the internet. He usually starts his search on Google, but also turns to websites such as Baidu and Reuters.

He hates websites where he has to constantly click on links to locate information. Zei is a busy person, he gets annoyed if he has to spend a longer time on a website than he has to. Zei’s artistic side, makes him have an extra appreciation for websites that are aesthetically pleasing.

Through the research he conducted on the web, he discovered that UNC’s School of Business is very reputable and has the type of program he is looking for. He has spent a lot of time perusing the School of Business’s website to learn more about the program, the classes offered, and the types of internships and jobs alumni of the program have obtained.

His search has also led his to UNC’s OISSS’s website. He realizes this website is important and plans to read through the information, so he can figure out what all he needs to do to obtain a student visa and to learn about programs the office offers to help his adjust to life in the US. However, at first glance the website looks lengthy, and Zei
knows he will have to make several visits to the website because he has a short attention span.

Zei is excited about the possibility of studying outside of the US, but is also nervous to leave the familiar. However, he is confident that he will be able to adjust to life in the US, but would appreciate all the help he can get as he prepares for this transition.

**Quote:** “I hope my time at UNC is all that I dream it to be!”
Kareena Patel is a second year graduate student in the Masters of Information Science program at UNC-Chapel Hill. She came to Chapel Hill from New Delhi, India last August, where her family lives. She has one younger sister and one younger brother. Kareena worked for two years at an IT consulting firm before coming to Chapel Hill to further her studies. Kareena worked on a team with engineers, programmers, analysts, and managers, where she assisted with project management. Kareena enjoyed her job, but felt that she needed more education to propel her to the next level of her career. She’s always loved and embraced new technologies, and has a particular interest in databases.

She aims to be a database administrator someday, and thinks that her graduate program will help her reach this goal. While Kareena is very hardworking, she easily gets stressed out with information overload. When she uses the internet, which she does on a frequent basis, she gets annoyed when she comes across a website that contains too many links, text, and pictures. As a result, Kareena prefers websites with a simple and clean interface. Google, Twitter, and Facebook, where she can easily digest the information she is seeing.

Kareena visits the OISSS website on a regular basis to make sure she is doing what she needs to do to maintain her J-1 student visa status. From time to time, she often has questions involving things such as what she needs to do to get an internship off-campus or what documents she needs to fill out if she decides to travel outside of the US. Sometimes, she also uses the website to find out when and where an event is occurring or to download a form that she needs to fill out. Kareena only likes coming to OISSS if she has to, since the office is about a 15 minute walk from where she usually is on campus.

Overall, Kareena loves being at UNC. However, there are times when she is nervous about her future and she hopes that the money and time she has spent at UNC pay off for her.

Quote: “I hate walking over to OISSS, everything I need should be made available on the website.”
Prospective Scholar

Name: Sherri Park
Age: 37

Sherri Park is a multimedia journalist in Seoul, South Korea. She has a husband, named Jin, and a one year old daughter. Sherri loves her career and desires to learn as much as possible about how multimedia can be used to tell compelling stories. Her boss told her about the Visiting International Scholar program that is offered at UNC Chapel Hill’s School of Journalism.

The program would allow Sherri the chance to gain knowledge about multimedia journalism from a different perspective, meet other scholars, and to experience a whole new culture. After consulting with her husband, Sherri decides that she will apply to the program and that her family will temporarily move to Chapel Hill, NC.

As a multimedia journalist, Sherri is well versed in technologies. She uses the computer daily for both personal and work reasons. Her favorite websites are some of the local news sites in Korea, the BBC, and Naver.com. Sherri prefers using websites that don’t have too many ads or flashy and unnecessary graphics since they take away from the content of the site. However, she does like websites that structure content in an easy to follow format, since she often finds that she misses key information when the text is formatted into a series of long paragraphs.

Sherri is motivated to gain as much experience as she can during her stay in Chapel Hill and is very eager to start the opportunity. Sherri visits the OISSS website to determine what all needs to be done so that she and her family can move to Chapel Hill.

Sherri wants the transition for her family to be as smooth as possible. She hopes that her husband and daughter will not become too homesick. As a result, she plans to depend on OISSS to help her family acclimate to the US by providing them with resources and contact information for other Korean internationals at UNC. Community is very important to Sherri, she hopes that she will be able to make a lot of new friends while in Chapel Hill.

Sherri is hopeful about her future and is eager to start the application process.

Quote: “I am ready for a change, I just hope it’s not too difficult for my family and me”
Current Scholar

Name: Carlos Prieto
Age: 64

Carlos is a current researcher at UNC-Chapel Hill’s School of Education. He came to UNC from Sao Paul, Brazil, where he is a Distinguished Professor at the local university. His research focuses on early immersion foreign language training among elementary schools. He has a wife and a 33 year old son, who both are in Brazil. Carlos decided to come to Chapel Hill because he wants to conduct his research in a new setting and because he is impressed by the excellence demonstrated by the School of Education.

Carlos spends his days in his office, immersed in his research. He often can be seen with a few mugs of coffee and several books spread across his table. Carlos does not like using technology, and only uses it when he absolutely needs to. He finds the constant changes in technology confusing and annoying. When he finds a method he likes, he does not like to stray away from it. When he does use the internet, he primarily uses it to check his email or use the library website to get information for his research.

Usually, Carlos calls the OISSS office when he has a visa related question. However, lately he has noticed that the office seems really busy and that they mostly point him towards the OISSS website. Carlos plans to make more of an effort to use the website. Especially, since he wants to find out what he needs to do to have his wife and son come visit him from Brazil. He is willing to learn and use the website, if the website is easy enough for him to understand.

Quote: “A person my age can only embrace technology if it’s intuitive and simple.”

**Note: Pictures for the Persona came from Microsoft Office and the information for each persona came from various interviews conducted with students and scholars.**
APPENDIX E:

Pre-Test Questionnaire Questions

Note: The Pre-Test Questionnaire was administered via Google Drive’s Survey Template

1) Enter your Age

2) What is your Gender
   a. Male
   b. Female

3) Would you Describe yourself as:
   a. American Indian/Native American
   b. Asian
   c. Black/African American
   d. Hispanic/Latino
   e. White/Caucasian
   f. Pacific Islander
   g. Other

4) What year are you at UNC
   a. Freshman
   b. Sophomore
   c. Junior
   d. Senior
   e. Grad Student

5) On average, how many hours do you spend on the Internet each day
   a. 0-3
   b. 3-6
   c. 6-9
   d. 9-15

6) What Web Browser do you use most frequently while using the internet
a. Firefox
b. Internet Explorer
c. Safari
d. Chrome
e. Other

7) How Often do you use the ISSS website
   a. Once a week
   b. Biweekly
   c. Monthly
   d. Never

8) Please rate your skill with Computers in General (1 being no experience, 5 being expert level)

9) Please rate your skill with the Internet (1 being no experience, 5 being expert level)

10) Please rate your skill with Watching Videos Online (1 being no experience, 5 being expert level)

11) Please rate your skill with Blogging (1 being no experience, 5 being expert level)

12) Please rate your skill with Social Media (1 being no experience, 5 being expert level)

13) Please list three of your favourite UNC-Chapel Hill affiliated websites
APPENDIX F:

Post-Test Questionnaire Questions

Note: The Post-Test Questionnaire was administered via Google Drive’s Survey Template. All Questions were asked on a scale from 1-5 (1 being strongly disagree and 5 being strongly agree). Questions adapted from the SUS Usability Scale

1. I think that I would like to use this website frequently
2. I found the website unnecessarily complex
3. I thought the website was easy to use
4. I thought there was too much inconsistency in this website
5. I would imagine that most people would learn to use this website very quickly
6. I found the website very cumbersome to use
7. I needed to learn a lot of things before I could get going with this website
APPENDIX G:

Screenshots of pages from redesigned website

Figure 11: Homepage
Figure 12: New Student Section
Figure 13: Current Student Section
There are many resources to help students and scholars adjust to life in the U.S. and Chapel Hill. Click on a tab to view resources for a particular category.

### Housing
- **On Campus housing**
- **Off-Campus Housing**

### Utilities
- **Duke Power Energy**
- **Telephones**
- **Orange Water & Sewer Authority**
- **PSNC Energy**

### Restaurants and Shopping
- **Where to Eat**
- **Shopping**
- **Taxes**
- **Banking**

*Figure 14: Resource Page*
Figure 15: Student Employment Section
Current Scholars: Invite a Dependent

1. Make sure you have sufficient funds to support dependent

1.1 Download & Fill Out a Financial Certificate Form. Turn in Form to ISSS via email or in person

2. Make sure dependent has Health Insurance

2.1 Submit the Form via email or in person to ISSS along with Proof of Finances and Health Insurance

3. Download and Fill out Family Member Application

3.1 Submit the Form via email or in person to ISSS

4. Have ISSS send dependent processed Form DS-2019

5. Have dependent get a J-2 Visa Stamp on Passport

6. Dependent Arrives to the US

APPENDIX H: Task Analysis
Current Students: Obtain Permission to Travel outside the US

1. Get Form I-20 or DS 2019 signed for travel by an ISSS advisor

2. Make sure passport has a valid F-1 or J-1 Stamp with unused entries

3. Obtain enough funds to support travel

4. Obtain a letter of enrollment verification from Registrar

5. Obtain a letter of recommendation from academic department

6. Bring all documents and Passport to ISSS
Prospective Students: Apply for Visa

1. Visit the Relevant Admission's Website
   1.1 Apply to the program
   1.2 Wait for Admission Decision

2. Complete the Financial Certificate Form
   2.1 Download the Form. Form will be completed on one's computer.
   2.2 Submit the Form to the Admission's Office in person or via email

3. Determine if F-1 or J-1 Student Visa
   3.1 Read Over the differences between the visas
   3.2 If the student wants to apply for the J-1 Visa, contact ISSS

4. Students need to have ISSS send their processed visa documentation
   4.1 Sign up for E-Ship Global by visiting the E-Ship Global Website.
   4.2 Send ISSS the Tracking # via email

5. Pay SEVIS Fee
   5.1 Submit Form I-901 if using alternative forms of payment
   5.2 Pay the SEVIS Fee on the SEVIS Fee website if using credit card

6. Obtain a Visa Stamp
   6.1 Gather Supporting Documentation
   6.2 Check the Embassy Website to find nearest Embassy
   6.3 Check Wait Times for Visa Processing on Dept. State website

7. Plan US Arrival
   7.1 Read up on resources related to housing, weather, transportation, etc

8. Enter the U.S and obtain Form I-94
   8.1 Get the I-94 Form Issued at the port of entry

9. Check in with ISSS
   9.1 Update Address in Connect Carolina
   9.2 Retrieve I-94 Admission Number by visiting the USCS website
   9.3 Bring Form I-20 or DS-209 and any other relevant documentation to ISSS
   9.4 Bring Passport to ISSS

10. Attend Orientation
    10.1 Find Orientation Dates
    10.2 Sign up for an Orientation Date
    10.3 Attend Orientation