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User experiences of Spanish-speaking Latinos: usabiltiy of the Frontier Behavioral Institute website

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USER EXPERIENCES OF SPANISH-SPEAKING LATINOS: USABILTIY TESTING

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By

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Introduction

Rhetoric, in the most traditional sense, is the art of communicating effectively and efficiently, to a specific audience, in means of persuasion or informing. There is rhetoric and a purpose behind all communication. Rhetoric is involved in the way information is delivered to a given audience. This paper will focus on one website delivering information regarding mental health services. Individuals can be informed electronically (website, emails, blogs), word-of-mouth (being told by someone who has utilized that service), or through print (brochures, flyers, mail). For individuals to receive mental health services, they must first be informed about those services. There are many variables that may affect their access and availability to utilize these services.

For the purposes of this paper, I define Latino/a based on how it is defined by the U.S. Census Bureau, and the U.S. Office of Management and Budget (OMB): Latino is defined as "a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race (2018). It is important to note here that the terms Latino and Hispanic refer to the same ethnic-minorities description provided by the U.S. Census Bureau—the terms are interchangeable. Research shows that Latinos are the largest ethnic minority group in the United States and are projected to reach 90 million by 2025 and 97 million by the year 2050 (Shobe, Coffman, & Dmochowski, 2009 & Rastogi, Massey-Hastings, &Wieling, 2012). There are 50.5 million Latinos in the United States, which constitute 16% of the total U.S. population and 66% of that Latino population are Mexican immigrants (Rastogi, Massey-Hastings, & Wieling, 2012). However, Latinos are half as likely to seek mental health services as Whites. Research has shown that there are system-level barriers (lack of Spanish-speaking service

providers, inadequate training in the delivery of culturally competent services), as well as patient-level barriers (different views of mental health and mental health treatment, concern regarding stigma, and poverty) (Adams, 2007).

Empirical studies continue to support that although progress has been made in the field of technical communication, there is still a digital divide. Kirt St. Amant and Filipp Sapienza (2011) stated that "over the past decade, electronic communication and new technologies have been steadily reshaping traditional communication practices" (406). Technical communicators must pay closer attention to how effective the delivery of their information design products is. According to Parry and Judge (2005) some populations are more difficult to reach with health messages, even among those with access to healthcare and preventative services (Clayman et. al 2010). In respect to the Latino population, its members may not have access and use the same information as non-Hispanics, due to language, cultural, and media use differences (Viswanath, 2006).

This project focused on facilitating usability tests, examining how Spanish-speaking Latinos interact with the Frontier Behavioral Health website. Through the facilitation of usability tests, I observed how users interacted with the Frontier Behavioral Health website, assessed how users navigated the website, and located specific information on a website. Frontier Behavioral Health is a non-profit organization that offers individuals, ranging from youth, adults and elderly people access to psychiatric, psychological, and specialist consultation services. Frontier Behavioral Health expresses through their mission statement and values, under the "About" page of the website, that they are dedicated in "providing clinically and culturally appropriate behavioral healthcare and related services to people of all ages in collaboration with community

partners" (Frontier Behavioral Health, 2014). Through the findings I collect from my usability tests, I examine if the way the information is designed promotes an easy-navigation and user-friendly experience for Spanish-speaking Latinos.

Literature Review

The literature review that follows is organized in two major sections: technical communication and information design across cultures and cultural approach to usability testing. These sections are essential to discuss in research because one can better learn how technical communicators utilize different concepts when communicating with individuals or large groups of individuals from diverse, cultural backgrounds, as well as the benefits of utilizing usability testing.

Technical Communication and Information Design across Cultures

Edward R. Tufte claims that "principles of information design are universal—like mathematics—and are not tied to unique features of a particular language or culture" (10). Technical communicators must think more than just about the type of information they are going to place on a document, website, product, etc. As noted by Still and Crane (2017), "good user-centered design is not about giving users what they want or making decisions for them. Rather it is giving them enough control to understand and manage the system in multiple situations" (13). Essentially, even though there are principles to design for websites, like ensuring there is alignment, structure, and consistency, as well as avoiding clumping and overuse of text, we must not assume that all users have the

same, consistent, underlying needs. Given the assumptions made, research must be conducted in order to effectively deliver information to diverse audiences.

A computer system is a tool. A tool for users to use with ease and efficiency to locate information in a satisfying manner. As Albers (2004) notes, "information systems should work to provide a user with high quality information that support complex situations," (158). Users want systems that are easy to learn, easy to use and that ultimately help them complete certain tasks. Users want software that "doesn't confuse them, that doesn't make it slow them down, that doesn't make it easier to make mistakes or harder to finish their job," (Albers, 158). Adding the complexity of having users from different cultural backgrounds is just another factor that must be considered for information design.

Moreover, translation and localization are the two main strategies that technical communicators use to address these differences in language and rhetorical preference (Sprung, 2000). Michael Cronin (2001) defines localization as "taking a product that is already designed and adapting it to a local market" (13). Because different cultures have different rhetorical preferences, localization can be a key step in making the information appropriate for the target audience. Germaine-Madison (2009) stresses that localization goes beyond translating the language the document is written. Germaine-Madison states that there are other issues, such as how the readers will use the document, specific content, and stylistic issues that must also be considered (Esselink 2000; Yunker 2003, 128).

Designers need to design interfaces targeted for a specific audience, who come from different cultural backgrounds. This requires the designer to know what interface

features might be common in a given culture. When designers provide interface features that create a learning environment which learners understand and with which they are comfortable (Ingram et al. 2007), communication flows smoothly from the content to the learner (Recabarren et al. 2008).

Although limited research exists, it suggests that low acculturated Latino adults prefer Web site features that are more relevant to the Latino culture (Singh et al. 2008). Culturally relevant features suggested by Singh and colleagues (Singh et al. 2008; Singh et al. 2009) include providing information and customer support in Spanish, reflecting a viewpoint that demonstrates how the organization serves and gives back to the Latino community, showing the value of family by displaying pictures of families and/or grandparents, integrating structure, and using clear navigation, color, graphics, web support, and unique products preferred by Latino Web users. In technical communication, information is generally written in the context of the host language and culture. For example, a native English-speaking U.S. Citizen would design a website differently than a Spanish-speaking Mexican immigrant would. To achieve the best results when communicating across cultures, it is important to consider possible target languages and cultural contexts while designing technical documents. Different cultural expectations and practices can affect the way individuals from different cultures present or interpret spoken or written information (Uljin and St Amant, 2000).

Furthermore, Yuan (2013) states that "culture makes a difference in shaping the design, implementation, use, and social implications of media technologies," (261). According to Weiss (1998), earlier research showed two intercultural adaptations branched out from the growing literature in business and technical communication: the

culture free approach and the culture-fair approach. The culture free approach focuses on the various ways technical communicators can "make a text easy to understand and translate is first to write it according to the strictest standards of clarity and simplicity and then strip it all of stylistic peculiarities" (254). Culture-free document focuses on eliminating all "figurative language, no wordplay, and no intentional humor," (255). John Kirkman (1988) observed that non-English readers struggle when they encounter "common features of incompetent technical writing" (347). These common errors include: wordiness, ostentation, clumsy links, tense problems, jargon, passives, nomilization, etc. (Weiss, 1998).

Kirk St. Amant states that "a new set of research questions, challenges, and dilemmas that professional communicators need to explore in order to ensure a productive intercultural dialog among different nations," is the next step that needs to be taken among all technical communicators (St. Amant, 2011, 206). St. Amant (2015) poses that technical communicators need to take the time to stop and collaborate on what the field of technical communication has accomplished, what we have examined, but also, what topics we must discuss now in order to provide better insights in the future. One topic Amant believes should be discussed among technical communicators, is to: "…design materials for a specific audience. But in an age of global online media, who is our audience, and what implications are there for how different populations interpret and react to information?" (221).

St. Amant (2015) emphasizes the need to re-think technical communication and the research we produce by stating that:

Re-thinking research in terms of the technologies used and the contexts in

which research takes place can provide new approaches to usability and

lead to designs that better suit the needs of specific groups of users (221).

In essence, St. Amant is creating an exigence for scholars, researchers, and professors of technical communication to re-think the various topics, based on the evolving needs of the users in our communities. He reminds us that our world is constantly changing, so we must think of innovative and creative ways to improve the world of technical communication. He challenges us to re-think our current practices to ensure a progressive field of technical communication that delivers information effectively and efficiently to our diverse populations.

Moreover, I would like to narrow the focus to how Latinos, specifically, are affected by web design. A study conducted by Clayman and her colleagues found that Hispanics, who are comfortable speaking English, were not more likely to use the Internet than non-Hispanic Whites and had very high trust ratings for information on the Internet. In fact, after healthcare providers, Hispanics comfortable speaking English were most likely to trust the Internet as a source of health information (Clayman et al. 2010). A study of data collected more recently than this administration of HINTS (Livingston et al., 2009) found that, despite recent increases in internet use, a gap remained between native (those born in the U.S.) and foreign-born (those born outside of the U.S.) Hispanics (Latinos). This lack of fluency in English among Latinos creates a substantial barrier to Internet use. They also found that those who read well in Spanish were less likely to go online than those who read well in English. Hispanics who are comfortable speaking English may be frequent users of these new methods of communication, as they

have high usage of and trust in the Internet. However, for Hispanics who are less comfortable speaking English, the Internet and its associated content would not seem to be a good resource. This study by Clayman and his colleagues concluded that trust and media use patterns than those comfortable speaking English.

It is essential for those in technical communication to be knowledgeable about the cultural backgrounds of their prospective audiences. Further research is crucial in the field of technical communication and information design, to identify the differences among ethnic-cultural minorities. If there are audience members who speak a different language or communicate information differently than others, technical communicators must be prepared and equipped with the necessary knowledge and skill set related to intercultural communication and design to diverse populations, so they may design and deliver effective information and communicate efficiently.

Cultural Approach to Usability Testing

Moving into research and literature that discusses cultural approaches to usability testing in the field of technical communication, it is necessary for technical writers to be educated on developing culturally sensitive approaches, as well as understanding the benefits of utilizing usability tests to ensure their products are culturally appropriate. The International Organization for Standardization (1998) defines usability as the "effectiveness, efficiency, and satisfaction with which a specified set of users can achieve a specified set of tasks in a particular environment" (Albers & Still, 2011). The primary goal of technical communication is usability. Usability, as defined by Jakob Nielsen has

five components: Memorability, Errors, Efficiency, Learnability, and Satisfaction. Jakob

Nielsen (2012) broke down the five components:

- **M**emorability: When users return to the design after a period of not using it, how

    easily can they reestablish proficiency?

- **E**rrors: How many errors do users make, how severe are these errors, and how

    easily can they recover from the errors?

- **E**fficiency: Once users have learned the design, how quickly can they perform

    tasks?

- **L**earnability: How easy is it for users to accomplish basic tasks the first time they

    encounter the design?

- **S**atisfaction: How pleasant is it to use the design? ("Usability 101: Introduction to

    Usability", 2012).

The aim of researching users for usability tests is to help designers identify their

users' underlying needs (i.e. those that are not instantly apparent or accessible through

questioning alone). Once we, as technical communicators, have established the needs of

our targeted users, we can then develop new problem-solving approaches that

accommodate the user's constraints and exploit their capabilities. Thereby, utilizing

usability tests as a tool to assess information design, increases accessibility and empathy

for diverse users. When facilitating usability tests and utilizing the M.E.E.L.S usability

test principles for guidance, one will be "creating a balancing act" (Still & Crane, 192). In

the end, technical communicators and designers want to achieve all of these elements, not

just one. By using this method, technical communicators will be able to determine the

elements of their test design and the usability of their product (Still & Crane, 2017).

Continuing with the expertise of Still and Crane (2017), there are two types of usability testing: A/B Testing (also known as Summative Testing) and Formative Testing. A/B testing "compares the usability of two competitive products, two prototypes of a product, or even an earlier versus a later version of a product" (192). Formative testing, also referred to as "iterative testing," emphasizes "testing multiple times during the design process, using small numbers of representative users to test for each iteration" (193). It has been agreed by many technical communicators that this type of usability testing is the most useful type to conduct during the design process. The benefit of using a formative usability test is "when you are testing small numbers of user's multiple times, you get data about usability problems that can be fixed during the design process" (193). That way when you test throughout the design of the product, before it is finalized, you can catch usability issues and major design problems that can be detrimental to your targeted user's experiences.

Web site designers of international or intercultural communication, must take their audience into consideration and respect cultural differences. An approach to optimize a website for users from various cultural backgrounds, would be to evaluate the site, through usability testing, with potential users from various nationalities. By including users from all nationalities, it would create a representative sample population. The evaluation would include a think-aloud protocol usability test. Think-aloud usability tests allow participants to act as real users and give insight into the mistakes they make and the doubts they have in the process (Hall, Jong, Steehouder, 2004).

For web designers to be successful and for users to be satisfied, web sites need to consider usability and other design criteria (Palmer, 2002). Arguably, usability testing is

one of the most important elements of technical communication. By conducting a series of usability tests with users who fit our targeted audience's criteria, we ensure that we are in fact relaying our message in an effective manner, while making sure that our users also have a user-friendly experience with our products. By educating technical communicators on the importance of including usability testing in their web design process, we will be able to create more culturally sensitive information.

In the end, the large scope problem is that there continues to be disparities among Latinos accessing information regarding mental health services, as well as receiving mental health services. Research shows that Latinos are not only more likely to have psychiatric disorders than their Caucasian and African American counterparts but are less likely than other ethnic/racial categories to receive care. Research also shows that an existing barrier is that they do not speak English, or they lack the knowledge of available services. Clients with limited English proficiency are unlikely to pursue care (Willerton et al. 2008).

Methodology

In this section I provide a detailed overview of how I chose to conduct this study. I include information regarding the test goals and objectives, participants, scenario and test tasks, and methods used for collecting data.

Test Goals and Objectives

The objective of this study was to collect data from a series of usability tests, which will be used to examine how Spanish-speaking Latinos interact with a website that delivers

information about mental health services. The goal was to identify usability problems, collect qualitative and quantitative data, and determine the participants' overall satisfaction with the website. More specifically my research question is how do Spanish-speaking Latinos navigate information on the Frontier Behavioral health website?

I chose to evaluate the Frontier Behavioral Health website for this study because it is a non-profit organization that has been serving the Spokane region for more than 100 years. Their website also states that FBH is the "lead service provider in the Spokane County Regional Support Network (SCRSN)" system of care. FBH is an organization that has been serving the community for decades and has built a reputation among Spokane county. Further, their mission itself states that they strive to "provide clinically and culturally appropriate behavioral healthcare and related services to people of all ages…," as well as make their "behavioral healthcare services timely, accessible, and barrier free…" (Frontier Behavioral Health, 2014). I wanted to choose an organization that is in fact committed and dedicated to helping the diverse community of Spokane.

Participants

This section will focus on the participants of the test. This includes the recruitment process, presenting my user profiles, and then go into the scenarios and test tasks the users were asked to complete.

Demographics

All demographic information was collected through a pre-test survey (see Appendix A for full survey). All participants are Spanish-speaking and identify

themselves as being Latino/a. In this study, there were a total of 13 users (11 females and 2 males.)

<u>Recruitment</u>

During the recruitment process, I had specific criteria for a participant selection. All participants had to be 18-years old or older (legal age to consent), be of Latino/a descent (Mexican, Dominican, Peruvian, Puerto Rican, etc.), must have Spanish as their first language, must be able to speak and read in both English and Spanish (so they may understand the test procedures and questions in English). No participants were turned away based on education levels, technological skills or experiences, or income. I created four user profiles (college student, single parent with a child or children, married with a child or children, elder [50+ years or older]) in order to form a representative sample of Latinos for this study.

I recruited through word-of-mouth and provided an electronic copy of my IRB approved flyer to potential users. I sent a recruitment e-mail to friends and colleagues regarding my thesis project (see appendix B). Upon agreeing to participate, the participant and I determined which day and time would work best based on our availability. All usability tests took place in the technical communication lab in Patterson Hall (211 D).

Scenario and Test Tasks

Creating a scenario is a required and essential element of usability testing. According to Still and Crane (2017), creating scenarios for users provides them with the

abilty to work within a "fictional yet representative context" (209) and allows users to

visualize themselves in a hypothetical situation, as they offer feedback (168). I provided

the user with a scenario of a hypothetical situation the user uses as reference, where they

needed to perform a series of tasks directly related to the FBH website.

The scenario was:

> *You are a 32-year old, single parent, residing in Spokane, Washington*
>
> *with your 8-year old son. You just moved to Spokane from California*
>
> *about three months ago and just started a new job as the head*
>
> *housekeeper at the Red Lion Hotel in downtown Spokane. Your son has*
>
> *just started the third grade at Shadle Elementary School. Now, you just*
>
> *received a phone call from the school counselor informing you that your*
>
> *child has been experiencing difficulty staying on task, loss of interest in*
>
> *engaging with his peers, sadness, loss of appetite, and has been*
>
> *experiencing anxiety. Your son has also recently come forward and told*
>
> *his school counselor that he has not been sleeping well and has been*
>
> *offered to smoke cigarettes and drink alcohol with older kids, who meet up*
>
> *after school at Shadle Park. The school counselor has recommended you*
>
> *go to the Frontier Behavioral Health website to seek further services for*
>
> *your child, in order for you to get the help you need.*

It is important to note that the language for the tasks were revised after participant

five. The tasks were revised to be more scenario specific, in order to avoid any confusion

or misunderstanding among individuals. By avoiding confusion or misunderstanding

from the language of the written tasks, it does not allow room for the task failures to be tied to the language I used throughout the study, but user-related issues associated with the website itself. For instance, task 1 use to read: what are the different types of services that Frontier Behavioral Health offers to youth (please list at least 3). This did not allow the participant to refer back to the scenario that was read to them and it did not encourage them to place themselves in that hypothetical situation. It was then revised to: You want to do your own research before you inquire about the mental health services provided by Frontier Behavioral Health for your son. Explore the website to find the different types of services that are offered to youth/children (please list at least 3). Relating the task to the scenario, helps situate the participant in the hypothetical situation as they complete the tasks provided to them.

Test Tasks

Once the user received the scenario for the usability test, I asked them to complete the following tasks:

1. You want to do your own research before you inquire about the mental health services provided by Frontier Behavioral Health for your son. Explore the website to find the different types of services that are offered to youth/children (please list at least 3).

2. You are wanting to get a better idea of how long it will take you to arrive to the nearest Frontier Behavioral Health clinic, so you can plan accordingly in the near future. Explore the website to locate the nearest Frontier Behavioral Clinic

location in Spokane County, from where you are right now. Find the directions to the nearest facility.

3. You have now completed your research on the services provided by Frontier Behavioral Health and you have directions to the nearest facility. Next, you wish to find the steps you need to take in order to begin receiving mental health services for your son. Where would you find these steps listed on the website?

4. Your knowledge regarding mental health and common disorders is limited. You want to find material to read so you can become more educated on such topics. Where on the website could you locate resources to read, regarding mental health and common mental health disorders?

5. You are committed to getting your son the help he needs, but you are concerned about the cost of treatment. Where on the website can you locate the different forms of payment that are accepted at Frontier Behavioral Health?

Metrics

This study required a mixed-methods approach to collect data. While each participant navigated through the website and completed each task, I asked users to think-aloud. Think-aloud protocol encourages test participants to use the website, while continuously thinking out loud—verbalizing their thoughts as they move through the user interface. For example, as a user completed each task, they talked aloud, expressing their thought process and verbalizing why they were making certain decisions (clicking on a link, searching for a keyword). Once the user felt they had completed their task, or found the information they were asked to find, they said "done," or "found it" out loud. As Barnum

(2011) states: "hearing from the participant while he or she is working, and learning what pleases, frustrates, confuses, confounds him or her is illuminating" (205). This information is essential to collecting qualitative data that will illuminate user-related issues that may occur, that are directly tied to the design of the website.

I used the see-say-do triangle to collect data, Still and Crane (2017) developed the see-say-do triangle, as a method for close observation to during usability testing. The elements of the see-say-do triangle include: observing what users do (see), listening to what users say (say), and measuring what users do (do). According to Still and Crane (2017), through the use of the see-say-do triangle, you balance observation, self-reporting, and performance data (191). For the "see" element, the designer would observe what the users are doing while interacting with the design (product). This kind of observation includes user navigation with the design and user behavior (emotional responses, body language). The "say" data is the user feedback you obtain about the design (product). For this study, I utilized think-aloud protocol (TAP), pre-test surveys, and post-test interviews, which are all under the "say" category. According to Still and Crane, "TAP asks users to talk about their thoughts and decision-making processes while completing tasks" (203). Then, the survey and interview collect data about the users thoughts regarding mental health services in general, as well as gauge the user's satisfaction with the website. The post-test interview also gathered information regarding what the users found most appealing, what they struggled with, and allowed them the opportunity to provide feedback regarding all aspects of the usability test. Finally, the "do" refers to performance data. This includes time on task, mouse clicks, and error rates. The time on task refers to the amount of time (seconds) the user spends completing each

task. Mouse clicks refer to the number of clicks a user makes per task. The mouse clicks include clicking on a link, hitting a submit button, etc. Error rates include the number of errors made and the severity of those errors, which may occur during a task. Through the use and collection of data through the see-say-do triangle, I noted the "patterns, errors, gaps, and even incidental actions from different sources, each one representing a different approach: user performance, user verbalization, and designer observation" (Still & Crane, 69). All this data not only points to the navigating and thought process of a sample of Spanish-speaking Latinos, but also brings out any user-related issues they may encounter with the Frontier Behavioral Health website.

I used two metric scales when analyzing the tasks completed by users. The first was a task completion scale that I used to assign how easy or difficult it was for each participant to complete each given task. This metric scale is the one that is already prepared for use in MORAE, an audio-video screen recording usability software. This metric scale goes along with the efficiency and learnability guidelines of usability testing (see Table 1).

Table 1: Ease of Completing Task Scale

Rate	Description
0	Completed with ease—user was observed being able to complete the task with little to no frustration or confusion
1	Completed with difficulty—user was observed being able to complete the task, but struggled either with the navigation process, locating the correct information, or understanding what was being asked

2	Failed to complete—user was observed not being able to complete the task due to a variety of factors

The second metric scale I used was an error severity scale. If there was an error(s) made during a given task, I would assign it a rating, based on the severity of the error (see Table 2). This error scale is the one that was already in place by the MORAE Software. This is important to consider because, if there are a high volume of catastrophic errors occurring during certain sections of the website, this can point to a real design issue.

Table 2: Error Severity Scale

Rate	Category	Severity Description
1	Catastrophe	User cannot complete task; user can complete the process but express extreme irritation at the process; or user needs assistance
2	Serious	User is frustrated but gets through it; suggests that others may be less inclined to put up with the inconvenience or that frustration will be high
3	Cosmetic (minor)	User may hesitate or pick the wrong option, but user corrects it without incident; or user expresses minor irritation or annoyance, but it doesn't affect ability to complete task

Once I provided the participant with a consent form and it was signed, I pressed record through MORAE and it prompted the pre-test survey. The pre-test survey asked a

series of questions that were split into four sections: demographic information, language proficiency, mental health services (if they had ever accessed MHS, how likely they would be to pursue MHS), and technological skills (for full pre-test survey see appendix A). After each participant concluded the usability test, I pressed the "stop recording" button through MORAE. This prompted the post-test interview, which was composed of six questions varying from: what did you find most appealing about the website and what do you feel is the website's purpose? (for full post-test interview see in Appendix C).

Results

In this section, I will present data collected from the pre-test survey, usability test, and the post-test interview. The data collected was used to address the research question: how do Spanish-speaking Latinos navigate information on the Frontier Behavioral health website? In this section, I will solely present data collected from the study, and then follow in discussion, I will provide an interpretation of this data.

To begin, I will review the demographic information relevant to this study, which was collected through the pre-test survey. Although I created four user profiles, I was mainly able to gather individuals from the college student profile, due to limitations (no responses from other user groups). As mentioned before, due to difficulties recruiting Spanish-speaking Latinos who were willing to participate or time, the majority of the participants were currently enrolled students at EWU.

There were a total of 13 participants (n=13). Of the thirteen participants, the youngest was 21-years old and the oldest participant was 31-years old. All participants graduated and received at least a high school education. The participants fell in the

following categories: five with "some college," one with an Associate Degree, five with a Bachelor's Degree, and one with a Master's Degree. Moreover, three individuals are Eastern Washington University (EWU) alumni and are all working full-time. The remaining ten individuals are current students at EWU and fall into the following categories: four are working full-time, three are working part-time, and three are unemployed but remain full-time students. Out of all thirteen participants, when ranking their proficiency in speaking, writing, and reading in Spanish, one participant claimed to be on a basic level, ten claimed to be on an intermediate level, and two participants claimed to be on an expert level. When ranking their proficiency in speaking, writing, and reading in English, zero claimed to be on a basic level, four participants claimed to be intermediate, and nine claimed to be on an expert level.

Regarding their technological experience and skill level, the average (mean) rating [basic knowledge, intermediate (practical application), or expert] was 2.43 out of 3. All 13 participants responded that they have access to either a laptop, computer, or tablet. When assessing how familiar the users are in using a computer, tablet, or laptop, they chose a number based on the Likert scale where one represented not all familiar five indicted extremely familiar, the average (mean) rating was 4.86, which means that almost all participants rate themselves as being "extremely familiar" when using a computer, tablet, or laptop. There was a following question about their comfort level in navigating the internet to search for important information. They were asked to rate themselves based on a Likert scale rating of one through five (poor to excellent). The average (mean) answer to this question was 4.86. Again, this question regarding comfort level with technology demonstrated that almost all participants rated as having "excellent" levels of

comfort with being able to access information on the internet. All participants were asked how much time (hours) they spend a day using technology. The available options were less than an hour, 1-2 hours, 2-3 hours, 3-4 hours, or 5 or more hours. All participants answered that they spend 5 or more hours a day using some type of electronic device. All participants had internet access at home. This was no surprise due to the fact that a large portion of these participants are actively enrolled university students, who have been exposed to and participated in a lifestyle that revolves around the constant use of technology (computers, cell-phones, tablets, laptops) in order to access needed information.

Results: Time on Task

Figure 1 highlights the average time (seconds) it took for all (n=13) users to complete tasks 1-5. When measuring these tasks, I began the "task time start" when the user began scrolling and moving the mouse to navigate the website. The task ended when the user located the information and verbally announced that they had "found it" or "were done." If they did not verbally state so, I would ask the user if they had completed their task or if they were going to continue searching. The average (mean) amount of time spent on each task, in seconds, are as follows: task one (different types of services provided to youth/children) 85.66 seconds, task two had the least average of time spent on task of 4.66 seconds (finding the closest FBH facility and directions to that facility), task three (steps to follow to begin accessing MHS) 21.12 seconds, task four had the highest average of time spent on task with 288.33 seconds (locating resources to read,

regarding common mental health disorders) and task five (finding the different methods of payment accepted by FBH) 45.42 seconds.
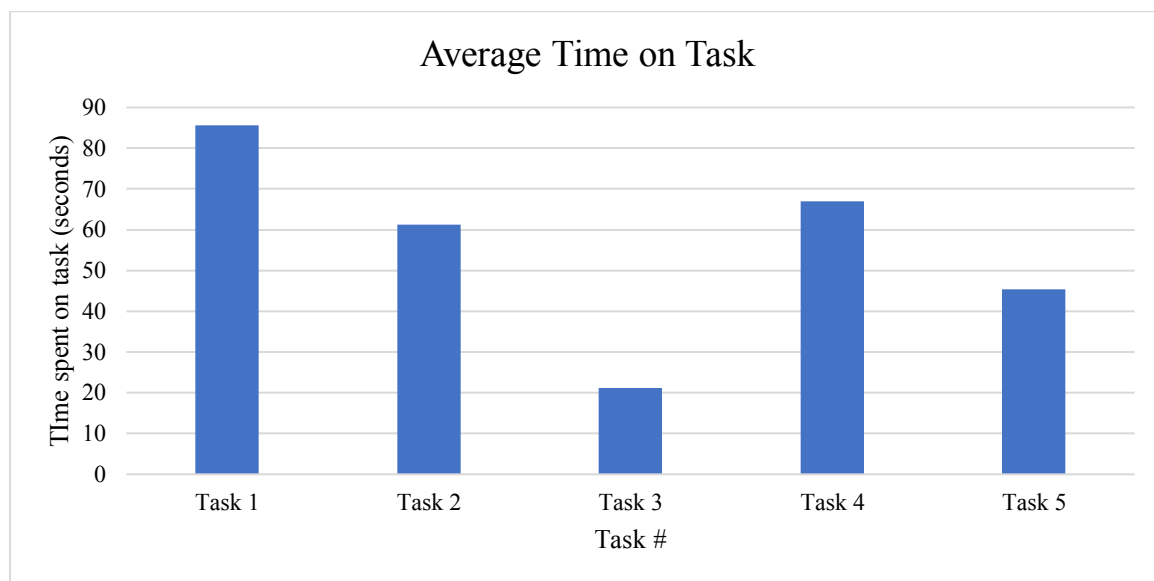

Figure 1: Time on Task

Results: Mouse Clicks

Figure 2 demonstrates the average number of mouse clicks performed per task, for all participants (n=13). This data was set to measure the amount of time the user clicked on their mouse, whether it was to click to move around on the page or to select a hyperlink. The average (mean) amount of mouse clicks, per task, are as follows: task one (5.54), task two (5.46), task three (1.85), task four (7.15), and task five (4.54). This data shows, that on average, task four (locating resources to read, regarding common mental health disorders) had the highest amount of mouse clicks, and task three (steps to follow to begin accessing MHS) had the least amount of mouse clicks. For task one (different types of services provided to youth/children), task two (finding the closest FBH facility and directions to that facility), and task three (steps to follow to begin accessing MHS),

the minimum amount of mouse clicks was zero because those participants chose to stay on the homepage and did not navigate elsewhere to complete the given tasks. The maximum amount of mouse clicks was 19 for both task one (different types of services provided to youth/children) and task four (locating resources to read, regarding common mental health disorders).
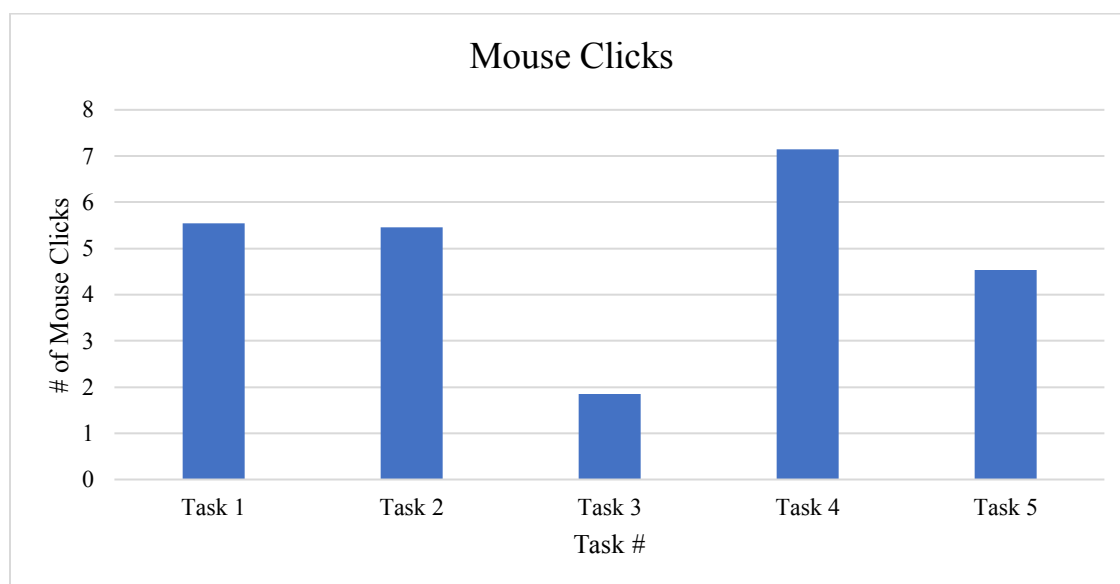

Figure 2: Mouse Clicks

Results: Task Success

The data also shows the level of success achieved on behalf of all users (n=13), per task (see Figure 3). Task success was assessed based on the level of difficulty the user experienced, while completing each task. They were assessed based on three levels: completed with ease, completed with difficulty, or failed to complete. For example, this data shows that zero participants failed to complete task five. Data also shows that task three (steps to follow to begin accessing MHS) and task five (finding the different

methods of payment accepted by FBH) were the easiest to complete, with 11 of 13 participants falling under that category. The task that was most difficult and had the highest amount of task failure, was task one (different types of services provided to youth/children), with 7 out of 13 participants were category.
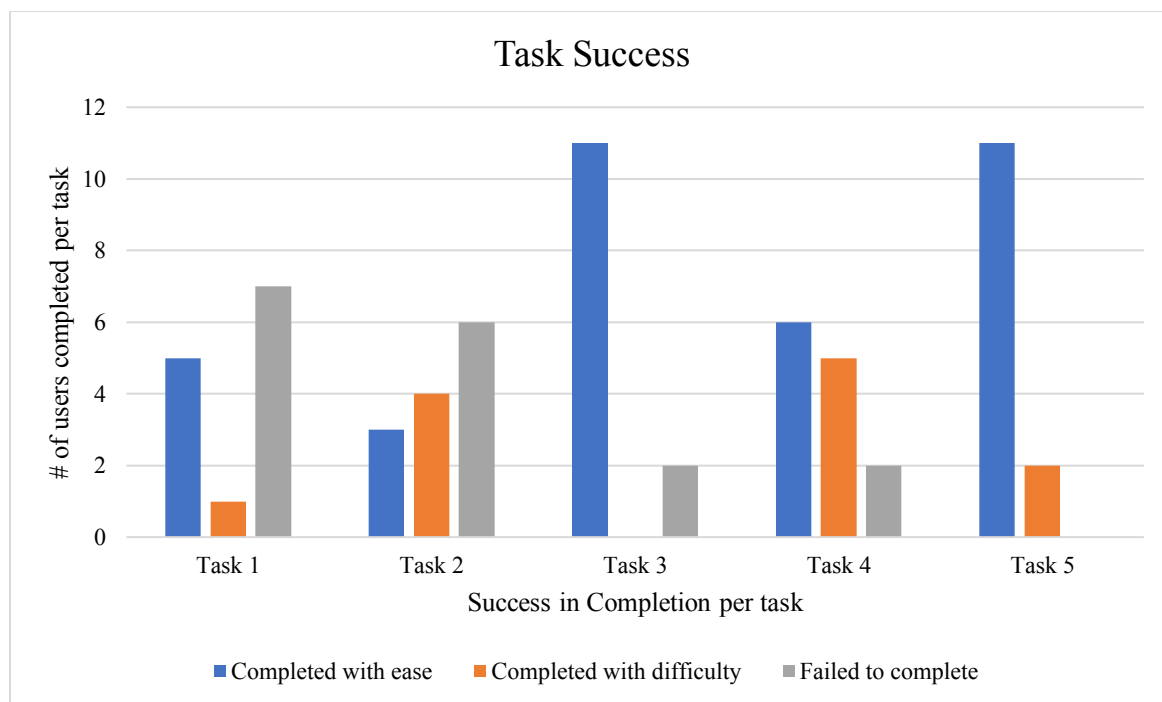
Figure 3: Task Success: Measuring the Task Completion and Level of Difficulty

Additionally, in Table 3, I provide data that shows the percent of all users (n=13), who were assessed under the three categories of level of difficulty in completing each task. This data shows the average percent of users who were able to complete (or failed) each task and at what level of difficulty. For example, for Task one (different types of services provided to youth/children), 38.46% of the total 13 participants completed the task with ease. But task one also has the highest number of users who failed to complete

the task with 53.85% of all users falling under this category. This table demonstrates that

task three (steps to follow to begin accessing MHS) and task five (finding the different

methods of payment accepted by FBH) were overall the "easiest" task to complete, with

84.62% of all users being able to successfully complete the task with "ease."

Table 3: Average User Task Success (percent)

	Completed with ease	**Completed with difficulty**	**Failed to complete**
Task 1	38.46%	7.69%	53.85%
Task 2	23.08%	30.77%	46.15%
Task 3	84.62%	0.00%	15.38%
Task 4	46.15%	38.46%	15.38%
Task 5	84.62%	15.38%	0.00%

Results: Number of errors made, and error level assessed

Lastly, I present Table 4, which highlights the different types of errors made, per

task, among all user's total (n=13). In regard to assessment, the catastrophic level errors

were the ones where the user cannot complete the task, can complete the process but

express extreme irritation at the process, or needs significant assistance. Serious level

errors are when the user is frustrated but gets through it—suggesting that others may be

less inclined to put up with the inconvenience or that frustration related to that task. And

finally, the cosmetic (minor) level errors are when the user may hesitate or pick the

wrong option, but the user is able to correct it without incident, or if the user express

minor irritation or annoyance, but it doesn't affect their ability to complete the task at

hand. In total, for the entire study, there were four cosmetic errors, four serious errors,

and ten catastrophic errors. Task one was the leading cause of catastrophic level errors, with five of the total of ten errors made in that category. Task three had the highest amount of serious errors, with three of the total four errors made in that category. And task two had the highest amount of cosmetic errors made, with three of the four total errors made in that category.

Table 4: Error Level Per Task

	Cosmetic	Serious	Catastrophe
Task 1	1	0	5
Task 2	3	3	3
Task 3	0	0	1
Task 4	0	1	1
Task 5	0	0	0
Total	4	4	10

There were various factors that contributed to users having a frustrating and confusing experience when interacting with the Frontier Behavioral Health website. We will now transition to the findings, where I will review and interpret the results.

Findings and Discussion

In this section I will analyze the data to interpret the various factors that influenced task failure, errors made (cosmetic, serious, catastrophic), why they were made, and patterns observed among all users during the usability testing.

I will expand on the errors made during this study and what factors I believe to have caused users to fail specific tasks. There were three levels of error: (1) catastrophic, (2) serious, (3) cosmetic. While I review these errors, I will expand on the user's experiences during the most difficult tasks and some common patterns observed among the users. There were five catastrophic errors made for task one (locating the services provided, specifically for youth/children).

For task one (different types of services provided to youth/children), the users did not navigate away from the homepage and were instead using the information on the homepage to complete their task (see figure 4). This was a problem because they were instructed to locate services that are specifically provided to youth/children in Spokane county. In the scenario they were provided for the test, it stated that they were on the website in the first place to receive mental health services for their eight-year old son. By not fully exploring the website, users were unable to see the full list of services provided that their theoretical child would be able to access.

Task one took the longest amount of time to complete, with an average of 85.66 seconds to complete. Task 1 also had the highest number of clicks out of all tasks, with an average of 5.54 clicks (highest of 19, lowest of 0). Task one had a 46.15% completion rate (ease and with difficulty) and a 53.85% failure rate, which was quite significant. This pointed to the users experiencing difficulty in learning the website and were still very unfamiliar with how to navigate the website efficiently. There were a total of six errors made for this task: one cosmetic, five catastrophic. When looking at all of the data for task one, there was a significant issue with learnability. Users were experiencing issues in completing the task because they were unable to learn the website. There was also an

issue with efficiency. The users were not able to find information they wanted in a timely manner. Due to users not being familiar with the website, they struggled and spent the largest amount of time on this task and some users even gave up.
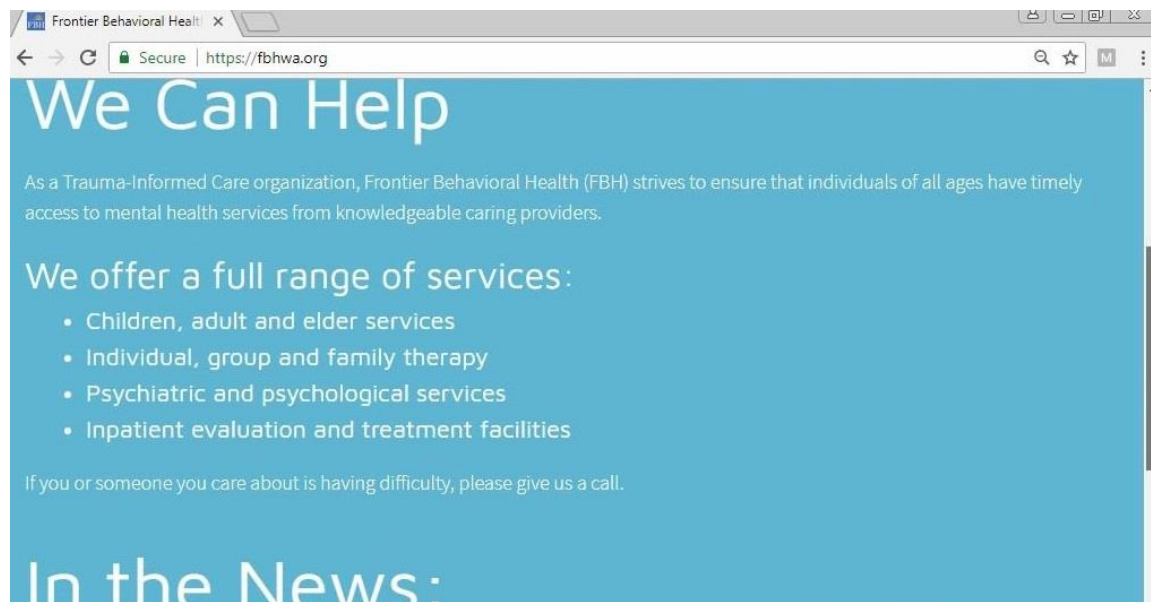
Figure 4: Frontier Behavioral Health Full Range of Services on homepage

Additionally, five users were unaware there was a menu button at the top of the homepage, and one user became frustrated and gave up on the task because he was unable to locate the information. Users were unable to distinguish the 'Menu' link because it was so small and all the way at the top (see Figure 5). They were unaware that they were able to click on it to fully explore the website. Participant five discovered the menu button by task three (steps to follow to begin accessing MHS), stating: "Is this the full menu? [pointing to the top of homepage with cursor]. Look at that… the menu has directions! Clearly I wasn't navigating this website fully [laughs at self]." Participant six, who was aware that the menu button existed, but became frustrated, expressed his

internet browsing process: "My instincts are to go to the menu, to find something like 'types of services…There's a lot of text… which I'm not going to read. As a user, I'm trying to scan. But I can't read any headers or keywords." As the user continued to explore the website, he became visually frustrated and confused, so the user went back to the homepage to see if they could find the information they were looking for. After a few minutes of searching, the user exclaimed: "I don't see a button that says 'youth services' or 'children. "I'm pretty much confused and… I give up."

In essence, the participants failed to complete the task and were assessed at a catastrophic level of error due to two primary reasons. First, the services provided towards the bottom of the homepage are the general services provided to children, adults, and the elderly. They are not child/youth specific as instructed for task one. Second, they failed to navigate outside of the homepage and did not utilize the menu link. The menu link forms into a drop-down menu (see figure 6) to locate the services that Frontier Behavioral Health specifically provides for youth/children. In the scenario provided at the beginning of the usability test, it was emphasized that their sole reason to explore the website was to find valuable information that would lead to receiving mental health services for their son.

Task one (locating the services provided, specifically for youth/children) had one cosmetic error made. Participant 9 was unable to complete the task and was assessed at a cosmetic error level type for task one. This user clicked on "Programs," under the main drop-down menu, and then read off the general services provided by FBH instead of searching for the services provided to children/youth specifically. This user was able to locate the list of services, but not necessarily the ones that were asked of her. This would

in turn be an issue because if this user was a mother of an eight-year old, who is currently in crisis, they would want to receive the accurate information regarding the different types of services that are provided to children/youth. That way, they can assess which service(s) the user would request, in order to best serve her child's needs.

Figure 5: Frontier Behavioral Health 'menu' link on homepage
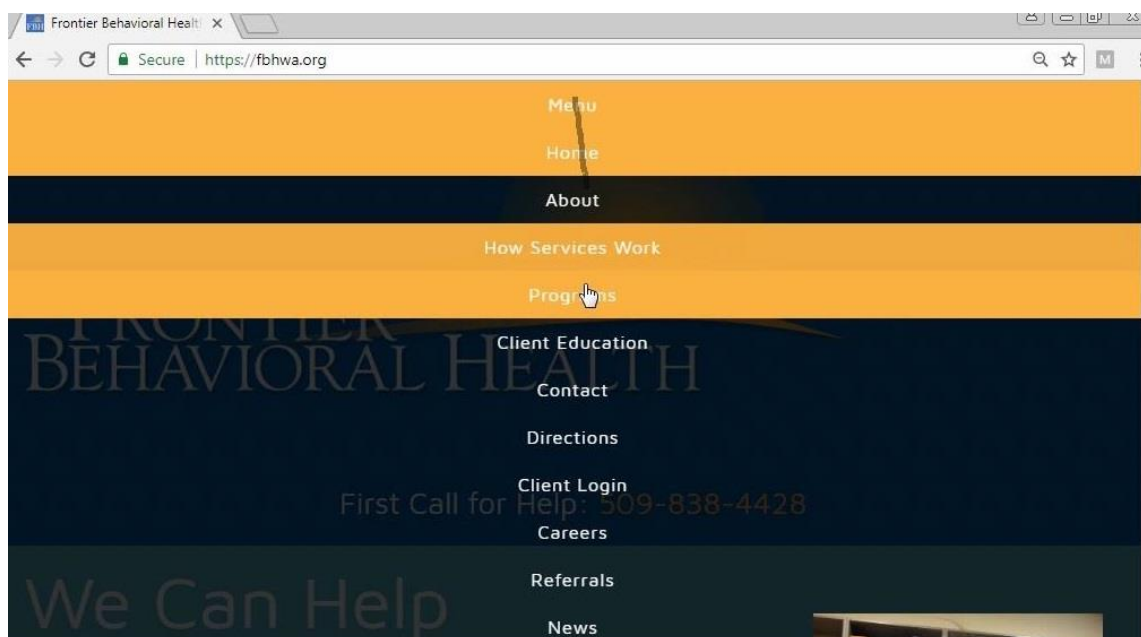

Figure 6: Frontier Behavioral Health 'drop-down menu' on homepage

During task two (locate the nearest FBH facility to your current location and access directions to that location, for future reference), users continued to struggle to complete the given task. Although in the usability tests script I emphasized that there was more than one location in Spokane county, there were still three users who looked up multiple locations instead of focusing on finding the closest one to their current location. On average, users spent 61.32 seconds to complete the task. User 8 spent 114.86 seconds to complete this task, user 9 took 152.54 seconds to complete the task, and user 12 took 109.35 seconds to complete the task. The reason that these users took such a long time was because they were not looking in the right place. Two of these users navigated to the correct page but were unable to investigate which facility was closest to their current location and were unable to access directions to that facility. They took a long time because they were attempting to become familiar with the website and become more comfortable with the navigation of the website. But then there was one user who spent 4.66 seconds to complete the task. This user spent the least amount of time because they stayed on the homepage and did not navigate the website. This pointed to the learnability issue observed in task one. Individuals were still struggling to get the hang of how to efficiently and effectively navigate the website to locate specific information.

An average of 5.46 clicks were made during the completion of task two (highest 16, lowest of 0). There was also a 53.85% completion rate and a 46.15% failure rate. But most significantly, there were a total of nine errors marked for this task: three cosmetic, three serious, and three catastrophic errors made. These errors occurred for two main reasons: (1) the user did not note the difference between the "contact" and "directions" pages. Both of these pages listed all the facilities in Spokane county, but the user was

unable to identify which facility was closest to their current location, and (2) the user did not navigate past the homepage and claimed the main facility's address was the closest, and again, did not access directions to the location.

All three of these participants failed to complete this task, because they did not move past the homepage to locate the "Directions" tab under the drop-down menu. Instead, all three participants named the main facility (see Figure 7) as the nearest facility. Not only were these users observed in choosing the nearest facility as the main facility in Spokane, but they were also unable to access the directions to that location. This was all due to the users not navigating to different areas of the website, to locate the correct information under "Directions" in the drop-down menu. These errors continued to be tied back to the fact that they did not notice the "Menu" link located at the top of the homepage, as well as not being fully aware that the menu drops down to list a series of helpful links that navigate them over to other pages on the website.

Task two (locate the nearest FBH facility to your current location and access directions to that location, for future reference) had three cosmetic errors. Participants two and four were able to complete the tasks, but with some difficulty. Both participants were assessed as a cosmetic level error for the completion of task two. Participant two was able to find the FBH facility that was the closest to her but was unable to access directions to that facility. Comparatively, participant four was able to locate the closest facility, but again, did not actually access the directions to that facility as asked. Participant four stated: "I would say this is how I would be able to look at it… depending where I'm at, I could put the zip code," as the user was pointing to the "Search Locations" bar on the page with her mouse cursor (see figure 9).

As for the serious level errors, participant 10 was unable to complete the task and was assessed at a serious level error. Participant 10 stated: "I would click programs. And I would put…I would look at all the services that they have on here, like adult services, recovery treatment…is that it? [I responded that I could not directly provide a yes/no answer and they should utilize their best judgment] I'm going to say yes." This particular participant flew through the usability test and appeared to be racing against themselves, trying to complete each task in the fastest way possible.

At task three (steps needed to take in order to begin accessing/receiving mental health services from FBH) learnability, efficiency, and memorability significantly improved for at this point in the study. On average, task three was completed in 21.12 seconds. This was the fastest completion time for all tasks. Showing more efficiency in completing the tasks. There was also an average of 1.85 mouse clicks, which was the lowest of all five tasks. For this task, there was only a 15.38% failure rate and only one error made (catastrophic). The data points that by this point, the users were gaining more confidence in themselves and their ability to navigate through the website. The users were spending their time more efficiently due to increased memorability. The users began utilizing the drop-down menu, which helped them navigate more efficiently. Users were at the point where they were familiar navigating the system. The one error made was due to one user not utilizing the full website (not aware of the menu link).

At this point I began noting a pattern, among a series of participants who did not clearly see the labeled "Menu" link. Thereby, they did not realize there was a drop-down menu available on the homepage. Instead, these users opted to complete this task by locating information to complete task three on the main page. Participant 3 stated: "It

says first call for help… so I guess, first call for help," inferring that they would call the first call for help hotline number in order to begin receiving mental health services (see Figure 7). This was a task failure at catastrophic level for two reasons. The first is that the user did not navigate past the homepage and did not utilize the menu link order to locate the correct information needed to complete the task. The second reason was because the First call for Help number is a crisis hotline number, for individuals who may be in crisis and are in need of immediate psychiatric or medical assistance. The users that were able to complete this task successfully and locate the information needed were able to find the lists of steps needed to take in order to begin accessing mental health services, under the "How Services Work" link under the menu (see Figure 6).
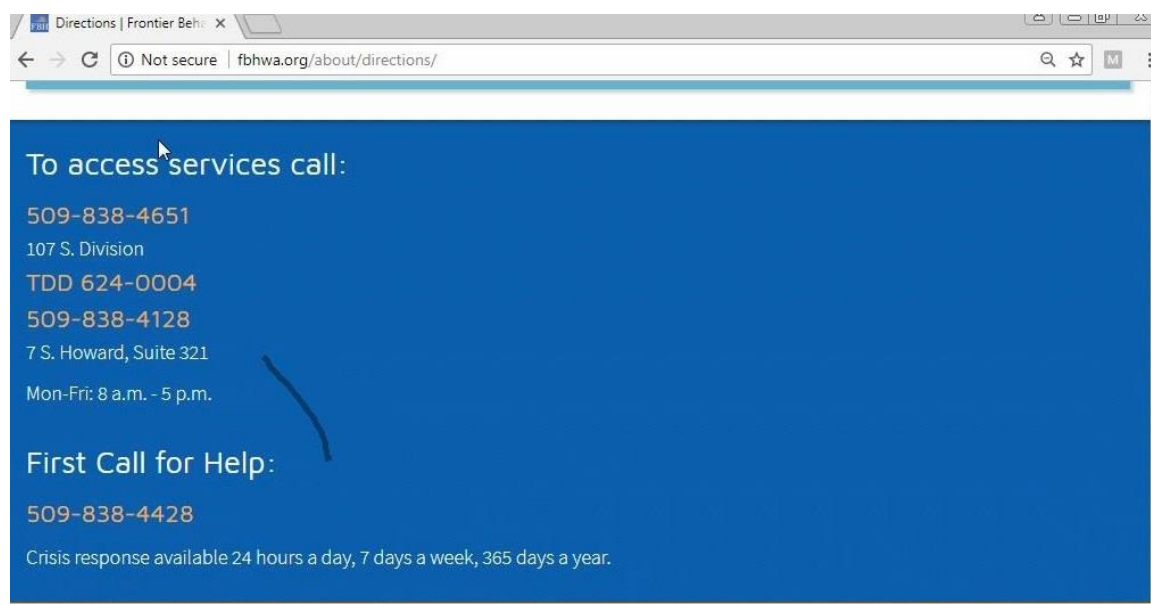
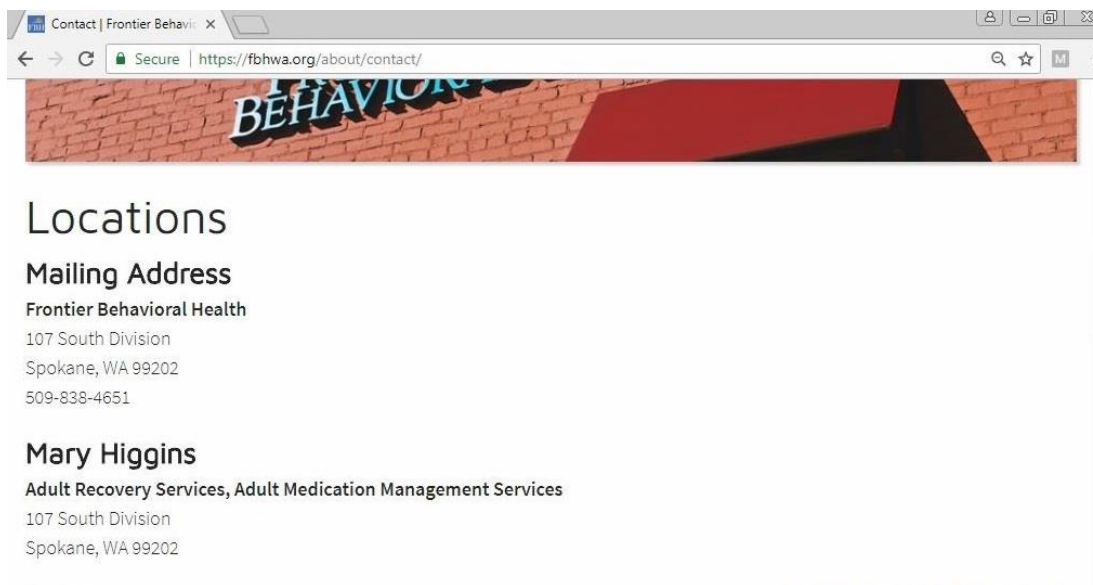*Figure 7: Frontier Behavioral Health Primary Contact Information on homepage*

For task four (locating resources to read, on the website, regarding mental health and common mental health disorders) there was one catastrophic error made. Participant

12 was unable to locate resources to read regarding mental health services on the Frontier Behavioral Health website. These resources can be located by clicking the "Client Education" link on the main drop-down menu (refer to figure 6). Instead, participant 12 chose the information listed about the programs produced by the Frontier Behavioral Health center. The user stated: "I would say under 'programs,' because it tells you what you're looking for…" The user expressed confusion and hesitance which ultimately led to task failure.

Task two (locate the nearest FBH facility to your current location and access directions to that location, for future reference) had three errors and task four (locating resources to read, on the website, regarding mental health and common mental health disorders) had one error, with a total of four serious level errors made overall. Regarding task two (closest facility and directions), both participants 7, 12, and 13 were assessed at a serious error level. All three participants were unable to complete the task. Participant seven was able to find the different FBH locations in Spokane County under "Contact," from the drop-down menu (see Figure 8) but was not actually able to access the directions themselves. This participant was unable to access directions or see which facility was closest because they were on the incorrect page (correct was "Directions" tab under the menu). Instead, participant 7 navigated under "contact," scanned the list of locations, and then randomly picked from the list and stated: "I would say Frontier Behavioral Health on S. Division, Spokane." Similarly, participant 12 and 13 navigated to "Contact," as well, scrolled down the list of various locations, and picked a location at random. Participant 12 stated: "I just don/t know much of Spokane, so I don't know which is close." Then participant 12 went on to say: "okay, I'll just say this one [pointing

with the cursor to the first address on the list]." Both participants failed to complete the task. They were not able to the correct page, assess which facility was closest to their current location (EWU Campus, Cheney, WA.), and access directions from and to that location, as asked.

Figure 8: Locations list under 'Contact' of the Frontier Behavioral Health Website
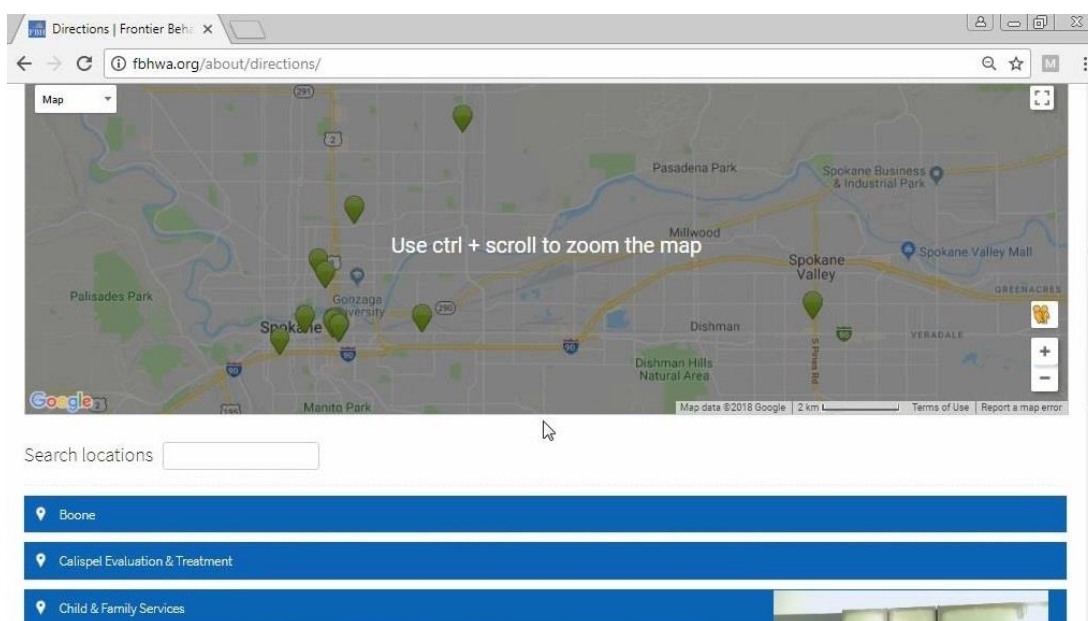
Figure 9: Directions page of the Frontier Behavioral Health website

Continuing with task four (locating resources to read, on the website, regarding mental health and common mental health disorders), users were observed improving in memorability and learnability. On average, users spent 67.05 seconds completing each task. For task four, users jumped to having an average of 7.15 mouse clicks. Specifically, there were five users who clicked on the high range (10 to 19 clicks). Fortunately, the failure rate was low with 15.38% and a total of two errors: one serious, one catastrophic. Although most users were able to complete it, users were observed experiencing difficulty because they were unable to locate information with keywords. There were memorability and learnability issues for two major reasons: (1) their learning system was not efficient because they spent longer times completing this task, and (2) they were unable to connect keywords to the available menu options.

Finally, by task five (finding the different methods of payment accepted by FBH), users were familiar with navigating the website and more confident in their ability to find accurate information. On average, users spent 45.42 seconds to complete this task and 4.54 mouse clicks (second lowest out of all five tasks). Most importantly, there were no errors made. Not only did users improve significantly in learnability, memorability, and efficiency by the end of the study, but by the end, it became error resistant. By this point, users had explored a majority of the website, by completing other tasks, so they did not experience difficulty in locating the necessary information.

In essence, it appeared that the majority of user issues were due to the design of the homepage—mainly, accessibility and visibility of the menu button. The way that the Frontier Behavioral Health website has been designed made it difficult for users to see, thereby, negatively effecting the usability of the rest of the website. The website also

lacked a search bar, which would make the users experience significantly easier to locate specific information by using keywords or terms. Participant six had expressed that they would typically utilize a search bar when exploring the internet. When attempting to complete task four, quickly noticed there wasn't a search bar and stated: "I don't see a search thing, so I'll try the menu. I'm looking for 'resources." Similarly, participant one stated: "I'm trying to look for something that says like 'learn about' or 'how to understand; but I'm not seeing anything," when referring to completing task four, which the user did with some difficulty. This supported the general thought process of participants who relied on scanning for keywords, and phrases when trying to locate specific information and complete tasks. Additionally, since a search bar was missing on the website, it made it particularly difficult for users who rely on this to make their search efficient, which led to longer times spent in completing tasks.

In summary, I would like to refer back to MEELS (memorability, errors, efficiency, learnability, and satisfaction)**.** The major findings from this usability test were related to issues with learnability, memorability, efficiency, and error resistance. It was very difficult for users to accomplish basic tasks the first time they encountered the Frontier Behavioral health website. This is where a few users were unable to move past the homepage, because they were unaware of the menu button, to fully explore the site. There was also a memorability issue; users struggled to remember and learn the system and effectively use this site. Fortunately, by the third task, all users observed the FBH website system and became more efficient in their navigating process. This finding was supported by the fifth task, which was the fastest to complete out of all tasks with the

least amount of mouse clicks. By the fifth task, the FBH website had become error resistant. There were no errors made at any level by the fifth task.

Conclusion

      I was unable to conclude that Spanish-speaking Latinos had a difficult time navigating the Frontier Behavioral Health website due to cultural differences. What my research suggests is that if users cannot find information, they will become frustrated and give up. Further, when individuals were unaware of the full-menu and not navigating the website fully, they blamed themselves for not taking notice. This is an issue because if the users blame themselves for their inability to learn the system in a quick manner or are unable to locate information based on using keywords that are not used on the website, they will leave the site due to confusion or frustration. Issues like these are what designers must be able to find through usability testing to begin addressing these design-related user issues.

      This study seemed to pick up quite a few issues with the user's ability to navigate through the website with ease. Most of these users experienced frustration and confusion, which led to either giving up and failing to complete the task, or they were able to complete the task but with some difficulty. This study shows how usability testing can collect data that helps improve websites, to deliver a positive user-experience to users, while delivering information in an efficient and effective way. Referring back to what Jacob Nielsen (2012) had stated: "If a website is difficult to use, people leave. If the homepage fails to clearly state what a company offers and what users can do on the site, people leave. If the users get lost on the website, they leave. If a website's information is hard to read or doesn't answer the user's key questions, they leave," (1). This was proven

to be true as I observed users become frustrated and confused while trying to navigate through the Frontier Behavioral Health website.

Usability testing is crucial when designing a website. The FBH website serves many purposes, but its primary purpose is to inform and educate. FBH has created this website to deliver information regarding their various facilities in the Spokane county, as well as essential steps that should be taken in order to begin receiving mental health services they offer. A part of Frontier Behavioral Health's mission is to strive to "provide clinically and culturally appropriate behavioral healthcare and related services to people of all ages…," as well as make their "behavioral healthcare services timely, accessible, and barrier free…" contradicted the message it was delivering through the design of the website. In the sections that follow, I will review the limitations of this study and then end with recommendations for future research.

Limitations of Study

The majority of the users utilized for this study are college aged individuals. In the beginning of this study, I had four user profiles that I wanted to recruit with at least four participants were category (16 total participants). These four categories were: college student, single parent with a child or children, married with a child or children, elder (50+ years or older. None of the participants had children, twelve of the participants claimed to be "single," and only one individual was "married but separated." The oldest participant was 31-years old, who was not a student, but did not have a child or children. In the future, I would like to collect data from all of these user profiles in order to form a representative sample of Latinos for this study. By recruiting participants from the other

user profiles I had created, it would provide data that would shed light on the differences between a wider range of language proficiency, age, occupation, and technological experience, to see how all of those factors influence the user experience when interacting with the Frontier Behavioral Health website.

Another limitation of this study was that it was conducted using a Macintosh laptop, with a PC interface. I later discovered that the two interfaces have different homepage designs, which may lead to a difference in user experiences with the website. This could be further explored in future research.

Recommendations for Future Research

My recommendation is to discourage technical communicators from applying a single framework when desginging for intercultural audiences. As Brumberger (2014) explains "a one size fits all model is no more appropriate for visual communication than it is for verbal communication" (91). Research in technical communication, visual communication, and intercultural communication has expressed the need for further research to discover workable frameworks that can be utilized in various situations and for diverse audiences. As technical communictors, we must think innovatively and realize that the existence of a single framework that will work effectively for a universal audience may not exist. I recommend we continue educating and equipping companies, non-profit organizations, and businesses about the benefits of utilizing and facilitating usability testing for their products. As of right now, we know that there are aspects that affect the usability and perception of visual communication such as color, viewing patterns, contextual relationships, and preferences; however, there is still not enough

research that there is one intercultural visual communication framework to draw from (Brumberger, E. 2014). In the end, the purpose of my recommendations are to encourage others to spread the necessity of usability testing when creating a product for culturally diverse audiences, so their underlying needs may be served. Although I cannot conclude that there were significaitn cultural differences that interfered with the users experience, I can conclude that further research is needed in order to investigate these barriers. Once we are aware of these barriers and are able to pinpoint what is creating these barriers, we can then adujust our frameworks of information design, and in turn, increase accessibility to diverse groups of users. If the design team of the Frontier Behavioral Health clinc incorporates this framework while re-designing their website, they will enable users from different cultural backgrounds, who may be confronted with frustration or confusion due to the formal and clinical language used on the site, as well as a poorly designed homepage.

Through the results and findings of this study, I would recommend Frontier Behavioral Health conduct usability tests on both a Microsoft PC and Macintosh interface. The study was conducted using a PC interface, so it would be interesting to see the differences in using a Macintosh interface. When looking at the website on an Apple interface, it looks different than it does on a Microsoft PC interface. The overall architecture and design of the homepage menu is the biggest difference thus far. The menu bar is clearly labeled and visible at the top of the homepage for the MAC interface, but there is only a small 'Menu' link at the top of the homepage on the PC interface. By doing so, they will ensure that users have an equally satisfying experience navigating the website with ease. By performing usability tests on a series of internet browsers (Safari,

Internet Explorer, Mozilla Firefox, Google Chrome) on different interfaces (Macintosh/PC), with perhaps different computer types (Desktop computer, laptop), the design team at Frontier Behavioral Health would be able to identify if these are operating system, web browser, or web design problems. By identifying the root of the differences in these two interfaces, they can be directly addressed the problems to provide the most satisfying experience to their targeted audience. The facilitation of usability tests would also help identify if there are significant issues with visibility and accessibility that may be contributing to the errors and difficulties that users observed experiencing during my study.

Other small recommendations are to make the "menu" more visible and adding a search bar. A few users made comments about navigating through the website by scanning for keywords and phrases. With that being said, a search bar can help users complete tasks with ease and help make information more accessible.

Future usability tests will definitely help confirm the issues encountered by users and major findings found in this study. More usability tests can shed light on issues that were not caught, due to the limitations of this study, or it can fill gaps that were not addressed with this study. The Frontier Behavioral Health would greatly benefit from performing a series of usability tests on their website. By doing so, their mission to "provide clinically and culturally appropriate behavioral healthcare and related services to people of all ages…," as well as making their "behavioral healthcare services timely, accessible, and barrier free…" would be supported through the data collected. Through the use of usability testing, it will help Frontier address issues that exist in the design of their website, to create a well-designed website that provides crucial information

regarding mental health services. The Frontier Behavioral Health clinic is committed and dedicated to helping the diverse community of Spokane, and thereby, should perform more research to ensure that they are addressing their targeted users underlying needs.

With the data collected in this study, I cannot conclude whether results of the study were due to cultural differences that affected the way Spanish-speaking Latinos navigated to find information on the Frontier Behavioral Health website. Through the facilitation of usability tests, I observed users encounter design issues that posed barriers in their navigation process. The design of the website made it difficult for users to learn the system and navigate the website efficiently. This study has set a solid foundation for future research, where I can explore whether or not there are distinct differences when compared to native-English speakers and those users ways of navigating through the FBH website. I can also conclude that as technical communicators, we must facilitate usability tests to gather data that may point to design-related issues that can pose barriers that will deter our targeted audience members away from our site. For example, if an individual came to the FBH website in crisis and needed information to get help, but was unable to because of the website's poor design, the organization would be at fault, not the individual. It is the responsibility of the organization and companies to invest in usability tests and gather user feedback to constantly improve their websites. As technical communication invests more in investigating the differences among our diverse communities we can better design and disseminate information with improved rhetoric. As Aristotle once said, rhetoric is finding and utilizing, in a given situation, the available means of persuasion. Everything comes back to rhetoric. As technical communicators, we

must ensure that the organizations, especially mental health facilities, are utilizing their

rhetoric effectively.

References

Adams, S.T., Cardemil, E.V., Calista, J.L., Connell, J., Encarnacion, J.,

　　Esparza, N.K., Frohock, J., Hicks, E., Kim, S., Kokernak, G., McGrenra, M.,

　　Mestre, R., Perez, M., Pinedo, T.M., Quagan, R., Rivera, C., Taucer, P., Wang, E.

　　(2007). The Latino mental health project: a local mental health needs assessment.

　　Administration Policy Mental Health & Mental Health Service Res., 32, 331-341.

　　Web. DOI: 10.1007/s10488-007-0113-

Albers, M. (2004). Communication of complex information. New Jersey: Lawrance

　　Erlbaum Associates, Inc. ISBN: 080584992

Albers, M., Still, B. (2011). Usability of complex information systems. Boca Raton:

　　Taylor & Francis Group. ISBN: 9781138114609

Barnum, C.M. (2011). Usability Testing Essentials. Massachusetts: Elsevier

　　Inc. ISBN: 978-0-12-375092-1

Brumberger, E. (2014). Toward a framework for intercultural visual communication: A

　　critical review and call for research. *International Professioannl Communication*

　　Journal, 2(1), 91-116

Clayman, M.L, Manganello, J.A., Viswanath, K., Hesse, B.W., Arora, N.K.

　　(2010). Understanding the importance of language, trust in health information

　　sources, and media use. Journal of Health Communication, 15, 252-263. DOI:

　　0.1080/10810730.2010.522697

Experience UX Specialists (2017). What is usability testing? Experience UX,

　　retrieved from: http://www.experienceux.co.uk/faqs/what-is-usability testing/

Frontier Behavioral Health (2014). *Mission & Values*. Retrieved from:

https://fbhwa.org/about/mission-values/

Germaine-Madison, N.S. (2009). Localizing medical information for U.S.

Spanish-speakers: the CDC campaign to increase public awareness about HPV.

Society for Technical Communication, 56(3), 235-247. Retrieved from:

http://www.jstor.org/stable/43094075

Hall, M., Jong, M.D., Steehouder, M. (2004). Cultural differences and

usability evaluation: individualistic and collectivistic participants compared.

Society for Technical Communication, 51(4), 489-503. Retrieved from:

http://www.jstor.org/stable/43092359

Hudson, W. (2009). Reduced empathizing skills increase challenges for user-

centered Design, User Studies and Design. Retrieved from:

http://www.syntagm.co.uk/design/articles/note1271-

hudson.pdf?__hstc=246535899.1289f84a362c41b80e5e8776d3502129.14352339

10711.1436979988826.1437043884259.45&__hssc=246535899.3.143704388425

9&__hsfp=4289683868

Hunsinger, R. P. (2006). Culture and Cultural Identity in Intercultural

Technical Communication. Technical Communication Quarterly, 15(1), 31-48.

doi:10.1207/s15427625tcq1501_4

Kirkman, John (1988). How friendly is your writing for readers around the world? Text,

context, and hypertext: writing with and for the computer. Cambridge: MIT Press,

343-364. ISBN: 0-262-02275-3

Nielsen, J. (2012). Usability 101: Introduction to usability. Nielsen Norman Group.

Retrieved from:

file:///Users/RaquelRamos/Desktop/Articles%20to%20be%20read/Usability%201

01:%20Introduction%20to%20Usability.webarchive

Palmer, J. W. (2002). Web site usability, design, and performance metrics. *Information*

System Research, 13(2), 151-167. Retrieved from:

http://www.jstor.org/stable/23011053

Redish, G. (2014). Letting go of the words. Waltham, MA: Elsevier, Inc.

Shin, H. B., & Bruno, R. (2003). Language use and English-speaking ability:

2000 (No. Census 2000 Brief, C2KBR-29). Washington, DC: U.S. Census

Bureau.

Shobe, M.A., Coffman, M.J., Dmochowski, J., (2009). Achieving the American dream:

facilitators and barriers to health and mental health for Latino immigrants. Journal

of Evidence-Based Social Work, 6(92), 92-100. DOI:

10.1080/15433710802633601

Still, B., Crane, K. (2017). Fundamentals of user-centered design: A practical approach.

Boca Raton, FL: Taylor and Francis Group, LLC:

St. Amant, Kirk. (2011). Culture, Communication and Cyberspace: Rethinking Technical

Communication for International Online Environments Book Review. IEEE

Transactions on Professional Communication, 54(4), 406-407.

St. Amant, K (2015). Re-thinking the context of technical communication. *Society for*

Technical Communication, 62(4), 221-223.

Rastogi, M., Massey-Hastings, N., Wieling, E. (2012). Barriers to seeking

mental health services in the latino/a community: a qualitative analysis. Journal of

Systemic Therapies, 31(4), 1-17. Print.

Viswanath, K. (2006). Public communications and its role in reducing and eliminating

health disparities. In G. E. Thomson, F. Mitchell, & M. B. Williams (Eds.),

Examining the Health Disparities Research Plan of the National Institutes of

Health: Unfinished Business (pp. 215–253). Washington, DC: Institute of

Medicine.

Ulijn, J. M., and K. St. Amant (2000). Mutual intercultural perception: How

does it affect technical communication? Some data from China, The Netherlands,

Germany, France, and Italy. Technical communication 47:

U.S. Census Bureau (2018). About Hispanic Origin. Retrieved from:

https://www.census.gov/topics/population/hispanic-origin/about.html

U.S. Department of Health & Human Services (2017). Accessibility basics.

Usability.gov, retrieved from: https://www.usability.gov/what-and-

why/accessibility.html

Weiss, E.H. (1998). Technical communication across cultures: five

philosophical questions. *Journal of Business and Technical Communication*,

12(2).

Tufte, E., & Graphics Press, publisher. (1990). Envisioning information.

Cheshire, Connecticut: Graphics Press.

Yuan, E. (2013). Recent literature on new media and intercultural communication.

Journal Of Multicultural Discourses, 8(3), 260-265.

doi:10.1080/17447143.2013.829480

Appendix A: Pre-Test Survey

Question	Available options
1. Age	Textbox available for answer
2. Gender	- Female - Male - Transgender - Other (textbox available for additional answer)
3. What is the highest level of education you have obtained?	- Less than high school - High school graduate - Vocational/trade school - Some college - Associates Degree - Bachelor's Degree - Master's Degree - Doctor/Lawyer/ Doctorate - Other (textbox available for additional answer)
4. Is Spanish your first language?	- Yes - No
5. How proficient are you in speaking, writing, and reading in Spanish?	- Basic knowledge - Intermediate (practical application) - Expert
6. How proficient are you in speaking, writing, and reading in English?	- Basic knowledge - Intermediate (practical application) - Expert
7. On a daily basis, how often do you communicate in Spanish?	- Very frequently - Frequently - Occasionally - Rarely - Very rarely - Never
8. When utilizing any form of services, do you ask for information in Spanish?	- Yes - No

9. How important is it for you to have access to information in Spanish?	• Very important • Important • Moderately important • Slightly important • Not important
10. Do you experience difficulty in communicating in English? If so, how difficult is it?	• Very difficult • Difficult • Neutral • Easy • Very easy • Not applicable (no difficulty experienced)
11. What is your current relationship status?	• Single • Married • Separated • Divorced
12. How many children do you have?	• 0 • 1 • 2 • 3 or more
13. Are you currently employed?	• Yes • No
14. If you are employed, is it:	• Part-time • Full-time • Not Applicable
15. What is your annual income?	• Less than $20,000 • $20,000-$40,000 • $40,000-$60,000 • $60,000-$80,000 • $80,000-$100,000 • Greater than $100,000
16. How likely would you be to seek mental health services?	Likert scale: Not likely 1 2 3 Very likely
17. Have you ever personally sought out mental health services	Select all that apply: • Yes • No

for yourself, your child, or your spouse/significant other? If yes, for who?	• I don't have children • I don't have a spouse or significant other • Other (textbox available for additional answer)
18. How have you been informed about mental health services available to you?	• Digital (email, website) • Advertisement • Brochure • Flyer • Mail • Word of mouth (being told by a colleague, friend, family member) • Other (textbox available for additional answer
19. Are there any factors that have gotten in the way of you accessing or receiving information on the mental health services available to you or a member of your family?	Textbox available for open-ended answer
20. How would you rate your technological skills?	• Basic knowledge • Intermediate (practical application) • Expert
21. Do you have access to a computer, laptop, or tablet?	• Yes • No
22. How familiar are you in using a computer, tablet, or laptop?	Likert scale: Not at all familiar 1 2 3 4 5 Extremely familiar
23. How comfortable are you navigating the internet to search for important information?	Likert Scale: Poor 1 2 3 4 5 Excellent
24. On average, how much time do you spend using technology a day?	• Less than 1 hour • 1-2 hours • 2-3 hours

	• 3-4 hours • 5 or more hours
25. Do you have access to internet at home? If not, where do you go?	• Yes • No • Other (textbox available for additional answer)
26. Is it difficult to find information online in Spanish? How so?	Likert scale: Very difficult 1 2 3 4 5 Very easy (textbox available for additional answer)

Appendix B: Recruitment Email

Dear _____,

I'm contacting you to inform you about my current thesis project, in hopes that you may

be willing to voluntarily participate in my research study. As a part of the requirements of

my master's program, English with an emphasis in Rhetoric and Technical

Communication, I am currently conducting usability tests to collect data for my project.

This project has been approved by the EWU IRB, so I have full permission to conduct

this study.

I chose to contact you specifically because you fit the criteria for my study:

- 18+years or older

- Have Spanish as your first language (Spanish-speaking), and

- Are of Latino/a descent.

I would like to invite you to meet with me, at your convenience, on campus for

approximately an hour for a usability test. The usability test will be audio-video recorded,

through a software called MORAE, as you explore a website. During this usability test, I

will be asking you to navigate through a website to locate specific information, based on

the five tasks that I provide you with. This usability test is in no way testing your

knowledge or ability to perform a certain way, I just want to observe the way you interact

with the website. I am testing the website, not you, so do not be concerned about your

capabilities to get the "correct answer," as there is none.

If you are able, and willing to participate, please email me back at rramos@ewu.edu or text/call me at 509-881-7858 so we can set up a day and time for us to meet and set the test up. The location will be on campus, in 211-D Patterson Hall.

If you have any questions or concerns, feel free to contact me and I will answer to the best of my ability.

I look forward to hearing back from you soon.

Regards,

Raquel Ramos

Appendix C: Post-Test Interview

1	What did you find most appealing about the website?
2	Did you find it easy to navigate and was it user-friendly? Why or why not?
3	Which task did you struggle with the most? Why did you think you struggled with that one specifically?
4	What do you feel is this websites purpose, after being able to explore it a bit?
5	What kind of barriers do you believe it would pose?
6	Overall, how would you rate this website in being able to deliver information in an effective way? Why?

Appendix D: Time on Task Raw Data

Time on Task (Seconds)

	Task 1	Task 2	Task 3	Task 4	Task 5
User 1	49.73	45.58	9.8	112.9	37.6
User 2	83.1	29.05	11.58	25.26	27.5
User 3	23.87	18.84	8.63	58.91	109.86
User 4	288.33	41.16	7.95	159.16	21.52
User 5	59.41	37.99	50.48	17.8	20.97
User 6	254.03	74.64	18.86	80.18	68.82
User 7	83.95	75.07	41.58	128.23	45.58
User 8	58.72	114.86	17.36	73.04	26.98
User 9	56.53	152.54	17.91	23.51	57.81
User 10	23.16	4.66	47.97	60.01	27.51
User 11	56.55	41.56	14.32	7.33	54.55
User 12	46.05	109.35	19	40.99	67.24
User 13	30.21	51.84	9.08	84.38	24.57
Minimum	23.16	4.66	7.95	7.33	20.97
Maximum	288.33	152.54	50.48	159.16	109.86
Mean	85.66	61.32	21.12	67.05	45.42
Standard Dev.	84.76	42.42	15.21	45.89	25.92

Appendix E: Mouse Clicks Raw Data

	Task 1	Task 2	Task 3	Task 4	Task 5
User 1	3	5	0	10	6
User 2	5	3	1	2	2
User 3	0	1	1	14	11
User 4	17	4	1	19	2
User 5	0	0	6	4	3
User 6	19	12	2	4	4
User 7	3	5	2	6	6
User 8	11	11	1	13	2
User 9	4	16	3	4	8
User 10	0	0	2	3	3
User 11	3	5	1	1	2
User 12	6	6	2	3	8
User 13	1	3	2	10	2
Minimum	0	0	0	1	2
Maximum	19	16	6	19	11
Mean	5.54	5.46	1.85	7.15	4.54
Standard Dev.	6.31	4.82	1.46	5.54	2.99

Appendix F: Task Success Raw Data

Use the key to assess the following data:

Ease	=	Completed with ease
Difficulty	=	Completed with difficulty
Failed=	=	Failed to complete

	Task 1-ease	Task 1-difficulty	Task 1-failed	Task 2-ease	Task 2-difficulty	Task 2-failed	Task 3-ease
User 1	100	0	0	100	0	0	0
User 2	100	0	0	0	100	0	100
User 3	0	0	100	0	0	100	0
User 4	0	100	0	0	100	0	100
User 5	0	0	100	0	0	100	100
User 6	0	0	100	0	100	0	100
User 7	100	0	0	0	0	100	100
User 8	0	0	100	100	0	0	100
User 9	0	0	100	0	100	0	100
User 10	0	0	100	0	0	100	100
User 11	100	0	0	100	0	0	100
User 12	100	0	0	0	0	100	100
User 13	0	0	100	0	0	100	100
Total	38.46%	7.69%	53.85%	23.08%	30.77%	46.15%	84.62%

	Task 3-difficulty	Task 3-failed	Task 4-ease	Task 4-difficulty	Task 4-failed	Task 5-ease	Task 5-difficulty
User 1	0	100	0	100	0	100	0
User 2	0	0	100	0	0	100	0
User 3	0	100	100	0	0	0	100
User 4	0	0	0	100	0	100	0
User 5	0	0	100	0	0	100	0
User 6	0	0	0	100	0	0	100

User 7	0	0	0	100	0	100	0
User 8	0	0	0	100	0	100	0
User 9	0	0	100	0	0	100	0
User 10	0	0	0	0	100	100	0
User 11	0	0	100	0	0	100	0
User 12	0	0	0	0	100	100	0
User 13	0	0	100	0	0	100	0
Total	0	15.38%	46.15%	38.46%	15.38%	84.62%	15.38%

User 1	Task 5-failed
User 2	0
User 3	0
User 4	0
User 5	0
User 6	0
User 7	0
User 8	0
User 9	0
User 10	0
User 11	0
User 12	0
User 13	0
Total	0

Appendix G: Appendix F: Error Level Per Task Raw Data

	Task 1-catastrophe	Task 1-Serious	Task 1-Cosmetic	Task 2-catastrophe	Task 2-Serious	Task 2-Cosmetic	Task 3-catastrophe
User 1	0	0	0	0	0	0	0
User 2	0	0	0	0	0	1	0
User 3	0	0	0	1	0	0	1
User 4	0	0	0	0	0	1	0
User 5	1	0	0	1	0	0	0
User 6	1	0	0	0	0	1	0
User 7	0	0	0	0	1	0	0
User 8	1	0	0	0	0	0	0
User 9	0	0	1	0	0	0	0
User 10	1	0	0	1	0	0	0
User 11	0	0	0	0	0	0	0
User 12	0	0	0	0	1	0	0
User 13	1	0	0	0	1	0	0
Total	5	0	1	3	3	3	1

	Task 3-Serious	Task 3-Cosmetic	Task 4-catastrophe	Task 4-Serious	Task 4-Cosmetic	Task 5-catastrophe	Task 5-Serious	Task 5-Cosmetic
User 1	0	0	0	0	0	0	0	0
User 2	0	0	0	0	0	0	0	0
User 3	0	0	0	0	0	0	0	0
User 4	0	0	0	0	0	0	0	0
User 5	0	0	0	0	0	0	0	0
User 6	0	0	0	0	0	0	0	0
User 7	0	0	0	0	0	0	0	0
User 8	0	0	0	0	0	0	0	0
User 9	0	0	0	0	0	0	0	0
User 10	0	0	0	1	0	0	0	0
User 11	0	0	0	0	0	0	0	0
User 12	0	0	1	0	0	0	0	0

User 13	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	0	0

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