

UNCOVERING VOCATIONAL REHABILITATION ONLINE:
HOW THE STANDARDIZATION OF STATE AND FEDERAL GOVERNMENT
INFORMATION CAN EMPOWER THE DEAF AND HARD OF HEARING

by

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DISSERTATION ABSTRACT

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Title: Uncovering Vocational Rehabilitation Online: How the Standardization of State and Federal Government Information Can Empower the Deaf and Hard of Hearing

Resources are often lacking or difficult to find for the Deaf and Hard of Hearing (DHH) in the United States. The DHH fall behind in mainstream schools without assistive services and often turn to State Vocational Rehabilitation Services Programs (SVRSP), a federally and state funded education-to-employment program. It provides access to accessibility services so “disabled” people can secure education and employment. A client’s residence determines what website, services, and funds are available.

This study is grounded in uncertainty reduction and muted group theories as viewed through a Foucauldian lens. Computer-mediated communication, updated to online-mediated communication, is used as a conceptual model. The core research question asks: How can state and federal agencies improve online access to vocational rehabilitation for the DHH and what are the existing barriers? Public policy mandates states to provide information for DHH individuals and stipulates that the state is responsible for making program information publicly available. DHH access to information and services was

examined through a quantitative and qualitative assessment of the SVRSPs on state and territorial government websites.

Document analysis provides a contextual overview. The presence and absence of SVRSP information was quantitatively examined through the Content, Usability, Interactivity, Transparency, and Audience (CUITA) model, revealing SVRSP resource gaps. Of the 56 state and territories, 29 had closed captioning, 9 had ASL in videos, 3 mentioned cochlear implants, and 24 mentioned hearing aids. Statistically significant differences among state websites' relationships with political party leaning, budgets, Cook Political Report, and alignment with a scale of Elazar's Political Culture classification are reported. Improving online-mediated communication, revising website design, and ensuring website compliance with state and federal laws would serve to unmute the DHH. A qualitative analysis examined five state vocational rehabilitation service program websites in detail. The study determined that much of the SVRSP information was not accessible to the DHH, and website content requires high levels of education.

The study concludes that budgets affect SVRSP program resources and therefore influence the quality of the websites. A best-practices checklist for improvement is provided. These findings extend muted group theory to un-muted group theory, demonstrating that the DHH are unmuted not only through language but also by accessibility resources.

Keywords: deaf, power, discourse, accessibility, vocational rehabilitation, government, online, information

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CHAPTER ONE: INTRODUCTION

Opening

On Tuesday, March 21, 2023, the United States Supreme Court ruled in favor of a deaf student, Miguel Luna Perez, whose education was neglected by the public school system despite the supposed protections of the Individuals with Disabilities Education Act (IDEA) and the Americans with Disabilities Act (ADA) (Luna Perez V. Sturgis Public Schools et al., 2023). The Michigan's Sturgis Public School District assigned assistants, or aides, to Mr. Perez, to translate classroom material into American Sign Language. However, these aids and translators were absent or incompetent. One aid attempted to teach herself American Sign Language after being assigned to assist Mr. Perez. As a result of the lack of effective support over the years, Mr. Perez did not learn the assigned material, but the public school system advanced him and reported inaccurate grades and learning achievements. Due to the school system incorrectly evaluating his competencies, he and his parents believed that he was on track to graduate high school with the rest of his graduating class. Months before Mr. Perez's graduation, the school revealed that they would not be awarding him a diploma. In winning this case, Mr. Perez and his family demonstrated exhausting the resources and protections of the ADA and IDEA — yet were still let down, lied to, and failed by the public education system.

This case demonstrates the experiences of *just one* of the many deaf and hard of hearing individuals who have been failed by the U.S. public education system. Further, it demonstrates the inadequacies of public information about and for deafness, and the clear and present need for accessible public information on and for the deaf, for easily accessible

assistive technology, and for other accommodation resources. Still, society is reactive rather than proactive with the provision of disability accommodations. In 2023, are the deaf truly protected and given an equal opportunity?

This dissertation explores Deaf and Hard of Hearing (DHH) individuals' access to information and services through an investigation of the availability and presence of information on state and territorial State Vocational Rehabilitation Services Programs (SVRSP) websites. The study applies muted group theory through a Foucauldian lens to analyze power and knowledge structures. In addition, it employs uncertainty reduction theory and computer-mediated communication¹ strategic and conceptual models respectively. The results are then used to develop a website checklist using best practices to provide greater access to and transparency of SVRSP services for the DHH.

Population Overview

The U.S. Deaf and Hard of Hearing population accounts for 48 million people (Center for Hearing and Communication, n.d.). Despite the community's size, resources for DHH individuals are often lacking or difficult to find, an issue exacerbated by the fact that most Deaf children are born to hearing parents (Hunt, 2011). Deaf children of Hearing parents often require assistive programs as they are educationally mainstreamed and attend public schools with accessibility resources rather than specialized schools for the DHH (Hult & Compton, 2012; Individuals with Disabilities Education Improvement

¹ This study argues that computer-mediated communication should now be referenced and changed to online-mediated communication due to the multitude of different ways an individual can access the internet. Online-mediated communication and computer-mediated communication are used interchangeably in this study but reference the same idea of communication that is accessed via the internet. This idea is further explained in the "Online Mediated (Computer Mediated) Communication as a Conceptual Model" section.

Act, 2004). As noted earlier, the state vocational rehabilitation service program (SVRSP) is one these assistive programs, directing states to provide access to resources such as hearing aids, interpreters, notetaking, glasses, and captions for people with various disabilities so they can find meaningful education and employment. Existing research suggests, however, that SVRSP has underserved deaf² people (Palmer et al., 2020); consequently, DHH and their hearing parents must find additional resources and other information about deafness, education, and accessibility services.

The most direct strategy to learn more about the SVRSP is to look up information via a state government website, as the program is administrated at the state or territorial level. These government websites provide information to individuals about public health and other resources. As the SVRSP is state-funded, and matched by the Federal government, information is normally provided at the state level. Hearing parents of deaf children seek information online, and approximately 65% access 2-5 sites (Porter & Edirippulige, 2007). Others seek out deaf community-building online to see what others do in the same situation (Shoham & Heber, 2012). The online modality of information-seeking fosters cohesive communities, while lowering verbal barriers and communicative apprehension that can be problematic in a medical setting (Blom, 2014). At the same time, when looking up information via a browser, 67% of individuals click on information presented on the first page, and less than 4% of individuals venture beyond the first two pages (Baker, McLeod-Morin, Kent, & Lindsey, 2020; Law, 2020). If information is not current on vocational sites,

² The difference between capital Deaf and lowercase deaf will be explained within the literature review.

the website will not be indexed by Google, Bing, and other large search engines. Therefore, the direct information about the program will be rendered inaccessible. When information online is not relevant to updated public health trends, public engagement, and awareness decline (Boehm, 2012).

Important to note here is the phenomenon of a machine heuristic through which trust in a website increases when it is chosen by a machine, or algorithm (Sundar, 2008; Westerman et al., 2014). A user's trust in a website may increase if machine algorithms pick up the website's importance and place it on the first page of a user's search. Credibility and quality judgements ensue depending on the website flow, contingency, presence of information, usefulness, and uncertainty reduction. Sundar et al. (2007) describe the initial interactions as an "information scent" that invoke subsequent behavioral patterns. The content, or modality cues, presented on different platforms are also important to a user, as infographics and images on mobile devices are preferred to extensive scrolling of textual material. Television is primarily audiovisual, radio is aural, and newspapers are textual (and now are textual + audiovisual), so humans have been socialized into familiarity with different presentations of media depending on the platform that is used (Sundar, 2008). Yet the extent to which the DHH can use, much less trust, the websites that are charged with serving them is unknown.

Context and Background of the Research

The State Vocational Rehabilitation Services Program (SVRSP) is a state and federally-funded program that supports the disabled population in obtaining gainful or meaningful employment. It is a subset of the Rehabilitation Service Administration. The program provides services for primary, secondary, and post-secondary education with the

formulation of Individual Employment or Education Plans (IEP), real-time transcription (RTT), American Sign Language (ASL) interpreting, hearing aids, work clothes, textbooks, and more. These resources empower the DHH population when they are effectively distributed. However, these services vary drastically across states. For instance, California SVRSP recipients can select colleges and universities that may be partially covered while Vermont residents may only receive only \$500 towards textbooks. States support various services without a set standard or stipulation in place. Additionally, the online information about these services can be obscure or difficult to find. Communication of and accessibility to this information is imperative for the DHH to acquire an education and gain support for work.

Furthermore, sources for obtaining data about the DHH are insufficient, rendering the Americans with Disabilities Act's (ADA) effectiveness difficult to measure (Harris et al., 2014). Data collected on the DHH often neglect employment outcomes, salary data, education, language modality, and literacy or numeracy levels (Hartmann, 2010). Critically examining government websites for SVRSP information is one way to assess the ADA and advocate for increased accessibility and transparency in state resources.

Project Description

This dissertation examines what information was or was not provided about SVRSP by state and territorial governments and how that information was presented when available. With the goal of empowering the DHH, this mixed methods study assessed the content and quality of SVRSP resources in providing accessible information. If made available, how might these resources empower the DHH? The discourse of deafness brings communication and awareness into the public eye. When information

about resources is communicated within the public sphere, issues of missing components, transparency of existing resources, and access to knowledge are raised. As the Foucauldian lens exposes, knowledge is power. The power structure of government institutions can serve to empower and “unmute” the DHH.

First, Chapter Two provides background information and reviews relevant literature to provide a holistic context for the study. Portions of the literature review address issues within rulings of Supreme Court Cases, modern media, and assistive technology, as well as other communication barriers that the DHH face daily (e.g., the “dinner table syndrome.”) The review also includes a brief history of communication inventions by people who are deaf or hard of hearing, as almost a deaf person created almost every major communication invention! Necessity is indeed the mother of invention.

Next, Chapter Three discusses the theoretical framework for the research, and Chapter Four presents the study’s research questions and core concepts.

Chapter Five describes an in-depth analysis of key public documents related to the DHH community. These documents are reviewed through a document analysis.

Chapter Six describes the quantitative research protocol used, and Chapter Seven reports results of a quantitative assessment of resources and their availability on vocational rehabilitation websites. The quantitative assessment was conducted with an adapted CUITA model (Ferber, Foltz, & Pugliese, 2008), which groups individual features into the categories of Content, Usability, Interactivity, Transparency, and Audience. Although originally designed to assess state legislature websites, the CUITA codebook was modified by the primary researcher for this dissertation to include features

important to those who are disabled or DHH (see APPENDIX B). This adapted model is used to examine “muted-ness” as described in muted group theory. If the DHH are not able to access SVRSP information, they are rendered a muted population, as the lack of information and common language disempowers them. For example, are the DHH vocational rehabilitation site users offered American Sign Language videos, or videos with captions on the websites? These videos should be captioned and use ASL for them to be completely accessible and validate the usability of the website. Similarly, the content category checks for the presence of contact information and ways to follow up with the program. However, if this content is not made available, knowledge is limited, and power diminished. The presence of this information can empower the DHH through knowledge and reduce uncertainty, as uncertainty reduction theory holds.

Additionally, assessing differences in information provided and communicated online between conservative and liberal states or territories can reflect a relationship between political leaning and support for DHH communities, as well as offer insight into differences between state budget allocation and federal regulation of these programs. This dissertation documents what information is available on vocational rehabilitation websites for all users but with a focus on how the sites accommodate or fail to accommodate the DHH. If political leaning correlates with the extent of SVRSP funding, the transparency of this information can be used to empower the DHH by increasing resources in states with lower SVRSP funding. Federal regulations should seek to empower the DHH with standardized websites using best practices for communicating information to the DHH population.

Chapter Eight describes the qualitative protocol used, and Chapter Nine reports results of a sequential qualitative analysis assessing five (5) states in detail and noting other states that had notable features. A Foucauldian lens was used for this assessment along with tools such as the Web Accessibility Evaluation Tool, Linguistic and Model Website Themes, The Online Consumer's Hierarchy of Needs, and the Flesch Kincaid Test.

Chapter Ten discusses both quantitative and qualitative results through the core themes of Content, Usability, Interactivity, Transparency, and Audience. The chapter also makes recommendations for improving SVRSP websites and expands muted group theory to unmuted group theory, demonstrating that accommodations in conjunction with language are necessary to unmute and include the DHH and other excluded populations.

Finally, Chapter Eleven concludes the dissertation with a summary of the dissertation's contributions to research and suggestions for future studies.

CHAPTER TWO: LITERATURE REVIEW

The DHH and Modern Vocational Rehabilitation Programs

The SVRSP provides a wide array of resources for the DHH, such as hearing aids, interpreters, textbooks, and even the complete payment of university tuition in some states. The goal is to help the DHH gain meaningful employment through an Independent Education or Employment Plan (Department of Rehabilitation, 2020; National Association for the Deaf, 2020). Successful or meaningful employment is defined by the US Department of Education Rehabilitation Services administration as employment for at least 90 days within an integrated employment setting. The overall goal of the program is for individuals to obtain self-sufficiency through employment, which relieves reliance on disability supplemental income programs and improves wellbeing. The SVRSP also advocates for the DHH through the provision of resources on the job, work training, education, and accessibility services on job sites. Within job orientation or education, an ASL interpreter, computer-assisted notetaker, or assistive learning device must be provided (Watson et al., 2008) depending on the individual's needs. Despite the program's advocacy for integration into the hearing world, the program's resources permit them to communicate in a modality with which they are most comfortable, rejecting the ultimatum of the dominant Cochlear Implant (CI) "cure." Historically, ASL has been suppressed in favor of oralism due to the unique syntax structure of ASL (Rose et al., 1995). The syntax of ASL does not immediately translate to spoken English, but rather translates to concepts or ideas in English. In various state vocational rehabilitation publications, it has been noted how diverse the DHH population is in terms of its needs for accessibility services, modalities communication, and other resources (Boutin, 2010;

Watson et al., 2008). Advocacy and asynchronous courses are used to further educate vocational counselors or practitioners on diversity and needs (Pearson, 2008). Educating the DHH and the non-DHH populations will increase empowerment through knowledge.

The DHH constitute the largest category of people served through the SVRSP, with over 600,000 cases closed in 2006 (Watson et al., 2008). Individuals in the SVRSP for sensory/communication reasons had the highest employment success rate (75%) and were the most likely to enter the professional field (19%) when compared to mental or physical SVRSP consumers (Dutta, Gervery, & Chan, 2008). The DHH fall under the sensory/communication section of the vocational rehabilitation program. This suggests that when resources are distributed to those who need it and information is available upon websites, SVRSP is empowering. Upon successful IPE completion, the largest sector of employment post-IPE for the DHH are sales and service (Boutin, 2010). However, even after completing the SVRSP the DHH wages were still 25% below the national average (Boutin & Wilson, 2009). Equality and access to the SVRSP program has been studied in terms of gender and race, but not by location or online information provision (Boutin & Wilson, 2009; Menz et al., 1989; Stace, 1987). As the population is diverse and dispersed, it requires quality online information at the state government level. If adequate information is available online, individuals with internet access in any location may access it. Much of the publicly available information and statistical information about the SVRSP is dated and lacking.

The best predictor of successful DHH employment is a college education.

“College or university training was 8.18 ($p = .04$) times more likely to predict competitive employment. Job search assistance were 4.08 ($p = .007$) times more

likely to predict competitive employment. Job placement assistance was 3.01 ($p = .01$) times more likely to predict competitive employment” (Shadrick & Etlen, 2019, p. 8).

Training, job assistance, and job placement are all things offered by some of the SVRSPs. This data empowers the DHH as it demonstrates what SVRSP counselors can do to assist clients, and how the program can be structured to enhance and capitalize on the things that work for DHH clients. Program counselors should work closely with universities to ensure that there is a smooth transition into a higher education environment, as higher levels of education were a significant predictor of competitive job placement (Shadrick & Etlen, 2019).

Challenges of the State-Run Model

The state model plan, which designed the overarching state-level SVRSP, was created in 1998 (Watson et al., 2008). The status of state-run vocational rehabilitation programs is important, as prior research has uncovered differences between states. Not all states provide detailed public information about their SVRSP, rendering them partially unexamined. However, employment, counselor-to-applicant ratio, and percentage of applicants accepted has been reported across state lines between the years of 2004 – 2011 (Honeycutt et al., 2015). The report assessed the broad scope of the SVRSP and the success across different states. For example, Wyoming (70%) was the most successful state in employment outcomes while Louisiana (40%) was the least. Nine states had more than 50% of applicants on a wait list, which may indicate underfunding and neglect of the program at the state and federal levels. The current level of waitlisting may be higher. Neglecting the publishing of this information online hinders transparency, furthering an

existing discourse divide. Only 30 states were without wait lists (Honeycutt et al., 2015).

This data about waitlists can be used to uncover disparities across state lines.

Additionally, in future studies, wait list information can be contrasted with the Cook Partisan Voting Index to see if there is a difference between Democratic or Republican leaning states.

Other studies have examined individual states, revealing wide disparities. For instance, the state of California Department of Rehabilitation (CDOR) recognizes ASL as a primary language for some culturally Deaf and Hard of Hearing individuals. In addition, the California DOR (Department of Rehabilitation) may offer help or guidance for clients to attend a culturally deaf university such as Gallaudet University, the National Technical Institute for the Deaf (NTID), or California State University Northridge if college enrollment is part of the individual's IPE. In 2019, the California DOR assisted with textbooks, transportation, and other special yet necessary accommodations. In contrast, the state of Vermont's rehabilitation program only offers a few hundred dollars for textbooks per semester (Division of Vocational Rehabilitation, 2021). It should be noted that not all independent education plans (IEPs) are the same, as some individuals fulfill their plan through trade (Boutin, 2010). All individuals who have an IPE are unique and require different resources. Varying state budgets change what is available to consumers based on their geographic location.

Highlighting the differences between state programs, information available, and generating advocacy for more representation leads to improved services in the future for all DHH clients, without restrictions based on location. As median hourly earnings can increase by 14.6% after the completion of a SVRSP, its services are productive (CDOR,

2016). If the specific information regarding these programs, such as budget allocations and available resources, are obscure and not readily available to the general public, it could exacerbate marginalization, making meaningful discussions unattainable. In that case, the further marginalization renders helpful discourse inaccessible (Foucault, 1980). This study therefore aims to uncover the differences in information to bridge the gaps in coverage of an underserved population. Research suggests DHH individuals are increasingly seeking information about services online (Adams, 2008; Turner et al., 2017). This positions state websites as a digital place for information seeking, without geographic restrictions, rendering them necessary to have accurate and updated information.

Visual Epistemology

The visuals on websites are important in part due to the visual epistemology of the DHH population (Hauser et al., 2010). American Sign Language is a visual language. From a biological viewpoint, Bavelier et al. (2006) argue that deafness increases certain aspects of an individual's visual attention. Things relating to perceived dangers, personal interactions, alertness, are visual rather than auditory. "The dorsal pathway hypothesis holds that, although there is overlap and interconnectivity between dorsal and ventral streams, the two show different functional biases and different susceptibility to altered experience" (Bavelier et al., 2006, p. 512). Deaf individuals are more easily distracted by peripherals than the hearing population. This is important in education and website design as the DHH are "easily distracted, cannot stay on task, and lack the ability to focus attention" (Bavelier et al., 2006, p. 514). The deaf may be more sensitive to peripheral

motion based upon levels of early exposure and brain training. Heightened visual sensitivities creates a unique experience for the deaf, likely making the population much more visually perceptive to cues than the hearing population.

It should be noted that 95% of individuals who are born deaf have hearing parents who do not understand deaf epistemology or the importance of visuals, and most hearing parents of deaf children do not know American Sign Language. This may have an effect upon the notion of deaf distractibility. “Deaf of Deaf children begin their schooling knowing where and when to look for visual information in their environment” (Hauser et al., p. 487). Ding et al. (2015) compared hearing and congenitally deaf participants in visual-spatial working memory tasks while magnetic resonance images (MRI) were collected. Deaf participants demonstrated faster responses than hearing participants, but both groups of participants performed at approximately the same level of accuracy. Increased cross-modal activation in the DHH is a result of reduced auditory experience (Ding et al. 2015) or a result of late language acquisition that triggers compensatory mechanisms for cognitive processing (MacSweeney & Cardin, 2015).

More research is needed on the visual epistemology of deafness. Visual epistemology research enhances the understanding of deafness and how current and future resources can be amended or tailored. Past research (Paul et al., 2010; Szarkowski, 2018) and this study call for the creation of a deaf communication psychology discipline, and to unite and standardize already existing academic and education disciplines and programs. Visuals can be used to improve education and other resources. A discipline of deaf communication psychology is different from general disability studies. It should be its own discipline due to the nature of learning and socialization vastly differing between

the DHH, yet the lack of incidental learning and mainstreaming of the population leads to similar behavioral results. The hidden disability or difference that the DHH have disguises them as hearing and fully assimilated into the population.

The increased use of visuals in education, websites, and general infographics may benefit visual learners or those who prefer alternate forms of communication. Website design began with visual testing of the “hamburger menu” to create familiar patterns to formulate standardization of use across browsers platforms, and user systems (Babich, 2021). Testing website design visuals on the DHH population or designing websites for the population through User Experience Design testing (UX Design), would lead to better accessibility and utilization of resources. Deaf epistemology unites the fields internet and design, of psychology, and communication together.

Guillemin & Drew (2010) examined image production in young individuals who experienced chronic health conditions. Besides environmental influences on an illness, family members and visual objects available in environments played a role in shaping an image. It is essential to conduct research with those within the community as “... the commentary of participants is crucial in understanding this element of construction of the visual story” (Guillemin et al., 2010, p. 183). Videos in ASL coupled with captions marry language and visuals together. Additionally, with misleading images, the researcher can “...inaccurately assess the importance of the image if they view it in isolation from any commentary from the young person” (Guillemin et al., 2010, p. 183). Images and linguistic accounts build upon each other to construct a more robust framework for argumentation and depth of qualitative understanding.

Deaf Education

Another overarching theme within DHH research is education. The “best” way to educate a DHH child is a topic of frequent research; however, making these findings accessible to the Deaf of Hearing parents has proven problematic (Hauser et al. 2010; Lane 1992; Roots 1999). Research is of little use if its distribution and application among the community it is intended to benefit is lacking. The DHH’s epistemology of the world is visual (Hauser et al., 2010), making it necessary to visually adapt DHH education. The modification of education should be practiced regardless of mainstream or Deaf school enrollment. The Deaf who have Deaf parents “(Deaf of Deaf)” are taught visual cues, while those who are Deaf with Hearing parents “(Deaf of Hearing)” lag behind with visual cues and other socialization factors (Hauser et al., 2010; Ramsey et al., 1998). Family socialization plays a large role in the communication modality and education of young DHH. Deaf of Deaf are likely to be more aware of their educational opportunities, fill activist roles, and thus hold lower uncertainty (Avon 2006; Corning et al., 2002; Lane 1992; Lee et al., 2013; Roots 1999). The Deaf of Deaf are more likely to be civically engaged (Roots 1999; Hauser et al., 2010). Parents cannot communicate information about education with their DHH children in an efficient manner if they cannot communicate effectively with their child. This implies the need for websites, online communities, and medical practitioners to provide comprehensive and research-based information on bi-modalism, captions, and other alternative assistive devices. The SVRSP should take up this responsibility.

Previous research has pointed to the reading difficulties of the DHH. Proper diffusion of educational resources related to the DHH may reduce uncertainty about

education levels and performance. However, information seeking, and uncertainty reduction may be undermined if adequate skills have not been acquired (Luft et al., 2009). Among DHH Germans, 69% used a computer, and 66% of those browsed the internet routinely (Power et al., 2007). Future research should replicate computer use studies among the DHH in the United States and further the application of uncertainty reduction theory to understand information-seeking and education modalities among the DHH. Aside from the potential grammar, spelling, or grammatical context inconsistencies, the DHH also face greater language learning and processing problems as a result of deficiencies in their own education. This is not to say the DHH are incapable of obtaining a higher level of language proficiency, but to demonstrate that the current language learning and education systems in place for the DHH are inadequate.

Most [Deaf and Hard of Hearing individuals] read at or below a fourth-grade level and have been poorly served by the educational system, are frequently misdiagnosed and misplaced, lack a supportive home environment, are often discouraged in school and drop out, and are not prepared for post-school life and work. Approximately 60% of the high schoolers who are deaf cannot read at the fourth-grade level (Dew, 1999, p. 27).

Uncertainty about available education programs is a reoccurring problem as parents and students co-exist in a hearing world without adequate information, tools, and resources. Taking away resources or failing to provide correct, accessible ones will serve to further disable the community (Lane, 1999). An infusion of rich cues, namely visual ones, may assist young DHH students (Hauser et al., 2010). “Because of the predictive

power of phonological skills in determining reading outcome in hearing students, the role of phonology in deaf student's vis-a-vis reading has been a subject of great interest" (Koo et al., 2008, p. 85). When the DHH reach their working and college years, state-funded programs such as vocational rehabilitation are indispensable. Future studies can uncover the extent of uncertainty in the lived experience of the DHH. As verbal conversations and resources are often inaccessible, it is likely that the DHH live in a higher state of uncertainty overall.

Education Law

In short, there are three major laws pertaining to the education and eventual employment of the DHH. While this dissertation study acknowledges the difference between the upper-case cultural Deaf and lower-case medical terminology deaf (Rose et al., 1995), the following summary is presented from a legal standpoint, which does not make such distinctions. The Individuals with Disabilities Education Act (IDEA) was crafted to ensure that disabled individuals obtain the same education in public schools that their non-disabled counterparts do. The Individuals with Disabilities Education Act must satisfy the individualized education/employment plan, which includes language goals and determines the educational context within which the student will be placed (Hult & Compton, 2012). The access one has to a disability program(s) is often unclear and cumbersome. Some primary public schools have never educated a DHH student. The Rehabilitation Act of 1973 created SVRSP, ensuring that extra support services and an individualized plan for employment are made available to young adults, those seeking a college education, the disabled, and others (DOR, 2020). Finally, the ADA of 1990 required that employers implement suitable accommodations for disabled employees.

These three acts protect the DHH in theory but can only fully protect the DHH if they are made aware of their rights and the programs available to them. U.S. policy protecting the d/Deaf is based on assimilating the DHH into the hearing world (Hult & Compton, 2012). Special schools for the DHH may not be accessible for families located in rural areas or underfunded states. The DHH living in remote areas with no access to extra education resources are kept in mainstream classes, which may lead to estrangement in socialization with hearing peers (Lane, 1992). Education and social estrangement change the trajectory of an individual's abilities and self-perception. The IDEA expressly states that students will remain in mainstream schools unless the child cannot benefit from supplementary aids (Hult & Compton, 2012; Individuals with Disabilities Education Improvement Act). In a mainstream school the DHH may experience the dinner table syndrome.

Many Deaf of Hearing children and adults are familiar with the dinner table syndrome-they have experienced years at the dinner table watching close hearing family and friends converse with each other but are unable to decipher what is being said (Hauser et al. 2010, p. 488).

Although support services may be accessed within the classroom, this does not translate to recess, lunch, or other free time within the school system. It may be awkward, cumbersome, or even humiliating to rely on an interpreter to communicate with peers, as it involves a third party. Hauser et al. (2012) also argue that this phenomenon, the dinner table syndrome, denies the DHH of incidental learning opportunities.

Online Education

More recently, accessibility to online classes by combining ASL and captions was another area of online DHH research. Batanero et al. (2019) suggest using captions in conjunction with ASL for synchronous online classes. Additional studies about how the DHH community accesses political information online and their news source of choice points to the high use of social networking sites and other online sites for information gathering (Deering & Pugliese; Deering, 2019). However, there have only been a few studies that address the DHH and online community use, and none of them examine SVRSP. Messages on a D/deaf virtual forum in Israel covered a range of difficulties (Shoham & Heber, 2012).

Subjects discussed in messages included technical difficulties, coping with difficulties presented by hearing loss, adjusting to assistive devices, difficulties at school and work, accessibility issues, difficulties communicating with the hearing world, and rights. Messages were also used to initiate a range of social activities (p. 1).

Deaf individuals may seek out education information online if it is not fully explained to them in a verbal setting. Many DHH follow up on ideas through a Google search that were partially heard or may have been misheard. For individuals seeking health information, SVRSPs has been a source to better inform themselves about available options. Online sites have been studied for their use of social support as it pertains to health information (Choudhury, 2014), positioning it as a resource to obtain information about health information and resource education among the DHH.

Additionally, recurring health themes have been found within communities online (Park et al., 2018), pointing to similarities in information-seeking behaviors.

It is important to take the digital divide into account. This divide appears in who is accessing the internet as well as what content is available. “The term ‘digital divide’ has come to refer to the disparity between minorities and low-income households with regard to ownership of personal computers and Internet access” (Ferber, Foltz, & Pugliese, 2008, p. 49-50). The digital divide expands beyond income to other factors such as location, age, income, ability, education level and more. However, the National Telecommunications and Information Administration (2022) stated that the divide between those who have internet access and those who do not has decreased. While the divide has decreased, the data that demonstrates the modality of how individuals of different demographics access the internet still reflects a large divide. Approximately 80% of Americans aged three and up have access to the internet, and the divide is the greatest between those with higher and lower incomes (National Telecommunications and Information Administration, 2022). Households with lower incomes are less likely to connect via a computer or broadband connection, but rather with a mobile device. This highlights the importance of mobile optimization in government website design. “Our data, however, show continued disparities in device use. Only 54 percent of Americans with disabilities used a PC or tablet in 2021, compared with 70 percent of those not reporting a disability” (National Telecommunications and Information Administration, 2022, p. 4). The prior information is consistent with previously reported data that states the disabled populations are less likely to engage online.

The DHH students at the National Technical Institute for the Deaf demonstrated high levels of internet usability and capabilities with no significant differences from their hearing counterparts (Deering, 2019; Deering & Pugliese, 2020). DHH Students enrolled in a technical university are likely to exhibit enhanced proficiency in online abilities. The National Technical Institute for the Deaf reported that in 2008, current students received over \$7 million in funds from multiple sources (Rochester Institute of Technology, 2008). This fiscal number has increased, but it demonstrates the clear relationship between vocational programs, the deaf, and education. For the fiscal year of 2021 the National Technical Institute for the Deaf received \$10,480,830 from U.S. State and Federal support. This includes Pell Grants, State Grants, Vocational Rehabilitation, Federal Work Study, and “other.” Vocational Rehabilitation alone contributed \$7,679,659 of these funds. The corresponding figure from the website for the National Technical Institute for the Deaf is below. These figures clearly demonstrate the strong relationship that vocational rehabilitation has with higher education and the DHH. These data are demonstrated below in Figure 1.

SOURCE OF AID	2020		2021		Amount Diff %
	Awards*	Amount	Awards*	Amount	
INSTITUTIONALLY SPONSORED SUPPORT					
Grant-in-Aid:					
NTID Grant-in-Aid	285	\$1,575,856	363	\$1,977,232	25.5%
RIT Grant-in-Aid	22	84,187	22	98,850	17.4%
Subtotal Grant-in-Aid	307	\$1,660,043	385	\$2,076,082	25.1%
Scholarships:					
NTID	459	\$1,847,614	565	\$2,770,339	49.9%
RIT	121	303,614	160	413,550	36.2%
NTID Endowments	783	\$2,393,654	657	\$2,215,168	-7.5%
External Groups	83	224,913	78	283,896	26.2%
Subtotal Scholarships	1,446	\$4,769,795	1,460	\$5,682,953	19.1%
Subtotal Institutionally Sponsored Support	1,753	\$6,429,838	1,845	\$7,759,035	20.7%
STATE AND FEDERAL SUPPORT					
Grants:					
Pell Grants	485	\$2,353,799	446	\$2,215,865	-5.9%
State Grants	187	511,115	201	522,350	2.2%
Subtotal Grants	672	\$2,864,914	647	\$2,738,215	-4.4%
Other Federal Support:					
Vocational Rehabilitation	668	\$8,409,863	611	\$7,679,659	-8.7%
Federal Work Study	39	78,941	27	62,956	-20.2%
Subtotal Other Support	707	\$8,488,804	638	\$7,742,615	-8.8%
Subtotal State and Federal Support	1,379	\$11,353,718	1,285	\$10,480,830	-7.7%
LOANS					
Subsidized Federal Student Loan	333	\$1,206,249	283	\$980,408	-18.7%
Unsubsidized Federal Student Loan	319	1,158,681	291	1,138,451	-1.7%
Parent PLUS Loans	47	\$571,733	29	\$298,808	-47.7%
Subtotal Loans	699	\$2,936,663	603	\$2,417,667	-17.7%
TOTAL ALL FINANCIAL AID	3,831	\$20,720,219	3,733	\$20,657,532	-0.3%
Domestic Student Enrollment		1,089		1,071	-1.7%
Average Financial Aid per Student		\$19,027		\$19,288	1.4%
Average Financial Aid per Student Excluding Loans		\$16,330		\$17,031	4.3%

Figure 1. National Technical Institute for the Deaf Financial Aid from 2020-2021.
 Accessed at RIT: National Technical Institute for the Deaf, 2021, p. 202.

Some of the nuanced data from the National Technical Institute for the Deaf is beyond the scope of this project. However, it is useful and accessible at the following link <https://www.rit.edu/ntid/about/media>.

Employment and Education Statistics

DHH individuals aged 25-64 with a bachelor's degree earn approximately \$39,278 annually. A DHH individual in the same age range with the education of a high school diploma or less will earn between \$7,630 to \$15,042 annually (U.S. Census Bureau, 2011). The DHH who answered "graduate degree" on the U.S. Census averaged around \$54,924 annually (U.S. Census Bureau, 2011). These data demonstrate that education prepares DHH individuals to increase their salary expectations. Unemployment rates among the DHH range from 21% with no high school diploma to 8% with a bachelor's degree (National Technical Institute for the Deaf, 2011a). The percent of DHH individuals who work in various occupations has been documented and contrasted to the hearing population. There were 23 categories documented ranging from "healthcare" positions to "construction and extraction" positions. All categories had a statistically significant difference between DHH workers and hearing workers for each of the respective categories. For example, construction and extraction consisted of 9.45% of the DHH population and only 5.85% of the hearing population. Similarly, 3.22% of the surveyed DHH population made up the healthcare industry in contrast to the 5.60% of hearing individuals (National Technical Institute for the Deaf, 2011b). There was a statistically significant difference in the representation of the workforce between the DHH and hearing population across various fields, with nearly all fields showing such a difference. This illustrates that the DHH population is not equally represented in the workforce and could benefit from education and job training. Disproportionate representation is likely due to the lack of resources and accessible opportunities, rather than ability. The catch-up role of assistive technologies and the lack of implementing

deaf-friendly measures in classrooms demonstrates the unavailability of resources for DHH education (Rose et al., 1995; Schildroth, Rawlings, & Allen, 1991).

The National Technical Institute for the Deaf, The Office of Research Evaluation and Statistics, The Social Security Administration, and Cornell University collaborated on a joint study in 2010 to evaluate deaf and hard of hearing reliance on social programs after graduating from National Technical Institute for the Deaf. The project was mainly conducted with data from the Social Security Administration and the National Technical Institute for the Deaf. It was found that those with college-level education training had a decreased reliance on disability support income programs (Schley et al., 2010), rendering vocational rehabilitation as a reliable source for decreasing long term dependence on disability government programs.

This finding suggests that reductions in the duration of time spent on Social Security programs are not limited to those with the highest level of scholastic aptitude and that investments in post-secondary education can benefit a broad group of deaf and hard-of-hearing persons. In addition, the data show that individuals who attend college, but withdraw before graduation, fair no better economically than individuals who never attended college (Schley et al., 2010, p. 524).

However, education attainment levels were lower nationally for the DHH than their hearing counterparts. In 1988 to 1994 within the U.S., 18.7% of the population had not graduated from high school, but that number was 44.4% during the same time period among the severely to profoundly DHH (Schley et al., 2010). Barriers within education, despite the ADA's enactment in 1990, are apparent within the data that do exist. College

Graduation percentages among the DHH were lower along with total workforce percentages and average income (Schley et al., 2010). Upon matching data files across the National Technical Institute for the Deaf and the Social Security Administration, bachelor graduates earned \$15,000 more than non-graduates. It was hypothesized that deaf degree holders will earn 68% more over their working lives than the DHH who do not hold a degree (Walter, Clarcq, & Thompson, 2001). Supplemental security income commonly known as SSI, declined by 60% amongst graduates compared to the 10% decline of non-graduates (Schley et al., 2010). Through education to work programs, DHH are empowered financially and rely less of the government in the long run.

In sum, education assists DHH individuals in obtaining employment, higher salaries, and likely a higher quality of living. The data highlight the necessity of education to employment programs being sponsored through government assistance programs. Within the DHH populace, many DHH individuals go into jobs such as cooking, cleaning, and other solitary jobs that do not require communication or interaction with the hearing population. Many of these jobs provide few upward mobility opportunities. Government job positions comprise 9.5% of the deaf workforce (Garberoglio et al., 2019). They are quite popular among the population as the government is an equal-opportunity employer and less likely to discriminate. Often, smaller businesses do not invest the money or resources into replacing company phones into teletypewriter (TTY) or captioned phones (Craig & Silver, 1966). “If the adjustments or risks appear to be excessive, the deaf person will either not gain employment or, in some instances, will be accepted to perform a very limited function with no opportunity for advancement (Craig & Silver, 1966, p. 644). While the previous quote is dated, it

holds true in the current workforce (Shadrick & Etlen, 2019). Many companies, if not all, require interviews. DHH applicants must find interpreters if their primary language is ASL. Suppose a DHH person's primary language is English. In that case, the hard-of-hearing applicant may struggle to understand spoken English, especially interviewers who may speak with a bit of an accent, cover their mouth, speak quickly, or mumble. Additionally, in-person training and pre-employment testing may present additional hardships or discourage job applicants. Some companies struggle to understand deaf needs; deaf employees feel inappropriate in asking for advancements and more training (Mowry & Anderson, 1993).

The United Parcel Service, Inc., commonly known as UPS, violated the ADA by requesting deaf individuals who worked for the company to prove their ability to drive safely for vehicles under 10,001 while not upholding the same request to hearing drivers. The U.S. Court of Appeals for the 9th Circuit agreed that the United Parcel Service violated the Americans with Disabilities Act by using qualification standards to screen out deaf individuals. *BATES V UPS*, No. 04-17295 (9th Cir. 2007). Current legal regulations require hearing tests for drivers who haul above 10,001 pounds by the U.S. Department of Transportation, but not below 10,001 pounds. Court cases are expensive, time consuming, and require a burden of proof beyond a reasonable doubt. Hearing is required for some jobs to avoid safety concerns. However, laws cannot be made or implemented corporations unless they adhere to the ADA or a federal regulation program. Work and job training can enable individuals to feel confident about their value within society. Additionally, it makes them financially independent and unlikely to rely on others for money or assistance.

Abuse and the Deaf Population: Issues Exacerbated by Communication Barriers

Unbeknownst to many outside of the DHH community, there is a high rate of verbal and physical abuse towards the DHH (Mastrocinque et al., 2015; Mastrocinque et al., 2017; Park et al., 2018; Pollard et al., 2014). Physical and verbal abuse perpetrated towards the DHH comes from hearing and other DHH individuals alike and may be circumvented or alleviated if a person has the education and money to “free” themselves from the power and money that an abuser holds over them.

Intercourse during childhood was four times more frequent in the deaf group than in [hearing] controls. 44% of victims had one or more hearing perpetrators, 41% had deaf perpetrators, and 15% were abused by both deaf and hearing people. Half of the victims reported that they were abused through a connection with a boarding school for the deaf, even when they lived with their families. High rates of partner violence suggest that abuse can continue into adulthood. Additionally, children with profound hearing impairments are more likely to be physically disciplined than are children with normal hearing.

(Fellinger, Holzinger, & Pollard, 2012, p. 1039)

Many children reach adulthood with their trauma secrets intact, as society has a proclivity to disregard or minimize these uncomfortable conversations at the individual and community level (Herman, 1992; van der Kolk, 2014). The hearing parent must learn how to communicate with their deaf child and often see their child as lacking or broken. Many of the frustrations that abusers, parents and partners alike complained about were the communication barriers (Mastrocinque et al., 2022) The primary concern for a deaf

child is language acquisition and appropriate maturation or development. Hearing parents can easily become frustrated with their deaf children, as they require more work in areas of language development. It is not out of the ordinary for parents to let out their frustrations onto their children with belittling language or physical abuse (Fellinger et al., 2012). Unfortunately, there are many well-documented cases of hearing individuals hitting a deaf person on the head in attempt to “fix” the person’s deafness. An example of this in media is portrayed in the silent episode, or episode seven, of “Only Murderers in the Building.” In this episode, an affluent father becomes frustrated with his adult deaf son and hits him on the head for not being able to hear radio music despite the volume being turned up to the maximum level. The rate of abuse towards deaf individuals is supposedly two to three times higher than that of the hearing community (Glickman & Gulati, 2003). Such childhood mistreatment increases the possibility of mood disorders, depression, and exacerbates bipolar, schizophrenia, and other mental health conditions (Aas et al., 2016; Hosang et al., 2018). The high risk of abuse in the deaf population stems from communication barriers, expectations of language not being met, disability stigmatization, and the lack of resources in place to allow for fluid conversation(s) and preventative abuse measures.

Communication Barriers in a Medical Setting

There are a multitude of communication barriers to mental health programs or facilities, but this is exacerbated for the deaf. Employing DHH individuals within a medical field may decrease these issues as the staff will become familiar with deaf needs, and advocacy for services can be conducted internally. DHH activism should come from internally from the hospital to avoid DHH patients having to advocate for themselves

while injured or sick. The staff could familiarize themselves with DHH communication methods, but DHH employment in the medical setting is significantly lower proportionally than that of the hearing population (National Technical Institute for the Deaf, 2011b). Deaf individuals living in hearing communities may face language barriers and cannot communicate their needs appropriately (Critchfield, 2002). The deaf must wait for interpreters to communicate with their physicians in emergency rooms. However, interpreters are hard to come by, and the deaf end up having to write out their problems if they can do so in a crisis (Bureau of Labor Statistics, 2022; Hickey, 2021; Pollard, 1997). Explaining one's physical or mental issues to an interpreter who is not a trained medical professional, or trained in medical ASL interpreting, can be awkward or cumbersome, especially in high stress scenarios. Glickman and Gulati (2003) state that interpreters provide the illusion of inclusion in a mental health setting. Often, interpreters are not trained in medical terminology or do not know how to accurately interpret signs (Committee on Disabilities, 1997; Golden et al., 1978). If something is incorrectly interpreted, a medical mistake can happen. There is a low margin of waiting time for an interpreter in scenarios where there are emergencies, or time is of the essence. The DHH are entitled to effective communication (U.S. Department of Health and Human Services). Within a therapy setting, the deaf individual has to trust not only their therapist with private information but also the assigned interpreter. Many scheduling difficulties may arise, especially if three parties are involved.

It should be noted that interpreters are in high demand, and many deaf individuals have sued health facilities and systems over the lack of adequate communication provisions (Gold, 1998). Access to health information depends on the staff

communicating these issues appropriately (Golden et al., 1978). Knowing that these barriers are likely present, one may think, “why even try,” for seeking out resources may be more trouble than it is worth.

Glickman and Gulati (2003) are two leading figures in psychiatric care for the deaf. Glickman, a d/Deaf person and mental health professional, checked herself into a mental health hospital after extreme frustration with communication between her husband and son. During her weeklong stay at the hospital, she was denied access to an interpreter, which only increased her frustration and suicidality. Since then, Glickman and Gulati (2003) have created a manual for deaf inpatient services called the Deaf Unit. This emphasizes bicultural communication and emphasizes calming “cinematic experiences” such as accurate captions on video displays. Inaccurate captions may not increase frustration for the hearing population, but the deaf population is highly sensitive to caption delays and inaccuracies. Small frustrations may be drastic during mental health crises. Other best practices include providing written pamphlets about treatment and care, ensuring that interpreters are available, making group therapy inclusive through sim-com (ASL and spoken English), and providing for a culturally deaf experience (Gulati, 2003). Without inclusive therapy options that make language accessible, therapy is unlikely to be implementable, successful, or a viable solution. Other research conducted by Pollard & Barnett (2009) and Pollard, Dean, O’Hearn, and Haynes (2009) focus on adapting health material for the DHH to ensure that it is accessible.

Deaf individuals have a lower socioeconomic status on average. They are less likely to hold high-paying jobs due to education and language barriers, which increases their risk of poverty (Boss et al., 2011). Individuals in poverty are less likely to seek

adequate health care due to financial problems. Additionally, these families cannot afford devices such as hearing aids or cochlear implants, furthering communication barriers. Luckily, services such as Medicare are available when deaf individuals turn 18 (Boss et al., 2011), but they are subjected to their parents' health care choices and coverage before reaching adulthood. Medicare does not cover hearing aids as they are not considered "medically necessary" for the hard of hearing despite the majority of the hard of hearing population finding them necessary for everyday functioning. Suppose a family stigmatizes mental health and/or perpetuates abuse. In that case, the individual will not have a way to communicate these issues unless a school system uncovers this information via trauma-informed strategies (Djeddah et al., 2000). Many public-school education systems lack trauma informed strategies or do not meticulously screen for signs of abuse and neglect. Lack of adequate treatment in realm of trauma leads to the perpetuation of violence and connected health consequences, such as excess gambling and drug addictions later in life. Geidne et al. (2003) uncovered the increase in risk-taking behavior among deaf adolescents. Risk-taking behavior is likely two to four times higher among the deaf than their hearing counterparts (Geidne et al., 2003). Expanding the viability of success or adjusting into a safe situation can be done by empowering oneself via education training or holding a job that pays enough for someone to be financially independent and stable. The SVRSP empowers the DHH through work and education by creating upward mobility opportunities.

Durable Medical Equipment

In general, hearing aids are not covered by medical health insurance. Medicare, a health insurance that the deaf qualify for under the label of a disability, does not cover

hearing aids or exams for fitting hearing aids (Medicare.gov, n.d.). Currently, Medicare does not consider hearing aids durable medical equipment. The Food and Drug Administration labels hearing aids as “Personal Sound Amplification Products” and therefore they are not always covered (U.S. Food and Drug Administration, 2022a) despite their meeting every definition of durable medical equipment as specified in the Code of Federal Regulations of title 42 Chapter IV 414.202 definitions of Title 42 (Code of Federal Regulations, 2022). However, in 24 states, there are laws that partially or completely cover the expense of hearing aids for those with medical insurance. Insurance and coverages are variable based on plans, location, or need. Cochlear Implants are considered durable medical equipment and covered by most insurers, including an 80% coverage by Medicare. Cochlear Implant surgery can cost from \$30,000 to upwards of \$50,000. This does not always cover batteries, repairs, and possible surgical complications. Cochlear Implants are not viable for many as it requires surgery and commitment. However, some SVRSP provide clients with hearing aids if the clients find them necessary for their schooling and work, and many may prefer a hearing aid for remaining residual hearing loss. The provision of hearing aids should not depend exclusively on the SVRSP. However, many in the SVRSP program may also have Medicare and not a private insurance as it is a federally funded program for the disabled. One report from New Hampshire released in 2020 demonstrated 21% of DHH individuals enrolled in Medicare at the exit of the SVRSP program (U.S. Department of Education Office of Special Education and Rehabilitative Services Rehabilitation Services Administration, 2020). This figure supports the argument that many SVRSP clients likely use Medicare, and hearing aids should be covered by Medicare and the SVRSPs.

Advocacy within Audiology

Audiologists sometimes serve as a primary source for information. Therefore, they should be skilled and knowledgeable about resources for the DHH. As some state vocational rehabilitation programs support and cover the price of hearing aids, they should be in contact with audiologist and hearing aid manufacturers. Whicker et al. (2019) uncovered that audiologists, in general, view SVRSP as beneficial to their practice, but there was a large variability in referral patterns. Approximately 97% of audiologists surveyed viewed SVRSP as beneficial, yet 64% of them responded that they seldom to take the time to explain vocational services to clients (Whicker et al., 2019).

Approximately 58% of audiologists had inaccurate information about SVRSP, but the study did not specify the location of the respondents surveyed. Therefore, SVRSP should have printable pamphlets with updated contact information, resources, available services, and general information available on their state websites that audiologists can distribute or make available to clients facing financial, educational, or work difficulties. Audiologists would benefit from more customers, the DHH would receive accessibility services, and the federal and state governments would reduce future reliance on supplemental income programs. Garberoglio et al. (2019), report that in academic year 2015-2016 the average financial aid was \$1,365 lower for deaf students than hearing students (\$7,524 vs. \$8,888). Financial aid opportunities are normally greater for those with disabilities as a disability is usually a qualifying factor for aid. However, the data report that the DHH are less likely to have or use the aid which points towards the lack of updated information or education about SVRSP. Ear, nose, and throat doctors could also make information available with printed pamphlets. Further studies can examine the ways

in which DHH individuals learned about state vocational services. Much research uncovers the outcomes of the program, which have been consistently beneficial (Boutin, 2010; Dutta et al., 2008), but there is far less research on the accessibility, equality, and websites of the SVRSP.

Communication Technologies: The History of Communication Inventions by the Deaf

Accommodations for accessibility are usually designed and implemented reactively rather than proactively. Perhaps necessity truly is the mother of invention, as Plato's Republic (1943) stated "our need will be our real creator." The deaf and their relatives have designed new methods of communication in order to integrate themselves into society or find a way to communicate without sound. It is not widely known, but most of communication inventions were created by individuals who are deaf or hard of hearing, and in some cases, the inventor was closely related to a number of deaf individuals (Van Cleve, 1987). This demonstrates that deafness and societal and communication progression are deeply interwoven. Deaf individuals restructure existing technologies and programs to meet their needs. Samuel Morse is well known for his invention of the Telegraph. He invented a way to send short messages across vast spaces. Upon receiving news of his first wife's death rather late, Morse was determined to devise a faster way to communicate. Morse and his second wife, Sarah Elizabeth Griswold, formulated a series of taps that translated into letters. Unbeknownst to many, Sarah Elizabeth Griswold was deaf and used Morse Code to communicate with her husband, Samuel Morse (Van Cleve, 1987). Many postulate that Morse code would not have been invented without Sarah Elizabeth Griswold's use of communicative taps to converse with her husband. Morse's business partner was Amos

Kendall who was the postmaster general at the time. Kendall's estate was where the first long-distance telegraphic transmission originated. The Kendall estate eventually became the grounds of the Gallaudet University for the Deaf.

Thomas Edison is another well-known name within the field of mass communication, deaf studies, hard sciences, and beyond. Edison's contributions include the photograph, the motion picture camera, early versions of the electric light bulb, and many other electrical devices. Edison was profoundly deaf and is said to have suffered many ear infections as a child. The true cause of his hearing loss and the specifics or intensity of it is still widely debated by historians (Markel, 2018). However, it is thought to have progressed after his bout with scarlet fever at the age of 12. Despite his deafness, he pioneered the phonograph, and improved the wired or carbon microphone. Edison once stated that the silent movie *Birth of a Nation* by David Wark Griffith was his favorite movie, and "talkie" movies ruined the theater experience for him (Readers Digest, 1930). The silent film era is generally thought to be from 1883 to 1929 (Schuchman, 1984). DHH individuals could view movies without interpreters, closed captions, electronic decoders, or other elaborate sound systems. This silent film time period, as alluded to in Edison's commentary, was an inclusive time period within entertainment media as the media was equally understood and available to the DHH and hearing populations.

Silent films transitioned into talkie films around 1926 to 1930. These films were not captioned, and often inaccessible to the DHH. It took the U.S. government almost 30 years to implement closed caption laws. In 1958, Congress passed Public Law 85-905, also known as the Captioned Films Act of 1958, which established Captioned Films for the Deaf as a

federal program. However, the budget for captioned films was limited to \$250,000 to carry out the provisions of the act (Public Law 85-905).

Another well-known inventor that has a mixed relationship with the DHH community is Alexander Graham Bell. Bell had a deaf mother and wife, and originally created the telephone to assist deaf individuals in their communication endeavors. However, this technology backfired and ended up being one of the largest barriers for the DHH. Despite Bell's marriage to Mabel Hubbard, a deaf woman, Bell strongly opposed intermarriage among the congenitally deaf and hearing. Bell advocated for the oral method of communication within deaf education and removed ASL teachers from the three deaf schools he taught at (Greenwald & Van Cleve, 2015). Bell attempted to alleviate social problems by stagnating and controlling reproduction among the DHH rather than modifying society to accommodate for the needs of the DHH. Many of Bell's teaching ideals hindered the DHH as they were interwoven with eugenics and oralism.

Vint Cerf was one of the founders of the internet and worked on the ARPANet system, Internet Society (ISOC), a Google vice president, Internet Corporation for Assigned Names and Numbers (ICANN), and many other foundational structures of the internet. He is best known for writing the Internet Protocol Suite (TCP/IP), which is a set of communication protocols on the internet. Cerf stated, "Instant messaging and chat rooms have basically created a level playing field for deaf people" (Fussman, 2008, para. 8). Cerf has continued to support Deaf advocacy groups and serves as a trustee for Gallaudet University. The internet has been a wonderful communication resource and knowledge tool for the DHH. Today, the Government and organizations alike post information about available services. Due to this resource, individuals no longer must drive to a physical

location or use a telephone to call someone for more information. Text-based communication is much easier for hard of hearing individuals, especially now that many YouTube videos have captions or auto-generated captions.

William Shaw, a deaf man, invented a talk-less telephone that used light signaling, an alarm clock that aggravated the sleeper's pillow, and a doorbell that sensed movement and signaled parents with flashing lights (Gertz & Boudreault, 2016). Many of these inventions are still used by the DHH today. Shaw was congratulated by Alexander Graham Bell and Thomas Edison for his inventions. Shaw also fought two custody cases against his parents. Shaw's son was capable of hearing, but Shaw had to appear in court twice to prove that he was able to take care of and raise a hearing son. Later, Shaw stated "It is partly for the sake of the deaf in general that I have fought so hard. Law is law and it is the duty of the deaf to defend their own rights and fight for them if necessary" (Southwest Museum of Engineering, Communications and Computation, 2009, p. 1).

Emerson Romero was a Cuban American born in 1900 and became deaf at the age of six due to whooping cough. After attending various colleges, his brother Dorian Romero invited him to begin acting in silent films, as Dorian had recently started a film company in Cuba. Emerson Romero eventually changed his name to Tommy Albert at the request of film distributors to sound more American (Penn, 1927). Emerson Romero, John Funk, and Sam Block created the Theatre Guild of the Deaf in 1934 (Rosenholz & Brown, 1972). However, his most notable contribution was the invention of captions with talkie films in 1957. Romero purchased films and began "slicing them" and adding text to the bottom to coincide with the spoken word in the film. He then put the images back together with the inserted text. This operation of "Captioned Films for the Deaf" was taken over by the U.S.

Government. This resulted in Public Law 85-905, and a government agency was created to caption films for the deaf. Dr. Malcolm J. Norwood expanded the program during the years of 1962-1988. During this time, Dr. Norwood served as various roles on the Captioned Films for the Deaf program, which is now known as the Described and Captioned Media Program (Boatner, 1980; Gannon, 2011). Additionally, he was the first deaf professional to work in the Department of Education.

Before the invention of the TTY, Dr. James C. Marsters depended on hearing individuals to answer the telephone and mouth the words to him, as he could read lips. He eventually approached Robert H. Weibrecht, a deaf physicist at Stanford Research Institute. The two deaf men revised an acoustic coupler, or modem, to create a telephone for the deaf. Today this is known as a teletypewriter, or a TTY. Dr. Marsters and Weibrecht were the first deaf individuals to use the teletypewriter to communicate via phone in 1964 (Shapiro, 2009). Their first phone conversation was the first time two deaf individuals could make a long-distance phone call and understand each other. The famous phrase of “Are you printing now?” spoken by Weibrecht was the first sentence transmitted by the teletypewriter.

The history of the deaf and communication inventions are intertwined. Perhaps language, something that has been inaccessible to the DHH, is fascinating to them. Resilience, modifications, and inventions have allowed the DHH to integrate themselves into modern society. It is essential to understand the history of a population to understand it holistically and integrate diverse communication modalities. Through the law, technology, or communication devices, it is clear that the deaf have modified the world to their needs instead of waiting for sub-par solutions or accepting defeat in the linguistic world. Now, it is time for the Rehabilitation Services Administration in conjunction with U.S. policymakers

to standardize the websites of Vocational Rehabilitation to render them accessible for the populations they are supposed to serve.

The Discourse of Deafness

Board of Education V. Rowley (1988)

The law is not always partial to those who fight for equality. Amy Rowley was a young deaf girl who became the subject of the Board of Education v. Rowley (1988) U.S. Supreme Court case. The case debated the interpretation of the Education for All Handicapped Children Act of 1975. In 1976, Amy's parents Clifford and Nancy Rowley met with the principal of Furnace Woods Elementary School to discuss options for their daughter who would be starting kindergarten the following year. Within Amy's Independent Education Plan (IEP), she was provided with an FM hearing aid but not an American Sign Language interpreter. Clifford and Nancy Rowley disagreed with the public schools' Committee on the Handicapped and pushed for a sign language interpreter. The U. S. Southern District Court of New York agreed with the school, so the Rowley's appealed.

The District Court Judge Vincent L. Broderick heard the case in September 1979. Amy's parents provided evidence and stated that Amy did in fact need an interpreter as she only understood 60% of what was being communicated within the classroom. Dr. Zavarella, the principal, argued in testimony that the district would only provide an interpreter if Amy proved to be failing academically. Judge Broderick ruled that the school was providing an adequate education but not an appropriate education for the deaf student.

The case was still not settled. On March 23rd of 1982, the U.S. Supreme Court “heard” Michael A. Chatoff, a deaf lawyer, who argued on behalf of the Rowleys. During this hearing, Chatoff became the first deaf lawyer to argue in front of the U.S. Supreme Court (Kleiman, 1982). The Rowleys lost the case, and former Republican Justice William Rehnquist wrote the majority (6-3) ruling opinion. The majority ruling’s opinion focused on the overall statutory interpretation of the Education for All Handicapped Children Act of 1975 and the exact definition of “free appropriate public education.” The majority ruling stated that Schools are “not required by law to provide sign language interpreters to deaf students who are otherwise receiving an equal and adequate education” (*Board of Education v. Rowley* (1982) 458 U.S. 176 (1982)). Opposing the majority, former Republican Justice Harry Blackmun stated, “it seems plain to me that Congress, in enacting this statute, intended to do more than merely set out politically self-serving but essentially meaningless language about what the handicapped deserve at the hands of state authorities” (*Board v. Rowley*). In sum, Amy Rowley, a deaf girl, was denied an ASL interpreter by the U.S. Supreme Court. Amy Rowley stated years later that the School District put a lien on the Rowley home when they moved a year after the Supreme Court Case was decided. Today, Dr. Amy Rowley is an assistant professor in modern languages at California State University, East Bay (California State University, East Bay, 2022).

It is still debated today whether the board of education’s view of the Rowley case has been superseded by the Individuals with Disabilities Act of 1997 and 2004 and the No Child Left Behind Act (2004). The U.S. Supreme Court did not deal with another disability education case until *Endrew F. V. Douglas County School Dist. RE-1 in 2017*.

Language in Public Policy

The way in which deafness is communicated and what language is used within public policy and government hearings has profound repercussions on the structural changes of disability policy. Jeon and Haider-Markel (2001) conducted a quantitative content analysis of congressional hearings pertaining to disability from 1943 to 1990. The number and content of these hearings were compared to the way disability was framed in *The New York Times*. “There were 1,475 (44%) hearings based on the economic definition, 481 (14%) based on the medical definition, 686 (21%) based on the sociopolitical definition, and 721 (21%) that used a mixture of the definitions” (Jeon & Haider-Markel, 2001, p. 221). The researchers assessed whether the hearing framed disability in a socio-political, economic, or medical language. Language that communicated disability in a socio-political frame within the media was statistically more successful in policy changes and led to more congressional hearings.

In the case of disability policy, policy change resulted partly from a shift away from the medical concept of disability as physical limitation and the economic concept of disability as a vocational incapacity and income problem. The developing definition was a new sociopolitical perspective that delineates the meaning of disability as a product of the interaction between individuals and the environment.

(Jeon & Haider-Markel, 2001, p. 228).

The language used by the media is a major contributor to the shift in U.S. disability policy (Biklen, 1987). When the media defined language in a social light, policy changes and hearings were more successful (Jeon & Haider-Markel, 2001). When

disability is construed in a socio-political language, disability is the lack of modifications provided by a society. When the issue is demonstrated as a societal issue, such as policy not protecting the members of a society or accommodating to the needs of people with a society, the policy language is far more powerful. Conversely, defining the disabled as needing economic support for a medical issue puts the problem on the individual, which detracts from the power that resources within society have over an individual. This study argues that the utilization of language is power. This claim, or argument is consistent with Foucault theoretical framework. This furthers the question of why exactly is language in policy so important? Jeon and Haider-Markel (2001) respond “How problems are defined or framed determines what factual evidence is relevant, which solutions or alternatives are considered effective and feasible, who participates in the decision process, and ultimately who wins and loses” (p. 227). How a problem is defined will invoke the involvement of subsequent language. The 1980s is marked by a shift in language to a sociopolitical view, only a few short years before the Americans with Disabilities act was passed on July 26, 1990 (Jeon et al., 2001). These linguistic categories used to frame disability will be further examined within the qualitative methodology portion of this study.

The Department of Justice, also known as the DOJ, has created a series of videos and education materials explicating the necessity of ASL and captions in telecommunications, employment, transportation, public accommodations, and public communications. These videos were made in conjunction with the National Center for Law and Deafness, demonstrating the Federal Government’s reliance on outside programs and disability activist groups. When assessing the Americans with Disabilities

Act, Watson (2003) uncovered that approximately 20% of the complaints received to the Dynamic Regulatory System (DRS) about lacking accommodations that are supposedly protected by the Americans with Disability Act, were from deaf or hard of hearing individuals. Approximately 37% of all complaints came from the Southern states, 18% from the Northeastern states, and less than 1% were from rural Northeastern states (Watson, 1993). While these data are older, there are likely many more complaints that have gone unreported as the process may seem cumbersome or daunting, or a fear of repercussions may have prevented one from reporting complaints.

The use of social media may make organizations seem more accessible and able to deal with complaints or basic communication with communities. Mergel (2016) found that managers of public social media profiles “recognize the need for standardization and streamlining of behavior” (p. 144), as events and postings may sporadically appear with events or announcements from different sectors with a department. Following a routine schedule or set of guiding principles assist in standardizing a department’s engagement with the public. The embedding of structured media use on a government website creates a mutual understanding across internal department members, external users of the sites, and formulates a nuanced, or common understanding. A Foucauldian lens reveals that the internal relationships in information provision create power structures. A structure that routinely extracts internal information, updates, events, images, and policy changes via a social media manager, results in information being accessible to all individuals.

CHAPTER THREE: THEORY

A Brief Overview

This study applies and integrates muted group theory, a Foucauldian lens to analyze power and knowledge structures, and uncertainty reduction theory. Computer-mediated communication, arguably now called online-mediated communication, is used as a conceptual model for the study. In conjunction, these theoretical frameworks guide interpretation of the data and how best to reposition it for empowerment.

First, muted group theory explicates how dominant social groups create language and discourse systems within society, which can lead to an estrangement of those who are “othered.” This theory is applicable simply due to the language and cultural differences of those who use ASL. This will further investigate whether deafness is portrayed as a disability or a cultural trait. Secondly, Foucault’s lens acknowledges power structures and the interrelation of government structures, language, society, and power. The discourse used on SVRSP websites directly affects the power of the DHH and their level of “muted-ness.” Uncertainty reduction theory explicates why posted information is important and how it can reduce uncertainty when it comes to job and work training, which directly influences the overall wellbeing of a DHH individual. Vocational rehabilitation websites serve to reduce uncertainty about the program. This theory also addresses why individuals seek out information. As the information analyzed in this study is posted online, online-mediated communication theory will help interpret the nature of these communicative interactions.

Muted Group Theory

Muted group theory (Ardner & Ardner, 1975) provides one theoretical perspective for this study and supports the quantitative and qualitative methods of the study. Muted group theory posits that the dominant societal group creates the language and discourse systems of a society (Burnette et al., 2009). Groups become mute when members cannot express themselves without changing their vocabulary or language to that of the dominant societal group. Muted group theory is used to “..shed light on various ways which persons reinforce, manage, alter, and overcome a societal position that renders them outside the centers of power” (Orbe, 1998, p. 65). The current application of muted group theory predominantly points to language as the largest and sometimes only tool that can integrate groups into society.

The theory posits that muted groups do contribute to culture, despite not being part of the dominant group. Their contributions are outside of the expected societal contributions (Funderbruke, 2012), yet these muted contributions are necessary for language evolution (Kramarae & Jenkins, 1985). Research using the theory has encouraged the reconstruction of language to include muted groups, empowering them with a larger role in co-creating the current society and language. Muted group theory assumes that discourse reflects the worldview of a society (Foss & Foss, 2004), and the appropriate linguistic choices of it.

Muted group theory suggests that people attached or assigned to subordinate groups may have a lot to say, but they tend to have relatively little power to say it without getting into a lot of trouble. Their speech is disrespected by those in the dominant positions; their knowledge is not

considered sufficient for public decision-making or policy making processes of that culture; their experiences are interpreted for them by others; and they are encouraged to see themselves as represented in the dominant discourse. The theory further suggests that an important way that a group maintains its dominance is by stifling and belittling the speech and ideas of those they label as outside the privileged circle.

(Kramarae, 2005, p. 1).

In the case of the DHH, muted group theory highlights how the DHH must use spoken or written English, rather than ASL, to integrate into a mainstream, or hearing society, since the muted language is deemed inferior (Barkman, 2019). Muted group, when transformed to unmuted group theory can also apply to how the *lack* of necessary information and resources—or the predominance of some forms of integration over others—can exclude the DHH from participation in society and culture or encourage only particular participation types. This study argues for an expansion of muted group theory to unmuted group theory. Individuals are unmuted when language *and* resources are available to individuals. Within uppercase “D,” Deaf culture, unmuted group theory also applies to how SVRSP provides access services for the oral and signing DHH to become integrated into hearing society, rather than hearing society integrating into deaf society. Perhaps the DHH had a “voice” in the 1800s, but they were still muted. Without modern day accessibility resources, language is inefficient for change without accessibility resources in conjunction with language.

For example, the pressure for the DHH to integrate into mainstream society through oralism and cochlear implants illustrates how the Deaf culture became a muted

group (Valente, 2011). Rather than accepting or advocating for Deafness as a culture, school administrators, medical professionals, and others can pressure DHH individuals towards “solutions” like cochlear implants, pointing to an evident prevalence of oral-centric approaches for the deaf and silencing their options (Rose et al., 1995; Valente, 2011). Some deaf programs do not give individuals a language or socialization choice as SVRSP does, leading to “terrible ethnocidal and linguicidal crimes being perpetrated against the deaf community and young deaf children” (Valente, 2011, p. 641). Through suppressing sign language as a subhuman and animalistic characteristic (Baynton, 1999), the dominant oralism culture prevails (Meares, 2017). Transparency of information, when it is presented in an accessible language, serves to unmute the DHH population. Populations are unmuted when government information is transparent and provides equality across its services despite an individual’s geographic location.

Foucauldian Framework

Falling in line with the Foucauldian theoretical framework, the discussion or discourse of deafness is predominantly controlled by those in power. This study uses a sequential close reading for analysis, primarily of the qualitative data. This capitalizes on the use of the Foucauldian framework as a theoretical lens to highlight structures of power in relation to knowledge. Discourse is said to govern social groups. The discourse of government programs alters their power and structure internally and externally. This internal structure of communication in turn shapes what will be outwardly provided to DHH vocational rehabilitation clients. The structure and provision of information online reduces uncertainty through empowerment and knowledge. Conversely online resources disempower a consumer from the program if information is inadequate. The government

and its institutions serve as regulating and empowering sources of information and knowledge about resources for the DHH. When these resources are made accessible, available, and clearly communicated to the DHH, they serve to empower this population. However, when these resources are obscure, lacking, and unavailable, they hinder the DHH from accessing resources to better themselves and their well-being. These resources are important as they provide tools to function within a dominant hearing society. Hearing aids are expensive and seldom covered by insurance; however, vocational rehabilitation may provide hearing aids to empower individuals who need and desire them. Additionally, education is power. Education is knowledge and knowledge is power according to the theoretical lens. If deaf individuals are not able to obtain education due to a lack of resources, they are unable to progress and integrate themselves into an oral and predominantly verbal society.

According to Kendall & Wickham (1999), there are five components to using a Foucauldian lens.

The recognition of a discourse as a corpus of “statements” whose organization is regular and systematic. The identification of rules of the production of statements; the identification of rules that delimit the sayable (which of course are never rules of closure); the identification of rules that create the spaces in which new statements can be made; the identification of rules that ensure that a practice is material and discursive at the same time (p. 42).

Vocational rehabilitation is structured through federal laws and modified at the state level. The program is further limited or empowered through budget allocations,

standardizations, and best practice procedures. These laws are systematic statements that formulate rules and structures. These structures and rules apply to employees who work within the system and directly interact with DHH consumers.

This communication is regulated through its defining needs and resources, as policymakers and administrators shape and dominate the discourse of cochlear implants and other tools that are made available to the DHH. As communication is the means by which power and privilege are enacted (Meares, 2017), the communication channels chosen by these groups detract from Deaf culture. The dominant culture advocates for cochlear implants in hopes of bypassing interpreters and hearing aids. Paralysis of the facial nerve, infections, vertigo, leakage of spinal fluid, and meningitis are just a few side effects of cochlear implants (U.S Food & Drug Administration, 2021) that are deemed acceptable in the name of oralism.

This appoints SVRSP to a potential position of power, an opportunity to free the deaf from medical procedures and integrate them through accessibility services. Although some DHH may opt for cochlear implants, doing so should not be their only option, or one forced upon them. Through SVRSP, the DHH can choose to continue communicating in the modality in which they are most comfortable. This includes interpreters on job sites and integration into deaf academic communities such as Gallaudet University and NTID. Simultaneously, the power of the dominant, oral culture may work to suppress and mute information about mitigating programs like SVRSP, allowing oralism to proceed unimpeded. The listing of SVRSP information can constrain or enable the DHH's access to resources as theoretically foreshadowed. When information is provided, individuals are enabled to exert power over their own lives and to proceed with the program. If the

information provided does not address the DHH, they may not know what opportunities are available to them, thus constraining future communication or possible discourse. This study is therefore necessary both to advocate for individuals' access to SVRSP resources, as well as to push back against oralism as a dominant framework.

The socialization that the government brings has an impact on the belief system of an individual. "At the level of population, it is not possible to coerce every individual and regulate their actions in minute detail. Rather, government operates by educating desires and configuring habits, aspirations and beliefs." (Li, 2007, p. 276). It is the role of experts, or those educated on the law, to adjust customs, habits, and laws that have an influential role in shaping public affairs. Foucault (1991) recommended a finite series of calculations and government interventions to enhance the procedures of interventions and procedures. As Li (2007) wrote, "Understanding governmental interventions as assemblages helps to break down the image of government as the preserve of a monolithic state operating as a singular source of power and enables us to recognize the range of parties involved in attempts to regulate the conditions under which lives are lived." (Li, 2007, p. 276). The deconstruction of one element of vocational rehabilitation, namely their websites and information provision, demonstrates the complexity of regulations, geography, design, and human construction that goes into just one facet of the program. As these elements are unified only when brought together by the program, the Foucauldian deconstruction of the whole delineates the restrictive parts and the need to modify a minor aspect of a program, bit by bit, instead of taking the program as a monolithic entity governed by an intangible force.

Foucault reminded audiences that laws, the government, and resources are not stoic, intangible elements, but rather interact with and shape social forces. The political economy, the linking of the government to the people, is the power that the government holds. Li (2007) highlights the importance of reflexivity and intrinsic calculations to continually enhance and self-heal the broken elements. When stating “the Government,” a plethora of different definitions are utilized to describe its existence or power. Each individual views “the Government” as something unique based upon their socialization within the governed society. If the government is a series of enacted policies implemented or enforced by its workers, a hive of bees, then it is the role of the researcher to continually hammer at the ideas, like a blacksmith, until they suit the populace they are crafted for. A son can use his father’s sword if it is re-crafted, through arduous blacksmith work, for him.

Uncertainty Reduction Theory

The uncertainty reduction theory first formulated by Charles Berger and Richard Calabrese in 1975 posited that humans use communication as a tool in subsequent interactions to reduce uncertainty about their environments and people. Individuals have different levels of awareness about their behaviors depending on previous socializations, obtained information, and communicative security levels. Message content in initial interactions, focus on sharing basic communicative information. SVRSP websites are developed by government employees and provide information for DHH individuals to access this information based upon a shared demographic trait or interest. This is consistent with uncertainty reduction theory. During the later stages, communicative

information explores attitudes and opinions. Due to the computer-mediated communication or online nature of the interactions, it can be assumed that more forums or detailed information will be disclosed. Within computer-mediated communication, there are two phases, known as the entry and exit phases. The entry phase occurs in initial information-seeking phases, when individuals are seeking engagement related to information they do not know. The exit phase occurs when the material has been read, time has run out, or participants decided not to pursue the relationship or seek further information. When information has been consumed during the exit phase, individuals will opt to return at a later date or seek informational interactions elsewhere. Uncertainty reduction theory posits that information gained in the entry phase can terminate potential subsequent interaction. If DHH users deem the current information as useless or unengaging, they will not return to the website. Therefore, it is important for SVRSP to have transparent, engaging, timely, and useful information. Due to the asynchronous nature of computer-mediated communication or online websites, the uncertainty reduction theory's application is likely to be different.

Individuals seek to reduce uncertainty through communication, up to a preconceived notion. "While uncertainty may be rewarding up to a point, the ability to completely predict another's behavior might lead to boredom" (Berger et al., 1975, p. 161). If DHH members seek out online information and find the posted information redundant, repetitive, or already known, they will not return to the website. The uncertainty reduction theory also points towards pause rate and speech rate as indicators of uncertainty; however, this cannot be measured in an online website analysis. Although these do not factor into text-based online-mediated communication, the present study

seeks to expand the textual use of uncertainty reduction theory to online-mediated communication. The text should be simple and clear. Additionally, some DHH members cannot hear speech intonations, and therefore become dependent on visual cues within ASL, lip reading, or simple body gestures to reduce uncertainty within a communicative context. These uncertainties are faced in everyday interactions (Lane, 1992), SVRSP is a source for shared information, thus reducing uncertainty. This points to the importance of studying emerging textual themes of online communities where ways to reduce these uncertainties may be sought. It is claimed that the use of online-mediated communication reduces uncertainty within the DHH community by eliminating certain verbal communicative barriers. Awkward pauses, incorrect responses due to mishearing, and requests for repetition are eliminated.

In oral communication, there is more uncertainty due to the inability to hear transmitted sound. “When persons are unable to make sense out of their environment, they usually become anxious” (Berger et al., 1975, p. 107). Not hearing information creates the initial uncertainty as the DHH are deprived of incidental learning. Tangential research by Blom (2014) and Karras et al. (2012), point to the use of online websites to obtain information, but not in the context of vocational resources. Both studies found barriers in online information access if information sought is not organized and tailored in an accessible modality for the DHH. Rogers (1999) posits that barriers are lowered in online communication. However, 23% of disabled Americans do not use the Internet to seek out information (Bialik, 2017). The increase of media that contains audio may push the DHH away from using the internet as a resource unless necessary for school or work-related functions among younger generations (Deering & Pugliese, 2020; Deering, 2019).

Axioms

Uncertainty reduction theory contains a number of pertinent axioms and theorems that relate to the current proposed study.³

AXIOM 1: Given the high level of uncertainty present at the onset of the entry phase, as the amount of verbal communication between strangers increases, the level of uncertainty for each interactant in the relationship will decrease. As uncertainty is further reduced, the amount of verbal communication will increase” (Berger et al., 1975, p. 101-102).

While the first axiom relates to verbal communication, it can be extended to apply to online communication. To suit an online mediated-communication context, the axiom could be rephrased to:

Given the high level of uncertainty present at the onset of the entry phase, as the amount of information seeking on a website increases, the level of uncertainty for each interactant available in the information seeking process will decrease. As uncertainty is further reduced, the amount of subsequent communication interactivity will increase.⁴

As the degree of information available increases, or there are present features of the CUITA codebook on SVRSP websites, the degree of uncertainty about SVRSP will decrease. The information that is communicated to individuals serves to decrease uncertainty. Additionally, future studies may capitalize on the original definition of this axiom to understand the communication between SVRSP clients and their counselors.

³ All the axioms used in this study are found in the original work by Berger & Calabrese, 1975.

⁴ The axiom revisions are original work by the primary researcher (Deering, 2023) created for this study.

However, this communication cannot take place if there is no email or contact information present on the website. Interactions will be improved with available information on a website (Ling et al., 2007, and serve to decrease DHH uncertainty.

AXIOM 2: As nonverbal affiliative expressiveness increases, uncertainty levels will decrease in an initial interaction situation. In addition, decreases in uncertainty level will cause increases in nonverbal affiliative expressiveness.

Nonverbal expressiveness can relate to accessible communication such as captioned videos, usable links, up to date contact information, question boxes that are attended to, and other features. Positive responses will be the continued engagement, interaction, and use of the site. This study was limited to the presence or absence of features within the website. It does not measure nonverbal expressions, but it can be assumed that available information can result in positive outcomes rather than frustration and increased uncertainty due to a lack of information. Antheunis et al. (2011) studied nonverbal expressiveness in online communication, and how communicators made up for the lack of verbal interactions. Expanding and building on prior work from Tidwell & Walther (2002), Antheunis et al. (2011) found that when comparing face-to face conversations, computer mediated conversations exhibited a larger proportion of self-disclosure and question asking. The higher amount of disclosure led to a higher level of attributional confidence and perceived communicative effectiveness (Antheunis et al., p. 758, 2011). Potential SVRSP seekers may feel more comfortable initially disclosing information about themselves in an accessible text platform if there is an option to do so. “This approach posits that in the absence of nonverbal cues CMC [computer-mediated communication] interactants tend to focus on those cues that are available” (Tidwell &

Walther, 2002, p. 760). Missing communicative cues imply a lack of availability and can result in false assumptions, greater frustration, and further uncertainty.

AXIOM 3: High levels of uncertainty cause increases in information seeking behavior. As uncertainty levels decline, information seeking behavior decreases (Berger et al., 1975, p. 103).

Not hearing information that is verbally presented may cause DHH individuals to seek out alternative ways to better communicate among themselves or with the hearing population. The inability to understand spoken language produces uncertainty. Individuals then turn to websites that offer ways to reduce uncertainty. The information sought may be related to improved hearing aids, interpreting, captions, or other accessibility features. Websites can share information, provide recommendations, or foster support. Ecker (2008) uncovered texting as a means of easily conveying information among the DHH, which illustrates how new and social media can be used to enhance accessibility. Conversely, Yoshida and Deichmann (2008) claim that mass media technology cannot keep up with accessibility features. However, it is believed that the SVRSP websites will decrease uncertainty through the sharing of information about available technologies and services. The websites should use ASL and closed captioning to reach the DHH. These are neither new nor expensive technologies. Additionally, if individuals already know the information provided on the SVRSP website, they will not be motivated to seek it out. Curiosity about a subject serves as a bonding measure for online communities and sites (Litman & Pezzo, 2007).

AXIOM 4: High levels of uncertainty in a relationship cause decreases in the intimacy level of communication content. Low levels of uncertainty produce high levels of intimacy.

For this study, Axiom 4 is reworded to suit an online-mediated communication context. In sum, high levels of uncertainty in online information resources cause a decrease in the level of communication content use and usability. Conversely, low levels of uncertainty will produce a high levels of online communicative recourse use. It is hypothesized that websites with features present will decrease uncertainty and lead users to interact with the website. If a website is missing features and information, the user will have an increased level of uncertainty. If there is uncertainty in a relationship as the original axiom posits, the relationship does not encourage the exchange of intimate details or information. Similarly, uncertainty with dead links or information that is not easily understood will render the user dissatisfied and less likely to fill out information such as standard follow-up contact information. At this point, the user may search elsewhere or give up the information seeking process and opt to live with temporary or persistent uncertainty.

AXIOM 5: High levels of uncertainty produce high rates of reciprocity. Low levels of uncertainty produced low reciprocity rates (Berger et al., 1975, p. 105).

Due to high uncertainty levels within the DHH community about accessibility, education, and resources, it is proposed that members will be encouraged to relay information. Members who are not seeking out active information may be passively reading information. Therefore, it is hypothesized that individuals who visit the SVRSP websites more frequently may have higher levels of uncertainty, and this uncertainty is

reduced if information is present. This is similar to uncertainty reduction that results from using tutorials (Brumfield, 2008) or the reduction of uncertainty that results from online health information seeking behaviors (Ling et al., 2007).

AXIOM 6: Similarities between persons reduce uncertainty, while dissimilarities produce increases in uncertainty (Berger et al., 1975, p. 106).

Hogg et al. (1999) reports the reduction of uncertainty when joining groups of like-minded or similar people. Individuals may use online-mediated communication to find others who are similar to themselves and reduce their uncertainty. An asynchronous resource attracts similar people or individuals with similar goals, congruent with Axiom 6. The present features within the content analysis will likely uncover themes that reveal website similarities in terms of shared interests or needs. Uncertainty may be reduced through the discussion of various topics related to health, education, and accessibility. These topics can be related to and used in a similar way due to the shared hearing status trait and an underlying need or desire.

AXIOM 7: Increases in uncertainty level produce decreases in liking; decreases in uncertainty level produce increases in liking.

First impressions for website use are important. If the DHH find that a website is accessible, informative, and useful, the likelihood of them engaging in subsequent interactions with the website and SVRSP are increased. If the first impression is positive or favorable, uncertainty is reduced, and self-efficacy is increased (Anderson, Carleton, Diefenbach & Han, 2019). The website also provides an area for hearing individuals to understand with DHH and learn about resources which may impact the hearing populations perception of SVRSP.

Alternate Views of the Uncertainty Reduction Theory

It is important to address the updated review of the uncertainty reduction theory proposed by Brashers (2001). Expanding upon the theory, Brashers (2001) infused it with health examples and provided an alternative view of the theory. Brashers states that people may increase their uncertainty by intentionally seeking out information that contradicts their preexisting beliefs. This uncertainty may be increased by seeking out alternatives. While the discovery of information about vocational rehabilitation is unlikely to increase uncertainty within the DHH population, they may seek out alternatives to assistive devices, interpreting services, captioning services, health information, or educational resources. SVRSP websites may be one of the options or locations that the DHH use for information seeking. The reworked version of the theory in Brashers's (2001) article aims to implement real world application of uncertainty reduction theory. For example, if a d/Deaf or HH student at Rochester Institute of Technology is not happy with the education they are receiving, they may opt to inquire about Gallaudet University. This of course rests on the notion that the individual is seeking a university rooted in Deaf culture. However, this study argues that the goal of seeking this information is to find an alternative that would reduce uncertainty, not increase it. Uncertainty may result in a proliferation of options at a later date, but the initial seeking does not generate uncertainty, as Brashers (2001) suggests. The view of uncertainty reduction theory as it pertains to this study heavily relies on Berger's (1975) original depiction. Avoidance of information can provide an escape from distressing certainty (Brashers, 2001). It may be hypothesized that the DHH live in a state of uncertainty, unable to discern verbal language.

Online Mediated (Computer Mediated) Communication as a Conceptual Model

Addressing uncertainties in the light of retrospective understanding for linguistic DHH education choices has been examined by Young (2006), but there has been no direct use of the computer mediated communication (now referenced as online mediated communication or used interchangeably) model in conjunction to the DHH with a communicative context. This highlights the need of DHH research as it pertains to political socialization, community engagement, and the seeking of health and accessibility information online. Ramirez et al. (2002) focus their research on computer-mediated communication. Minimal information about SVRSP can lead to exaggerated perceptions of the quality or quantity of information. Unless a closed-caption video is posted, websites reduce or eliminate the nonverbal and contextual cues that DHH rely on in the place of verbal communication. All information an individual receives on text-based platforms is usually through the written word. However, vocational rehabilitation websites sometimes support the integration or linking of external links and media, integrating occasional images or videos into the platform. This encourages the sharing of external information, which makes the content rich (Medvedev et al., 2019).

This study acknowledges that websites may be accessed via computers, tablets, phones, or other available devices that connect to the internet. This study expands computer-mediated communication to the new term of online-mediated communication to account for the different modalities of website access and use. The study will use the term “online-mediated communication” to reference all online communication that uses the general parameters of computer-mediated communication. The term online-mediated communication is used for clarity and ease of general understanding as there are many

ways to access websites, smart refrigerators being one of them. Future research can adopt the coining of online-mediated communication to account for social networking sites that are accessed through mobile devices and even emails written on tablets. These nuances of online-mediated communication apply to all modalities of online communication as the text is accessed and formatted in relatively the same way, without verbal cues, facial expressions, or other nuanced nonverbal communication. It should be recognized that some websites are not mobile friendly, or easily adjusted to non-computer formats.

Computer-mediated (online-mediated) communication uses uncertainty reduction theory as a cognitive state, but for this study, it is argued that uncertainty is a motivator for seeking information about SVRSP and engaging in subsequent interaction with the program. First, the state of uncertainty should be conceptualized. Ramirez et al. (2002) write, “Rather, Uncertainty is conceptualized as a cognitive state that fluctuates based on the discrepancy between the information desired and the quality of that acquired” (p. 217). If the information found is deemed useful, users will return to the site; if not, other sources will be scouted. It is hypothesized that if there are high SVRSP counselor response rates, interactivity, and good resources, uncertainty will be reduced. Low engagement in the community, meaning lower response rates and inaccessible information, deems the information as less rich and engaging. The uncertainty may not be reduced. Using the computer-mediated (online-mediated) communication model drafted by Ramirez et al. (2002), factors such as perceived efficacy of personal technology that influence the appraisal of information are technology-related. Some DHH often avoid online technological information, (Karras et al., 2012), and their reading skills may suffer because English is not their first language (Dew, 1999).

The second parts of the online-mediated communication model are information-related factors of quantity and quality. Situational, contextually related factors such as time and target availability factor into the amount of website use. Do the DHH users believe that their state website is an adequate reference or resource to their inquiries? If so, participants may act in a positive manner, as their uncertainty has been reduced, with actions such as following up with the program. Lastly, communication-related factors such as history and background of the individual, preferences, and communication skills also factor in. Do the individual's seeking information and answering questions have the skill or background knowledge to adequately do so? The judgment of these areas of online-mediated communication may prove to be large determinants that increase rather than decrease the uncertainty experienced when users visit a SVRSP website.

The behavioral part of the online-mediated communication model is the selection of information-seeking strategies. The strategies can be interactive, active, extractive, or passive. If an individual is continually reading the information and engaging with SVRSP websites, this would be an active or interactive information-seeking strategy. The linking of third-party information is the hallmark of the active strategy, differentiating it from the interactive strategy (Ramirez et al., 2002). The majority of community members are likely passive due to the lack of familiarity with content (Schneider, 2012), meaning those with higher engagement may have higher uncertainty. Epistemic curiosity is a motivator for seeking out knowledge online (Koo et al, 2010; Lauriola et al., 2015; Schneider 2012). High levels of information would transform DHH users into interactive, active, and extractive information seekers. Additionally, high vocational department

employee involvement in websites would create an active and interactive department atmosphere.

The study will focus on outcomes of the online-mediated communication model. This relates to feedback, experiences, and assessment. Through analyzing the information made available by other members within the community, these elements will be uncovered. “In summary, the conceptual model represents a general perspective from which social information seeking via computer-mediated [online-mediated] communication and new media can be explained,” write Ramirez et al. (2002, p. 224). This reiterates the call for the model’s use in information seeking and further expands the proper application of uncertainty reduction theory.

Theoretical Summary

Muted group theory, uncertainty reduction theory, the Foucauldian lens, and online-mediated communication form the theoretical foundation for this study. Muted group theory examines how groups are pushed out of mainstream communication if language is not made accessible to them and transforms the DHH to an unmuted group when resources and language are accessible. Uncertainty reduction theory explicates how uncertainty can be decreased if this information is made available, and the group is no longer muted. The standardization of best practices can ensure that all knowledge is accessible. It is important for this knowledge to be accessible as the Foucauldian lens states that knowledge is power, and resources for the DHH should empower them. Online-mediated-communication is a root to empowerment as it uses text-based media and incorporates the visual language of ASL. For the deaf and hard of hearing to be included and use vocational rehabilitation websites, captions, and other resources need to

be made deaf-friendly. Empowerment to the DHH each will happen when best practices are applied on vocational rehabilitation websites.

CHAPTER FOUR: CONCEPTS AND RESEARCH QUESTIONS

The overall research question of this dissertation asks: How can standardization of state and federal government information can empower the deaf and hard of hearing? The core concepts explored in this study – availability, inclusion, interactivity, accessibility, usability, clarity, transparency, political leaning, empowerment, and knowledge – are derived from the literature review and theoretical framework. Specific research questions and concepts are defined below, and theoretical linkages are provided.

Research Question 1: What information regarding state vocational rehabilitation service program (SVRSP) is **available** on state government websites?

SVRSP *information* consists of data that would be unknown to a SVRSP seeker or individual before using the website. For example, a fact about who is being served, a contact phone number, or even a video that has closed captions would be an example of previously unknown information.

Availability is defined as the presence or absence of elements within the CUITA model. For example, is a teletypewriter (TTY) or video-phone number provided on the website?

The modified version of muted group theory, unmuted group theory would argue that lack of availability of SVRSP information further mutes the DHH and disempowers the group. Without information on a website that is supposed to help them, SVRSP does not fulfill its purpose of “unmuting” the DHH through accessible communication and knowledge.

Research Question 2: What state level factors relate to whether information available on state government websites include the Deaf or Hard of Hearing as an audience?

Inclusion is defined as considering the needs of the DHH through features on a website that facilitate use by the DHH. For example, a separate site or section of SVRSP for the DHH and posting a video with closed captions would be indicators of inclusive practice.

Including people within a discourse facilitates communication within the population that is muted and empowers them. This transitions the language of the DHH into the public sphere and creates SVRSP as resource for upward mobility in education employment. Conversely, if there are no resources available, the population will continue to be muted.

Research Question 3: To what extent is SVRSP website information **interactive** for the DHH?

For this research question, *interactivity* is defined as promoting and enabling the two-way flow of information and influence between a user and the digital content.

Research Question 3a: How **accessible** to the Deaf and Hard of Hearing is state vocational rehabilitation service program information on state websites?

Accessibility is defined as the ease of use of a website by the DHH. Are the modalities of communication accessible? These include email, text-based communications such as a chat box, teletype telephones (TTY), captioned videos, and interpreters.

Research Question 3b: Do vocational rehabilitation websites **clearly communicate** ways to contact a state vocational rehabilitation service program (SVRSP) counselor or apply for services?

Clear communication refers to the presence of features that make it easier for individuals to follow up and move forward in their vocational rehabilitation search process. Clarity is the absence of missing, intelligible, or comprehensive information. Clear communication means providing timely and accurate information, without dead links. For example, is there a list of SVRSP counselors or staff? Is there a physical address or contact information? Is how to apply for services clear?

*Research Question 3c: What **usability gaps** exist for the Deaf and Hard of Hearing (DHH) population on the state vocational rehabilitation service program (SVRSP) websites?*

Usability is defined as the ability for a DHH individual to understand and consume information that is not text based.

Examples of usability gaps are dead links, expired contact information, mobile optimization, videos without captions, videos without ASL, or the absence of relevant, updated information.

This research question ties into uncertainty reduction theory, as the more information that is available and the more usable the information is, the less uncertainty there will be among SVRSP users. Dead links, incorrect information, and missing or unusable information may increase uncertainty about the services available from SVRSP. If there are no usability gaps, the uncertainty within the deaf and hard of hearing population will be reduced.

Research Question 4: Do state budgets have any effect on the presence or absence of features on vocational rehabilitation service program (SVRSP) websites?

Transparency refers to openly informing VR website audiences about budgets for physical and financial resources.

Physical resources include things such as hearing aids, cochlear implants, service animals, and more. *Fiscal resources* may refer to health benefits, business opportunities, career counseling and more.

Transparency includes easily found information, accessible communication modalities, and website updating accountability.

Unmuted group theory, formerly muted group theory, and uncertainty reduction theory inform this question because information unmutes these groups, as does reducing uncertainty.

Research Question 5: How do state vocational rehabilitation service program (SVRSP) benefits for the Deaf and Hard of Hearing (DHH) compare across state lines?

Research Question 5a: How many and which states make information available and accessible to the Deaf and Hard of Hearing (DHH) on vocational rehabilitation websites?

Knowing where information is available and accessible helps to empower the DHH.

Research Question 5b: How does state vocational rehabilitation service program (SVRSP) information compare between Democratic and Republican-leaning states?

Research Question 5c: How does state vocational rehabilitation service program (SVRSP) information compare between states of moralistic, individualistic, and traditionalistic political cultures?

After all the websites have been accounted for, research question 5c examines if there is a pattern between resources being present or absent based upon political party leaning which is measured within the codebook. For example, are the presence of

features present more frequently in liberal or conservative leaning states? What is the difference of waitlisting across state lines? The qualitative portion of the study can delve deeper into this question and its particularities.

A conservative leaning state is defined as having a +1 or more on Republican leaning of the 2022 Cook Partisan Voter Index (Cook Political Report, 2022). For example, Wyoming is a (R+25) while Michigan is (R+1). Each state will be coded on a scale by its Cook Political Report score.

A liberal leaning state is defined as one that has a +1 or more on the democratic leaning of the 2022 Cook Partisan Voter Index (Cook Political Report, 2022). For example, the District of Columbia is D+43 while New Hampshire is D+1. Each state will be coded on a scale by its Cook Political Report score.

Research question 5c is viewed through the Foucauldian lens of institutions empowering or disempowering groups through fiscal resources, knowledge, and discourse of available resources, knowledge, or money. Answering the above research question will help uncover communication patterns and how politics may influence the SVRSP information and affect the DHH population. Knowing if individuals are receiving the same benefits across state lines can serve to empower the deaf. The absence of or obscuring of this information “permits” inequalities in rendered resources to continue and persist across state lines. Knowing that there is a difference is knowledge, and this knowledge can be used by the DHH population to empower change and create equality across the different SVRSPs.

Moralistic, independent, and traditionalistic, are defined within the literature review, which is consistent with Elazar’s Political Culture scale (1968). The three

categories have will be explicated and defined within the quantitative methodology section. The states are categorized based upon timely and current research on Elazar's Political Culture scale from 1968, demonstrating that the scale is not dated or irrelevant despite it being created over half a century ago.

Research Question 6: How do the state vocational rehabilitation service program (SVRSP) websites portray the Deaf and Hard of Hearing (DHH)?

Subtle alterations and changes alter the presentation of SVRSP website information reconstruct how the program is viewed. These subtle linguistic differences and presentations may have profound implications for the audience's use and interaction with the SVRSP website and program as a result. The linguistic themes of a website also uncover the presentation of deafness, as a cultural trait or medical malady, at the state and federal level. The question will be analyzed qualitatively and critically at the state level.

Research Question 7: Do the themes and recommendations of the state vocational rehabilitation service program (SVRSP) websites serve to empower the Deaf and Hard of Hearing (DHH) through knowledge and accessibility?

In summary, *themes and recommendations* are the characteristics of features on SVRSP websites. The availability, inclusion, accessibility, usability, clarity and transparency of information indicate the potential for empowerment.

Empowering the DHH through knowledge and accessibility means making it possible for the DHH to use the SVRSP website(s) with ease and purpose to obtain gainful employment attain meaningful lives.

Results of this question are used to expand upon muted group theory, with the intention of making an original contribution to it by expanding it into unmuted group theory.

CHAPTER FIVE: PUBLIC POLICY DOCUMENT ANALYSIS

Document Analysis Introduction

To understand the expenses and changes of vocational rehabilitation, as well as their relation to the current ADA, an overview of disability policy and law through a document analysis⁵ is vital. Additional historical perspective of deafness demonstrates the necessity of this study. In addition, Federal regulations and laws, as they pertain to online websites, are discussed. To conduct this portion of the analysis, the primary researcher prioritized pertinent history and law relevant to vocational rehabilitation and online websites. Online resources and past research were utilized to account for relevant history and law critically. Although information about the three major acts and key Supreme Court cases was provided in Chapter Two as necessary introductory background and context to a study about the DHH, this portion of the study focuses on the vocational program's roots in U.S. history, law, and culture. As these regulations are portions of the of laws at the state and federal levels, this analysis attempts to provide a holistic view of the most pertinent policies.

The History of Vocational Rehabilitation and the Americans with Disabilities Act

The attitude towards disability in the early years of the U.S. is rather gloomy as the disabled were viewed as a “punishment from God,” a personal failure, ostracized, and separated from mainstream society. This is in stark contrast to the modern view that disabled individuals are only limited by societal or environmental factors. Historically,

⁵ The methodology and steps taken to conduct the document analysis are discussed in the Qualitative Methodology section, or Chapter 8. The document analysis results have been placed before the quantitative section to provide contextual clues for the results and overall understanding of the study.

individuals with disabilities were often institutionalized, subjected to medical experimentation, or sterilized. These actions were taken due to the belief within society at that time was that disabled individuals were unable to live fulfilling lives, and time should not be spent educating or employing these individuals. In 1722 the Connecticut House of Corrections was established to separate not only criminals, but also individuals with disabilities. Other institutions such as the Hospital for the Ruptured and Crippled (1863) and the Boston Industrial School for the Crippled and Deformed (1893) were established to confine individuals with disabilities (Levine, 2005). Ostracization was also demonstrated in reporting procedures. The U.S. Census combined “defective,” delinquents, and dependents into the same category.

The Smith Hughes Act of 1917 made federal money available to states on a matching basis for vocational education programs. This act also established the federal board for vocational education, which later administered the program now known as SVRSP. Shortly after, the Soldiers Rehabilitation Act (Smith-Sears Act) of 1918 extended rehabilitation to disabled veterans who had served in World War One. The Smith Fess Act (1920), also known as a Civilian Vocational Rehabilitation Act (Public Law 236), established a civilian program under the federal board for vocational education. This mandated that educational vocational programs would be funded on a 50-50 matching basis with the states by the federal government.

In 1920, the Vocational Rehabilitation Veterans program was expanded to include people with disabilities, and the vocational rehabilitation program was created under the Rehabilitation Services Administration. This came shortly after World War 1 and benefitted the disabled veterans. Since then, it has undergone numerous expansions,

revisions, and adaptations (Ogden, 1990). One example is the 1935 Social Security Act signed into law by Franklin D. Roosevelt which provided unemployment and disability insurance to individuals who were older, and to ensure the provision of various forms of medical care. The Social Security Act made the vocational program a federal law, no longer needing its re-affirmation every four years, unless congress voted or votes it out. Vocational Rehabilitation was then permanently linked to the Social Security Act. These laws are closely linked to the Workforce Investment Act (WIA).

The program vocational program expanded to include people with mental disabilities under the Rehabilitation Act of 1943 (The Barden-LaFollette Act), enabling states to create separate departments for people with blindness or other specific disabilities that required more attention, paying for items such as hearing aids. During the 1950s, the program was quite popular, as every dollar spent by the government returned \$7 through working employees (National Consortium of Interpreter Education Centers, 2021).

In 1965, President Lyndon Baines Johnson expanded the vocational rehabilitation act under the Great Society programs to cover drug abuse, individuals who were previously incarcerated, and other behavioral disorders. One building at the National Technical Institute for the Deaf is named “LBJ” after the former president. In 1973, the program expanded to include individualized employment plans through rehabilitation counselors. This included Section 503, which mandates employers to make reasonable accommodations for individuals with disabilities. The 1986 expansion included consumer choice, allowing individuals to have a larger say in the outcome of their Individual Plans for Employment (IPE) and similarly, the 1992 expansion created a standardization of this

process. A few notable features in this act consist of the addition of the Client Assistant Programs (CAP), speeding up consumer eligibility, created state rehabilitation branches, and amended definitions. In 1998, informed choice was added, mandating that individuals be informed of all the availabilities and options of the program.

In the late 1980s and early 1990s, disparate vocational rehabilitation programs were also part of the overall combination of accessibility initiatives under the umbrella of the ADA. The formulation of the ADA grouped various disability programs together and protected them under one act. The ADA was first introduced to Congress in 1988, but it is more widely known for its signing on July 28, 1990. The ADA owes its origins to the passage of section 504 of the 1973 Rehabilitation Act, which banned discrimination on the basis of disability for programs receiving federal funds. Section 504 also placed the legal view of disabled people in the light of a minority rather than just disabled, which further necessitated the need for the subsequent passage of ADA protections. The Olmstead Decision resulting from a Supreme Court Decision on Title 2 of the ADA required that states place individuals with cognitive disability in community settings rather than institutionalizing them.

As noted earlier, rehabilitation legislation was first brought to life in 1917 to protect veterans of the first World War. The ADA was modeled after the Vocational Rehabilitation Act banning discrimination based upon race, ethnic origin, or gender. Landmark decisions and legislation such as *Grove City College v. Bell*, the Fair Housing Act, Education for Handicapped Children Act (Individuals with Disabilities Education Improvement Act), and *Southeastern Community College v. Davis*, 442 U.S.397, led up to the passage of the ADA. In September of 1988, a joint hearing was held before the

Senate Subcommittee on the Handicapped, which included the House Subcommittee on Select Education. More than 700 disabled individuals and advocates were present or reiterated testimonies about discrimination in order to advocate for their rights and the passing of the ADA legislation. On May 9th, 1989, Senators Tom Harkin (R-IA) and David Durrenberger (R-MN) and Representatives Anthony Coelho (D-CA) and Hamilton Fish (R-DC) introduced the legislation. The ADA passed the Senate by a vote of 76 to 8. Different sections of the ADA cover various areas and sectors to protect individuals with disabilities. Title I of the ADA covers employment, Title II covers the U.S. Government, Title III covers public and commercial facilities, and Title IV covers telecommunications.

Laws & Other Fiscal Matters

The following information about SVRSP funding is stated on the Rehabilitation Services Administration website. Note that the statutory formula does not equally divide SVRSP funds based only on the population of a state.

Funds are distributed to states, the District of Columbia, and the five U.S. territories based on the statutory formula that takes into account population and per capita income in determining the amount of Federal funds made available to each grantee for VR [vocational rehabilitation] program purposes. Grant funds are administered under the approved VR [vocational rehabilitation] services portion of the Unified or Combined State Plan in accordance with WIOA Unified and Combined State Plan Requirements. (Rehabilitation Services Administration, 2021, para 3).

VR [vocational rehabilitation] regulations require that the state incur a portion of expenditures under the VR [vocational rehabilitation] services

portion of the Unified or Combined State Plan from non-Federal funds to meet its cost sharing requirements (34 C.F.R. § 361.60). The Federal share for expenditures made by the state, including expenditures for the provision of VR [vocational rehabilitation] services and the administration of the VR [vocational rehabilitation] services portion of the Unified or Combined State Plan, is 78.7 percent. The state's share is 21.3 percent of the total program cost. The VR [vocational rehabilitation] program considers non-Federal share to be allowable as match only when obligated during the year of appropriation of an award. (Rehabilitation Services Administration, 2021, para. 2-3).

Responses to the ADA from the upper-case⁶ Deaf community have been split; the DHH welcome protections, benefits, and services, but reject the labeling of them as “disability” services. This is especially true in the DHH community, as the culturally Deaf reject terms such as “disabled” or “impairment” due to their offensive connotations. Instead, DHH individuals view themselves as a linguistic minority (Deering & Pugliese, 2020; Hult & Compton, 2012; Lane, 1992; Rogers, 1999). Capital “D” Deaf refers to the culturally deaf, and those who use American Sign Language (ASL) as their primary communication modality (Glenn-Smith, 2017). Roots (1999) wrote, “By definition, therefore, the hard of hearing person wishes to remain as active a participant in hearing society as possible, and to this end utilizes lip reading and technical aids rather than Sign” (p. 3). There are not only differences between deaf and hard of hearing, but also between

⁶ The Deaf community is referred to as “upper case” to hallmark the distinction of identity between deaf and Deaf. It is further elaborated on within the subsequent page.

deaf and Deaf. A distinction should also be made between signing deaf and oral deaf, as they differ in how they choose to communicate and socialize with the hearing community (Roots, 1999). The oral deaf may prefer to use assistive devices such as cochlear implants or hearing aids and use spoken English as their primary language. Other culturally Deaf individuals choose not to use assistive devices and rely on ASL alone. This community has a wide array of needs, so one generalized linguistic or socialization solution does not address all. Despite these varied needs, however, the ADA and associated legislation tend to treat deafness as a disability and therefore within the purview of the Act.

The SVRSP is funded by formula grants to assist states in developing a workforce development system (Rehabilitation Services Administration, 2021). Some states have more than one branch location to serve the entire population that requires services. For example, a few state agencies have a separate branch just for the blind.

State VR [vocational rehabilitation] programs provide VR services for individuals with disabilities, consistent with their strengths, resources, priorities, concerns, abilities, capabilities, interests, and informed choice, so that they may prepare for and engage in competitive integrated employment or supported employment and achieve economic self-sufficiency. To be eligible for the VR program, individuals must have a physical or mental impairment that results in a substantial impediment to employment and who require and can benefit from VR services to achieve employment and maximize career goals.

(Rehabilitation Services Administration, 2021, p. 1).

As stated in the program description on the Rehabilitation Services Administration website, the goal of the SVRSP is to educate and employ individuals with qualifying disabilities and integrate them into society. It is important to note that many DHH individuals reject the term disabled but accept state resources and federal assistance programs. Employment preparation through training programs provides the DHH with essential work-life skills. These skills can be applied to a job of their choice and reduce reliance on disability programs in the future.

The Umbrella of the Rehabilitation Services Administration

The Rehabilitation Services Administration manages different education programs and their funding. Vocational rehabilitation is a smaller subset of the Rehabilitation Services Administration. There are seven main categories on the Rehabilitation Services Administration website: disability employment programs, advocacy programs, independent living program, technical assistance centers, training programs, demonstration programs, and underserved populations. The State Vocational Rehabilitation Services Program, or SVRSP, falls under the Disability Employment Program. Other programs in this category are the State Supported Employment Services Program, American Indian Vocational Rehabilitation Services, and the Randolph-Sheppard Vending Facility Program. However, the SVRSP is the largest state program that assists a vast number of disabled individuals within all states. It relies on a precise U.S. Federal formula grant specifying how to formulate and fund the program. The formula determines how state governments calculate and distribute the financial aid to which they are entitled under the law. The recipients of the aid must qualify for assistance under the stipulations of the overall program. Some formulas reward some states more

than others depending on their standing (Rehabilitation Services Administration, 2021; Stillman, 2005); consequently, SVRSP consumers across state lines do not receive equal services due to the formula grant. U.S. citizens should receive the same services despite their geographic location. Perhaps the formula grant should be updated to ensure equality.

The following explanation details how SVRSP funding is determined on the Rehabilitation Services Administration website.

Funds are distributed to states, the District of Columbia, and the five U.S. territories based on the statutory formula that takes into account population and per capita income in determining the amount of Federal funds made available to each grantee for VR [vocational rehabilitation] program purposes. Grant funds are administered under the approved VR [vocational rehabilitation] services portion of the Unified or Combined State Plan in accordance with WIOA Unified and Combined State Plan Requirements.

April 2020 Report: 2014 Workforce Innovation and Opportunity Act

In April of 2020 a report titled “The State Vocational Rehabilitation Services Program Before and After Enactment of The Workforce Innovation and Opportunity Act In 2014” was submitted by U.S. Department of Education, Office of Special Education, and Rehabilitative Services. Title IV of the Workforce Innovation and Opportunity Act (WIOA) was signed into law on July 22, 2014, which created significant changes for the program. Therefore, a review of the program’s changes, updates and statistics by the Federal and State government was necessitated. The review was done by members of the U.S. Department of Education, Office of Special Education, and Rehabilitative Services.

According to the report, the WIOA act vastly helped the reporting procedures of the SVRSP and accountability. “These changes empower individuals with disabilities to maximize employment, economic self-sufficiency, independence, and inclusion and integration into society and the 21-century global economy.” (U.S. Department of Education, Office of Special Education, and Rehabilitative Services, 2020, pg. 4). To assess the SVRSP for this study, it is necessary to review the report of federally available information.

The Workforce Innovation and Opportunity Act report claims that 78 SVRSP agencies are administrated at the State level, including all 50 states, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and the U.S. Virgin Islands. There are 22 agencies that only serve the blind and those with vision differences. There are 22 agencies that serve disabilities other than the blind, and 34 other agencies that serve all disabilities. In sum, 56 of the 78 VR agencies serve the DHH. The report did not specify which states had what programs available, but the quantitative content analysis of this study will uncover what is available per state. The Rehabilitation Services Administration claims to have distributed \$3.26 billion to the States, which represented 78.7% of the total cost of the SVRSP program. The states are said to have contributed the remaining 21.3% of the total cost of the program using non-Federal funds. The report is transparent and quite informative; however, it may be difficult to understand for individuals who do not have a background in law or policy. In the past, reports on SVRSP success were only measured by individuals who had exited the program and did not include those who are currently within the program. On July 1, 2016, Section 116 of WIOA changed the

reporting procedures that had previously been set in place by the Workforce Investment Act (WIA) of 1998. This illustrates how the program is moving towards more transparent measures of reporting. However, some numbers may be skewed, rendering some inaccuracies in results due to the changes in data collection.

The number of applicants and individuals served by the SVRSP program declined over a nine-year period. While reporting standards and procedures have changed due to Section 116 of the Workforce Innovation and Opportunity Act (WIOA) and all economic data cannot be accounted for, it is important to note that the report stated that many states were having financial difficulties due to the lack of state fund matching.

VR [vocational rehabilitation] agencies also attributed their need to implement orders and close additional priority categories to the requirement to reserve at least 15 percent of their federal allotments for the provision of pre-employment transition services, thereby causing a lack of funds sufficient to provide all other VR services to eligible individuals with disabilities and putting applicants onto a wait list. (U.S. Department of Education, Office of Special Education, and Rehabilitative Services, 2020, p. 10).

Table 1: Number of Applicants, Eligible Individuals, and Eligible Individuals Receiving VR Services under IPEs

FY	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Applicants	701,779	673,578	652,756	619,265	590,820	583,246	602,400	569,530	528,386	446,919
Eligible Individuals	693,628	653,314	638,959	601,327	578,490	578,997	582,788	536,483	484,674	399,587
Eligible Individuals Receiving Services under an IPE	1,011,395	1,011,602	1,011,671	1,001,814	944,593	954,024	972,155	975,359	932,119	1,236,663

Figure 2. Number of Vocational Rehabilitation Applicants from 2010-2019. Image taken from The U.S. Department of Education, Office of Special Education, and Rehabilitative Services, 2020, pg. 11.

While the report contains important demographic information such as age, gender, and race, the program does not specify what qualified the individual(s) for the program.

Therefore, the report does not contain specific information about the DHH, but broadly groups them into an overall disabled population.

The desired outcome of the SVRSP program as measured by employment rates have also declined. “The employment rate is calculated by dividing the number of individuals with disabilities exiting with employment outcomes after receiving services by the total number of individuals who exited after receiving services and multiplying this fraction by 100” (U.S. Department of Education, Office of Special Education, and Rehabilitative Services, 2020, pg. 11).

Table 2: Employment Outcomes at Exit and Employment Rate

FY	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Individuals Exiting with Employment Outcome	164,674	171,490	173,975	176,788	176,065	178,110	179,476	175,458	153,293	142,523
Individuals Exiting without Employment Outcome	152,587	146,277	138,116	152,956	134,345	135,798	136,207	179,003	171,205	170,521
Employment Rate	51.9%	54.0%	55.7%	53.6%	56.7%	56.7%	56.9%	49.5%	47.23%	45.5%

Source: U.S. Department of Education, Office of Special Education and Rehabilitative Services, Rehabilitation Services Administration, Case Service Report (RSA-911), FYs 2010 through 2019

Figure 3. Vocational Rehabilitation Employment Outcomes and Rates from 2010-2019. Image taken from The U.S. Department of Education, Office of Special Education, and Rehabilitative Services, 2020, pg. 11.

Open and closed cases must be reported, which may be a contributing factor in the employment decline. Additionally, the report states that many students require services over a longer period due to education training, which may result in an “unemployment” reporting, rendering inaccuracies. A future formula that measures success rates could integrate individuals that are still in the program. SVRSP agencies reported a high number of staff turnover and low retention rates. Individual SVRSP counselors are serving an increased number of applicants, which allots less time and attention to consumers. Median hourly incomes for those who have exited the VR was

\$11.25 an hour, with a median of 30 hours per week worked. The majority of the funds spent within the program seemed to be on career services and training services.

The 78.7% covered by the federal government is reported as covering administration and service costs. “The data demonstrate that the amount of non-Federal share contributed by States has been increasing from \$848 million in FY 2010 to \$1.03 billion in FY 2018. Despite this overall trend, some states continue to experience difficulty providing the required match to draw down their full Federal allotments” (U.S. Department of Education, Office of Special Education, and Rehabilitative Services, 2020, p. 22). Between 2010 to 2019, state deficits have ranged between \$7.2 million to \$6.9 million in 2019. In sum, the report provides useful data that assess the condition of the program.

The US Department of Education also reports the performance of the SVRSP program by state. However, the most up-to-date performance information available to the public is from fiscal years 2008 to 2014. Fiscal year 2015 is missing, and one limited infographic link for 2016 is available. This renders much of the data available in 2022 for vocational rehabilitation eight (8) years old. The Rehabilitation Services Administration lists the amount of money that has been awarded to each state. There is data for 2022, but some years are not consistently reported at this link by state. It is available for public use at this location: (https://rsa.ed.gov/about/programs/vocational-rehabilitation-state-grants/awards?field_fy_value=2022&field_full_state_name_value=). Other excel data are available which does seem to be consistent.

The Federal Role in Website Regulation

A document titled “Transforming Federal Customer Experience and Service Delivery to Rebuild Trust in Government” was released by the Executive Office of the President on December 16, 2021. The document specifies changes that different agencies should and need to take for the benefit of all people. The following quotation explicates how these ideas fall in line with the Foucault lens that highlights the relationship between power and knowledge.

Government must be held accountable for designing and delivering services with a focus on the actual experience of the people whom it is meant to serve. Government must also work to deliver services more equitably and effectively, especially for those who have been historically underserved. Strengthening the democratic process requires providing direct lines of feedback and mechanisms for engaging the American people in the design and improvement of Federal Government programs, processes, and services. (Federal Register, 2021, p. 71357).

The Federal Government mandated that the Office of Management and Budget shall issue guidance for Health Information Service Providers. It is not immediately clear if the SVRSP program falls under this category; however, the program often assists with mitigating health conditions in the workplace. However, it delegates that improvement plans should consider outreach to the public that enrolls within the program. Streamlining

forms and encouraging digital accessibility while eliminating extraneous items are recommended.

Informed by findings from these assessments, plans for improvement should include, as appropriate, actions such as conducting outreach to the public about the agency's programs and other Federal programs for which those served by the agency may be eligible, providing assistance to members of the public enrolling in the agency's programs and other Federal programs, streamlining and improving accessibility of forms and digital experiences, eliminating unnecessary administrative burdens on customers, ensuring the accessibility of services for customers with disabilities and those with limited English proficiency, developing targeted actions to advance equity for communities that face inequitable barriers to service access, or engaging in other efforts to coordinate with other agencies to reduce the need for those they serve to interact separately with multiple agencies (Federal Register, 2021, p. 71364).

The statement continues with

“(e) improve the digital customer experience for their respective agencies' customers by modernizing agency websites, using human-centered design methodologies, digitizing agency services and forms, modernizing records management, updating network infrastructure and mobility capabilities, and accelerating the use of electronic signatures when aligned with policy priorities, as required by the 21st Century Integrated Digital Experience Act (44 U.S.C. 3501 note); and (f) identify means by which their respective agencies can improve transparency and accessibility through their compliance with the Plain Writing

Act of 2010 (Public Law 111-274) and related requirements and guidance.”
(Federal Register, 2021, p. 71365).

The Public Law 111-274 (FDA.gov) also known as the Plain Writing Act of 2010 necessitates that information about a Federal Government benefit or service “calls for plain writing that is clear, concise, well-organized, and consistent with other best practices appropriate to the subject or field and intended audience” (para. 1). While this act does not specify the exact use of language, it does necessitate that the language is accessible and understandable for the audience it serves. In the U.S., the DHH primarily use English, closed captions, and ASL. A combination of the three makes information accessible to all DHH communication preferences. Including a standardized video with closed captions and in ASL to explicate what the program is about should be necessitated at the federal level even if the program is distributed at the state level.

Title 44 -3501 or 21st Century Integrated Digital Experience Act (Congress.gov) is a series of laws regarding documents. Section 3 is titled “Website Modernization.” The guidelines specified within this act were used for the modification of the CUITA codebook that is used to assess the presence or absence of features on SVRSP websites. Eight primary requirements for websites are listed below. They match various elements within the CUITA. Websites should be—

- (1) is accessible to individuals with disabilities in accordance with section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d); (2) has a consistent appearance;
- (3) does not overlap with or duplicate any legacy websites and, if applicable, ensure that legacy websites are regularly reviewed, eliminated, and consolidated;
- (4) contains a search function that allows users to easily search content intended

for public use; (5) is provided through an industry standard secure connection; (6) is designed around user needs with data-driven analysis influencing management and development decisions, using qualitative and quantitative data to determine user goals, needs, and behaviors, and continually test the website, web-based form, web-based application, or digital service to ensure that user needs are addressed; (7) provides users of the new or redesigned website, web-based form, web-based application, or digital service with the option for a more customized digital experience that allows users to complete digital transactions in an efficient and accurate manner; and (8) is fully functional and usable on common mobile devices.

The director(s) of respective federal agencies are responsible for ensuring website updates and compliance with regulatory measures and are tasked with appointing or hiring the appropriate individuals for modifications. Baker et al. (2020) used a quantitative content analysis to examine the use of Federal websites, namely the Center for Disease Control and Prevention (CDC) and the United States Department of Agriculture (USDA) during the Corona Virus outbreak of 2020, finding that little information was pertinent or available about zoonotic and communicable diseases. Federal websites create a space for dialectic communication, yet often do not take advantage of these features, and instead focus on one-way mass communication. This aligns with Boehm (2007), who claimed that many Federal agencies fail to provide vital information for the general public. Baker et al. (2020) claim the Federal government has struggled to make the online interactive model of communication and information work effectively and decry the lack of interactivity, “The opportunity for the internet to

transform the way people engage with and learn about health information is stifled when the interactive nature of the web is not utilized” (p. 3). It may be difficult to standardize the state vocational rehabilitation websites due to the difference in policy, services, and regulations at the state level. Traditionalistic representatives and senators are likely to be resistant to policy amendments (Elazar, 1984; Sharkansky, 1969) especially if they are unfamiliar with the nuanced functions of the internet. However, if a model is formulated based on the findings of this study, government agencies could suggest its use across all states. Additionally, it could alleviate the burden imposed upon individual states if a template and detailed instructions are provided at the Federal level.

However, accessible digital information at all levels of the government and their respective websites is essential as state legislative research has uncovered. “This content divide, which could also be called a quality divide, clearly affects the potential development of increased levels of citizen participation. Poorly designed Websites lacking in content are unlikely to contribute to the goals of digital democracy” (Ferber, Foltz, & Pugliese, 2008, p. 50). Other research has uncovered that Federal and State websites “...were using outdated information, avoided controversial topics, and lacked variety in the content they were sharing” (Baker et al., 2020, p. 28). Other website research has focuses on the presence of sustainability in institutions of higher education which also accentuate the importance of clear communication goals and interactivity (Dade & Hassenzahl, 2013). The goal of website interactivity is transforming the user into a source of information, with interactive communication capabilities as a transactional model suggested of audiences, not just a stoic one-way receiver as the original Shannon and Weaver communication model prescribed. The current post-script

stage of communication necessitates the dynamic flow of information. Arguably, all information is only information if it is propelled forward by the wheels on the vehicle of communication.

Section 206 of Title 44 is written policy concerning regulatory agencies and their purposes. Agencies should be “using information technology to increase access, accountability, and transparency” and to “enhance public participation in Government by electronic means” (Title 44, p. 133). Title 44 subsequently encourages regulatory agency members and staffed members of respective departments to conduct research to enhance priorities and standards; additionally, departments should engage with served communities to obtain feedback about programs, services, and websites (Federal Register).

The Federal Government states that the primary use of public websites is to inform the public. Therefore, the use of public sites is not assumed as its utility is directly stated. Subsequent website amendments should heed the following statement.

Federal Agency public websites and digital services are the primary means by which the public receives information from and interacts with the Federal Government. These websites and services help the public apply for benefits, search for jobs, comply with Federal rules, obtain authoritative information, and much more. (Office of Management and Budget, 2016).

The Digital Government Strategy

The Digital Government Strategy, launched on May 23, 2012, had three strategic objectives. The CUITA codebook was modified to account for suggestions made by the Digital Government Strategy and the policy that it is based on. The first goal was to:

“Enable the American people and an increasingly mobile workforce to access high-quality digital government information and services anywhere, anytime, on any device” (National Archives and Records Administration (NARA), n.d., para. 6). High quality digital information necessitates continual updates and departmental reviews. The second goal of the Digital Government Strategy was to: “Ensure that as the government adjusts to this new digital world, we seize the opportunity to procure and manage devices, applications, and data in smart, secure and affordable ways” (NARA, n.d., para. 7). The last goal stated is to: “Unlock the power of government data to spur innovation across our Nation and improve the quality of services for the American people” (NARA, n.d., para. 8).

The three strategic objectives from the Digital Government Strategy were based on various policies, executive orders, and other digital referendums. The involved items and programs were Executive Order 13571 (Streamlining Service Delivery and Improving Customer Service), Executive Order 13576 (Delivering an Efficient, Effective, and Accountable Government), the President’s Memorandum on Transparency and Open Government, OMB Memorandum M-10-06 (Open Government Directive), the National Strategy for Trusted Identities in Cyberspace (NSTIC), and the 25-Point Implementation Plan to Reform Federal Information Technology Management (IT Reform). Each of these contributing elements and pieces of U.S. policy will briefly be discussed below as they relate to the management of online vocational rehabilitation websites. Additionally, various parts of the items listed above have been integrated into the CUITA quantitative analysis and the qualitative assessment. A brief overview of various acts has been provided. The scope of the current project does not permit an analysis of every part of

each order, act, or memorandum. However, the project attempts to include all related elements.

Executive Order 13571: Streamlining Service Delivery and Improving Customer Service

Executive Order 13571, titled Streamlining Service Delivery and Improving Customer Service, required agencies that provided services directly to the public to identify, survey, establish standards, track performance, and perform evaluations. This was a movement issued in March of 1995 and updated in April of 2011. The movement has since been updated to ensure that the populace is “put first,” otherwise coined as “putting people first.”

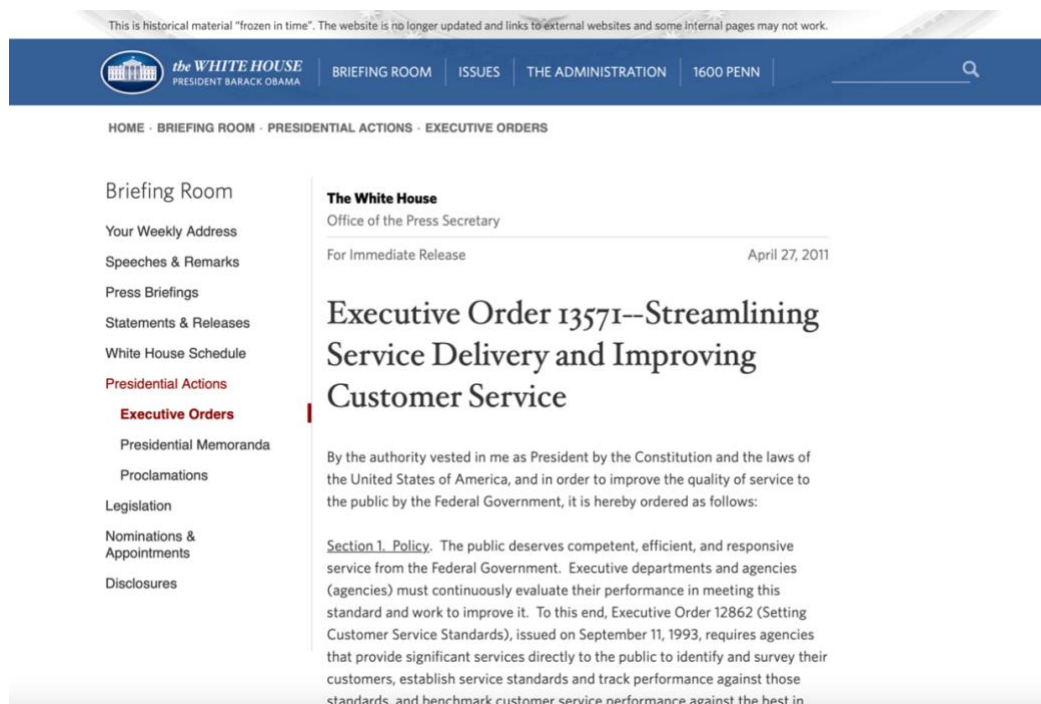


Figure 4. Executive Order 13571 Frozen Historical Material taken on March 30th, 2023. From Executive Order 13571. Accessed at <https://obamawhitehouse.archives.gov/the-press-office/2011/04/27/executive-order-13571-streamlining-service-delivery-and-improving-custom>.

To keep up with evolving technology, the act was revised in April of 2011 and included a list of plans. These plans are the following-

- (a) establishing one major initiative (signature initiative) that will use technology to improve the customer experience;
- (b) establishing mechanisms to solicit customer feedback on Government services and using such feedback regularly to make service improvements;
- (c) setting clear customer service standards and expectations, including, where appropriate, performance goals for customer service required by the GPRA
- (d) improving the customer experience by adopting proven customer service best practices and coordinating across service channels (such as online, phone, in-person, and mail services);
- (e) streamlining agency processes to reduce costs and accelerate delivery, while reducing the need for customer calls and inquiries; and
- (f) identifying ways to use innovative technologies to accomplish the customer service activities above, thereby lowering costs, decreasing service delivery times, and improving the customer experience.

(Executive Order 13571, 2011, para. 5-10).

This dissertation research and the subsequent quantitative and qualitative studies sought to address needs for improvement in the federal and state websites, as suggested in article *a* and *b* of Executive Order 13571. Portion *a* and *b* focuses on customer experiences with the technological aspect of the state program departments. Customer experience can be improved through organized online information. Additionally, the availability of online information reduces repetitive inquiries to and from the SVRSP and

the consumer. Suggestions like the use of an online portal across all states and branches are made in the discussion section as this directly relates to streamlining and enhancing agency processes. The CUITA codebook features were updated to reflect the elements suggested by this executive order.

Section *d* suggests that programs should improve customer experiences across communication channels. The CUITA codebook checks for the presence or absence of various communication modalities indicated in section *d*. Although it is not outright mentioned in the executive order, the writing insinuates that different communication channels, including online-mediated communication, are vital to the success of programs. Populations prefer to communicate in various ways, such as email, telecommunication, or phones with modifications, assistive technology, social media, portals, videoconferencing, instant messaging, and other communicative devices. All reasonable methods of communication should be accommodated.

When communication services are enhanced and modified into streamlined, automated processes, a reduction of human labor results. If the communicative elements are streamlined, coordinators and counselors can spend less time answering repetitive questions and more time customizing services for clients, connecting with new resources in the local community, and formulating ideas for future program initiatives. Programs will then pay counselors, coordinators, and staff for effectively using their time and “thereby lowering costs, decreasing service delivery times, and improving the customer experience” (para. 10), as the memorandum suggests. Innovative communication technologies have profound potential that programs may not have considered due to the difficulties of implementing widespread changes. This study seeks to identify various

ways that technologies and online-mediated communication can be redesigned for overall efficacy.

Executive Order 13576: Delivering an Efficient, Effective, and Accountable Government

Executive Order 13576 was signed by former President Barack Obama on October 6, 2011. The order promoted program accountability and waste reduction by improving the efficiency and effectiveness of federal government operations. It established a council of agency heads and a government-wide plan to streamline processes, reduce duplication, and improve government customer service. Agencies were advised to implement cost-saving measures such as sharing resources and eligible information. The act emphasized the necessity of transparency in Federal programs, which is reflected in this study's Transparency portion of the CUITA codebook. The program and clients will benefit if vocational programs share best practice resources and strategies across state lines.

In appointing people to various roles to oversee programs, Executive Order 13576 attempts to “systematically identify additional reforms necessary to eliminate wasteful, duplicative, or otherwise inefficient programs; and publicize these reforms so that they may serve as a model across the Federal Government” (para. 3). The reformation and research on the online-mediated communication and accountability of online vocational program services is the goal of this research. Duplicate websites or landing pages would

be extraneous. The results of the current research will identify elements vital to creating an efficient online website model for SVRSPs.

Memorandum on Transparency and Open Government

The President's Memorandum on Transparency and Open Government (2009) is a one-page long document that emphasizes the importance of transparency, participation, and collaboration in the programs provided by the U.S. Government. "Executive departments and agencies should offer Americans increased opportunities to participate in policymaking and to provide their government with the benefits of their collective expertise and information" (Administration of Barack H. Obama, 2009, para. 3). The memorandum's aforementioned statement has direct relevance to vocational rehabilitation because soliciting feedback from members about what works and what doesn't work can lead to program improvements. The memorandum encourages individuals who benefit from federal and state programs to interact with government resources proactively and reflexively. Education-to-work programs benefit from the knowledge and experience of others and serve to unmute future participants. The theorist Michel Foucault acknowledged that the relationships between individuals and their institutions are a source of power. This is reflected in the memorandum as "Knowledge is widely dispersed in society, and public officials benefit from having access to that dispersed knowledge" (Administration of Barack H. Obama, 2009, para. 3). Individuals who have diverse experiences are more powerful in creating change when these differences in information and experiences are compiled to draft change.

We should admit rather that power produces knowledge (and not simply by encouraging it because it serves power or by applying it because it is useful); that

power and knowledge directly imply one another; that there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations.

(Foucault, 1995, p. 27).

The knowledge that DHH individuals have from their lived experience can empower the vocational program if the program is open to their suggestions.

Communication reflexivity is important for implementing change.

Memorandum M-10-06 Open Government Directive

The Open Government Directive is highly related SVRSP's need for website updates. It attests that agencies should utilize the internet as a space for spreading and publishing information.

b. To the extent practicable and subject to valid restrictions, agencies should publish information online in an open format that can be retrieved, downloaded, indexed, and searched by commonly used web search applications. An open format is one that is platform independent, machine readable, and made available to the public without restrictions that would impede the re-use of that information. (Open Government Directive, 2009, para. 5)

The directive emphasizes that state vocational websites should provide content that is accessible to all individuals, including those who are deaf or hard of hearing (DHH), and should be available as a primary resource. In addition, the directive states that this information should be integrated into the websites and downloadable for use across other departments, for external research purposes if applicable, or as a template. The directive also delineates that information should be accessible through various

platforms. Resources and access to the internet vary mainly by income and education level but also by geographic location. According to Pew Research, approximately 77% of American adults own a desktop computer or laptop, and 53% own a tablet computer (Pew Research, 2022). “Reliance on smartphones for online access is especially common among younger adults, lower-income Americans and those with a high school education or less (Pew Research, 2022, para. 6). For example, individuals with an income of \$30,000 or less demonstrated a 27% or higher reliance on a smartphone for internet access, compared to only 6% in the \$50,000 to \$74,999 financial bracket (Pew Research, 2022).

Different sections of the Open Government Directive emphasized transparent plans for website updates and encouraged open communication between the government and its people. “Emerging technologies open new forms of communication between a government and the people” (Open Government Directive, 2009, para. 28).

Communication technologies provide an active strategic resource for people to engage in correspondence, amendments, and program utilization. If administrated appropriately, the communication provided by the program will reduce uncertainty with a “Frequently Asked Questions” (FAQ) box, a way to contact program administrators, and other ways that encourage the two-way flow of communication. Due to the importance of communication in memorandums and online interactivity, communication features comprise a large portion of the CUITA codebook.

The National Strategy for Trusted Identities in Cyberspace (NSTIC)

The National Strategy for Trusted Identities in Cyberspace (NSTIC): Enhancing Online Choice, Efficiency, Security, and Privacy is a 45-page document from the former

Obama Administration that defines the internet as an existing resource that can be enhanced into an “Identity Ecosystem” for conducting and managing government affairs. It outlines a strategy for improving online transactions using trusted digital identities. Although the plan is somewhat vague and optimistic, it encourages using security tools and privacy protocols. For the online ecosystem to succeed, it is crucial that there is collaboration between government departments and the public. The document reiterates that the state government has a unique role due to its proximity to the people.

One unique strength of these [state] governments is their more direct and personal engagement with their constituents. The Federal Government will thus encourage them to initiate education and awareness efforts to engage individuals, small and local businesses, and other local organizations. (The White House, 2011, p. 34-40).

To summarize the quote above, the states have the strength of interactivity and customization of services and procedures for their populations. The state’s digital space can be customized while still adhering to a vocational website’s foundational structural and content needs. If states cannot provide customized services to their populations, the Federal government should supply extra resources, such as appropriate website templates and implementable security resources.

The 25-Point Implementation Plan to Reform Federal Information Technology Management (IT Reform)

The Plan to Reform Federal Information Technology Management was published in December of 2010 by the U.S. Chief Information Officer, Vivek Kundra. The goal of the document was to reform Federal information technology (IT) practices and was

released by the U.S. Department of Homeland Security (DHS). With 25 action items, the document aims to improve and modernize the security, efficiency, and cost-effectiveness of information technology systems and services that federal and state governments use. Some of the significant elements in the document relate to the adoption and implementation of cloud computing, increasing transparency in information technology spending, and increasing the efficiency of existing technology. Additionally, the collaboration of information sharing across agencies was noted: “Recently, the government used an online wiki tool to rapidly and effectively explore solutions for a planned Federal IT investment” (Department of Homeland Security, 2010, p. 32). This online tool opened a dialogue between designers, creating a space for communicating the ideas that work. “The dialogue allowed participants to tag and vote on the best ideas, providing the agency with a list of top priorities and key themes that made the feedback both more comprehensive and more actionable than what could have been obtained through traditional methods (Department of Homeland Security, 2010, p. 32). If existing federal resources like the online wiki tool are not applicable to SVRSPs, it would be beneficial to create an online platform where individuals can exchange thoughts about improving website security, simplifying vocational rehabilitation processes, or other digital aspects that facilitate cross-state communication.

A lack of communication has historically hindered engagement between Government programs and the general industry. Private technological corporations that design assistive devices, caption call phones, and other technical aids would benefit from their integration into the State and Federal Government. “The result has been barriers between industry and government buyers, whose efforts are often frustrated by a lack of

awareness of the most efficient and effective technologies available in the private sector” (Department of Homeland Security, 2010, p. 31). Creating a portion of a vocational site dedicated to business or corporate outreach would benefit businesses, the government, and the DHH. Technological deficits result if the demand for advanced technologies is not voiced, and vendors assume that regulations ban them from soliciting products. Businesses profit or receive tit-for-tat government benefits when products are supplied to individuals who "go through" government programs to obtain these services. The CUITA codebook measures for the presence of “business opportunities” under the “Audience” portion of CUITA. However, future research can focus on expanding and implementing business opportunities. Communicative and policy barriers should be explored to prevent future implementation impediments.

The consolidation of data offers researchers across state and federal departments a rapid method for quantifying and evaluating the efficacy of various measures, enabling the introduction of new, efficient technological solutions. While the federal government typically requires yearly reports for financial and budget accountability purposes, external researchers can also benefit from these reports if they are easily accessible. In addition to consolidation measures, the reports can introduce new avenues for accountability.

Other Government Legislation

This section marks the end of the brief overview of policies, executive orders, and referendums on which the three strategic objectives of the Digital Government Strategy report were established. In summary, the three strategic objectives of the Digital Government Strategy report aimed to digitize government information, facilitate

affordable adoption of online platforms, and leverage government data to enhance services. The next set of laws examine other legislation pertinent to the digitization of the state and federal government programs. The following sections cover the E-Government Act of 2002 - Section 207, and the Office of Management and Budget Memorandum 17-06, which is titled "Policies for Federal Agency Public Websites and Digital Services." These items were reviewed in the context of the digitization of state and federal government programs.

Electronic Government Act of 2002, Section 207

Section 207 of the E-Government Act of 2002, focuses on the “Accessibility, usability, and preservation of government information.” Two areas of the act, part *e* and part *f*, are particularly relevant to the current analysis. Part *e* deals with the regulation of public access to government information, while part *f* establishes standards for agency websites.

Further discussion is provided regarding website regulation outlined in section *f*. Interestingly, in 2002 approximately 59% of adult Americans used the internet compared to 84% in 2015 (Perrin, 2020). According to a different Pew Research Article, the number of Adults in the U.S. who use the internet in 2021 is approximately 93% (Pew Research Center, 2022c). It was clear that internet regulations were necessitated even in 2002 when only 59% of U.S. adults used the internet. As the adoption of online-mediated communication technologies continue to increase, and the amount of data available online continues to grow exponentially, the significance of online accountability becomes

increasingly important. The internet is an efficient tool when the two-way flow of online-mediated communication between the government and its people is regulated.

The e-Government act outlines various requirements for preserving electronically stored information. The above policies protect and sometimes dispose of information consistent with legal requirements. A Chief Records Officer is appointed for each Federal agency. All the elements under section *f* are integrated into the CUITA codebook to provide an updated analysis consistent with federal regulations. The sub-measures under portion *f* of section 207 require that websites provide information about the agency's description, mission, and authority, information related to the Freedom of Information Act, and information about its structure.

Section 207 continues to elaborate on the minimum goals an agency is required to administer to assist public users on websites. Some of the requirements are—

- (i) speed of retrieval of search results;
- (ii) the relevance of the results;
- (iii) tools to aggregate and disaggregate data; and
- (iv) security protocols to protect information.

(National Archives and Records Administration (NARA), 2002, Section *f*).

The above portion is only part of the federal stipulations for websites. The list is extensive as U.S. policy is often comprehensive; therefore, a brief paraphrase of elements deemed pertinent to the study is provided. The agency websites are also required to establish a process for determining what government information the agency will make available and accessible on the internet (ii), develop a schedule for making this information available and accessible (iii), and have this information available for public

comment (iv). These updates, processes, and changes to departments are not completed by one person, a process is suggested. The act explicates the involvement of various people. The members who should be involved in the process of website updates, regulations, and preservation are comprised of roles such as agency librarian(s), information technology manager(s), program manager(s), record manager(s), federal depository librarian(s), and other interested parties. (National Archives and Records Administration (NARA), 2002, section f). These individuals should “(i) update the directory as necessary, but not less than every 6 months; and (ii) solicit interested persons for improvements to the directory.” (National Archives and Records Administration (NARA), 2002, Section f).

Despite the fact that the E-Government Act of 2002 was designed to anticipate and tackle potential problems before the exponential expansion of internet use and the social media boom of the 2010s, it was hindered by budgetary constraints.

The problem of cross agency funding highlights the clash between the horizontal nature of government-wide e-government initiatives and the vertical organization of government. Congressional authorizing committees and appropriations subcommittees are organized by program and/or agency (Seifert, 2008, p. 15).

The “bureaucracy” element of federal and state government affairs requires appropriate checks and balances across items and regulations to prevent quick implementation of change. The e-Government act authorized \$345 million U.S. dollars to implement changes between the fiscal years of 2003 to 2007 (U.S. Congress, House Committee on Appropriations, 2007). The act hoped to formulate a “one stop” online service delivery for its internal users, such as government employees, and external users,

like the public. The act's intentions, even if they have not yet been completely implemented, are still a feasible goal. The passage of subsequent memorandums and policy amendments has built a framework for these online goals.

Congressional authorizing committees and appropriations subcommittees are organized by program and/or agency. The allocation of resources and the oversight of activities are likewise jurisdictionally defined. There are relatively few mechanisms to facilitate cross-agency collaboration, regarding the spending of funds. (Seifert, 2008, p. 15).

Prior research questions whether the quality of online government services has improved despite passing various acts, authorization of funds, new initiatives, and memorandums (Perez, 2015; Seifert, 2008). Other research raises concerns about the lack of an “in-house,” information technology specialist that serves to protect websites from malicious attacks and update security protocols (Seifert, 2008).

Document Analysis Summary

The above document analysis, or account of memoranda, public policies, initiatives, strategies, and other documents and announcements distributed by the U.S. Federal Government is not all inclusive. However, the analysis of key, selected materials demonstrates the wide array of protections that currently exist — and what gaps exist. Gaps such as mandated reporting for websites and accountability is obscure. In addition, this review demonstrates when many laws that pertain to the internet were formulated, and many of them were rather retroactive. The internet was “officially founded” on

October 29, 1969. In 2005, over 6.5 billion people were using the internet (16% worldwide), 6.9 billion in 2010 (30% worldwide), 7.4 billion in 2017 (48% worldwide), 7.75 billion in 2019 (53.6% worldwide), and in 2021 approximately 7.9 billion (63% worldwide) (Telecommunication Development Bureau, 2021). In 2015, 280 million people in the U.S. used the internet, and it is estimated in 2023 that there are 311 million internet users from the U.S. (Petrosyan, 2023). Many of the materials analyzed above date to the Obama era, 2008-2016. Many people, DHH and non DHH were on the internet well before 2008. Policy should be proactive rather than reactive.

CHAPTER SIX: QUANTITATIVE METHOD

Introduction

A quantitative content analysis uncovered the presence or absence of features on the vocational rehabilitation state websites and was followed by a qualitative analysis to examine select state vocational rehabilitation websites in detail. Together, these methods delineated how vocational rehabilitation websites communicate with and portray the DHH. The websites of all 50 states, The District of Columbia, and five territories were examined. Each method of analysis is explained below. Once the quantitative analysis was complete, the states' fulfillment of the Americans with Disabilities Act was assessed, a holistic list of features was suggested, and overall website recommendations were formulated. The summary analysis of quantitative and qualitative findings can be found within the Discussion chapter, or chapter ten. As all websites were qualitatively and quantitatively examined, notable features and suggestions were implemented at the end of the qualitative section. A list of all vocational rehabilitation websites can be found at the following link: <https://rsa.ed.gov/about/states> or at <https://www.rit.edu/ntid/tuition/state-by-state-vr>.

A Brief Overview: Quantitative Research and Content Analysis

The quantitative approach has held a dominant spot within communication research and has evolved to the current shift of post-positivistic research. It emerged from the hard sciences when the communication field was formed to understand the effects of propaganda and media from World War II (Lasswell, 1949). Quantitative researchers are objective and attempt to separate themselves from the data collection and the overall research design. To ensure separation from the research, the primary researcher employed

two independent coders to examine each of the SVRSP websites. The quantitative method is marked by the parsimony and heuristic applicability of a theory. The theories should be applicable, simple, and in line with Occam's razor. Quantitative research begins with uncovering patterns that are informed by theory. The theoretical approaches are used to inform the methodology, which have been previously discussed in the literature review and theory sections. In sum, theory has informed the research questions and the subsequent methods of this study in the attempt to describe, explain, and predict website nuances.

Content analysis has been used in various communication research projects and has been found especially useful with asynchronous technical communication.

“Researchers can also use the method to investigate a communicative situation that no longer exists or cannot be accessed” (Boettger & Palmer, 2010, p. 346). Vocational rehabilitation counseling and meetings are private, often taking place via a confidential conversation between a vocational coordinator and the client. Measures of success and counselor communication can be measured after the meeting or upon exit from the program, but it is important to assess publicly available data as this data may affect a large group of people and have profound implications. This publicly available data are a significant part of the entry phase process to the vocational rehabilitation process. Even though website use may be cursory, they may be repeatedly used for application purposes, subsequent counselor communication, referrals, and more.

Below, you will find descriptions of the scales used to determine political leaning, of how the CUITA model was applied, the coding protocol followed, and what statistical tests were used for data analysis.

A Review of Scales

Elazar's Political Classification and the Cook Partisan Voting Index were primarily applied within the quantitative analysis. However, they are also referenced within the qualitative portion of the study. The scales that are only used for the qualitative portion of the study may be found in the qualitative methodology, or chapter eight.

Elazar's Political Classification

To uncover political classifications and its impact on vocational rehabilitation, Elazar's Political Classification scale and the Cook Partisan Voting Index are used. Daniel Elazar, a University of Chicago political scientist, broke U.S. states into three different categories: moralistic, individualistic, and traditionalistic. These three categories comprise Elazar's Political Classification scale.

Elazar conceives political culture as 'the particular pattern of orientation to political action in which each political system is imbedded.' This orientation may be found among politicians and the general public, and it may affect their understanding of what politics is and what can be expected from government, influence the types of people who become active in politics, and influence the ways in which they practice politics and formulate public policy" (Sharkansky, 1969, p. 67).

The use of Elazar's Political Classification scale goes beyond simple political party line differences and delves into the public's understanding, view towards government intervention, influence of future political leaders, and the civic engagement

of citizens. It is hypothesized that political classifications may have an influence on the features present or absent on state vocational rehabilitation websites.

On a related dimension, the Moralistic culture welcomes the initiation of new programs for the good of the community; in the Individualistic culture, new programs would be initiated only if they could be described as political favors that would elicit favors in return for those who provided the programs; and the Traditionalist would accept new programs only if they were necessary for the maintenance of the status quo. (Sharkansky, 1969, p. 69).

In sum, each political classification views government programs differently, and some are more likely than others to support and fund them. The differences in culture as specified by Elazar's Cultural Classification may be apparent in state website data and possible state budgets.

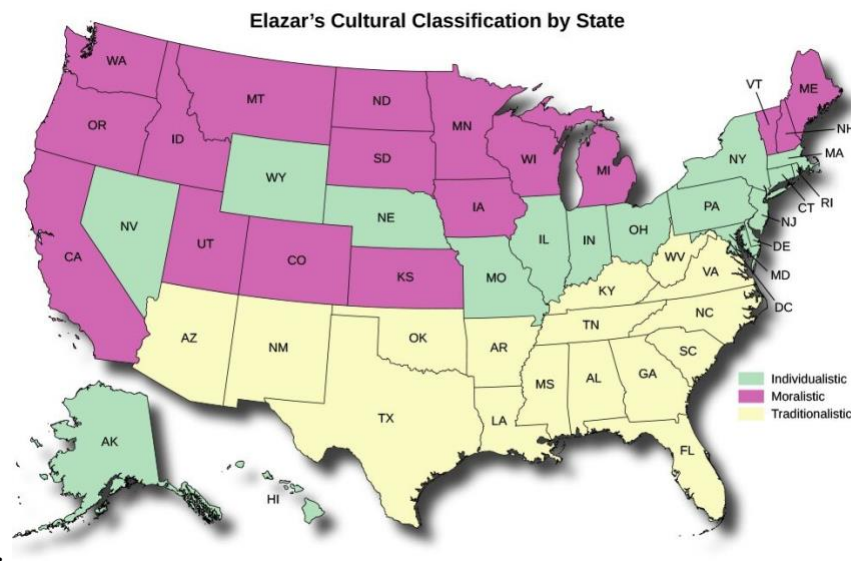


Figure 5. A Map of Elazar's Cultural Classification by State. Image found at OpenStax & Lumen Learning, O. S. & L. (n.d.). Retrieved January 25th, 2023, at <https://www.sciotoanalysis.com/news/2021/2/9/what-does-state-political-culture-mean-for-policy-analysis>.

Moralistic States

Moralistic states were settled by Puritans and Northern Europeans. The moralistic culture is defined by idealism, the use of politics to solve society's ills, and the use of government intervention for the good of all (Shankansky, 1996). Moralistic states are geographically located in the Western parts of the U.S. and the New England area. It is the duty of all citizens under the moralistic view to involve themselves in politics and public affairs and engage civically. Within the codebook, states that fall under the moralistic worldview according to Elazar's Political Classification scale, were coded as a "1."

Individualistic States

Individualistic states are diverse and defined by understanding, balance, and self-interest. These states are located in the mid-Atlantic and Midwest areas. Citizens in individualistic states tend to vote for the things that benefit what aligns closest to their individual interests. Bureaucracy is viewed as a potential problem to private affairs, but also a resource that can be used for the furthering of individual goals. In this worldview, government intervention should be limited yet maintained by a healthy balance (Springer, 2013). Individualistic states tend not to fall on either extreme of the political spectrum and are often "swing" or "campaign states," where politicians allocate more time and money. Within the codebook, states that fall under the Individualistic worldview according to Elazar's Political Classification scale, were coded as a "2."

Traditionalistic States

Traditionalist culture views political participation as something reserved for those with elite status and opposes the growth of the government as it may restrict those with an elite status in society. However, traditionalists believe that government intervention can be used to maintain existing power structures. These states are usually located within the southern and southeastern portion of the U.S. (Moore 2021; Sharkansky, 1969; Springer, 2013). Within the codebook, states that fall under the traditionalist worldview according to Elazar's Political Classification scale, will be coded as a "3."

The third, and proven hypothesis of Sharkansky (1969) stated "the closer a state's culture is to Traditionalism, the lower it will score on measures pertaining to the scope, magnitude, or costs of government programs." In conclusion, the study found "Hypothesis 3 finds support in strong negative relationships between Traditionalism and measures of service in the fields of education, highways, and welfare" (Sharkansky, 1969, p. 78-79). It is possible that the SVRSP websites in traditionalistic states will have fewer features present and smaller budgets per capita.

The following image demonstrates where each state falls within the classification categories. It should be noted that Alaska and Hawaii were not included in the original classification. However, they have been classified in subsequent research as individualistic through Sharkansky's (1969) method (Baker, 1990). Additionally, the original author, Elazar (1984), classified Alaska and Hawaii as individualistic in subsequent research. Updated accounts of the state classifications have reviewed the applicability of a classification system that was designed in 1968, finding that it remains

the same and is still valid for use (Cole, 2006; Ferber et al., 2008; Springer, 1998).

Research finds Elazar's Political Culture scale as applicable today because it takes demographic dynamics, the interrelated notions of physical geography, evolving human dynamics, economics, descriptive analyses of institutions and their processes into account.

Moralistic	Individualistic	Traditionalistic
California	Connecticut	Alabama
Colorado	Delaware	Arizona
Idaho	Illinois	Arkansas
Iowa	Indiana	Florida
Kansas	Nebraska	Georgia
Maine	Nevada	Kentucky
Michigan	Maryland	Louisiana
Minnesota	Massachusetts	Mississippi
Montana	Missouri	New Mexico
New Hampshire	New Jersey	North Carolina
North Dakota	New York	Oklahoma
Oregon	Ohio	South Carolina
South Dakota	Pennsylvania	Tennessee
Utah	Rhode Island	Texas
Vermont	Wyoming	Virginia
Washington		West Virginia
Wisconsin		

Source: Elazar 1966. Alaska and Hawaii were not included.

Figure 6. A Table of Elazar's Cultural Classification by State. Image source: Leckrone, J. W. (2013, December 18). Retrieved October 31, 2022, from <https://theamericanpartnership.com/2013/12/18/state-and-local-political-culture/>.

Cook Partisan Voting Index

The second scale that is used to examine political classification is the Cook Partisan Voting Index or Cook (PVI). The index was first developed in August of 1997. The Cook Partisan Voting Index measures to what degree a state or county leans towards the Democratic (D) or Republican (R) party compared to the U.S.'s average as a whole. Each state and county are measured by how members voted in the previous two presidential elections. In 2022, the scale measures the 2016 (Donald Trump – R versus

Hillary Clinton – D) and 2020 (Joseph Biden – D versus Donald Trump – R) presidential elections. For this research, the 2022 state version is used as it is the most recent.

In recent studies, the Cook Partisan Voting Index was used to examine health outcomes of children and the impact politics and geography on healthcare. Democratically leaning states rendered higher health outcomes overall and surpassed the Republican leaning states in each category examined (Paul et al., 2021). Other studies have used the Cook Partisan Voting index to examine the relationship between political campaign spending, the length of a political career, and success rates in races deemed competitive by the Cook Partisan Voting Index (Warshaw, 2019).

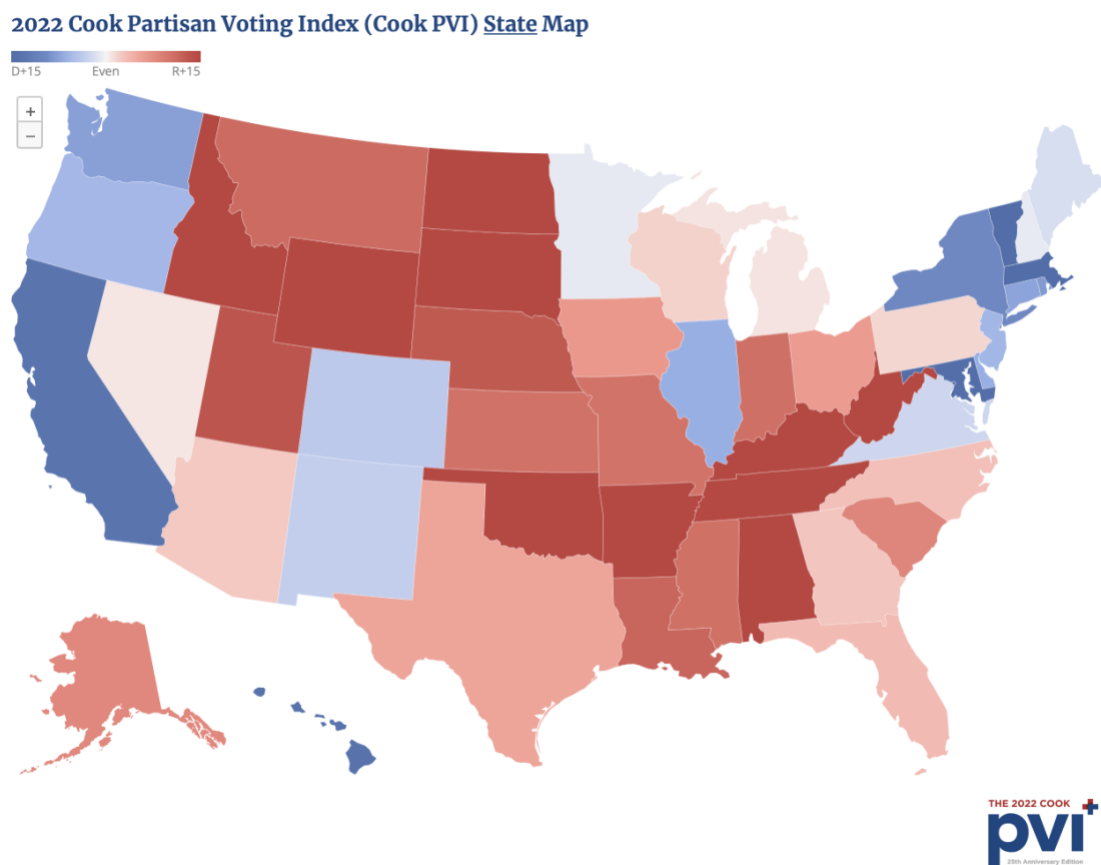


Figure 7. A Color-Coded Map Representation of the Cook Political Report Classification. Cook Partisan Voting Index. (n.d.). Image retrieved November 7, 2022. Accessed at from <https://www.cookpolitical.com/cook-pvi>.

The plus sign behind the letter identification of the party indicates to what degree the state leans “to the left or the right” politically. The number of points behind the letter demonstrate how the state performed in elections compared to the nation. The higher the number, the more that state leans to the Republican or Democratic side, politically. For example, Alabama is (R+15) while Alaska is (R+8). Therefore, Alabama has a stronger affinity or leaning towards the Republican end of the political spectrum. Nevada (R+1) and New Hampshire (D+1) are closer to the middle of the political spectrum, or closer to the national average. A state like Maryland (D+14) leans towards the democratic end of the spectrum. The blue color represents a Democratic leaning, while the red color represents a Republican leaning on a sliding gradient scale. Below, in Figure 8, Figure 9, Figure 10 are the current political leanings for each respective state. Further explanation of the index is found on the Cook Partisan Index website (Cook Partisan Index, n.d.).

Cook Partisan Voting Index (Cook PVI) State List

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State	2022 PVI	2020 Biden %	2020 Trump %	2016 Clinton %	2016 Trump %
Alabama	R+15	36.6%	62.0%	34.4%	62.1%
Alaska	R+8	42.8%	52.8%	36.6%	51.3%
Arizona	R+2	49.4%	49.1%	44.6%	48.1%
Arkansas	R+16	34.8%	62.4%	33.7%	60.6%
California	D+13	63.5%	34.3%	61.7%	31.6%
Colorado	D+4	55.4%	41.9%	48.2%	43.3%
Connecticut	D+7	59.3%	39.2%	54.6%	40.9%
Delaware	D+7	58.7%	39.8%	53.1%	41.7%
District of Columbia	D+43	92.2%	5.4%	90.9%	4.1%
Florida	R+3	47.9%	51.2%	47.8%	49.0%
Georgia	R+3	49.5%	49.2%	45.6%	50.8%
Hawaii	D+14	63.7%	34.3%	62.2%	30.0%
Idaho	R+18	33.1%	63.8%	27.5%	59.3%
Illinois	D+7	57.5%	40.6%	55.8%	38.8%
Indiana	R+11	41.0%	57.0%	37.9%	56.8%
Iowa	R+6	44.9%	53.1%	41.7%	51.2%
Kansas	R+10	41.6%	56.2%	36.1%	56.7%
Kentucky	R+16	36.2%	62.1%	32.7%	62.5%
Louisiana	R+12	39.9%	58.5%	38.5%	58.1%
Maine	D+2	53.1%	44.0%	47.8%	44.9%
Maryland	D+14	65.4%	32.2%	60.3%	33.9%
Massachusetts	D+15	65.6%	32.1%	60.0%	32.8%
Michigan	R+1	50.6%	47.8%	47.3%	47.5%
Minnesota	D+1	52.4%	45.3%	46.4%	44.9%
Mississippi	R+11	41.1%	57.6%	40.1%	57.9%



Figure 8. Cook Partisan Index by State: Alabama through Mississippi. Cook Partisan Voting Index. (n.d.). Screenshot taken on November 7, 2022, from <https://www.cookpolitical.com/cook-pvi>.

Cook Partisan Voting Index (Cook PVI) State List

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State	2022 PVI	2020 Biden %	2020 Trump %	2016 Clinton %	2016 Trump %
Missouri	R+10	41.4%	56.8%	38.1%	56.8%
Montana	R+11	40.6%	56.9%	35.8%	56.2%
Nebraska	R+13	39.2%	58.2%	33.7%	58.8%
Nevada	R+1	50.1%	47.7%	47.9%	45.5%
New Hampshire	D+1	52.7%	45.4%	47.0%	46.6%
New Jersey	D+6	57.3%	41.4%	55.5%	41.4%
New Mexico	D+3	54.3%	43.5%	48.3%	40.0%
New York	D+10	60.9%	37.8%	59.0%	36.5%
North Carolina	R+3	48.6%	49.9%	46.2%	49.8%
North Dakota	R+20	31.8%	65.1%	27.2%	63.0%
Ohio	R+6	45.2%	53.3%	43.6%	51.7%
Oklahoma	R+20	32.3%	65.4%	28.9%	65.3%
Oregon	D+6	56.5%	40.4%	50.1%	39.1%
Pennsylvania	R+2	50.0%	48.8%	47.5%	48.2%
Rhode Island	D+8	59.4%	38.6%	54.4%	38.9%
South Carolina	R+8	43.4%	55.1%	40.7%	54.9%
South Dakota	R+16	35.6%	61.8%	31.7%	61.5%
Tennessee	R+14	37.5%	60.7%	34.7%	60.7%
Texas	R+5	46.5%	52.1%	43.2%	52.2%
Utah	R+13	37.7%	58.1%	27.5%	45.5%
Vermont	D+16	66.1%	30.7%	56.7%	30.3%
Virginia	D+3	54.1%	44.0%	49.7%	44.4%
Washington	D+8	58.0%	38.8%	52.5%	36.8%
West Virginia	R+22	29.7%	68.6%	26.4%	68.5%
Wisconsin	R+2	49.5%	48.8%	46.5%	47.2%



Figure 9. Cook Partisan Index by State: Missouri though Wisconsin. Cook Partisan Voting Index. (n.d.). Screenshot taken on November 7, 2022, from <https://www.cookpolitical.com/cook-pvi>.

Cook Partisan Voting Index (Cook PVI) State List					
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State	2022 PVI	2020 Biden %	2020 Trump %	2016 Clinton %	2016 Trump %
Wyoming	R+25	26.6%	69.9%	21.9%	68.2%



Figure 10. Cook Partisan Index by State: Wyoming. Cook Partisan Voting Index. (n.d.). Screenshot taken on November 7, 2022, from <https://www.cookpolitical.com/cook-pvi>.⁷

The images above demonstrate the most recent political leaning from the years of 2016 to 2022. The data represented in the images above was used to create a Cook Political Report Scale. The 2022 Partisan Voting Index numbers by state was converted twice for the study to create different scales. The first scale conversion created two nominal groups that labeled states as either “Republican” or “Democratic.” The Cook Political Scale was also converted to an interval level scale so that it could be used in statistical tests that use interval level data, such as t-tests. The Cook Political Report scale and its conversions are further discussed within the results.

The Quantitative CUITA Codebook

The quantitative tools of measurement that assess the presence and absence of features have high internal validity but are not generalizable to the greater internet or other state program websites. The lack of generalizability is due to the specific design of the CUITA codebook for vocational rehabilitation research. Similar programs for the DHH may use the adapted CUITA codebook, or revisions of it that are suggested in the discussion, as it

⁷ Wyoming had its own screenshot due to it being listed on the third page of the Cook PVI by itself. There is no significant reason that it is listed by itself except for the lack of space on the website when the screenshot was taken. This is explained to avoid confusion or possible misinterpretation.

is a reliable and valid measurement for assessing website features (Ferber, Foltz, and Pugliese, 2008; Whittenmore et al., 2001). This research attempts to control for confounding variables and extraneous influences that may take away from the validity or reliability of the study (Tufekci, 2014).

The content of the communication, such as the frequency of words, themes, or phrases, is integral to understanding texts and the use of websites. The information about SVRSP on each respective state website will be coded using an updated quantitative framework originally formulated by Ferber, Foltz, and Pugliese (2008) to examine state legislature websites. “In quantitative research, content analysts evaluate texts for predefined terms or phrases and use inferential statistics to make conclusions about their presence” (Boettger & Palmer, 2010, p. 347). The collection of website texts allowed for in-depth statistical assessments and comparison with other relevant data to uncover communication problems and formulate guidelines or suggestions for improvement areas. The additions and redactions made to the original CUITA codebook (Ferber, Foltz, and Pugliese, 2008) for this study are listed in APPENDIX B.

To examine the demographics and political characteristics affecting state legislature websites, Ferber, Foltz, & Pugliese (2008) exposed the differences through the use of a codebook. “An alternative explanation for variation in state legislative sites may lie in the differences among states in regard to political characteristics, such as party competition, the degree of legislative professionalism, and the fundamental political culture of the states,” Ferber et al. write (p. 8). To measure the disparity, each website the researchers coded was parsed into five overarching categories (CUITA) with sub-features in the respective categories. These codebook categories are Content, Usability,

Interactivity, Transparency, and Audience, which summated the CUITA codebook. Underneath each category, a list of features that relate to the respective CUITA categories are listed. As the codebook designed by Ferber et al. (2008) crafted a reliable method for measuring state legislative websites. This project adapted and modified the existing codebook by Ferber et al. (2008) by weaving in an applicable framework with the concepts addressed in this study's research questions and information discussed within the document analysis. The codebook used for the quantitative analysis is found in APPENDIX A. The codebook used for this study, found in APPENDIX A, was modified from the original codebook formulated by Ferber et al. (2008). The modifications from the original codebook by Ferber et al. (2008) to the one used for this study can be found in APPENDIX B of this proposal.

It is important that the five U.S. territories were included in the quantitative coding, as they contributed to the overall descriptive statical analysis. However, the U.S. territories they were not included in the statistical analysis due to the lack of available budget data, lack of classification on Elazar's Political Culture Classification assessment, and the lack of placement on the Cook Political Report scale. The lack of publicly available data and classifications for these territories, the fact that territories are not represented in Congress or the Senate, and their geographic and cultural distance rendered them as outliers for the quantitative analysis. However, notable elements regarding the territories that appeared during the analysis will be mentioned qualitatively.

Coding and Other Quantitative Tools

There are a few research tools that were used for the study. First, coders each coded all 50 states and D.C. with the guidance of a word document that is listed in APPENDIX A.

From there, the data was checked and compared. Each state had two different word documents, one from each coder. Periodic checks of intercoder and content reliability were assessed by Cohen's kappa. Cohen's kappa is a more rigorous reliability assessment than other statistical tests used for assessing intercoder reliability as it accounts for chance when measuring the level of agreement between two coders (Cohen, 1960). When an unreliability was found, the coders met with the primary researcher and one of the authors of the CUITA codebook to create a consistency amongst coded elements. The primary researcher, and two trained coders who were Master of Science Students at the time, looked for the information by using the menu bar or site map. After coding the of five sites was complete, the reliability was assessed. The two coders were trained by the primary researcher once again and engaged in periodic meetings thereafter. Reliability was achieved and each coder completed the assessment of all 50 state sites and U.S. territories. Intercoder reliabilities for each variable are reported in in APPENDIX C. The quantitative data was collected during the months of September to December in the year of 2022.

After the data were found to be reliable, it was transferred into appropriate categories within a Microsoft Excel spreadsheet. Data and coding from the Cook Political Report and Elazar's Political Culture Classification was also added to each respective state within the spreadsheet. The Microsoft Excel spreadsheet with all the data for each state was then imported into Statistical Product and Service Solutions, more commonly known as SPSS. Statistical analysis was then conducted by the primary researcher.

Statistical Tests Used

The three statistical tests used for this study were a t-test, Chi-square, and an Analysis of Variance (ANOVA). A t-test, a test of means, was used for data that included

two nominal groups, which were compared to an interval-level scale. A Chi-square was used for running two sets of nominal data against one another. Lastly, an analysis of variance (ANOVA) test was used when interval or ratio data was run against nominal or ordinal data, specifically when three or more groups were present.

The majority of the tests used were t-tests as each feature had two groups (present or absent) and were run against the interval level scales. Examples of interval level scales are the mean of a state's population, the mean of a state's budget, and the mean of the sum of features present.

Additionally, it should be noted that the Cook Political Report Scale was converted to interval-level data to run against the presence or absence of features (2 groups of nominal-level data) as a t-test.

A Chi-square test was used for analyzing two groups of nominal level data. The presence or absence of features is one type of nominal-level data. Another type of nominal level data is the classification of a state as either Republican or Democratic.

Elazar's Political Cultural Classification scale necessitated an ANOVA test as it had three groups of nominal-level data. The ANOVA test ran the nominal Elazar Political Cultural Classification scale against interval-level data or ratio-level data.

CHAPTER SEVEN: QUANTITATIVE RESULTS

Summary Findings

Summary findings are reported to demonstrate the scope and variety of the quantitative data collected. The use of the word “states” for this research includes all 50 of the United States of America, and the District of Columbia (D.C.). The five U.S. territories studied include the American Samoa, Guam, Northern Mariana, Puerto Rico, and the Virgin Islands. As previously reiterated, the 5 U.S. territories were left out of the statistical analysis due to inconsistent reporting, lack of congressional voting, and missing features. One possible reason the territory data were inconsistent is that they are not represented in Congress. However, the territories are intermittently mentioned if a notable feature was present.

Only 29 states included closed captions on their videos. Only eight (8) states, Alabama, Alaska, California, Montana, Nebraska, Nevada, Oregon, and Puerto Rico used closed captioning and American Sign Language in their videos. Interestingly, these states scored higher overall on the number of features present. All of them surpassed the average of 28 present features.

The subsequent paragraph includes the findings from all of the states, D.C., and five U.S. territories. The subscribe button was an unpopular feature, with only eleven states reporting its website presence. Only two (2) state websites had their website editing policies present, and three (3) state sites mentioned cochlear implants. There were 16 state sites had a suggestion box, 17 sites displayed budget information, 24 sites mentioned hearing aids.

Quantitative Results by Research Question

Research Question 1

The first research question asks, “What information regarding state vocational rehabilitation service program (SVRSP) is available on state government websites?”

Resources available to the DHH and the online content of vocational rehabilitation websites differ vastly by state. However, a brief explanation sums up the findings. State vocational rehabilitation programs provide pertinent information to the general public, vocational consumers, counselors, politicians, and others. In general, the onboarding for the vocational program application begins on the respective state website. The majority of states use the website as an application resource, in varying capacities, for potential clients. However, the first step is to contact a counselor near the applicant, rather than filling out a streamlined survey in most states. This method is dated and often cumbersome. A streamlined internal process should be used in its stead. This is later elaborated on in the qualitative and discussion portions of the study. The purpose of the site, other than onboarding clients to the program, was the distribution of information to the general public. The website also serves to provide email addresses, phone information, instruction videos, testimonials, and more. The majority of states were missing the features listed in the CUITA codebook, and none of the states had all of the features listed.

Only eight states and one (1) of the five (5) territories had American Sign Language (ASL) present in the informational videos on their respective state websites. The eight states that used ASL within their videos were Alabama, Alaska, California, Florida, Montana, Nebraska, Nevada, and Oregon. The only territory that included ASL

within videos was Puerto Rico. This finding was concerning as many culturally Deaf individuals only communicate in ASL and are excluded from much of the information on the websites that are supposed to inform them.

Only 29 states included closed captions on their videos. Only eight states, Alabama, Alaska, California, Montana, Nebraska, Nevada, Oregon, and Puerto Rico used closed captioning *and* ASL in their videos. The states with closed captions present on state vocational websites scored higher overall on the number of features present. All of the eight aforementioned states surpassed the average of 28 features present. Conversely, some features appeared less frequently on most state vocational rehabilitation websites.

The subscribe button was an unpopular feature and only appeared on 11 websites. There were a few other infrequently seen features. Only two (2) states had their editing policies present, three (3) sites mentioned cochlear implants, 16 sites had a suggestion box, 17 sites displayed budget information, and 24 sites mentioned hearing aids. It is postulated for this study that accessibility is directly related to usability. A site will not be used if it is rendered inaccessible to a population. The inclusion of features such as a list of disabilities, hearing aid information, are vital to DHH website use. Due to low amounts of usable features being present on many state websites, it can be concluded that a lot of information is not accessible or available to the DHH.

All of the states that used ASL on website videos also had closed captions present in videos. This study suggests that states upload their videos to YouTube as it is widely accessible and ensures the provision of automated captions. However, typed, accurate captions are preferable to automated captions. Many automated captions are inaccurate or delayed (Romero-Fresco, 2016), but automated captions are preferable to no captions

whatsoever. Some DHH may disagree on the former point as caption inaccuracies can be confusing and infuriating, especially if the information understood ends up being incorrect. Despite the advancements in automated captions, those who depend on them to comprehend audio remain dissatisfied with their accuracy (Romero-Fresco, 2016). The summary data demonstrate that many states do not make their websites DHH friendly despite their purpose of serving as an accessibility program. If clear communication and directives are not explicitly stated and tailored for the DHH population, the result is inaccessibility.

Research Question 2

Research Question 2 asked, “What state level factors relate to whether information available on state government websites include the Deaf or Hard of Hearing as an audience?”

To examine the DHH population’s inclusion on state vocational rehabilitation service program websites, each site was examined to determine whether features directly linked to the population’s preferred means of communication were present. Features were assessed to determine whether they related to state characteristics such as population, budgets, and political concepts and culture. Statistically significant findings have been reported. For this question, a t-test was used, as each feature had two groups (the presence or absence of a feature) and was run against an interval level scale, or the mean each state’s population.

Relationships were found between states with higher populations and what features were present. States with higher populations were more likely to include a list of disabilities served ($t = -2.08$, $df = 48$, $p = .042$) and were more likely to include

information on hearing aids ($t = -2.16$, $df = 48$, $p = .035$). States with higher populations encounter a greater variety of people and disability types, which necessitates diversity and more resources. With large populations, greater variances are likely to appear, and the community makeup is less likely to be homogenous (She & Stapleton, 2006).

Formula grants affect state budgets which in return change the amount of money dedicated to the SVRSP. Highly populated states have a larger workforce of disabled populations and more potential employees to serve the variety of disabilities supported by vocational rehabilitation service programs (Coleman & Rowthorn, 2011). Therefore, states with higher populations are more likely to include the DHH with a list of disabilities served and hearing aid information.

For the rest of the statistical tests within this section, a t-test was used, as each feature had two groups (the presence or absence of a feature) and was run against an interval level scale, or the mean of the sum total of the features present on a state's website. Similar to the above findings, states that integrated ASL in website videos were more likely to have a higher sum of features present on their websites ($t = -2.97$, $df = 48$, $p = .005$). States with YouTube videos for clients ($t = -2.74$, $df = 48$, $p = .009$) were also more likely to have other features on the state website. This demonstrates that select features indicate a higher likelihood of other wayfinding tools and website mechanisms. These findings were consistent with past research that affirm feature availability increases website usability and behavior. "...relatively simple caption features such as the presence of all terms query terms, the readability of the snippet, and the length of the URL shown in the caption, can significantly influence users' Web search behavior"

(Clarke, et al., 2007, p. 1). Therefore, the presence of the aforementioned features for the DHH are necessary as they call attention to vital information and usability functions.

Simplistic, concise features that alleviate the burden of wayfinding for the user results in a higher website use success rate. Higher user success rates, in turn, increase the numbers of employed disabled people, and decrease reliance on supplemental disability income programs (Schley et al., 2010). Including information about and for the DHH increases the certainty of website use for the population.

States with a list of services available were also more likely to have a higher sum total of features present on their websites ($t = -3.24$, $df = 48$, $p = < .002$). Information seekers are exposed to multiple structural layouts across various websites, but a list of disabilities served and services available are essential to understanding what a state vocational rehabilitation program is and who it serves. Wayfinding tools promote self-reliance as users can execute functions without contacting another person or requiring alternate assistance tools. A list of available services also reduces uncertainty, demonstrating that a user is appropriately and accurately using a site as it was intended (Rains & Karmikel, 2009). Structural elements and the availability of services influence the perceived credibility and usability of websites and the service programs that they reflect (Rains et al., 2009).

Three significant findings demonstrate the importance of audience features being mentioned, as the DHH are a significant of the websites' audience. Again, a t-test, or test of means, was used to compare two groups of nominal level data to an interval level scale. Vocational rehabilitation websites are likely to have a higher number of CUITA features present if the DHH are mentioned as an audience ($t = -2.24$, $df = 48$, $p = .029$),

deaf-blind services are mentioned ($t = -3.94, df = 48, p = < .001$), hearing aid information is listed ($t = -2.86, df = 48, p = .006$), and cochlear implant information is present ($t = -2.24, df = 48, p = .030$). The availability of the aforementioned audience variables from the CUITA codebook increases the likelihood of well-developed vocational sites. Past research that measures the personalities and desires of users demonstrated that different features have a large influence on how the website will be used and who will use the site (Kosinski et al., 2014). For DHH users, the presence of resources and terminology directly related to their needs will decrease uncertainty and unmute them.

Unmuting the DHH expands muted group theory but modifies it to “unmuted group theory.” If accessibility services are refined and present online in accessible language, the DHH are able to take a step towards becoming unmuted. This study calls for the integration of more information on all vocational websites to unmute the DHH. Deaf-blind information, hearing aid information, and cochlear implant information should be mentioned on vocational websites even if they are not covered by the program. Alternate assistive device resources can be hyperlinked on vocational sites in lieu of provision if the state vocational budget does not cover the service. Clear online communication information alleviates uncertainty.

The adaptation and tailoring of website content unmutes the DHH and decreases uncertainty and waiting. Vocational counselors are less likely to receive emails with duplicate questions. Website usability and usefulness is essential for improving effectiveness, and features should center around a user centric design (Alahmadi & Drew, 2017). Internal department reviews can routinely survey vocational counselors for

questions that are frequently asked by vocational consumers. The result of the reviews and what frequently asked question information is found can be posted online under a Frequently Asked Question (FAQ) link to alleviate the burden on counselors and inform the public.

Research Question 3

Research Question 3 asks, “To what extent is the SVRSP website information interactive for the DHH?” Interactivity differences between states appeared when the sum of features by states were quantified and compared to the political leaning of a state. For this research question, *interactivity* is defined as promoting and enabling the two-way flow of information and influence between a user and the digital content. Each state was categorized as a Republican or Democratic state, using the Cook Political Report, but the extent of the political leaning was not taken into account for this portion of the analysis.

For this question, a t-test was used, as each feature had two groups (the presence or absence of a feature) and was run against an interval level scale, the converted Cook Scale⁸. Overall, there were more interactive features in Democratic state websites than Republican state websites ($t = -2.23$, $df = 48$, $p = .03$). Out of the website features measured, Republican states had a mean (average) of 27 while Democratic states had a mean (average) of 32. Policy across states differed based upon the ideologies, worldviews, customs, and mores of a political party and geographic area (Anderson et al., 2022). Politicians and policymakers strictly regulate and emphasize issues of greater importance to their constituents and populaces, respectively. Politicians and policymakers

⁸ The converted Cook Political Scale is explained later in the quantitative results chapter.

do so in hopes of re-election, general contentment, and to uphold progression or maintenance of a gerrymandered area or voting district. Democratic states tend to focus more on social programs, whereas Republican states strive cut social program budgets (Amenta, 2000). As vocational rehabilitation classifies as a social program for the disabled (Social Security, n.d.), it is unlikely to get as much attention or support from Republican states. From Cambridge University Press, Christopher Faricy's book provides a holistic assessment of political parties, social spending, and other governmental expenditures. Faricy's historical analysis supported by data collected over the years can be used to explicate the findings.

The fundamental story of political parties and social policy in America has not changed much since 1932. In this familiar narrative, Democrats expand the size of the federal government through increases in social spending that primarily benefit more vulnerable populations (such as the elderly, the working poor, ethnic minorities, and female-headed households) all in an effort to redistribute income and reduce inequality. The Republican Party, on the other hand, cuts social welfare spending in order to reduce the role of the federal government in the economy, which tends to magnify market inequalities. This American political story began with partisan battles over the New Deal, was extended to the Great Society programs, and, most recently, was fought anew over the passage of the Affordable Care Act, otherwise known as Obamacare. In fact, it can be argued that the epitome of modern partisan politics is the perpetual conflict between Democrats and Republicans over the proper role of government in financing social benefits and services. (Faricy, 2015, p. 1)

As social programs are key elements in state political elections for state representatives and senators, politicians may campaign on the promise of improving or expanding social programs. Adhering to their campaign promises and potentially allocating money towards social program budgets serves to increase the attention of online resource availability and may act as a tit for tat in re-election. The words used to describe these programs by politicians is fundamental in how they are viewed and the respective support they are given. Additionally, if websites display what is available to potential voters, it may increase the propensity of the DHH population to take future action and vote. Unfortunately, many politicians likely do not specifically mention vocational rehabilitation but use overarching terms such as “social program expansion.” Words used to describe people and policy alters the public’s perception as mentioned in Foucauldian framework and unmuted group theory (Kendall et al., 1999) As a higher number of features allude to less uncertainty, the DHH in Democratic states are likely to have less uncertainty about information on SVRSP websites.

Research Question 3a

Research Question 3a asks, “How accessible to the Deaf and Hard of Hearing are state vocational rehabilitation service program information on respective state websites?”

To split up states by political affiliation, the Cook Political Report was used to categorize the extent of each state’s political leaning and quantify the effect of state political leaning on culture and website features. For this question and subsequent questions, the term state refers to all 50 United States and includes the District of Columbia. Based on the Cook Political Report, each state was numerically categorized on

a scale from 1 to 68.⁹ Number 1 was the most Republican (Wyoming), and number 68 was the most Democratic leaning (District of Columbia). Therefore, the Cook Political Report scale was converted to interval-level data usable in statistical t-tests. The lower the number on the converted scale, the more Republican the state leaned, and the higher number on the scale, the more democratic the state leaned. The District of Columbia was an extreme outlier with its leaning of (D + 43) or 68 on the converted scale. The closest state to the District of Columbia was Vermont (D + 16), or a 41 on the scale. Although a potential outlier, the District of Columbia was included. For clarity, the Cook Political Report numbers will be reported in the findings.¹⁰ The inclusion of all states and the District of Columbia is one limitation of the current analysis. As mentioned earlier, *Accessibility* is defined as the ease of use of a website by the DHH. For this question, a t-test was used, as each feature had two groups (the presence or absence of a feature) and was run against an interval level scale, or the converted Cook Scale.

Democratic-leaning states (D + 10) are more likely to have external links to related sites and programs available ($t = -2.49$, $df = 48$, $p = .016$). An example of an external link would be hyperlinked text or the name of an external website, that when clicked, refer users to other government programs, non-profits, and resources. External links are an interactive feature, which directly links interactivity to accessibility. For reference, the (D + 10) state on the Cook Political Report is New York. Therefore, states close to the political leaning of New York will likely have externally linked resources available. Due to the emphasis on social programs in democratic states, the data findings

⁹ This section explains how the Cook Political Report was converted into interval level data.

¹⁰ The primary researcher intends to re-run this data, excluding D.C. in subsequent studies to further uncover differences.

are consistent. The misallocation of state and federal funds leads to an increased expenditures in long-term markets.

Allocated appropriately, public expenditures can overcome market failures that exacerbate poverty, such as the inability of poor people to borrow for education or to learn about preventive health care or the existence of externalities that increase the public health hazards that disproportionately hurt poor people. Allocation is often inappropriate, however. Public spending goes to wage bills for bulky state administrations, farm subsidies absorbed by the wealthiest farmers, or public works projects with limited public utility, all at the expense of the quality of public services (Keefer & Khemani, 2005, p. 1).

Allocation of funds varies by state; therefore, the state program accessibility levels differ without strict stipulations. Even with strict stipulations, states may define, interpret, and execute the inclusion of information or funds differently. Accessibility increases when governments focus on assistance programs and provide interactive links for external resources for items the vocational program may lack.

It is essential to investigate how political leaning influences a state vocational program's accessibility to prepare, predict, and understand possible adverse outcomes and prevent them. Center-leaning states or slightly democratic states are likely to have blind services listed ($t = -2.14$, $df = 48$, $p = .037$), veteran information listed ($t = 3.24$, $df = 48$, $p = .002$), and relay phone numbers listed ($t = -2.14$, $df = 48$, $p = .037$) than states with a more robust political leaning in either direction. Blind services and veterans are audience features while relay phone is an interactive feature.

According to the t-tests that used the converted Cook Political Report scale, a central leaning state was (D+1), meaning states similar to Minnesota's Cook Political Report alignment. A center-leaning Republican state (R+1) would be Michigan. These politically "moderate" states are often considered swing states and often the target of extensive campaigning during presidential elections. Heavy campaigning in swing states is hypothesized to increase voter turnout by 7-8% (Enos & Fowler, 2018). Individuals with disabilities are less likely to vote (Deering & Pugliese, 2020; Matsubayashi et al., 2014; Schur et al., 2002), but the increased time and expenditure of political campaigning in swing states likely increase the number of DHH who vote and make their voices heard.

Voter turnout increases with campaigning, and politicians' campaign more in swing states which may explain why blind services are more likely to be mentioned in moderate or swing states. Political scientists have adopted data driven tactics to appeal to muted groups, and those who are often ignored in order to obtain votes. Appealing to nuanced and overlooked populations can make a significant difference in politicking. Other possibilities are that these states have a higher balance in the representation of political parties, which might lead to more compromise and cooperation, resulting in more funding and resources allocated to blind services, phone relay, and veteran resources. The more resources that are available for a specific audience, the more interactive a website is. In sum, moderate states are more interactive likely due to the increased campaigning to a wide audience.

What we understand as "data-driven campaigning" — or using large data sets to either target messages to particular populations or test the efficacy of variations of messages and a variety of goals — rose in prominence first during the Obama

2008 campaign, but gained precision in its application and its public profile during the 2012 campaign, which many news outlets called “the big data election.” (Baldwin-Philippi, 2019, para. 2).

It is important to examine data available for and on the DHH so that their voice is unmuted in the political sphere. The two-way flow of information reduces uncertainty, increases voter turnout, and leads to policy changes that benefit a nuanced, often neglected, audience. Increasing the amount of data and accessibility of data on and about the needs of the DHH jumpstarts conversations in political science that yields policy change.

Job information, an audience feature, was more likely to be listed in Democratic states ($D + 15$), or those politically similar to Massachusetts ($t = 2.72$, $df = 48$, $p = .009$). Clients in Democratic states have a higher likelihood of accessing job information. Moralistic states are also more likely to have job information available, which was found through an ANOVA test, which is discussed later. Republican leaning states ($R + 15$) were more likely to have information for veterans available ($t = 3.24$, $df = 48$, $p = .002$). Republicans or those who identify as politically conservative express more favorable opinions towards the military (Foy & Restifo, 2018; Pew Research Center, 2020). To appeal to their younger active-duty voters, Republican politicians’ likely campaign on the promise of a better life for veterans more so than their Democratic counterparts (McLaughlin, Geras & Rhinehart, 2022).

Research Question 3b

Research Question 3b asked “Do vocational rehabilitation websites clearly communicate ways to contact a state vocational rehabilitation service program (SVRSP) counselor or apply for services?”

Initiating first contact with a SVRSP counselor varied across states. However, almost all states indicated that initiating contact with a vocational counselor, or a vocational program coordinator, was the first step in the process of obtaining state vocational services. The modality of communication recommended for initial contact and the modalities of contact information available varied across states. Some states had clients fill out a survey with personal information; others requested that clients create initial counselors via phone, email, or in person. States that only had a normal telephone line present for contact information were deemed problematic as many DHH opt not to communicate on the telephone. Future research can focus on standardizing this process through succinct and organized surveys. Initial contact and available communication resources will be discussed in more detail within the qualitative portion of the study.

Out of all 50 states, 43 states had a physical address listed, 41 states had at least one email contact present, 36 states had a toll-free number, and 28 states had fax numbers present. Contact information was not consistently listed, nor did the websites list the information in the same places. This is also problematic as onboarding requires contacting a counselor. This is further expanded upon within the qualitative portion of the analysis. For this question, t-tests were used, as each feature had two groups (the presence or absence of a feature) and was run against an interval level scale, or the number of features present on each respective state.

States that had a toll-free phone number ($t = -2.84$, $df = 48$, $p = .007$) and states with a fax number present ($t = -4.26$, $df = 48$, $p < .001$) were also more likely to have other communication features present on websites. A subscribe to newsletters and updates button ($t = -2.78$, $df = 48$, $p = .008$) and periodically sent emails ($t = -3.13$, $df = 48$, $p = .003$) were other communication features that proved to be predictive in demonstrating a higher number of features present. States that had a greater emphasis on communication had more interactivity features. This is likely due to respective vocational programs staying in touch with clients, potential clients, information seekers, politicians, policymakers, and interested members of the general public. Clear communication is the baseline for interactivity on a website as high levels of communication demonstrate interactivity between the user and a webpage. Communication is the basis of all website interactivity. Interactive communication is essential to government processes of regulation, policy, and administration at all levels and sectors. The proliferation of media highlights the importance of periodic, trustable communication methods (Hyland-Wood et al., 2021), as so many resources compete for users' attention.

The establishment of trust in the government requires transparency and civic engagement; websites provide the perfect platform for the generation of trust symbols that result in civic engagement. Four (4) of the ten (10) website recommendations generated by Hyland-Wood et al. (2021) mentioned the necessity of online trust references in online-mediated communication. This demonstrates the role that communication has in building online trust. Hyland-Wood et al. (2021) state the importance of accounting for health literacy and numeracy. Those who are more numerate rely on numbers, but less numerate individuals rely on infographics and images

that supposedly provide an accurate representation (Peters et al., 2006). Simplifying data takes into account the diverse needs of digital communities. Online government communications are unlikely to be a magic bullet for engaging the populace unless they are adapted to the audiences they serve.

In sum, the program does not have a standardized way to contact counselors at the Federal level, putting the burden in establishing communication protocols onto the individual state. States without surveys and streamlined processes then put the contact burden on clients seeking access to the program. The burden of communication should fall on federal regulatory processes or webmasters at the state level who design the program. Some sort of standardization should be implemented and used across all states. Future adaptations of the CUITA codebook and SVRSP studies will assess the presence of a streamlined survey for onboarding clients into the vocational program. “Onboarding practices help facilitate newcomer adjustment by both (a) reducing newcomer uncertainty, ambiguity, and anxiety that often accompany a new in order to bring greater clarity and understanding to their new role, and (b) facilitating the development of social capital and relationships” (Klein & Polin, 2012, p. 268).

To summarize the findings of research question 3b, clear communication varies by state. The majority of states have somewhat accessible features for the DHH, but they are often discursive and confusing, require extensive paperwork and provide few explanations. Communication outreach from a counselor to a client should be the first step of the vocational process, so clients may ask questions and reduce uncertainty about their disability or the program. Providing information within the initial contact stages also

serves to decrease communication uncertainty, reduce repetitive questions and save time, streamline processes, and decrease discursive instructions that distract from wayfinding.

Research Question 3c

Research Question 3c asks “What usability gaps exist for the Deaf and Hard of Hearing (DHH) population on the state vocational rehabilitation service program (SVRSP) websites?”

As mentioned in the document analysis, Title 44 -3501 or 21st Century Integrated Digital Experience Act (Congress.gov) the government mandates websites to have a search function and maintain consistent appearance. None of the websites had a consistent appearance across state lines. However, many states had a consistent design across various landing pages of that same state. This is further expanded upon in the qualitative portion of the study. Additionally, Title 44-3501 states that each site “(4) contains a search function that allows users to easily search content intended for public use.” However, Alabama did not have a site search button present. This qualifies as a usability gap and perhaps a violation of Title 44-3501.

Online safety is also important in the 21st Century Integrated Digital Experience Act. While element five of the list that mandates website security “(5) is provided through an industry standard secure connection” (Title 44-3501) may refer to the standard hypertext web protocol of https rather than http. HTTPS is the same as HTTP, but with encryption and verification layers or keys to protect the website and its users. Encryption is a way of locking the data with a cryptographic key so that only the authorized party, with a ‘the key’ receives it. The only difference between the two protocols is that HTTPS uses TLS (SSL) to encrypt normal HTTP requests and user responses, and to digitally

signs these requests and responses. TLS refers to Transport Layer Security which further encrypts data exchanged online. The older version of TLS is SSL which means Secure Sockets Layer which was first invented in 1995 for website security. As a result, of TLS and SSL, HTTPS sites are far more secure than HTTP websites. Only the sending and receiving parties have the key encryption and can access the data in HTTPS websites. For clarity, a website that is less secure uses HTTP and has HTTP:// in the beginning of the URL (Uniform Resource Locator), while a website that is more secure due to TSL and SSL uses HTTPS has HTTPS:// in the beginning of the URL (Cloudflare, 2023).

All the state websites were checked for the presence or absence of HTTPS and the presence or absence of a top-level domain (.GOV). As there were a low number of states websites that that did not comply with the mandates mentioned above, theses state websites have been reported as descriptive statistics below.

For example, the “Idaho Commission for the Blind and Visually Impaired” has a website link of <http://icbvi.idaho.gov>, which only uses HTTP, but their main vocational site uses a safer HTTPS. The following three (3) states and one (1) territory only use HTTP instead of HTTPS: “Nebraska VR” (<http://www.vr.nebraska.gov>), the “New York State Education Department ACCES-VR” (<http://www.acces.nysed.gov/vr>), the “West Virginia Division of Rehabilitation Services” (<http://www.wvdrs.org>), and the Virgin Islands (<http://www.dhs.gov.vi/disabilities/index.html>). In sum, five (5) vocational websites do not use the standard security protocol of HTTPS. To further ensure user

privacy and avoid DDoS attacks, SVRSP websites should use resiliency sites such as Cloudflare that act as a mediator or protect websites, data, and users.

Another suggestion to increase trust is to ensure the website hyperlink ends in .GOV rather than .COM or .NET. Websites that end in .GOV provide another trust symbol to users, proving that they are using a government website and not a scam website. Vocational sites with a site link like Maryland (<https://dors.maryland.gov>) seem more trustworthy than ones like the South Carolina site (<https://scvrd.net>). However, this is not a suggestion only uncovered by this research, but currently somewhat regulated. A “Memorandum for Heads of Executive Departments and Agencies” was sent out by Lisa Schlosser who is the Deputy Administrator for E-Government and Information Technology and Acting Federal Chief Information Officer. In this archived Obama White House memorandum, it stated that all websites must comply with section 508 of the Vocational Rehabilitation Act, comply with the Plain Language Act of 2010, and “Adhere to existing policies prohibiting the use of non-.gov (e.g. .org, .com) top-level domains” (Schlosser, n.d.) Future adaptations to the CUITA codebook examine domain name compliance, and the discussion is expanded in the qualitative portion of the study.

The fifth element in Title 44-3501 as mentioned earlier, stipulates that a government website “(5) is provided through an industry standard secure connection.” This stipulation may also refer to privacy policies and use of website cookies that collect user data. However, only 32 state websites provided their privacy policies, and 14 states provided their website cookie use. Transparency about a website’s privacy policies and cookie use is considered part of the industry’s standard secure connection information to

almost all large corporations and technology companies, and other businesses or Universities and their respective websites.

Website owners must disclose information about what data are collected from online visitors. This disclosure includes whether the site uses cookies, and how the data that the cookies collect be used. The formulation of a website cookie policy discloses all this information to visitors. Currently, there is no specific federal website privacy policy law regulating or requiring a website or app to post a policy. However, other public policy such as California's Consumer Privacy Act (CCPA), consider internet protocol (IP) addresses as personally identifying data. There are a mix of laws that require disclosure such as Health Insurance Portability and Accountability Act (HIPAA), Fair Credit Reporting Act (FCRA), Family Educational Rights and Privacy Act (FERPA), Gramm-Leach-Bliley Act (GLBA), Electronic Communications Privacy Act (ECPA), Children's Online Privacy Protection Rule (COPPA), and (Video Privacy Protection Act) VPPA. Information submitted and collected by vocational agencies can intersect with the protections listed above, or state level protections such as California's Consumer Privacy Act. Future research can examine privacy laws as they relate to vocational rehabilitation.

Trust symbols include stating what data are collected and provide extensive information about the program, contacts, and standardization. For example, small businesses that were accredited by the Better Business Bureau (BBB) and implemented the visual trust symbol increased the likelihood of a consumer purchasing from the accredited website when compared to the non-accredited website (Lacho & Mitchell, 2010). While vocational rehabilitation is not a business, visual trust symbols play a role in the DHH consumer choice. The program often requires clients to fill out their name,

date of birth, address, and contact information. Without clear trust symbols, users may have their uncertainty increased and feel reluctant to proceed. City or state slogans and symbols increase user familiarity and trust (Tschirhart, 2008).

Consistency in government website loading and landing pages integrated with geographic familiarity, creates trust (Tschirhart, 2008), which would hypothetically reduce usability gaps for state vocational rehabilitation service program websites. When examining how to “sell” issues in the government and specific policy measures, it was rendered a branding issue, that should be addressed gently over a period of time to create a subtle reminder of policy and government presence. Usability gaps can be decreased by familiarity, which necessitates state branding.

Some city governments hire design firms to create a brand logo. For example, the city of Charlotte, North Carolina is still using the design by Klundt + Hosmer Design Association that made it into Clark's (1999) list of two-hundred logos with design excellence. Good brand symbols are recognizable, memorable, express character or attitude, convey expertise or leadership, and instill familiarity and trust (Tschirhart, 2008, p. 38).

A more extensive review that suggests the standardization of all SVRSP websites design, trust symbols, and Universal Resource Locators (URLs) is further expanded upon within the qualitative section of the study.

In sum, the lack of program standardization has created usability gaps in areas such as the search function of state websites, privacy policy, standardized website design, mobile optimization, and more. The exact degree of usability differs by state, as do the

laws of each respective state, but in summation, many of the SVRSP sites are unorganized and lacking vital information.

Research Question 4

Research Question 4 asks, “Do state budgets have any relation to the presence or absence of features on vocational rehabilitation service program (SVRSP) websites?”

The budgets of states had an influence on some of the website features. For the findings in this section of RQ4, a t-test was used, as each feature had two groups (the presence or absence of a feature) and was run against an interval level scale, or the budget of each respective state.

States with the presence of a disability list were more likely to have a higher budget than states that did not have a disability list ($t = -2.28$, $df = 48$, $p = .027$). Within the findings of this research, most of the states that had higher budgets also had more features present on their websites. However, the budget did not have a statistically significant relationship with all of the features present on a website when they were each individually examined.

Budgets have an effect on counselor and client relationships and the waitlisting of clients, and fiscal resources. McGrew et al. (2007) analyzed two different models of SVRSP funding, evidence-based and results-based funding, and their influence on vocational counselors. Results-based funding practices were positively regarded by counselors but increased their stress levels.

Of greatest concern was that RBF [results-based funding] might create incentives for adverse selection, by limiting services to consumers with the highest potential for successful job placement (also known as creaming), by terminating

unmotivated clients more quickly, or by concentrating efforts on clients with higher potential for successful placement (McGrew, 2007, p. 12).

Clients inclined to hit milestones in the program slower may discourage counselors from extensively assisting clients with higher needs in favor of those who demonstrate a higher aptitude for program completion. Similarly, states with higher budgets may have extra money to serve more people with disabilities and can afford to update their public websites, provide more resources, serve a higher number of clients, and offer better or more services. States with lower budgets are forced to waitlist clients or provide partial services and provide less information or fewer resources on their websites. “When this happens, the agencies are required by law to prioritize the most significant disabilities, or they might prioritize completing service plans for customers who have certain characteristics” (Mann, & Hock, 2020, p. 55-56).

The fear of being waitlisted can discourage or deter future applicants, especially if websites list that many clients are currently being waitlisted. The vocational rehabilitation agencies first step after initial contact and information gathering is to assess whether an applicant is eligible for services. With the use of a survey, large quantities information could be automatically processed and separated for further human review. Additionally, a survey would decrease the costs of the program by reducing work hours. Budget cuts in 2007-2010 decreased program resources due to the U.S. economic recession (Mann, & Hock, 2020), and soon recovered after 2015. All the nuances and details that go into the study of a budget for vocational rehabilitation are too extensive to encompass within this study. However, budget data sets and corresponding public policy, allocation, and digital

transparency is an area for future research. In sum, the budget of a state has a statistically significant impact on some features of a SVRSP website.

For this section of RQ4, t-tests were used, as each feature had two groups (the presence or absence of a feature) and was run against an interval level scale, or the mean vocational rehabilitation budget of each respective state. The differences in budgets between states that did or did not provide information about hearing aids approached significance ($t = -1.84$, $df = 48$, $p = .072$) with states listing hearing aids, a physical resource, having higher budgets. The mean, or average budget of a state's vocational rehabilitation program without hearing aid information present on a website was \$47,701,036. The vocational rehabilitation budget for states with hearing aids present on the state website was \$79,967,009. This demonstrates that a greater allocation of money to vocational programs likely increases the number of resources available to the population it serves. However, there was no statistically significant difference between the budgets of states that had information about cochlear implants and those that did not ($t = .801$, $df = 48$, $p = .427$). A hearing aid is less likely to be covered by insurance than a cochlear implant. Hearing aids are also not covered for individuals on Medicare, even if it is the reason the individual receives Medicare is due to a hearing disability. Medicare part B does cover cochlear implants (Medicare.org, 2021), but leaves those with preferences for hearing aids to turn to vocational programs or pay out of pocket. This aligns with prior research as Medicare does not consider hearing aids necessary durable medical equipment, but the Medicare program does consider cochlear implants to be necessary durable medical equipment.

States with higher budgets may have money to allocate for hearing aids, while those with a lower budget do not, which may be one reason that states with lower budgets do not mention hearing aids on their websites. Budgets differ across state lines and directly affect the resources available to the DHH. One solution for equipment disparity would be to consider hearing aids durable medical equipment as cochlear implants are not a reasonable solution for all hard of hearing or deaf individuals, as many prefer to use their existing residual hearing, avoiding irreversible surgical operations. As per the definition of durable medical equipment as specified in the Code of Federal Regulations of title 42 Chapter IV 414.202 definitions of Title 42 (Code of Federal Regulations, 2022), hearing aids meet every requirement. This research argues that the DHH are muted by the lack of inclusion despite meeting regulatory code standards. Why are hearing aids not considered durable medical equipment? The exact stipulations of durable medical equipment “DME” is below—

Durable medical equipment means equipment, furnished by a supplier or a home health agency that meets the following conditions:

- (1) Can withstand repeated use.
- (2) Effective with respect to items classified as DME after January 1, 2012, has an expected life of at least 3 years.
- (3) Is primarily and customarily used to serve a medical purpose.
- (4) Generally is not useful to an individual in the absence of an illness or injury.
- (5) Is appropriate for use in the home.

(Code of Federal Regulations of Title 42 Chapter IV 414.202 definitions of Title 42 (Code of Federal Regulations, 2022)).

Again, it should be restated for the purpose of clarity—hearing aids meet all of the five stipulations that define durable medical equipment. Why are hearing aids not considered durable medical equipment? Public policy needs to clarify why hearing aids are excluded, or, better yet, include them as per their own stipulations and unmute the DHH.

Approximately 80% of those who are born deaf are implanted with a cochlear implant (Humphries et al., 2014), but this does not account for the profoundly hard of hearing who have a choice between the assistive devices. Much research states that the high number of cochlear implantations is due to physicians failing to inform families of other options and risks (Sorkin, 2013). One risk is that 40-73% of patients experience long-term vertigo. Many physicians fail to inform patients about the risks or the partial or complete loss of any remaining residual hearing once the cochlear device is surgically implanted.

The average price of a hearing aid is between \$2,000 - \$3,000 and more often than not range as high as \$8,000 or per pair for the profoundly hard of hearing. This price does not include any necessary devices that are compatible with hearing aids that allow them to connect to other external technology. For example, a hearing aid may require a “phone clip” (averaging around the price of \$500) that connects the hearing aid to a computer via Bluetooth for conference calls. The price of a hearing aid often depends on the age of the technology, manufacturer, warranty length, earmold and fitting, and hearing loss level. This price does not always or usually include fittings, audiologist adjustments, and repair servicing that the warranty may not cover. Prices are highly variable depending on the audiologist, hearing aid chosen, and location. In the state of

California for example, vocational rehabilitation pays for a client's hearing aids if they are needed for work or education purposes. The client may keep these after exiting the program and the client does not have to repay the program. The money from the new employees' taxes funds future vocational clients, allowing the program to pay back into itself, reducing the reliance on other social programs and creating a greater workforce.

On August 16th of 2022 the Food and Drug Administration finalized a historic rule that enables access to over-the-counter hearing aids. "In 2017, Congress passed bipartisan legislation requiring the FDA to create a category of OTC hearing aids, but it was not fully implemented until now. Consumers could see OTC hearing aids available in traditional retail and drug stores as soon as mid-October when the rule takes effect." (Food and Drug Administration, 2022). Regulations that mandate more affordable hearing aids and over the counter (OTC) hearing aids do not solve access to hearing aids for the profoundly hard of hearing or deaf. Hearing aids without precise customization are unusable for individuals with severe to profound deafness. Severe to profound deafness is an eligibility criterion for vocational services in many states.

Research Question 5

Research Question 5 asks, "How do state vocational rehabilitation service program (SVRSP) benefits for the Deaf and Hard of Hearing (DHH) compare across state lines?"

All features were analyzed to assess the effects of a state's political party leaning and what may differ across state lines. There were 11 major differences between the features that were present or absent between Democratic and Republican states, and those

pertinent to research question 5 are discussed¹¹. States were coded as Republican or Democratic based upon the tested and reliable Cook Political Report scale. To statistically assess the questions in this portion of RQ5, a Chi-Square was used, as each feature had two groups (the presence or absence of a feature) and was run against a nominal level scale with two categories (a Republican or Democratic state). Democratic states were significantly more likely to mention education services, an audience feature, than Republican states on their respective state vocational rehabilitation websites ($X^2 = 4.98$, $df = 1$, $p = .026$). The foundation of the vocational rehabilitation program is education, and in short, it is an education to work program. The appearance of a statistically significant difference with the education services feature was unexpected. Although much of education is regulated at the federal level, it is administered at the state and local levels. Access to resources differs by location.

There has been a steady uptick in research examining rural areas and education. Rural area students in poor areas often perform lower on standardized tests as “...rural students attend smaller schools with community connections but a smaller breadth of course offerings than urban schools” (Khatti et al., 1997, p. 1). Populations in rural areas are more likely to hold conservative, or Republican-leaning opinions and place a high emphasis on religious education (Ashwood 2018; Brint & Abrutyn, 2010). Education services across party lines differ depending on the population spread, or how densely packed a population is to an area. Population densities also effects community composition and morals. If education services are low in a specific population area, the low population and education

¹¹ All 11 differences found are mentioned within the research, but they are integrated throughout the quantitative results section in appropriate areas.

services likely feed upon each other in a circular fashion and prevent change or upward mobility in education and economic resources from occurring.

However, according to Pew Research, individuals with postgraduate experience are more likely to hold a liberal political position. “More than half of those with postgraduate experience (54%) have either consistently liberal political values (31%) or mostly liberal values (23%), based on an analysis of their opinions about the role and performance of government, social issues, the environment and other topics” (Geiger, 2020, p. 1). A Master of Science degree is suggested for an entry-level vocational counselor position, with approximately 93,200 positions available across the U.S. (U.S. Bureau of Labor Statistics, 2022). Social programs are also more likely to be supported by those who hold liberal beliefs and attract the same population within its hiring processes. However, the political leaning of vocational counselors has yet to be studied, and likely has less of an effect on SVRSP than the political leaning of the state’s constituents, policymakers, and elected officials.

Again, a Chi-Square was used to assess two groups of nominal level data. Democratic states were more likely to have student services information, an audience feature, present on their websites ($X^2 = 7.48$, $df = 1$, $p = .006$). Student services information is related to education services information, so the findings are consistent. Student services information suggests different pathways to reach educational milestones, offers plans to chart one’s study, and shows what this plan would look like on a timeline.

Vocational consumers in Republican states are less likely to have educational information appear on their respective websites, which is concerning for individuals seeking information in rural areas as education opportunities are already limited due to

the location. Biddle & Azano (2016) reviewed rural education research from 1911 to 2016 to examine salient issues. Owing to the “tradition-bound and parochial nature of rural America” (p. 305) finding individuals willing to work as teachers or in education proved to be a reoccurring issue, as many were unwilling to do so. Inadequate financing from programs made them unable to incentive for change and upward mobility. Lower income and rural areas generate less income due to lower amounts of people in the labor workforces. Lowered funding and the reduced prominence of education within a culture or social strata can result in a reduced amount student information. If programs are focused on the bare necessities of the program, presenting information may be considered a frill. The U.S. Congress’s allocation of fiscal resources has a profound impact on education, and not just vocational rehabilitation. Candidate preferences on policy measures can be cumbersome or impossible to find.

Congress has a central role in determining the scope and nature of federal grant programs. In its legislative capacity, Congress first determines what it wants to accomplish and then decides whether a grant-in-aid program is the best means to achieve it. Congress then selects which of the six grant mechanisms to use (project categorical grant, formula categorical grant, formula-project categorical grant, open-end reimbursement categorical grant, block grant, or general revenue sharing), and crafts legislation to accomplish its purpose, incorporating the chosen grant instrument. (Congressional Research Service, 2019, p. 4)

On a similar vein that demonstrates the veracity of the above quote, Democratic states were also more likely than Republican states to have information for consumers seeking services related to brain injuries present ($X^2 = 3.86$, $df = 1$, $p = .049$).

Transparency

Again, a Chi-Square was used to assess two groups of nominal level data. Within the transparency section of the CUITA codebook, Democratic states were more likely than Republican states to staff information present on the site ($X^2 = 3.86$, $df = 1$, $p = .049$). Transparency in government communication has shifted away from the media, and now relies on the government organization to present clear information. “Public administrators can no longer rely on the media to keep the public informed about government actions, but must now develop tools and strategies to aid them in fulfilling their democratic responsibility to keep the public informed.” (Fairbanks et al., 2007, p. 24). Not only is contact information from administrators vital, but individual vocational counselors contact information is necessary. Onboarding clients is not the only use for posted staff information. The DHH can use online counselor contact information to reach out to either a different staff member or an administrator if they are not satisfied with their current counselor. Additionally, staff can be surveyed by those interested in the program. For example, the National Technical Institute for the Deaf keeps an updated list of counselor information in a database (NTID, 2023). Reporting these data online with periodic updates alleviates contact problems between institutions for the deaf and the government. The responsibilities of communication facilitation fall onto the communication departments of the government; appropriately trained staff should be hired to fill public relations roles at the state, county, and city level. Two-way communication is essential in a democratic society for the maintenance of transparency and progress. Communication and public relations staff may outsource website projects if necessary to those with the appropriate coding and design skills, if appropriate. However,

issues can arise if the communication department is separate from counselors. “If an agency does a poor job of making information available to communicators, they cannot do a good job of getting information to external audiences” (Fairbanks et al., 2007, p. 31). Periodic information collection can be achieved through mandated internal department reporting or surveys. Mandated reports may be necessary as some staff withhold information from communication departments for fear of what or how the information may be used.

Vocational rehabilitation works off a grant that was decided by the U.S. Congress as previously reiterated. Democratic states were statistically more likely to mention budget information, a transparency feature, on their state vocational rehabilitation websites than Republican states ($X^2 = 4.05$, $df = 1$, $p = .044$). However, only 16 states had vocational rehabilitation budget information present which demonstrates a lack of transparency on state vocational websites. Although Guam was not a part of the statistical analysis, it was the only territory that had vocational rehabilitation budget information present on its website. Fortunately, budget information for each state and its vocational program can be found at other websites online, but budget data should be listed and broken down for increased transparency as it is public money. Making data available can be perceived as open and transparent thus increasing trust in a program and reducing uncertainty. Uncertainty reduction metaphorically goes hand in hand to unmute the deaf. Additionally, the presence of budget information unmutes the DHH as it allows them to petition for changes or write letters to representatives and policymakers with the inclusion of exact data and statistical information, rather than just personal experience and assumptions of fiscal allocation based on a prior year’s budget.

Official information provision and transaction processing are the essence of government in many cases, and citizens depend on it for a variety of personal and business purposes. Lack of openness by public organizations is likely to be interpreted as unresponsiveness, inability, or unwillingness to serve citizens. Personal and frequent contact between citizens and public agencies, on the other hand, is likely to have a positive effect on the levels of citizens' trust in those agencies, suggesting that direct accessibility and interactivity may be a viable option to reinvent government (la Porte et al., 2002).

Republican states may be perceived as less responsive to constituent needs and transparency if budgetary information is not present, as found statistically above ($p = .044$). As of May 1st, 2022, Pew Research reported that approximately 20% of Americans, regardless of political ideology, stated that “they trust the government in Washington to do what is right “just about always” (2%) or “most of the time” (19%)” (Bell, 2022, p. 1). Trust in the American government drops to 7% among conservative leaning Republicans and rises to 26% for liberal leaning Democrats (Bell, 2022). The publishing of fiscal data and estimates of what it is used for, at all levels and branches of the government, serves to increase transparency. Higher levels of transparency increase the trust and engagement of citizens. Designing websites to increase operational transparency and demonstrating how fiscal resources are used will increase citizens support of their government (Buell & Porter, 2021).

States with features that transparently inform constituents can increase support of vocational programs as public data educates people on the benefit of the program as it pays into itself by creating a workforce that would otherwise be unemployed. However,

some studies argue that the role transparency is magnified and provides less of an impact than most assume due to preexisting beliefs about the government but may have a larger impact on smaller government sectors (Grimmelikhuijsen, 2012). “Further, people with higher levels of outcome knowledge perceived the government organization as being more competent and benevolent. In addition, general trust in government explained a large proportion of trust in a specific government organization (Grimmelikhuijsen, 2012, p. 14).” In sum, fiscal transparency is vital to the improvement, support, and trust in government processes.

Content

Differences between Republican and Democratic states were also uncovered in the content sections of the CUITA codebook when a Chi-Square was used to assess two groups of nominal level data. Democratic states were more likely than Republican states to have a subscribe button ($X^2 = 6.46$, $df = 1$, $p = .011$) and have vocational counselor email addresses listed ($X^2 = 10.13$, $df = 1$, $p = .001$). Subscriptions and email addresses are content features that promote and facilitate communication between the government employees through websites to their users or constituents. Periodic emails evoke recall memory, eliciting a connection to a previous thought or action. Formatting, time, and content of messages trigger varying responses from audiences (Marshall et al., 2009). Formatting should be consistent to demonstrate the state government “branding,” which as mentioned, breeds familiarity with programs. Users spend, on average, 15 seconds reading the content of email messages (Sherpa, 2005), so content should be compelling, understandable, and unambiguous. Surveys should be implemented into periodic emails to learn about the populations that are interested in vocational rehabilitation services, and

to assess who receives the electronic communication. These survey results can better tailor updates to the websites.

Usability

Democratic states were more likely than Republican states to have interactive forms present ($X^2 = 10.40$, $df = 1$, $p = .001$). Interactive forums, as mentioned before, can be structured to onboard clients in a streamlined manner, learn about populations, and streamline efficiency. Democratic values encourage transformation, the updating of archaic policies, and encourage social change. In contrast, Republicans tend to lean towards a more traditionalistic route that has withstood the test of time (Sheldon & Nichols, 2009). The way the public accesses their government has shifted from the town crier to the movable type printing press in the 15th century, the telegraph in the 1840s, to the radio in the 1920s, and the television in the late 1940s. Now, information is spread through online-mediated communication. Unlike in the early ages of mass communication, information transmission is instantaneous, yet still somewhat asynchronous as before. Cross-agency portal development, suggested by Fountain (2004) can redistribute power, responsibilities, and control across decentralized agencies. Now, the efficacy, honesty, and ease of online voting is actively debated (Title 52- Voting and Elections- Subtitle I And II, 1965), but the use of online forum submission can take the place of burdensome paperwork, faxing time, and printing costs. “Cultural norms and patterns of individual behavior affect the manner in which technology is used by citizens and policy makers” (West, 2004, p. 16). The data demonstrated that states with politically Democratic cultures are partial to online forum use. West (2006) suggests that the final stage in e-government transformation is a fully integrated online portal that is

standardized across all levels of governance. The finding of the quantitative analysis agreed with West's (2006) website standardization. The familiarity and standardization of online forums will increase government website usability for all.

Research Question 5a

Research Question 5a asks, "How many and which states make information available and accessible to the Deaf and Hard of Hearing (DHH) on vocational rehabilitation websites?"

CUITA codebook features were compared to the Elazar Political Culture classification scale using an analysis of variance (ANOVA) statistical test. An ANOVA test was used for all of the tests that included Elazar Political Culture classification scale, as the scale has three nominal groups. In an ANOVA test, the variables that are compared to the nominal variables can be interval or ratio level data. An ANOVA test demonstrates that there is a statistically significant difference between the variables, but a post-hoc test is necessary to determine between what groups a statistically significant difference was found.

The post-hoc tests found that all of the statistically significant differences were between moralistic and individualistic states. Traditionalistic states are the grounds between moralistic and individualistic, so the research is consistent, deeming no significant differences between traditionalistic state ideas and the other two cultural classifications. Like in the previous reports for the research questions, the findings in this section were consistent with prior research.

What distinguishes moralistic and individualistic states is the fiscal role played by the state and local governments. In moralistic states, expenditures are relatively

lower for local governments and higher for the state government. In the individualistic states, expenditures are higher for local governments and lower for the state government (Miller, 1991, para. 1).

Moralistic, individualistic, and traditionalistic states did not have a statistically significant difference between budgets; however, the moralistic state culture was significantly different than the individualistic states. When examining the presence of reasonable accommodations [$F(2,45) = 3.46, p = .040$], a post-hoc test uncovered that moralistic states were more likely than individualistic states to have reasonable accommodations listed ($p = .03$). The moralistic culture emphasizes providing community benefits for all, and in short, this ideal is the opposite of an individualistic culture.

Individualistic cultures place the emphasis on the individual. The provision of information increases the likelihood of a potential client finding it. The provision of resources for the disabled benefits all. Providing reasonable accommodation information for the disabled is viewed as the government advancing the public interest and acting as a positive force in moralistic states. Moralistically, bureaucracy is viewed as favorable and a way to achieve the public good. Therefore, the more information, utility, and interactivity government employees have in the SVRSP website, the more utility it will have. Conversely, individualistic states believe that individuals should advance themselves professionally and independently out of self-interest. The view of disabled individuals in individualistic states would be for them to advocate for themselves and seek out information on their own.

When examining the presence of a website map [$F(2,45) = 3.69, p = .033$], a post-hoc test uncovered that moralistic states were more likely than individualistic states to have

a website map ($p = .041$). Website maps assist in wayfinding, which helps individuals who are new to the website find what they are looking for. It is provided by someone who is familiar with the site and its uses, usually a web designer and a creative employee team member. This aligns with the moralistic value of providing information, help, and resources for the common good. Those who take an individualistic perspective may believe that it is up to the user to discover or familiarize themselves with the website on their own; they may also think an extensive navigation bar is unnecessary. Website maps are an extra, useful tool for navigating large quantities of data, information, or applicant forums.

A t-test that examined nominal and level data (the presence or absence of a site map), to interval level data (sum of features present by state) were consistent with the findings of the ANOVA test. States with a site map were more likely to have other features present on their websites ($t = -2.49$, $df = 48$, $p = .016$). Participation in states with individualistic cultures increases when personal interests or benefits are involved. Since moralistic political cultural views have positive views of information provision, these same altruistic ideals may seep into other facets of state policy and governance. If a webmaster does not receive any extra benefits from designing and maintaining a site map and they are not asked to, they might not be inclined add a map. Interestingly, when using a t-test, states that had webmaster information present were more likely to have a higher total mean of features present on their websites ($t = -2.82$, $df = 48$, $p = .007$). This demonstrates that webmasters who leaves their contact information or personal mark on the state's website may be more apt to enhance the website or follow through with suggestions sent to them, or webmasters in some states have a higher state regulatory structure, law, or another factor.

More research, conducted by the internal state departments on webmasters would be required to completely explain findings regarding webmasters and designers.

When examining the presence of job information with an ANOVA test, [$F(2,45) = 3.65, df = 2, p = .034$], a post-hoc test uncovered that moralistic states were more likely than individualistic states to have job information listed on a respective state website ($p = .035$). “In the past, moralistic states have treated welfare as an occasion for generosity, individualistic states as a political issue, and traditionalistic states as an object of suspicion” (Mead, 2004, p. 276). However, the goal of the state vocational rehabilitation service program is to provide job information and assist those who qualify in obtaining jobs, so job information should be the most likely thing to appear on the site.

As there are statistical differences between moralistic and individualistic states, it demonstrates that some state websites are not fulfilling their purpose. Moralistic culture currently has a higher proclivity to unmute the DHH due to resources being created to benefit all and provide updated job information. Individualistic states have higher levels of party competition (Johnson, 1976); therefore, party changes may lead to reappointments of critical positions and leave some understaffed. Some individuals refuse to work for the government when new sets of stipulations are enforced by newly elected officials, leaving vacant positions and antiquated website data. Job data is arguably one of the most important aspects of vocational websites as it is the foundation for the rest of the vocational program.

When using an ANOVA test to examine the presence of multiple languages available on a website [$F(2,45) = 3.01, df = 2, p = .059$], a post-hoc test uncovered that moralistic states approached significance of being more likely than individualistic states to have multiple languages available on a respective state website ($p = .079$). While this finding was

not statistically significant, it was consistent with the other statistical data revealing that moralistic states had more features available. Only 25 of the states had languages other than English available, and none of the territories with the exception of Puerto Rico had languages other than English available, and Puerto Rico had only Spanish. The territories were not used in this statistical analysis. The alternate language ASL, being used in conjunction with spoken English or by itself only accounted for 9 of the states. Therefore, only 16 states had languages other than ASL and English available to users. According to the U.S. Census, over 53 million Americans speak a language other than English at home, which is a 53% increase since the year 2000 (Dietrich & Hernandez, 2022). Approximately 44 million individuals speak Spanish as a primary language at home instead of English (Dietrich et al., 2022). American Sign Language was not included on this report, which demonstrates the neglect within research and government reporting in recognizing ASL as a language, as it is not classified as “a spoken language.” However, with the application of unmuted group theory, accessibility features such as visuals and simplistic infographics, in conjunction with language, have the potential to serve as a bridge to cross language barriers that excludes them.

Research Question 5b

Research Question 5b asks “How does state vocational rehabilitation service program (SVRSP) information compare between conservative and liberal leaning states?”

Many differences were found between features present in Republican versus Democratic-leaning states. The Cook Political report was used to code each state as either a Republican or Democratic state. For this question, the extent of the political leaning based on the Cook Political Report was not measured; states were simply categorized into

one of the two dominant political parties. Appropriate statistics were run with SPSS software and are reported below. A Chi-square was used when there were two groups of nominal level data. An ANOVA test was used when three or more groups of interval level data were compared to ordinal level data.

Privacy policies may not seem like a large factor or something that flagrantly stands out when measuring uncertainty in the DHH use of state vocational rehabilitation service program (SVRSP) websites. However, research has demonstrated that trust factors such as icons and statements are necessary in building relationships between corporation or program websites and users (Palmer et al., 2000). Democratic states were more likely to report a privacy policy ($X^2 = 11.06$, $df = 1$, $p = .001$) and inform users about cookies that track user activity on the website ($X^2 = 8.79$, $df = 1$, $p = .003$). Conversely, Republican states were more likely to have an “about us” feature ($X^2 = 5.95$, $df = 1$, $p = .015$).

To reduce internet users' uncertainty about data handling practices and to help organizations build stable relationships with users, privacy policies need to explain not only their data collection and sharing practices but those practices in which companies do not engage. Furthermore, exact lexical choice in privacy policies would increase the transparency of data handling practices and, therefore, user trust in World Wide Web (WWW) interactions (Pollach, 2006, p. 1).

Transparency in data collection, sharing, and use serves in uncertainty reduction. Clear communication and the presence of trust symbol features increase the trust that users have in government programs and their respective websites. States increase the trust of clients when they integrate trust communication and clearly state website use policies.

Additionally, the California Consumer Privacy Act (CCPA), similar to the European General Data Protection Regulation (GDPR), and the Freedom of Information Act (FOIA) all important laws to reference or abide by in website development and data collection. Some individuals use data brokers to ensure that their data is removed from public spaces according to the State of California Department of Justice. The presence of website features increases the trust in government websites and reduces uncertainty. Not only should websites provide information, but transparently inform the DHH about what communication or use data that they collect from users.

When comparing the Cook Political Report to Elazar's Political Culture scale, traditionalistic states were more likely to vote Republican than individualistic states [$F(2,45) = df = 2, 4.32, p = .015$]. Traditionalist beliefs are marked by agreeing that only the elite belong in the political enterprise, which results in new public policies advancing only if they reinforce the beliefs and interests of those in power (Fitzpatrick & Hero, 1988). Similarly, Republicans believe that an individual enjoys freedom as nondomination if and only if he is more or less saliently immune to interference on an arbitrary basis. This way of understanding freedom is contrasted with the view, associated with Hobbes, that freedom consists in the absence of actual interference, by compulsion or coercion, with choice (McMahon, 2005, p. 1). Traditionalistic and Republican values respect tradition eschew interference in everyday life and emphasize freedom. All of the 16 states that had a traditionalistic leaning were marked as Republican on the Cook Political Report scale except for New Mexico (D + 3) Virginia (D + 3), which were closer to the center of the political scale than other states.

Limitations of a Quantitative Content Analysis

A content analysis can be inherently deductive, limiting the extraction of a text or phenomenon. There may be underlying unaccounted for problems that are not initially seen or addressed. The analysis must focus on issues that are preconceived based upon familiarity of the text and understanding of the mechanisms (Berelson, 1952). However, a content analysis facilitates comprehension of information and resources through the presence or absence of features. Existing data are used (Krippendorff, 2012). Control, time constraints, economic advantages, education level, and other psychographic or demographic data of SVRSP consumers were not accounted for. There is no overarching population measurement of primary language, assistive devices used, or education level, which may be key to understanding the DHH. The DHH were not surveyed, but the information and data that exists for them was examined. As the DHH were not participants within the study, the study assumes that each DHH person and vocational client is unique and has different needs, which was based on past research. Future studies may employ surveys to the DHH who have SVRSP resources; however, the data collection of DHH is difficult or limited (DeClerck, 2017; Deering, 2019).

Summary

In sum, many statistically significant findings were present. This demonstrates that the inclusion of website features for the SVRSP is highly variable. All states have different methods of displaying information, and similarities and differences were reported. This research demonstrated that budgets, population, and funding likely effects SVRSP website design. The DHH are limited by what is available within their area.

CHAPTER EIGHT: QUALITATIVE METHOD

A Brief Overview of Qualitative Research

Qualitative research is marked by critical, social constructivist, and cultural worldviews. For the qualitative portion, this study adopts a pragmatic worldview through a Foucauldian theoretical lens as this research uses a sequential mixed methodology. Worldviews assist in uncovering data. In general, this type of research attempts to uncover holistic accounts of a phenomenon. Qualitative analysis uses triangulation, authenticity, credibility, and a theoretical lens (Carter et al., 2014). This research is generalizable and externally valid. Its method emphasizes external and internal values and rejects objectivity. Value-laden ideas allow for theoretical lenses to shape the notion of communities and understand their ideas (Strauss & Corbin, 1990). Qualitative communication research encourages the use of a theoretical lens to inform worldviews. Similarly, cultural examinations of texts in a fixed time or theme demonstrate the way in which groups are shaped by external influences. Credibility and authenticity in qualitative research are comparable to the validity and reliability of quantitative research (Hovland et al., 1951).

Qualitative methodology reflexively examines and groups data (Glaser & Strauss, 1999). Triangulation recursively checks data and increases the validity in qualitative studies and is commonly used in qualitative and mixed-method research. Methodological triangulation involves a mixed-method approach and extracts data through the use of more than one method. Data, theoretical, and a researcher triangulation are all appropriate ways of ensuring the authenticity and credibility of a research project (Creswell & Miller, 2000).

Document Analysis

To conduct the document analysis, public records, official records, and public data were evaluated. All the documents were electronic and found by searching a series of databases, government websites, memorandums, and past research. All of the used documents are cited and examined in the order they were uncovered. The analysis was conducted to interpret the laws, gain an understanding of their meaning and application, and develop insight based on the online information provided. The document analysis results were placed before the quantitative methodology to offer contextual clues and assist readers with understanding the importance of why the CUITA codebook was modified, the protections that govern websites, and the overall historical context of the vocational rehabilitation program. This analysis was conducted throughout the course of the study and was initially part of the literature review. However, due to pertinent findings and the applicability of the documents, it was later decided that the documents required further explanation and integration into the overall study. The nature of emergent design in qualitative methodological research permits such reflexivity (Guba & Lincoln, 1982).

The document analysis demonstrates the authenticity of the study, relating publicly accessible law and records to the dissertation. Experts, quotations, and passages are organized into major categories to provide examples of pertinent topics (Labuschagne, 2003). Additionally, it fulfills the credibility of the research, demonstrating the knowledge of history and decree that the primary researcher has, demonstrating triangulation. Triangulation provides credibility as it allows for “the combination of methodologies in the study of the same phenomenon” (Denzin, 1970, p.

291). The meaning of the documents is examined and related to the theoretical grounding of unmuted group theory, uncertainty reduction, and the Foucauldian lens. The documents demonstrate that the U.S. Federal Government supplicates provisions in various provisions to enact claims and goals of disability equality. Stake (1995) argues that document analysis produces detailed accounts of programs. The subsequent qualitative results within the close reading extract meaning from the document analysis to provide ample proof of gaps in moderating these protective laws.

The Close Reading

The close reading of a text begins with an in-depth, or detailed reading by the primary researcher. This is a sequential study, so the qualitative data were collected after the quantitative analysis was completed. The states picked for examination were based on holistic findings of the quantitative analysis. Personal experience and direct observation are complimented by the researcher's personal knowledge about the texts, structure, idea, participants, and subject. The close reading analysis method highlights a portion of the text such as rhetorical features, structural elements, cultural references, or even selected features (Kain, 1998). During this process, texts are annotated, highlighted, parsed, and compared (Sheen, 2003). Text and thematic repetitions, contradictions, and similarities of a website and to other state websites were noted in the analysis.

Next, the observations are interpreted by inductive reasoning. Emergent design is used in the qualitative methodology, so the rigorous prescription of a study design was not implemented for the qualitative portion of the SVRSP website analysis (Creswell, 2007). The four main pillars uncovered in texts during close readings are linguistic, semantic, structural, and cultural. The pillars are mentioned periodically throughout the

analysis. This study integrates all four pillars at various points within the analysis, with a focus on the cultural and structural pillars. The Foucauldian lens was used to amplify the societal effects of knowledge and power. Vocational rehabilitation websites hold the power to educate and provide resources for large populations. The redaction or lack of feature inclusion decreases the potential power ascribed to the DHH through knowledge. Additionally, the primary researcher acknowledges that interpretations in this section may not be completely separated from their background in this portion of the study. Often in qualitative research, the lack of separation between the researcher and the subject(s) is not only acceptable but encouraged and further examined within analysis (Creswell, 2003). The lack of separation between the researcher and the data generates unanticipated insight and a higher degree of interactivity between the researcher and data (Guba & Lincoln, 1989; Nowell, Norris, White, Moules, 2017). In sum, the combination of qualitative and quantitative methodologies for uncovering vocational website data formulates a holistic account of the SVRSP websites.

Some researchers argue that mixed methods operate on shaky philosophical ground, as worldviews inform methods and the paradigms that undergird qualitative and quantitative methods often sharply differ. However, mixed methodology is rooted in the worldview of pragmatism, which focuses on solving problems using whatever tools are most effective for the research (Cherryholmes, 1992). Pragmatists would “simply like to change the subject” and formulate “solution-based” approaches (Cherryholmes, 1992). For website solutions, visual and in-depth examinations are necessary to compliment the numeric findings.

Steps of the Qualitative Analysis

After the quantitative data were collected and analyzed, this study qualitatively examined two best-practice sites, two worst-practice sites, and a site with a notable visual design. Finally, various state websites are mentioned to demonstrate other significant features. This examination furthered the theoretical interpretations, importance, and implications of online SVRSP websites for the greater DHH population. To conclude this study, a list of website features for all SVRSP is suggested. In the discussion section, a survey that accounts for all onboarding needs is presented along with a list of features that should be present.

The best practice websites that had sustainable features were uncovered quantitatively and examined qualitatively and used as a foundation for the list of best practices for SVRSP websites. To select the websites that were analyzed, the primary researcher chose those with the most features preset. However, as this study focuses on communication, the presence of closed captions and ASL had to be present on the best practice sites. If ASL and closed caption features were not present on the top two sum of present features states, the state's closest to the top would have been chosen. The states with the most features present had ASL and closed captions present. The two worst practice sites were chosen by having the lowest number of features present as revealed in the quantitative content analysis.

The original model for a state plan (Schein, 1973), was formulated before the internet was as widespread as it is in 2023. Many members of the U.S. Congress have limited understanding of the internet, as some do not understand what a “browser” or “cookie” is (Congressional Management Foundation, 2008; Kang, 2021). Without

internet knowledge, congressional representatives may not understand the profound implications that useful online information has in policy-making and federal program regulation. In 2021, 75.2% of global internet users were between the ages of 18 to 44. The average age of the 117th Congress (2021-2022) congressional representative was 58.9, and the average age of a congressional senate member was 64.8 (Blazina & DeSilver of Pew Research, 2023). Statista (2021) reports that 7.3% of individuals worldwide between the ages of 55 to 64 use the internet, which decreases to 5.5% for individuals aged 65 and above (Petrosyan, 2023). The data speaks for itself.

Although existing policy exists, the quantitative analysis found that website or internet policies at the state and federal level lack enforcement. Individuals cannot enforce what they do not understand or create proactive policy to protect the public. Analyzing website issues qualitatively make up for the gaps in research that currently exist, and lead to policy reform. Additionally, the study serves to inform policymakers about existing website gaps, lack of regulation compliance, and suggests future improvements. The qualitative analysis delves deeper into the issues present.

While the quantitative analysis was conducted by two independent coders, the qualitative readings were executed by the primary researcher. When conducting the qualitative analysis, the primary researcher worked alone to uncover patterns and themes and formulated an analysis. Each of the five websites were examined individually, and their themes and CUITA results were noted in an in-depth examination. Additionally, when a feature was flagrantly missing from a bad practice site or unique feature from a best practice website was found, they were added to the analysis. Based upon the qualitative reading, suggestions about usability features and standardization of all vocational rehabilitation

websites were made. Best practices and standardization of vocational rehabilitation further expanded the crafting of “unmuted” group theory. The primary researcher argues that individuals can be unmuted through knowledge, power, and resources.

Integrating Tools into the Qualitative Analysis

A close reading qualitative analysis was used to assess state vocational rehabilitation service program websites to discover how a user navigated the content, usability, interactivity, transparency, and accessibility of the best and worst practice vocational websites. The tools used for the qualitative assessment were the WAVE Tool (Web AIM, 2022), The Linguistics Themes and Model Themes¹², the Online Consumer’s Hierarchy of Needs (Valacich, Parboteeah, & Wells, 2007) and the Flesch-Kincaid Test (Flesch, 2007). The sites chosen for the analysis were based upon the sum of features present revealed in the quantitative analysis. The researcher first assessed the Universal Resource Locator (URL) accessibility using these guidelines and tools, and then scanned and broke down the page content through Foucauldian thematic lenses, and themes prescribed by the primary researcher. In general, the analysis of each state’s webpage took about five to ten hours, which yielded a high level of insight. Following the evaluation of the five best and worst practice websites, the primary researcher dedicated approximately one hour to examining the vocational rehabilitation websites of the remaining 45 states, resulting in approximately 50 hours of assessment for these states. Additionally, approximately one hour was spent assessing each U.S. territory website,

¹² The Linguistic and Model Themes are original research formulated by the author, or primary researcher for this study.

resulting in 5 hours of examination of U.S. territory websites. During the assesment of each state website, extensive notes were taken, and screenshots were collected and recorded.

The results of the close reading add to the quantitative results by crafting reccomendations, highlighting features that enhance vocational websites, and uncovering how potential vocational consumers contact vocational rehabilitation counselors. Possible barriers that SVRSP create are also discussed. The remainder of this chapter will more clearly outline the measures applied to these websites, present the findings, and discuss their significance in terms of unmuted group theory, uncertainty reduction theory, and online-mediated communication. Additionally, the tools used for the qualitative assessment and their use are explained and defined below.

The Web Accessibility Evaluation Tool

The web accessibility evaluation (WAVE) tool was used in conjunction with other elements of this study to qualitatively analyze the websites. It was created by Web AIM (Accessibility In Mind), which is a subset of the Institute for Disability Research, Policy and Practice at Utah State University (Utah State University, 2022). Web AIM has many tools available for website accessibility such as accessibility training, technical assistance, accessible site certifications, and website evaluation and reporting. For this study, only the WAVE tool was used. Future studies can employ the use of other Web AIM tools as they render an efficient way for website measurement and assist with the adherence to ADA regulations.

WAVE® is a suite of evaluation tools that helps authors make their web content more accessible to individuals with disabilities. WAVE can

identify many accessibility and Web Content Accessibility Guideline (WCAG) errors, but also facilitates human evaluation of web content. Our philosophy is to focus on issues that we know impact end users, facilitate human evaluation, and to educate about web accessibility (Web AIM, 2022, para. 1).

This tool can be employed by respective departments to amend and modify their sites. The WAVE tool can be found at <https://wave.webaim.org>. To use it, the link of the website that is to be analyzed is typed or copied and pasted into the WAVE homepage. To analyze different parts of a website, each specific URL must be typed in as the program does not analyze the whole website, only the linked URL and its respective landing page. The tool creates an assessment of six different items. These items are errors, contrast errors, alerts, features, structural elements, and “ARIA” (Accessible Rich Internet Applications). The results provide a numeric summary for each category and specifies details of what can be changed on a website to make it more accessible. The tool lists a total of 22 possible errors, 1 contrast error (present or not present), 42 possible alerts, and 13 possible “accessibility friendly” features.

Errors reference one of the following issues: missing alternative text, an empty link, an empty button, spacer image missing alternative text, invalid long description (links to images that have a long description should be provided in lieu of excessive text under an image), a broken skip link, an empty table header, blinking content, marquee (scrolling element that a user cannot stop that blocks text), missing form label, multiple form labels, image map missing alternative text, broken ARIA reference, broken ARIA menu, missing or

uninformative page title, language missing or invalid, page refreshes on its own or redirects, or an empty heading.

A *contrast error* is defined as text that is difficult to read due to the lack of contrast between the font and the background. One example of this would be light blue text on a white background, or colors that are difficult for colorblind people to view.

An *alert* may be one of the following items: suspicious alternative text, redundant alternative text, a nearby image has the same alternative text, long alternative text, long description, image with title, orphaned form label, unlabeled form control with title, select missing label, missing field set, field set missing legend, no heading structure, missing first level heading, no page regions, skipped heading level, possible heading, layout table, possible table caption, possible list, broken same-page link, suspicious link text, redundant link, link to Microsoft Word document, link to Microsoft Excel spreadsheet, link to Microsoft PowerPoint document, link to PDF document, link to document, audio/video, HTML 5 video or audio, YouTube video, flash, java applet, plugin, no script element, device dependent event handler, JavaScript jump menu, access key, tab index, very small text, justified text, underlined text, or redundant title text.

Accessibility friendly features are the following: alternative text, null or empty alternative text, null or empty alternative text on spacer, linked image with alternative text, image button with alternative text, image map with alternative text, image map area with alternative text, figure, form label, field set, skip link, skip link target, or language.

The complete definition and explanation of each element of the WAVE report can be found on the website under the reference tab after a website is pasted into the search box. It is important to remember that alerts are possible obstacles that make navigation

difficult to some populations, but some alerts may be redundant if the website provides alternative accessibility features. The alerts of the WAVE tool list areas that website creators should double check to ensure that accessibility features are present. For example, the WAVE analysis checks YouTube videos and discourages their use unless closed captions are included. Another example is the programs discouragement of incorporating PDF files as some users may not have appropriate tools for navigating them with ease. The WAVE assessment was completed after the original close reading was conducted to double check for any present or absent accessibility features that may have been left out of the original close reading assessment. This study reports the number of errors, contrast errors, and alerts as they are detrimental to the accessibility of a website. It also documents the number of features, or positive aspects of the website landing page, as specified by the WAVE report.

The Tool of Website Themes

A list of potential themes developed from the literature review guided the close reading process to assess how vocational rehabilitation construes deafness. The two themes are the “Model” theme and the “Deaf and Hard of Hearing” theme. Subcategories within these two themes are explained below. The two themes and their subcategories will be used for the five sites that demonstrate best and worst practices for vocational websites to uncover differences in their construction and accessibility.

The Model and Linguistic Theme

- *(Theme) Model:* medical model, social pathological model, cultural model
- *(Theme) Linguistics:* disability, culture

Website analysis assessed the tones of the respective state website and the medical or linguistic light in which the DHH are portrayed on the SVRSP websites. These themes (model and linguistics) are derived from reoccurring literature preset in DHH research and culture. Within these two themes, there are categories that further describe the phenomena. Categories represent a unit of information composed of events, language evolution, visuals, ideas, phenomena, and instances (Strauss & Corbin, 1990).

Model Theme Subcategories

Within the *model theme*, the subcategories are the social pathological model, the medical model, and the cultural model. The categories are not mutually exclusive. The *social pathological model* frames people who have disabilities as socially and economically disadvantaged, and in need of economic support (Worrell, 2018). “The *medical model* views deafness as non-perfect hearing leading to non-functional development, a problem which should be fixed. Successful assimilation into the dominant hearing society is the primary aim of the medical model” (Mouvet et al., 2013, p. 2). The social model views deafness as economically disadvantaged, and in need of economic support and assimilation into society through rehabilitative programs. The *cultural model* views DHH individuals as limited only if a society does not provide adequate accommodations, or if the buildings and technology are constructed in a way that do not allow for equal accessibility. Jeon et al., (2001) found that policy changes regarding disability were successful partially due to the reframing of disability from a medical and economic issue to that of a sociopolitical, or cultural perspective. The use of positive words and the use of a cultural view may increase the efficiency of vocational websites.

Linguistics Theme Subcategories

The *Linguistic theme* examined whether the websites present deafness as a disability or culture, as mentioned previously within the literature review. This is the difference between capital Deaf and lowercase deaf. Each category is further explained and structurally organized below in Figure 11 and *Figure 12*. These categories and the table were created by the primary researcher. Use of these categories is suggested for future research. When one of these categories is mentioned, it refers to the respective definition below.

Categories Within the Model Theme
Medical: The DHH are viewed as non-perfect due to hearing differences. DHH have non-functional development, a problem that should be fixed. These individuals should be successfully assimilated into the dominant hearing through teachings of spoken English, speech therapy, hearing aids, cochlear implants, assistive technologies, and guide dogs.
Social Pathological: DHH are disabled, socially and economically disadvantaged, and need economic support. This supports programs such as social security disability income, and vocational rehabilitation. It is distinguished from the medical frame due to its focus on reactive assimilation programs, instead of medical solutions.
Cultural: Being DHH is a cultural trait of a linguistic minority. The DHH are limited only if a society does not provide adequate accommodations through social programs and appropriate assistive devices and technology. Technology, law, and language should be proactively constructed in a way that allows for equal accessibility. The DHH are not disabled, but society disables them.

Figure 11. Categories Within the Model Theme. Formulated by Charlotte Deering for the qualitative assessment of SVRSP websites.

Categories Linguistics Theme
Disability: This frame will be applied if the DHH are considered disabled. The post or linked article must directly mention the word disability; implications do not meet the requirements of this theme.
Culture: This frame will be applied if the DHH are considered a culture or a community. The post or linked article must directly mention the word “culture” or “community;” implications of these words do not meet the requirements of this theme.

Figure 12. Categories Within the Deaf and Hard of Hearing Theme. Formulated by Charlotte Deering for the qualitative assessment of SVRSP websites.

The Online Consumer’s Hierarchy of Needs Tool

Due to the visual epistemology of the DHH, visual website design has a large role in usability. Visual design should focus on the hierarchy and ordering elements by importance and appropriate calls to action. Parts of the qualitative analysis will assess, critique, and suggest modifications to the visual aspects of vocational websites. As stated by Valacich et al. (2007), “Website designers take heed: Not all interface characteristics are created equal” (p. 84). Like Maslow’s Hierarchy of Needs, a framework for explaining what humans need to survive and thrive in everyday life (Maslow, 1943), Valacich et al. (2007) proposed an Online Consumer’s Hierarchy of Needs. The Consumer's Online Hierarchy of Needs classifies essential website components that guarantee its functionality. Similar to how a person cannot survive without their basic needs being met according to Maslow's Hierarchy of Needs, a website cannot survive if these fundamental website elements are not fulfilled.

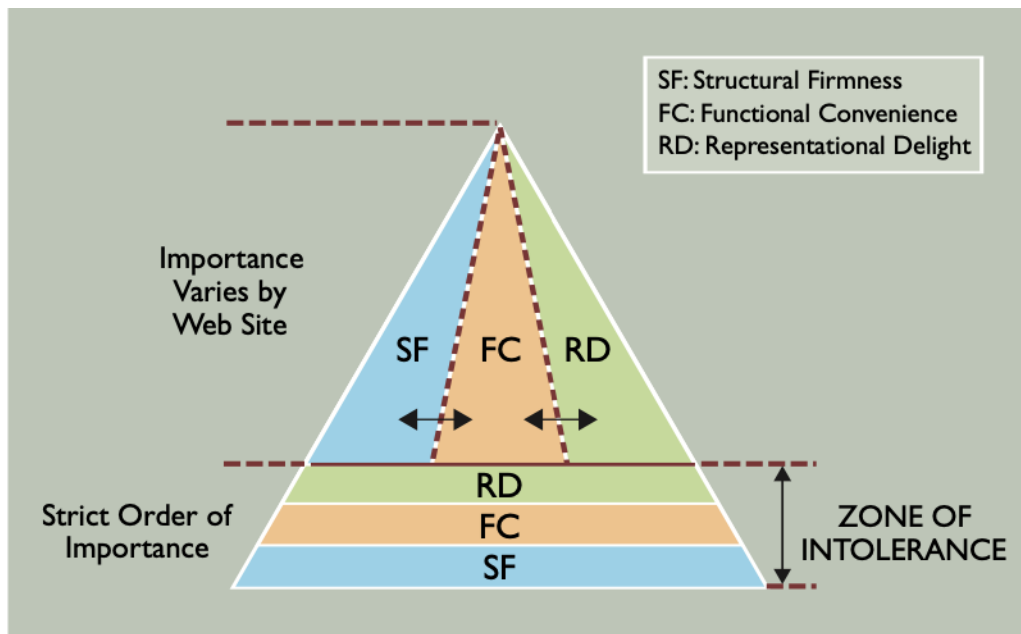


Figure 13. A Visual Representation of an Online Consumer's Hierarchy of Needs. Accessed on February 4th, 2023, from <https://sci-hub.ru/https://dl.acm.org/doi/fullHtml/10.1145/1284621.1284624>.

The Online Consumer's Hierarchy of Needs breaks down three essential characteristics for successful online engagement: structural firmness, functional convenience, and representational design. Websites that fail on all of these are relegated to the "Zone of Intolerance," which is equatable to the physiological and safety needs noted at the bottom of Maslow's (1943) hierarchy. The Zone of Intolerance notes SF: Structural Firmness, FC: Functional Convenience, and RD: Representational Design (Valacich et al., 2007, p. 86).

The *Structural Firmness* of a website is defined as "the characteristics that influence the Web site's security and performance." The response time of a website, privacy and security protocols, and security seals are examples of the structural firmness of a website.

Functional Convenience is defined as "the availability of convenient characteristics that help the consumer's interaction with the interface" (Valacich et al.,

2007, p. 86). The ease of use, provision of help features, and the navigatability of a website are all examples of the functional convenience of a website.

The third necessary element vital to a website's survival, arguably the most relatable to vocational rehabilitation sites, is *Representational Delight*, defined as "Web site characteristics that stimulate a consumer's senses (such as, atmospherics), primarily including what they see and hear" (Valacich et al., 2007, p. 86). Interface consistency, contrast and spacing of website content, and graphic design elements are all examples of representational delight of a website.

Vocational consumers seek out vocational resources, such as a path to a successful employment to fulfill everyday physiological and safety needs. If the "representational delight" of a SVRSP website fails to present information in multiple formats so that it can be accessed through auditory (screen readers) or visual means (for the DHH), then the website does not meet the goals of representational design but also fails to assist the DHH in fulfilling Maslow's baseline physiological and safety needs. When websites meet the requirements of usability and surpass the zone of intolerance, they are deemed usable in accordance with unmuted group theory.

Maslow's physiological and safety needs and the zone of website intolerance on vocational website are further interwoven when the use of chosen websites is analyzed. Vocational programs assist clients in obtaining a job and accessibility items to fulfill physiological and safety concerns. Vocational websites without structural firmness, functional convenience, and representational design prevent basic usability as measured in the CUITA model. If the state website is the primary method of access an individual has to vocational rehabilitation and it is deemed unusable, the individual will likely not

establish contact with the program. Without vocational rehabilitation as a resource, one may not obtain an individual plan for employment or education (IPE). Without training or an IPE, one may not obtain a job. Without a job, one may not have access to income. Without an income an individual may not be able to afford food, shelter, or other basic human needs.

Functional Convenience	Representational Delight	Structural Firmness
Ease of navigation	Interface consistency	Response time
Ease of use	Screen size and layout	Quick error recovery
Provision of product/ service information	Provision of a visually appealing design	Correct operation (such as, no bad links)
Feedback options	Innovative and creative design	Quality of firewalls
One-click ordering (for example, amazon.com)	Pleasant background color	Provision of privacy policies
Order tracking information	Use of graphics	Explicit security policies
Provision of help feature	Provision of video/ audio links	Availability of security seals
Variety of payment methods		

Figure 14. Online Consumer’s Hierarchy of Needs: Website Structure Interface Categories. Image found on February 4th, 2022. Taken from Valacich et al., 2007, p. 87.

Visuals delve into the structural implications of government websites (Creswell, 2007), and the visual epistemology of the DHH. Problems related to the three elements within the Zone of Intolerance arose within vocational rehabilitation websites. The CUITA codebook checked for elements like the ones listed in Figure 14 such as “interface consistency,” “explicit security policies,” and “the provision of help feature(s).” Digging into a few sites qualitatively substantiated that despite the presence of elements on a site, the element may still be inaccessible to some populations. This demonstrated that qualitative analysis in conjunction with quantitative assessments are

advantageous to the vocational website research. The weaving of qualitative, quantitative, and visual tools strengthen the findings of mixed methodology research. Structural and textual assessments present the essence, or invariant structure of the phenomenon. “For example, it means that all experiences have an underlying experience..” (Cresswell, 2007, p. 62). The experience can be improved if developers meet the needs of the user.

The OCHN framework provides two key goals for Web site design. First, a Web site must adequately meet online consumers’ expectations for minimal levels of each interface category. Second, once beyond the zone of intolerance, Web site designers must carefully consider the nature of the task (that is, hedonic vs. utilitarian) that online consumer will most likely execute on the site (Valacich et al., 2007, p. 89).

When visual elements were critiqued within this assessment, they did not meet the standards of structural firmness, functional convenience, or representational delight as defined by prior research in conjunction with Valacich et al., (2007)’s heirarchy of needs model. The primary researcher identifies as a skilled computer and internet user who likely has more computer knowledge and experience than the average individual. Assuming that the primary researcher has a higher level of computer and internet navigation skills is based on her education level and identification as a digital native. A digital native is an individual born or raised during the era of the widespread U.S. adoption of digital technologies, and cannot remember a time without internet accessible technology. From an early age, digital natives are accustomed and familiar with the existence and integration of digital technologies, online mediated communication, and the internet in everyday spaces.

A Linguistic Tool: The Flesch Kincaid Test

The Flesch-Kincaid test examines the reading ease and reading level of text (Kincaid, et al., 1975). This test was developed for the American English language and may not be applicable to other languages. The readability score and corresponding U.S. education grade level is devised through a formula. This formula is $(206.835 - 1.015 \times (\text{total words} \div \text{total sentences}) - 84.6 \times (\text{total syllables} \div \text{total words}))$. The formula is visualized in Figure 15.

The Flesch-Kincaid Formula Visualized

$$206.835 - 1.015 \left(\frac{\text{total words}}{\text{total sentences}} \right) - 84.6 \left(\frac{\text{total syllables}}{\text{total words}} \right)$$

Figure 15. The Flesch-Kincaid Formula Visualized. The formula is visualized based on text from Kincaid, et al., 1975.

This formula results in a number. The number and its level are demonstrated in the table below in Figure 16.

Flesch-Kincaid Reading Ease and Level Reference Chart

Score	U.S. School Level	Notes
90 - 100	5 th Grade	Understood by an average 11-year-old
80 - 90	6 th Grade	Easily understood, conversational English
70 - 80	7 th Grade	Fairly easy to understand
60 - 70	8 th to 9 th Grade	Plain English understood by 13 to 15-year-olds
50 - 60	10 th to 12 th Grade	Somewhat difficult to read
30 - 50	Undergraduate College	The majority of people will have difficulty reading at this level
10 - 30	College Graduate	Very difficult to read; best understood by bachelor-level university graduates
0 - 10	Professional	Extremely difficult to read; understood by individuals in graduate university programs

Figure 16. The Visualization of the Flesch-Kincaid Formula and Respective Grade Reading Level. The chart was made for this research based on text from Kincaid, et al., 1975.

The U.S. Plain Writing Act of 2010 requires that “federal agencies use clear government communication that the public can understand and use. The former U.S. President Barack Obama Administration emphasized in a Memorandum on Transparency and Open Government (2009) that the passage of the Plain Writing Act is an important step in establishing “a system of transparency, public participation, and collaboration.” This suggests that the writing level on websites should be as simple and organized as possible. For reference, this paragraph has a score of 37.3 putting it at an Undergraduate

College understandability level. Dew (1999) stated that the average reading level of a deaf individual is 4th grade. This research suggests updating textual content to match its audience as prescribed by the Plain Writing Act of 2010.

This study used the Flesch-Kincaid grade level test to assess the readability of state government websites. It is the most widely used measure of its kind. It complements the qualitative analysis by providing a standard that may be compared with previous studies and replicated in future research. Using the Flesch-Kincaid test score, researchers can assess a text's potential influence on its target audience, making it a valuable qualitative tool to evaluate the effectiveness of online-mediated communication. Qualitative analysis sometimes utilizes numeric tools to identify patterns and trends in the textual data or to quantify aspects of the phenomenon. Numeric tools complement qualitative analysis by providing a precise and objective measure of texts and language to confirm the veracity of the subjective, interpretive analysis. Numeric tools can identify and acknowledge biases and ensure consistent coding to avoid discrepancies in interpretation (Miles, M. B., & Huberman, 1994). Numeric tools supported and enriched the qualitative assessment.

The qualitative categories were subject to inductively derived additions, redactions, or changes during an evolving three-stage close reading: 1) overview, 2) documentation/categorization, 3) review for analysis.

CHAPTER NINE: QUALITATIVE RESULTS

The mean, or average number of features across all U.S. states and the District of Columbia (D.C.) was 28. The same average of total features presented resulted when the five territories were included in this calculation, which demonstrates that the U.S. territories do not deviate the mean or act as outliers with features on vocational rehabilitation websites. However, the mean of features present on the five (5) territories websites was 16.

Alaska and Florida were the best practice sites with the most features present, with 57 and 45 features, respectively. The states that demonstrated the worst practices in terms of the number of features present were Kentucky, with 12 features present, and Arizona, with 11 features present. Since this study highlights the importance of accessibility and communication, it should be noted that the two worst practice sites did not include closed captions, or the use of ASL and the two best practice sites did. As in life, this research will save the best for last and begin with a review of Arizona and end with a review of Alaska and Florida¹³.

Upon completing the review of states with high and low numbers of CUITA features, the assessment shifted to identifying notable aspects across different states. The analysis incorporates recommendations for standardization when a state website issue was identified. The presence or absence of notable features evoked ideas and insights during the analysis. Therefore, recommendations are sectioned by state, but apply to the overall recommendations for SVRSP websites. All of the elements that were uncovered

¹³ Alaska had more features present than Florida did, but they were presented in reverse order for clarity and a smooth transition.

during the assessment are further discussed within the discussion section of the study. Names, telephone information, or addresses have not been redacted in screenshots as these are publicly available data supplied to the general public by the respective state governments. Anyone with access to a device that connects to the internet can obtain the used within this study data. All data and screenshots of the SVRSP websites were collected from October 1st, 2022 through February 28th, 2023. Screenshots were taken on a MacBook Pro 16” (2019) Laptop. None of the screenshots were taken on a mobile device. The primary researcher intends to assess the SVRSP via a mobile device in future research.

The analysis was assisted by tools such as the WAVE assessment (Web AIM, 2022), the Linguistics Themes and Model Themes prescribed by the primary researcher for this study (Deering, 2023), the Online Consumer’s Hierarchy of Needs (Valacich et al., 2007), and the Flesch Kincaid Test (Kincaid et al., 1975). Each of these tools were used in various capacities and parts of the analysis, as their utility differed in part due to the drastic differences between state vocational websites. The tools created an interplay of linguistic, semantic, structural, and cultural (Cresswell, 2007) factors everpresent in online-mediated textual communication.

Arizona

The state of Arizona has a population of 7,151,502 according to the 2020 U.S. Census, making it the 14th most populous state. The Arizona SVRSP website had 11 CUITA features present. Arizona is located in the Southwestern region of the U.S, has a (R+2) leaning on the Cook Political Report, and is a traditionalistic state according to

Elazar's political culture classification. The homepage of Arizona SVRSP can be accessed at <https://des.az.gov/services/employment/rehabilitation-services/vocational-rehabilitation-vr>. The following features were present on the website: physical address, email, FAQ, laws and regulations, law search, site search, languages, downloadable documents, student information, education information, and career information.

The website Universal Resource Locator (URL) is long and is a subset of the Department of Economic Security (DES) in the hyperlink. It does mention vocational rehabilitation services and uses .gov, which means that it is a sponsored top-level domain. Domains that end with .gov are administered by the Cybersecurity and Infrastructure Security Agency (CISA), which is a component of the United States Department of Homeland Security. "Federal executive branch agency websites must use only .gov or .mil domains unless the agency head explicitly determines another domain is necessary for the proper performance of an agency function (this is rare)" (Digital.Gov, 2022).

The website body uses legible text and fonts but lacks significant contrast between the blue background and white text on the menu headers and drop-down menus. The website had a good general design and fulfilled most items of the Online Consumer's Hierarchy of Needs (Valacich et al., 2007). However, the vocational portion of the website was integrated into The Arizona Department of Economic Security. The functional convenience of integrating the programs makes it easier for web designers to maintain as a separate site but may confuse unfamiliar users. Different designs and locations of the SVRSP websites have use trade-offs.

While it is important to understand which characteristics can be successfully applied to a Web site's design, it is equally important to understand their relative

value in shaping a consumer's experience, given the natural trade-offs that occur due to design complexity, resources limitations, or situational factors (Valacich et al., 2007, p. 87).

A major concern was the modality of available contact information. Under the contact portion of the website, the most prominent contact information was a phone number, which suggested the use of a phone. The DHH likely do not use a phone as their primary method of communication and rely on TTY, video relay services, and captions with audio and phone communication.¹⁴

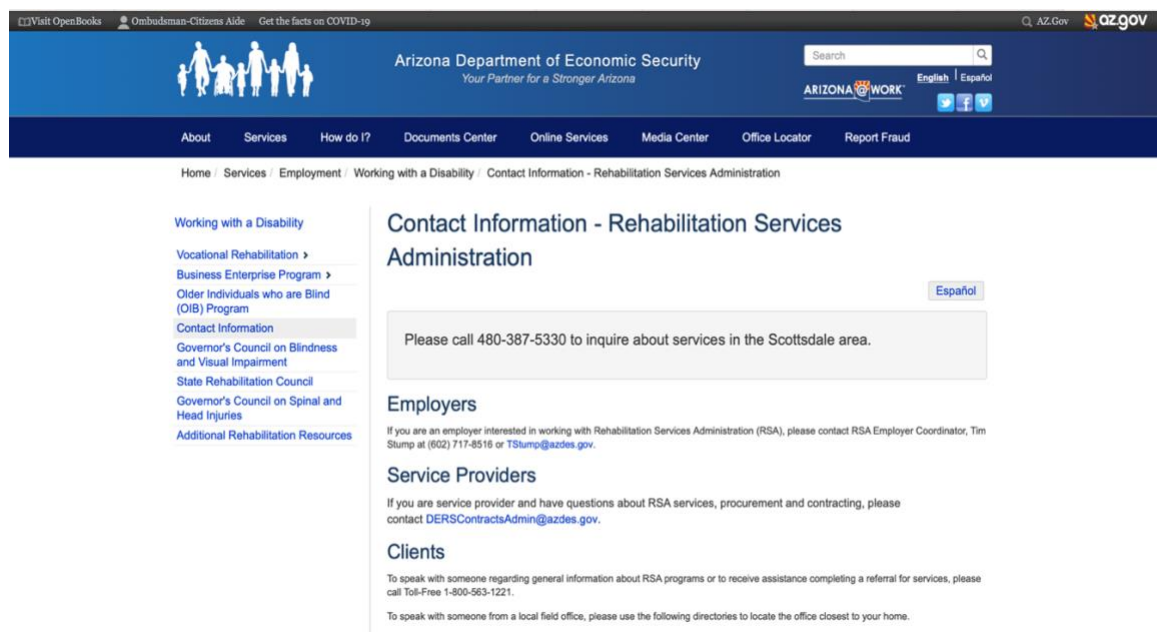


Figure 17. Website Screenshot of the Contact Information on the Arizona Department of Economic Security. Screenshot taken on October 13th, 2022. Accessed at <https://des.az.gov/services/employment>.

¹⁴ The images related to the qualitative portion have not been moved to the appendices to create a clear integration of the visuals that the assessment represents.

If a user scrolled down, the contact information specifically mentions the DHH on the same page that is displayed in Figure 17 above. The specific contact information of the DHH is pictured below in Figure 18.

Vocational Rehabilitation Serving Persons who are Blind, Visually Impaired and Deaf			
Contact Information for Rehabilitation Services Administration Office			
Supervisor	VR Office Address	Phone	FAX
Brian Dulude Region III Program Manager	1789 W. Jefferson Street Phoenix, AZ 85007	(602) 542-3332	(602) 250-8324
Vacant Assistant Program Manager	1789 W. Jefferson Street Phoenix, AZ 85007	(602) 542-3332	(602) 250-8324

Figure 18. Website Screenshot of the Arizona’s DHH SVRSP Contact Information. Screenshot taken on October 13th, 2022. Accessed at <https://des.az.gov/rsa-contact-information>.

The lack of information demonstrated in Figure 19 is quite concerning as there are no direct email addresses to the program counselors for the deaf branch of the program, or intake surveys. There is also no mention of textual communication options or accessible phones. The DHH likely use relay call phones, TTY, or videophones. Accessible telephone services often require a separate telephone line and an indication that it is an alternative communication line that uses textual or visual services. The provision of one address is useful only if the client is within driving range, has time to spare, and has some sort of transportation available. The iOS 16, an operating software for iPhones that was released on September 12th, 2022, is compatible with TTY and allows the user to auto-transcribe text or type out a message. However, not everyone is familiar with this technology, it requires a few steps to set up, and many cannot afford a smart phone or an entry level iPhone 14 for \$999 USD plus eligible taxes (Apple, 2023).

The forums, meeting minutes, and laws are accessible on the website, but there are no clear infographics or delineations of what exactly the vocational rehabilitation program is or what it may provide. The forums that are present are listed in alphabetical order and encompass a wide variety of documents that do not seem limited to vocational rehabilitation applications or information about the SVRSP. The website seemed to be integrated with other service programs that are provided by the state government of Arizona. The website information seems to assume users already know about the program, have the ability to talk on the phone, and are simply looking for forms to fill out.

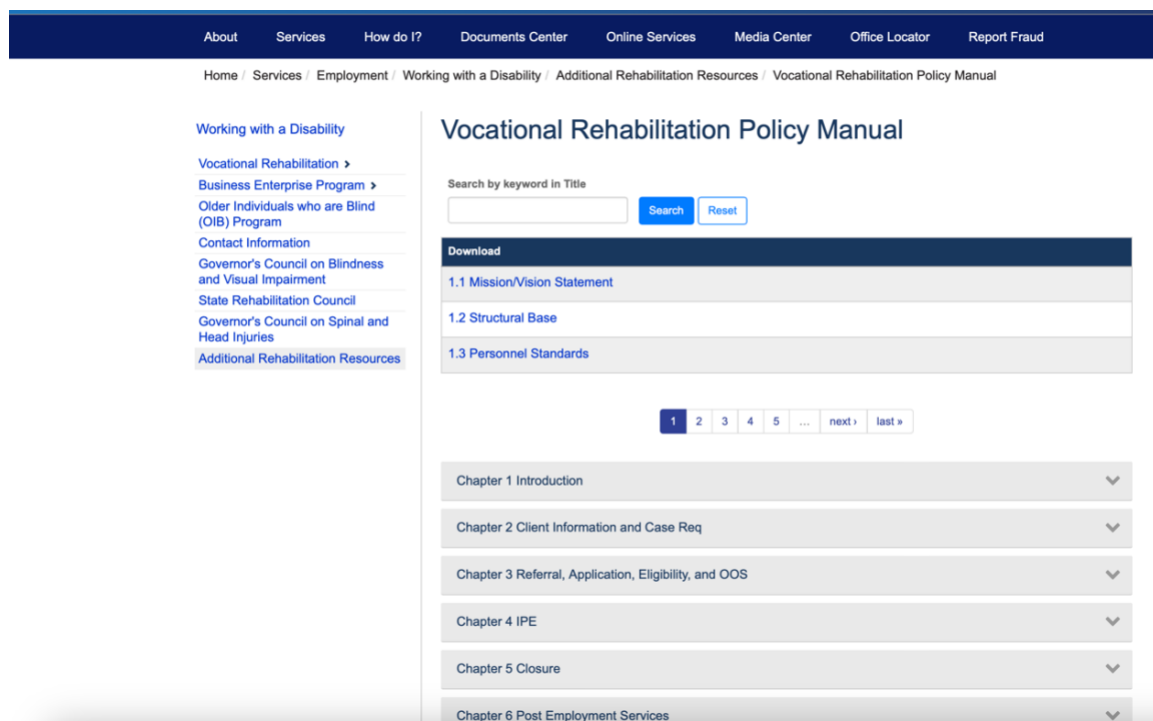


Figure 19. Vocational Rehabilitation Policy Manual Website Screenshot from the Arizona Economic Security Website. Screenshot taken on October 13th, 2022. Accessed at <https://des.az.gov/vocational-rehabilitation-policy-manual>.

The above image, Figure 19, is a screenshot of the policy manual that is listed on the Arizona website. This was found under the additional rehabilitation resources tab.

Information about the program is within this section of the website. The information present was quite informative and useful, demonstrating transparency of program policy and structural guidelines. However, the information is written in a policy-like structure which may be inaccessible or utterly confusing to people who are not familiar with the program. Additionally, it requires a higher level of reading ability and required extensive searching to find the area. The text references policy and laws and often uses vague language to describe services provided such as “other services” and “customized employment services.” The defining of vague and program-specific terminology enhances general-public comprehension. The Arizona homepage had a Flesch-Kincaid score of 42.3. It is recommended that the reading level of government texts is no higher than an 8th grade level, which corresponds to a minimum score of 60 when using the Flesch-Kincaid scale.

The Arizona website does provide a vague list of services with which it assists. “The following items are considered VR services and may be provided to applicants or clients participating in the VR program in accordance with policy.” Within this list, the “treating of impairments” is listed as a service. This language highlights disability in a medical light and frames consumers as impaired. Clients must then define themselves as impaired. The first definition that results when Google searching the term “impaired” in November of 2022 is “weakened or damaged.” Implying that services are used to treat a “weakened or damaged” person is not a flattering use of policy language. Foucauldian theory argues that “the acts, behaviors, and practices that emerge as ‘problematizations’ within certain networks of knowledge are dynamically linked to forms of power that turn individuals into subjects by tying them to identities” (Tremain, 2005, p. 14). If the DHH

and other SVRSP consumers are labeled as impaired, this label formulates their identity as a problem to society. Positive language would describe them as unique individuals who have different perspectives, ideas, culture, and contributions.

The term impaired is unfavorable to many and represents vocational services as a medical and pathological disability program. The former New York State Governor struck the term "hearing impaired" from the state's lawbooks (NYS Bill S06128, 2017), demonstrating that the term is dated and the words "deaf or hard of hearing" should be used in its stead. Similarly, terms such as "blind" should be used instead of "visually impaired."

Categorically, the language that the state of Arizona uses marks deafness as a disability rather than as a cultural trait. Throughout history, the complete unity of a populace has never succeeded. Groups desire their own language, identity, culture, and practices. The semantic elements of the language used discredit the cultural aspects of the DHH wishing to engage in the vocational program.

The Arizona SVRSP used the socio-pathological and medical model to represent deafness as a disability. The repeated use of delineating language such as impairment, health, and disability were determining factors in classifying the site's theme within the model portion of the evaluation.

Despite the lack of onboarding information and a clear separation from the greater Arizona labor website, extensive information about committee meetings were present in the vocational section of the site. A button that redirected users to an application for council membership was present. This survey can be found at <https://bc.azgovernor.gov/bc/form/boards-and-commissions-application>. It is suggested

that all state websites include a similar feature. The structural elements of the website provide a propellant towards commission membership.

The push towards board and commission membership and public participation was a convenient indication of engaging features. Conversely, the presence of a survey for council membership but limited client resources demonstrates that the site is more interested in the political functionality of adhering to policy requirements rather than accessibility for the population it serves. It is difficult to speak on the effectiveness of this council as a review of membership composition, Deaf inclusion, and language accessibility would be necessary. Participatory communication that unmutes the deaf is present when an onboarding survey and a council membership survey are present.



Figure 20. Arizona State Rehabilitation Council (SRC) Website Screenshot, taken from the Arizona Economic Security Website. Screenshot taken on January 30th, 2023. Accessed at <https://des.az.gov/services/employment/working-disability/arizona-state-rehabilitation>.

Arizona SVRSP website homepage after the initial qualitative analysis was completed to provide an additional perspective on accessibility features. The results

found four website errors, a contrast error in two places, and eight alerts. The error analysis found empty buttons in four different places of the website. An empty button has no value text when hyperlinked and matters as “descriptive text must be presented to screen reader users to indicate the function of the button” (Web AIM, 2022). The eight alerts were that a nearby image has the same alternative text creates redundancy; long alternative text making an image obsolete; a form control does not have a label (the search box is not labeled so it will not be announced on voice over readers); two redundant links were present which meant adjacent links go to the same URL; and two areas had redundant title text (meaning that the title attribute text is the same as text or alternative text). Ten WAVE accessibility features were present. The contrast errors found that the light white text was difficult to read with the light blue website background.

Kentucky

The state of Kentucky has a population of 4,505,836 according to the 2020 U.S. Census, making it the 26th most populous state. Kentucky had 12 CUITA features present. It is located in the Southeastern region of the U.S., had a (R+16) leaning on the Cook Political Report, and is a traditionalistic state according to Elazar’s political culture classification. The SVRSP of Kentucky can be accessed at <https://kcc.ky.gov/Vocational-Rehabilitation/Pages/Kentucky-Office-of-Vocational-Rehabilitation.aspx>. The Universal Resource Locator (URL) did use a “.gov” trust symbol. The SVRSP website homepage is found through the dropdown menu subsection of the Kentucky Career Center Website. The SVRSP of Kentucky does not have its own separate website. Websites that fulfill

utilitarian tasks are selected for their efficiency and “select sites based on their relative usefulness and support for solving a particular problem” (Valacich et al., 2007, p. 87). An overabundance of programs with various uses easily overwhelms users.

The following features were present on the website: physical address, email, site search, tollfree calling, relay calling, a forum box, privacy policy, services for the DHH are mentioned, services for the blind are mentioned, services for the deaf and blind are mentioned, student information, education information, business information, and career information.

Although the homepage for the Kentucky SVRSP initially seemed textually simple, the Flesch-Kincaid score was a 23.8, putting the website at a college graduate reading level. The eligibility section score was 9.4, which is a professional level of writing, and the deaf and hard of hearing services page was a 37.5. It is commonsensical to use images with descriptions, videos in ASL, or other simplistic words for websites. Images are advisable as they add clarity, as some information is difficult to convey through text alone, especially in regard to complex ideas or instructions. ASL is the primary method of communication many DHH individuals use; additionally, the use of a range of media appeals to a wider audience.

The “strategic plan” portion of the website seems as it was a Portable Document Format, or PDF document, uploaded to the webpage. The strategic review seems more of an internal guideline or internal policy review under the guise of a prospective client information provision. Many of the hyperlinked texts are accessible by using the menu, which was on the right side of the website. The right-side links redirect to a PDF document. Almost all the links clicked redirect to the homepage or a PDF. There is a

limited amount of content on the website, and the majority of it is formatted with black text on a white background. The font size used for the website body was 8 points, which is relatively small. For reference, the text of this sentence and the majority of this document is in Times New Roman, with a 12-point font size. This style and size are the standard prescribed by the American Psychological Association (APA).

The dual menus— a header on the top of the website and an additional list on the right side— were confusing. This is an example of why SVRSPs should have their own domain and website.

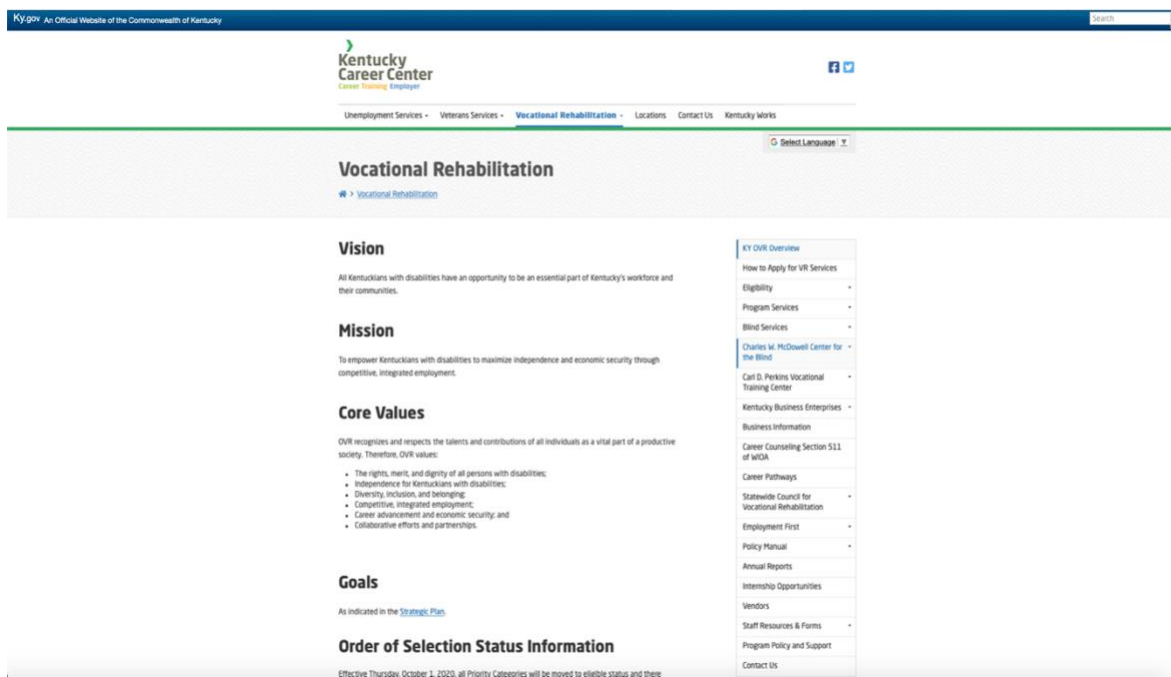


Figure 21. Screenshot of the Kentucky SVRSP Website Homepage. Screenshot taken on November 19, 2022. Accessed at <https://kcc.ky.gov/Pages/index.aspx>.

This is a screenshot of the Kentucky SVRSP homepage taken on November 19, 2022, at 1:40 p.m. The font, design, and layout of the homepage is legible and compact. Large textual summaries may be daunting or overwhelming to a user, especially if clicking a side menu link only scrolls the page down. When the page only scrolls instead of redirecting to a new subpage, users may feel like they “lost their place” on the page. Sometimes redirecting to a new tab creates simplicity as there is a clear ideological separation between the spaces. Users can opt to open the link in a new tab to go back and forth easily. Endless scrolling may keep users engaged on social media platforms, but scrolling can easily become overwhelming to first time users, and those who are unfamiliar with the program’s site design.

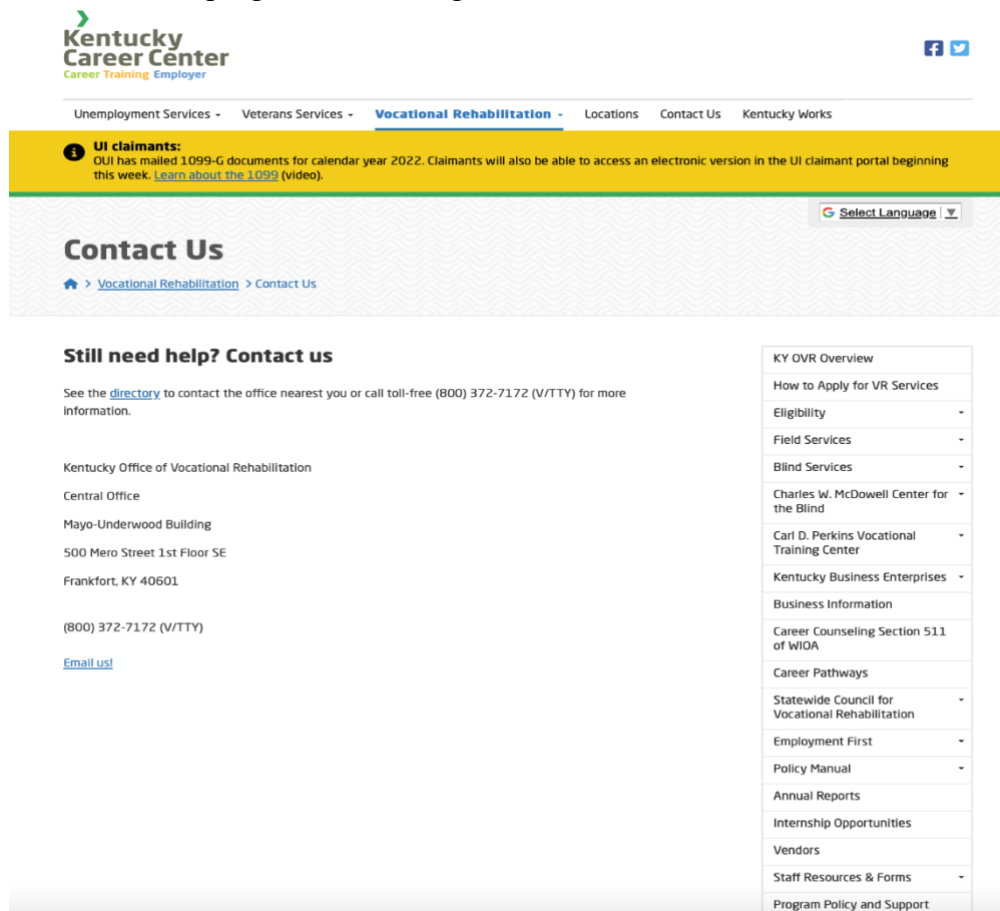


Figure 22. Contact Us Portion of the Kentucky Career Center or Kentucky’s SVRSP Website. Screenshot taken on February 10th, 2023. Accessed at <https://kcc.ky.gov/Vocational-Rehabilitation/Pages/Contact-Us.aspx>.

The picture above, pictured in Figure 22, results when the “How to Apply for VR Services” link is selected from the right-hand menu. Within the “contact us” portion of the site, a directory is hyperlinked. The hyperlinked “Telephone and Address Directory” posted on October 5th, 2022, is a 48-page document. The table of contents of this document stated that the “Deaf Services Branch” is on page 10. However, the “Deaf Service Branch” was not found on page 10, but on page 13, meaning that the table of contents lists the incorrect page.

Videophones, Sorensen communication, and email addresses were listed for most counselors in the “Telephone and Address Directory,” which demonstrated DHH communication accessibility. There are 14 staff members are listed: one is a branch manager, two are assistants, four are “RCD,” and seven are interpreters. The document does not immediately specify what RCD stands for. After Googling “RCD vocational rehabilitation” the definition was found in Chapter 7 of the California Code of Regulations. “‘Coordinating Rehabilitation Counselor for the Deaf or Coordinating RCD’ means the individual responsible for the provision of services to clients attending Gallaudet University, the National Technical Institute for the Deaf (NTID), and the California State University, Northridge (CSUN).” (California Code of Regulations, 2019, p. 7). “Coordinating Rehabilitation Counselor for the Deaf” is not likely to be a term that first-time program seekers are familiar with. All acronyms used on websites should be listed and explained the first time they are used.

Excessive use of acronyms and abbreviations in public documents can lead to confusion as some letters stand for similar things. For example, does VR stand for virtual

reality or vocational rehabilitation? Contextual cues matter, but context may be absent in information seeking and increase uncertainty if language is confusing or discursive.

The WAVE, or Website Accessibility Evaluation tool was used to analyze the Kentucky SVRSP website homepage. The tool found four website errors, a contrast error in two places, and 24 alerts. The error analysis found empty heading buttons in three different places of the website. An empty heading button contains no content to hyperlinked heading text. The other error uncovered an empty hyperlink on the website homepage.

The 24 alerts found fully justified text formatting present. This is problematic as “Large blocks of justified text can negatively impact readability due to varying word/letter spacing and 'rivers of white' that flow through the text” (Web AIM, 2022). Additionally, there were 12 redundant links present which meant that adjacent or nearby links redirect to the same spot when clicked. The six remaining alerts uncovered problems with content that was externalized and not easy for those with screen readers to use. Four of the alerts found external PDFs, one linked to a word processing document, and the last one linked to a YouTube video. As previously suggested, the text should be integrated into the website in plain language with PDFs and Microsoft Word® documents being a secondary, extra resource. Many people may not have the technical capabilities of opening these documents. Web AIM (2022) discourages the use of PDFs because “Unless authored with accessibility in mind, PDF documents often have accessibility issues. Additionally, PDF documents are typically viewed using a separate application or plug-in, and can thus cause confusion and navigation difficulties.” The YouTube alert is

null as the linked video had closed captions. The alerts are helpful as they remind users to double check different features to ensure that all members of the public can use them.

In sum, the Kentucky webpage has enough information for a DHH user to make contact with a counselor via email or phone, but the overall program is explicated through extensive use of text that uses college level or professional level writing, excessive scrolling, frequent redirecting, and a plethora of PDFs. The way to apply for services is to contact a counselor rather than filling out a form and waiting for the appropriate person to “contact you” back.

The possible services provided by the program are not immediately clear on the website as the information provided requires reading through long documents. There are no testimonials or direct explanations of how vocational rehabilitation may help a consumer on the site, resulting in a lot of textual generalizations. Discursive documents are a domain of power in a Foucauldian analysis. Power is construed through relationships between vocational rehabilitation employees, the provision of resources, documents, and resources available. The DHH clients are the subjects on the lower end of the power structure. They have little to no say in the prescribed guidelines, rules, and regulations that vocational rehabilitation counselors explain to them. Instead, prescribed rules and principles guide counselors' choices. “...the domain of power through which people are constituted as subjects who act upon others and whom others act upon in particular regulated ways” (Tremain, 2005, p. 15). The inclusion of structured documents highlights the regulation of the program, but these documents do not provide ease of the resources necessary to onboard the program.

From Assessments to Some Examples and Recommendations

Direct examples of needs and services should be provided through visual and textual examples to benefit prospective clients. For example, a recorded interview with an acting client that has a specific disability, and a counselor could be applicated to explain what services are available to them. Even if the video is of a client who is not DHH, ASL and closed captions should still be included. Other videos should be crafted to further inform about specific disability topics. Videos specifically crafted for DHH would assist clients in understanding available services.

A DHH video script example is the following—

Jane Doe could not find a job where communication was accessible, so she went to the SVRSP for support and a career change. Through vocational training, the program provided her with data entry and computer training. While completing her associate degree, she decided to try out hearing aids and take an American Sign Language Class. The program assisted her in purchasing appropriate work clothing and provided travel assistance until she had a stable income. Jane Doe now serves as an assistant to a law firm and is in the process of updating their databases! Through an individualized plan for employment, also referenced as an IPE, vocational rehabilitation assisted Jane with education training, the provision of hearing aids, and American Sign Language classes. With the interpreter provided at her workplace, she is now able to communicate at meetings and enjoys her job!

This story was created to formulate an example for this study. Professional actors, interpreters, or former clients could volunteer or be paid to create informative videos.

These videos could be funded by grants from the state or federal government. For example, the California Department of Rehabilitation has its own YouTube channel and provides generalized videos. One of them can be accessed at the following link—
<https://www.youtube.com/watch?v=L4f5m4fosWg>.

The Kentucky site presented deafness as a socio-pathological condition. There were no Deaf culture references present. The socio-pathological model depicts the DHH as disabled and disadvantaged. The program provides resources to assimilate the DHH into the workforce through assistive devices reactively rather than focusing on the culture or medical aspect of deafness. This model implicitly encourages the DHH to fit into society (Worrell, 2018). The cultural model is the most effective for assisting the DHH. Still, the socio-pathological model can be helpful in un-muting the Deaf only if they choose to assimilate into a hearing society rather than being forced to do so. The socio-pathological model focuses less on fixing the DHH. “A pathological model of deafness is similar both to a deficit model of bilingual education and to a medical model of disability” (Golos, 2010, p. 250).

It should be a goal, if it is not one already, for agencies to adapt materials to a cultural model of Deafness. “Sociodemographic data on deaf/sign language community members are not readily available, which is a challenge for developing initiatives that aim to be representative” (DeClerck, 2017, p. 4). However, difficulties arise for agencies that have lower budgets and large waitlists or serve consumers in rural areas and have a low number of DHH clients. DHH children born to hearing families and placed in mainstream classes without extra resources likely view the socio-pathological or medical model as standard. Semantic inferences and contextual placement of language sometimes is the

sole differentiator between the cultural and socio-pathological models. DHH born to Deaf parents are more likely to linguistically adopt cultural tenets of Deaf friendly semantics. Vocational programs can adapt the structural ideas of Deaf Culture into their recourse offering if funds are available. Websites that provide services and only use the socio-pathological model reinforce the idea of deafness as a disability, thus decreasing the perceived self-efficacy and success potential an individual might otherwise have if cultural Deafness is presented in its stead.

Many young DHH are isolated and do not know other young individuals with hearing difficulties. While SVRSP cannot share the names of other clients or health information as it is protected by the Health Insurance Portability and Accountability Act (HIPPA), youth meet-up spaces could be offered or linked on SVRSP websites, or even group information sessions, which allow for people of different disabilities and socializations to meet one another. Audiologists or other DHH service providers could create spaces for the DHH. A program for DHH to meet in an organized fashion and discuss struggles with cultural assimilation or the difficulties of interacting with only a hearing population could be created by SVRSP or built off or upon an established nationwide program. Robert Pollard, an advocate for the founding of the Deaf Communication-Psychology discipline (Pollard, 1996), has documented the phenomenon of Deaf cohesion that young students at the National Technical Institute for the Deaf experience upon first meeting other young DHH adults (Deering, 2019).

Using space on websites that result in face-to-face meetings is critical to consider in relationships with vast power dynamics. For example, there is a difference in relationship power between a counselor and a client, as the counselor has more power.

Foucault argued that the division and compartmentalization of space can be an instrument of disciplining power. Following Foucault, Berger shows that these disciplinary effects were produced by the messages that institutional organization conveyed to deaf students about what it meant for them to be deaf” (Tremain, 2005, p. 14).

In a way, vocational rehabilitation is an authority that tells DHH clients what they need in order to be successful in a hearing world. The DHH can choose what tools they want to use, but the tools available are prescribed by hearing policymakers and those who hold any authority in lawmaking. There are various steps and interrelated power structures in the SVRSP process. The DHH seeking assistive technologies should be able to communicate with policymakers to reiterate their needs if they are not being met with the current offerings. For example, many hard of hearing clients *need* hearing aids, not cochlear implants. “Deaf participants emphasized the desire and need for ATs [assistive technologies] that provide high communication quality in face-to-face conversations” (Gugenheimer et al., 2017, p. 673). When the deaf can express their needs to counselors and the public sphere, the policy in question can undergo revisions and amendments for communication needs. When modifications are successful, the DHH are “unmuted.” One voice without fiscal powers or notoriety within the sphere of public policy will likely create little change. The DHH can find strength in numbers and a collective communication channel.

There is a reoccurring theme of viewing deaf in a medical light, or as unwell. “There is persistence of thinking about deaf people as having a pathology, whether it is a condition of the ear or a disorder of communication, and there is also insistence on

viewing deaf people's bodies as unwell" (Humphries et al., 2017). The DHH are well; they are simply muted with perspectives that demean their abilities. A hearing person cannot tell a deaf person what they need; they can only make informed guesses based on the hearing person's abilities and socialization. The guess and check methods enacted by inadequate funding and research are cumbersome, inefficient, and inferior to structured methodology.

Often, lifetime hearing aid users are more knowledgeable about hearing aid program adjustment needs than the audiologists themselves are, as the DHH experience the hearing aids as an extension of themselves or an external organ. Foucault attempted to demonstrate the existence of "normalcy" in government policy or the tendency of policy to deviate towards the norm. The policy can be used to regulate outliers and encourage conformity so that governed bodies adhere to rules. The tendency to regulate is similar to the appeal of fear in ancient religions. Deviations toward what is normal occur within language too. One example of this is the history of propagating spoken English as a communication solution for the deaf rather than implementing ASL or closed captioning technology into public spaces. These rules and conformities may also restrict Rehabilitation Counselors for the Deaf and what services they are able to provide to the DHH.

SVRSP resources differ by grants and geographic location; websites reflect their own set of differences. In general, fewer resources are available for individuals who need something that is not considered ordinary, standard, or routine. Unique needs can be cumbersome or impossible to acquire.

Foucault regarded the tendency toward a form of political sovereignty that is a government ‘of all and of each’—a government whose concerns are to totalize and to individualize—as a characteristic and troubling property of the development of the practice of government in Western societies (Tremain, 2005, p. 19).

Vocational rehabilitation cannot be totalized in its prescriptions as it serves a diverse group of people, so a “one policy for all” regulation of resources should be avoided. Instead, the law should focus on making things accessible to ensure that everyone has a chance to be served, regardless of their geographic location. Individualized Education or Individualized Employment plans have the word “individualized” in them for a reason. If the government is made for the people, should it not be modified and calibrated by the people it intends to serve? Suppose an ineffective policy is considered the archetype solution to integrating the DHH into the hearing world, but it is cumbersome for all involved. In that case, the entire structure serves as a disabling apparatus under the cloak of helpful service or policy. Websites can be structured to assist the client onboarding process. Designing functional websites is far from challenging as millions of successful online retailers, information pages, and webpages reach their intended audience and elicit action. WordPress, Wix, and Squarespace are three resources for automated design and domain hosting. These sites have premade templates and allow users to import their URLs. However, State and Federal Government websites usually necessitate more complex designs with intranets.

Alaska

The state with the most features was Alaska, which had 57 features present. The state of Alaska has a population of 733,319 according to the 2020 U.S census, making it the 49th most populous state, and the largest geographic state. Due to the large land size and low population, the distribution of people in Alaska is sparse. It is located in the Northwest portion of the US, has an (R+8) leaning on the Cook Political Report, and is an Individualistic state according to Elazar's political culture classification. The SVRSP of Alaska can be accessed at <https://labor.alaska.gov/dvr/>.



Figure 23. Screenshot of the Alaska Division of Vocational Rehabilitation Homepage. Screenshot taken on November 19, 2022. Accessed at <https://labor.alaska.gov/dvr/>.

The home page for the Alaska SVRSP includes images, a video, and an application button. The video shown on the home page has closed captions. An email address, phone information, and an address were listed on the homepage. The natural order of visual interest was the flagrant, large red button that states “Start an Application.” Upon clicking it, the following page (Figure 24) appears with a five-step application process. The application button and its placement on the homepage was an efficient feature.

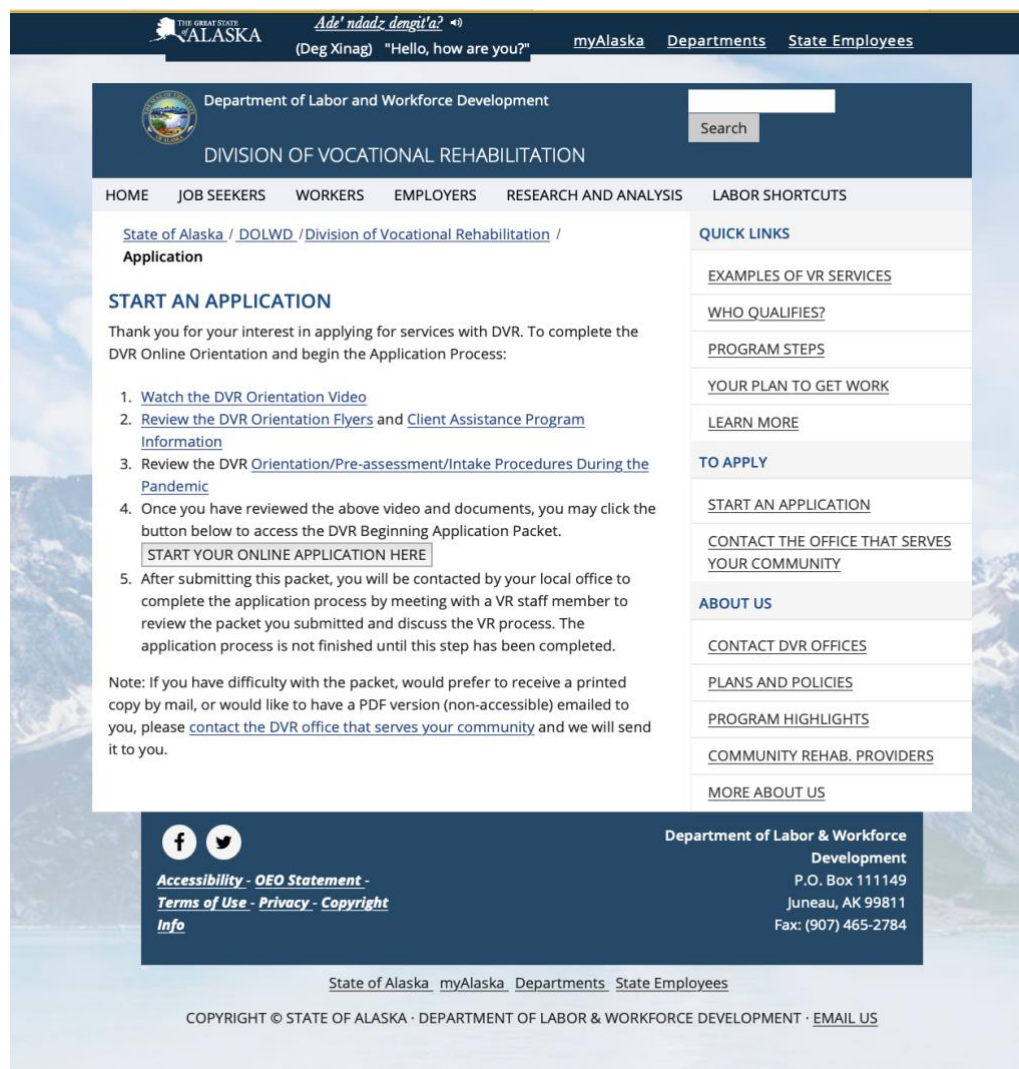


Figure 24. Screenshot of the Alaska Division of VR Website Application Section. Screenshot taken on November 19, 2022. Accessed at <https://labor.alaska.gov/dvr/start-an-application.html>.

The online application link redirects to an application hosted by Survey Monkey (surveymonkey.com), a website similar to Qualtrics or Google Forms. Surveys are the easiest way to streamline applications and electronically send them to the correct counselor for an assessment (Fleming, Del Valle, Kim, & Leahy, 2012). The data may be distributed internally through Excel files or a database. Online surveys for entrance applications also alleviate the need for cumbersome and confusing documents. In sum, a standardization of the survey application process seems beneficial for applicants and state departments. The state departments can efficiently run statistics on the collected applicant data and better streamline the process. However, surveys should be hosted by the website platform rather than outsourced to another private business to ensure the security of the client's data.

The "Program Steps" portion of the Alaska SVRSP had a Flesch-Kincaid readability score of 78.3, placing the text at an easily understood or 7th grade reading level. Although a bit more difficult to understand with a score of 21.1 (College Graduate level), the "More About Us" tab had a list of policies that protect the disabled and govern the program. No short summaries were provided, but all of the links on this portion of the site were not integrated but downloadable or redirected. As much of policy is complex, short summaries or paraphrases are suggested to benefit the average user, and those unfamiliar with policy language. Suppose vocational programs do not have the resources to spend time on summarizing laws and simplifying them? In that case, the federal government or a research grant could create a comprehensive list of abbreviated and summarized policies regarding vocational rehabilitation and other disability worker rights. If such a repository already exists, it should be linked to the SVRSP sites.

The orientation video on the Alaska website is helpful, but it should be integrated into the survey to prevent extensive back-and-forth online navigation. Additionally, documents requiring signatures or submission should not require users to download a document and mail it via email or postal mail. This analysis recommends that all documents for the onboarding process be digitized and integrated into the website or a survey. It should be acknowledged that the Alaska website had a pamphlet that could be printed and distributed or printed by ear, nose, and throat doctors or audiologists to spread information about the SVRSP website. The study also advocates for the push towards digital documents, onboarding, and communication.¹⁵

The government, through the ADA, legitimizes its control of disability through policy language, resulting in the consolidation of economic power (Skyer, 2019). Formerly, muted group theory applied when a subculture of a population used a language outside of the dominant language and engaged in cultural practices outside that of the norm. Vocational rehabilitation unmutes the DHH population not only by using an accessible language but also through the provision of education, interpreters, closed captioning, and other resources tailored to each individual's work and educational need. Unmuted group theory is applicable to vocational rehabilitation when no resources are excluded online or by a U.S. state's policy. Standardizing vocational rehabilitation websites would make them accessible to a wider population and inform the DHH and hearing communities; therefore, it would give them a chance to be unmuted. The DHH are also muted by policy language when they are not a participant in shaping it and

¹⁵ It is acknowledged that many individuals do not have access to digital technologies and the internet. However, these resources should be made available in vocational offices, libraries, or as a possible consumer service.

advocating for what they need since dominant groups use language to name experiences and determine what is socially acceptable or legitimate (Barkman, 2018). The DHH should be able to employ their experiences in the modification of websites and accessibility resources.

Through this qualitative research guided by the Foucauldian lens, the study focuses on the formulation of unmuted group theory. Unmuted group theory is applied when a formerly muted population becomes communicative through resources and language adaptations. *Unmuting* is an ongoing process that only results when accessible language and resources are interwoven into everyday society. Unmuting can happen in two ways. First, the muted original population can integrate into society with accessible language and resources. Second, the mainstream populations actively learn how to integrate, communicate, and involve themselves through resource provision with the lesser populated group. Future research can expand upon unmuted group theory to finetune its heuristic ability and generalizability. This study argues that vocational rehabilitation services, when they are accessible and not limited by the prescriptions of hearing policymakers, serve to unmute the DHH population. Muted group theory explains how individuals are muted. Nevertheless, individuals are "unmuted" through resources and society's resources and linguistic adaptations. The formerly muted group is no longer required to reshape themselves to fit the prescribed definition that an uninformed society dictates. With Alaska, the abundance of present features has served to unmute the DHH.

WAVE Report

The WAVE report was used to assess the Alaska SVRSP website. No errors or contrast errors were found on the homepage, but six alerts were present. The notifications indicate the presence of PDF files on the website, but the PDF content has not been incorporated into the text of the site. The lack of PDF content integration was a common occurrence on vocational rehabilitation websites. As previously stated, PDF files are a practical resource only if that material is also integrated into the website. If the text is on the site and a PDF, users can read the textual content, download it as a PDF to reference later, or use a different read-aloud or screen-reader program. Adobe Acrobat is the standard resource for editing PDF documents. Adobe Acrobat Standard is \$155.88 a year and Adobe Acrobat Pro is \$239.88 a year (Adobe, 2023). The two remaining alerts found on the WAVE report noted the use of videos on the website. These alerts are redundant as the videos had closed captioning and ASL. The WAVE report concluded with the presence of five positive accessibility features.

Overall, the website that Alaska provides is quite accessible but can still be improved through the integration of PDFs and the reformatting of the survey to include the orientation video, and internally hosting the survey. The qualitative findings were consistent with the WAVE report.

Uncertainty Reduction

The less information an online medium has, the greater the uncertainty users will experience (van Stralen, 2015). Other studies have examined uncertainty reduction theory by measuring uncertainty, finding that websites with less information available resulted in participants experiencing higher levels of uncertainty (Artandi, 1973). Uncertainty

motivates information-seeking (Driskill & Goldstein, 1986). This study suggests that the DHH population live in a state of uncertainty when there are no accessibility resources available to integrate themselves into a hearing world, and the hearing world has not provided these resources. However, the information provided by vocational rehabilitation serves to reduce this uncertainty. States with more features present and a streamlined application process reduce uncertainty as information is readily available. The more alternatives a user interacts with to obtain information on a program, the uncertain the user will be (Berger & Calabrese, 1974). Therefore, the study found that websites such as Alaska will reduce uncertainty as they increase accessibility, share information, and alleviate concerns. Aligning with the tenets of the uncertainty reduction theory, vocational websites should increase the amount and organization of information available on the sites. Although the study did not measure DHH participants' feelings of uncertainty, the CUITA codebook for websites has proven to be a consistent and reliable measure of uncertainty. The CUITA codebook demonstrated that the presence of features reduces uncertainty while the absence of features increases it. Future research can model SVRSP websites with design mockups and test them on DHH populations with pre-test and post-test measures of uncertainty and self-efficacy to build the best practice site for the DHH and all potential clients.

Self-perceptions of one's inability to work or apply to a program may increase if processes are not streamlined (Stewart et al., 2012). Dark patterns in websites, encouraging users to follow through on certain actions such as purchasing a high-cost item over a low-cost one has been studied. However, much research dedicated to online behaviors is within the sphere of business marketing rather than federal or state disability

programs. Discursive program design with scattered information can be compared to a dark pattern. Sites that weave through different ideas rather than directly explicating the steps use a dark pattern to block or discourage applicants from applying. Many policies and what is offered are discursive and confusing to the average individual; one example of discursive explanations would be healthcare choice pamphlets. This plays into the perception of one's self-efficacy. Studies have found that less numerate individuals were more susceptible to linguistic effects and chose concepts that were presented positively (Peters et al., 2006). Affirmative language use creates positive effects and ideas in the consumer's mind, resulting in the DHH being more apt to engage in a website that communicates encouraging outcomes.

Florida

The state of Florida has a population of 21,538,187 according to the 2020 U.S Census, making it the 3rd most populous state. It is located in the Southeastern portion of the US, has a (R+3) leaning on the Cook Political Report, and is a traditionalistic state according to Elazar's political culture classification. The SVRSP of Florida can be accessed at <http://www.rehabworks.org/>.

The "Steps for Using Vocational Rehabilitation" page had a Flecsh-Kincaid readability score of 59.3, which is a 10th to 12th grade reading level. Although a bit high, the site had a consistently lower reading level than the other states assessed. The "Frequently Asked Questions" page was a 41.4 (College level), and other portions of the site varied within this range. A number of external links to outsourcing websites were scattered throughout the site, which did not create a clear indication of whether these

sources were a part of the SVRSP itself or a useful, supplemental program. An additional yet separate page for all the links that outsource clients to variable resources would serve as a clarifying resource.

Although Florida has the second highest number of features present, the website was disorganized and filled with PDFs, downloadable documents, and even Microsoft Word® documents. The meandering layout demonstrates that future CUITA models should include website design analyses. While the necessary information is present, the lack of organization complicates information finding, as the website needs to be optimized for casual scrolling. The design fulfills tenets of administrative fulfillment and purpose rather than an information source for the general public. Each website section is hyperlinked to official documents containing formal, policy-structured information. This formatting is likely helpful for regulatory reviews and individuals who work in the policy department of the Florida vocational rehabilitation departments. This structure should be more convenient for the average user unfamiliar with the services available. The image below, Figure 24, is the list of documents found on the homepage.




[Home](#) | [About Us -](#) | [Careers with VR -](#) | [FL Rehab Council -](#) | [Accessibility -](#) | [Contact Us](#)



Vocational Rehabilitation

What We Do

- Job Programs
- Job Services
- Success Stories

Who We Are

- Division Directory
- Florida Rehab Council
- History
- Employment Services Providers
- Vendors

Where to Find Us

- Area Map
- Programs
- Ombudsman

Publications and Forms

Disability Laws

Disability Policies and Procedures

Disability Policies and Procedures

Disability policies and procedures provide VR customers, stakeholders and staff with guidance on programs and services. They are:

Vocational Rehabilitation Counselor

- Counselor Policy Manual (PDF)
- Chapter 1 - General Information (PDF)
- Chapter 1 - General Information Large Print (Word)
- Chapter 2 - Confidentiality and Release of Consumer Information/Records (PDF)
- Chapter 2 - Confidentiality and Release of Consumer Information/Records Large Print (Word)
- Chapter 3 - Notice of Decisions and Appeal Procedures (PDF)
- Chapter 3 - Notice of Decisions and Appeal Procedures Large Print (Word)
- Chapter 4 - Referrals, Applications, Diagnosis, and Assessment (PDF)
- Chapter 4 - Referrals, Applications, Diagnosis, and Assessment Large Print (Word)
- Chapter 5 - Transition Youth Services (PDF)
- Chapter 5 - Transition Youth Services Large Print (Word)
- Chapter 6 - Eligibility (PDF)
- Chapter 6 - Eligibility Large Print (Word)
- Chapter 7 - Significant and Most Significant Disabilities (PDF)
- Chapter 7 - Significant and Most Significant Disabilities Large Print (Word)
- Chapter 8 - Individualized Plan for Employment (IPE) (PDF)
- Chapter 8 - Individualized Plan for Employment (IPE) Large Print (Word)
- Chapter 9 - Authorization for Services, Financial Need, Comparable Services and Benefits, Third Party Payers (PDF)
- Chapter 9 - Authorization for Services, Financial Need, Comparable Services and Benefits, Third Party Payers Large Print (Word)
- Chapter 10 - DOE Purchasing and Bidding Requirements (PDF)

Figure 25. Screenshot of the Florida SVRSP Policy Section. Screenshot taken on November 19, 2022. Accessed at <https://www.rehabworks.org//about/policies.html>.

As the user continues scrolling on the homepage pictured above, the following documents are available for potential DHH clients.

Deaf and Hard of Hearing

Guide on Serving Individuals Who are Deaf, Late-Deafened, Hard of Hearing or DeafBlind (PDF)

Guide on Serving Individuals Who are Deaf, Late-Deafened, Hard of Hearing or DeafBlind Large Print (Word)

Guide on Services to Individuals Who are DeafBlind (PDF)

Guide on Services to Individuals Who are DeafBlind Large Print (Word)

Guide on Hearing Loss, the Purchase of Hearing Aids and Cochlear Implants (PDF)

Guide on Hearing Loss, the Purchase of Hearing Aids and Cochlear Implants Large Print (Word)

Guide for Provision of Interpreting Services for Individuals with Hearing Loss Part A (PDF)

Guide for Provision of Interpreting Services for Individuals with Hearing Loss Part B Purchasing Vendor Services (PDF)

Figure 26. Screenshot of the Florida SVRSP DHH Policy Section. Screenshot taken on November 19, 2022. Accessed at <https://www.rehabworks.org/about/policies.html>.

Each of these documents is around 13 pages in length, with academic references cited at the bottom. They have stylistic, or linguistic elements similar to informative research papers that are given to regulatory programs or department employees. The documents are helpful for research but have questionable use for first-time readers and vocational consumers. However, there is an orientation video, which is much more accessible to average users. The website does list accessible accommodations to assist the DHH in the workplace.

Applying For Services

The state of Florida had a different way of applying for vocational services. The orientation is how applicants apply for the program, which is found under the “orientation” section of the website. There were three video options that a user could select to view. The videos are as follows:

- 11 minutes and 30 seconds for the English version
- 13 minutes and 45 seconds for the Spanish version
- 17 minutes and 33 seconds in the ASL format.

The ASL video does not have closed captions or use lip-syncing. Using all communication accessibility features in ASL videos would be beneficial. For example,

many people would benefit from using Sim-Com (simultaneous communication), which uses lip-syncing in conjunction with sign language, verbalizing these words, and closed captions.¹⁶ Using each communication method, textual, visual, and verbal, provides multiple ways for viewers to process the information.

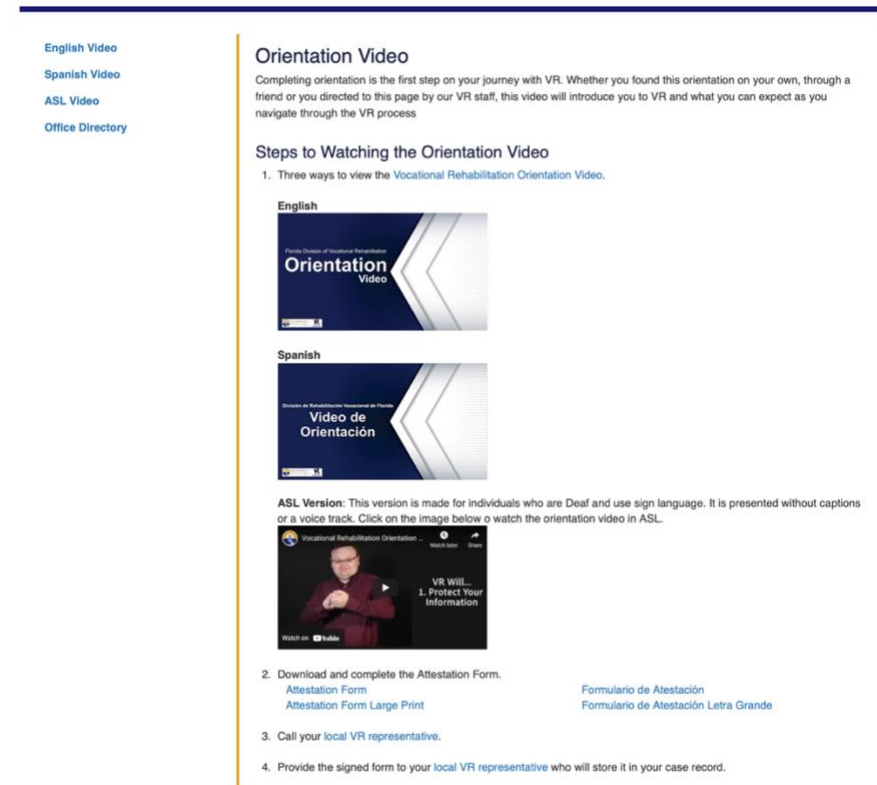


Figure 27. Orientation Videos on the Florida Department of Education – SVRSP. Taken on November 10th, 2022. Accessed at <https://www.rehabworks.org//about/orientation-video.html>.

Each video opens in the same tab, not a separate tab. Videos that open in the same tab necessitate user familiarity with the “back button” of a browser or use of the right click of a mouse to open the video in a new tab. For example, if the YouTube video is

¹⁶ Some culturally Deaf individuals may agree with the statements within this sentence. Some culturally Deaf individuals prefer communicating with only American Sign Language, without the inclusion of closed captions or lip-syncing/speechreading.

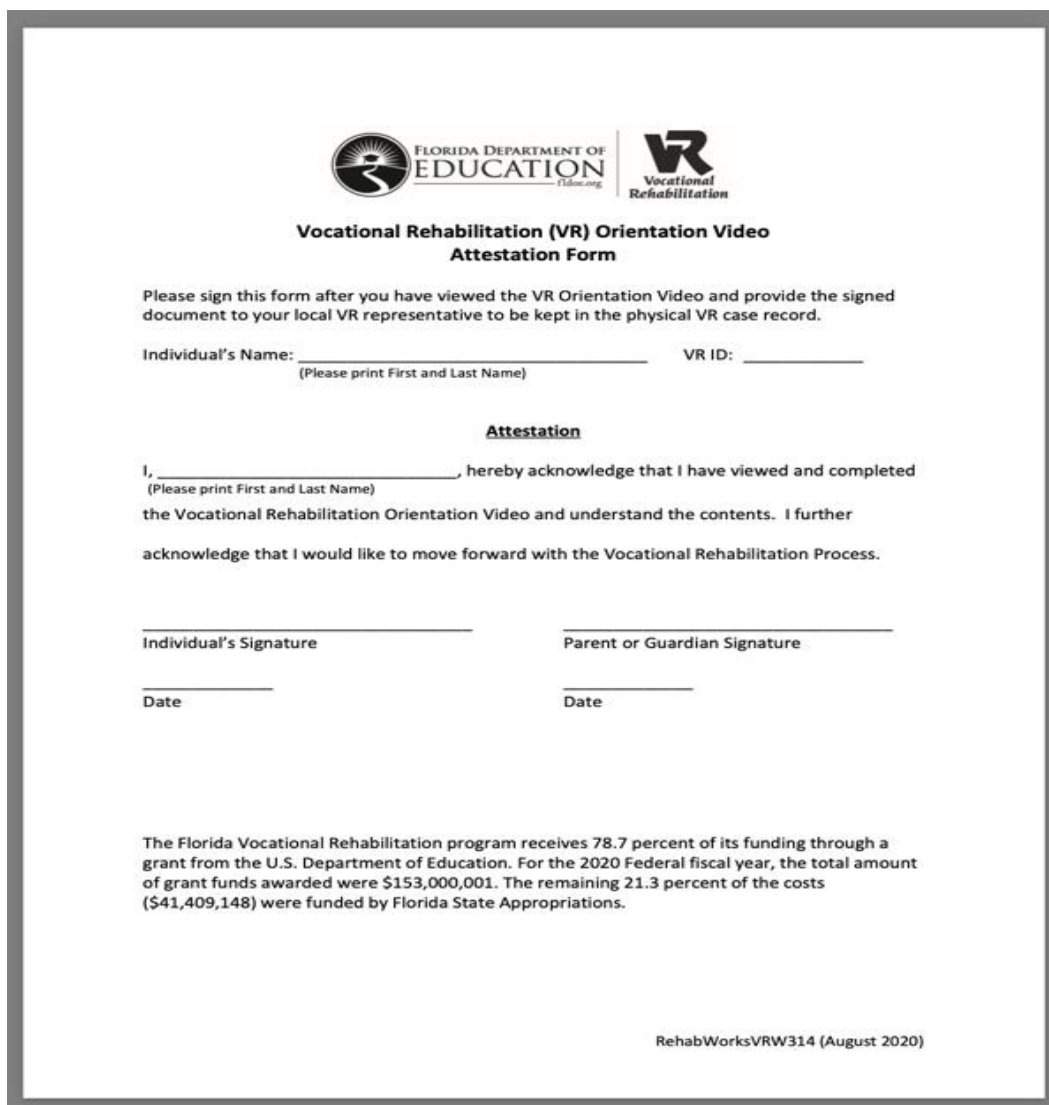
clicked and opened in the same tab, the user must navigate out of YouTube after the video ends and press the back button to return to the SVRSP website to find the place they were last. This study recommends that outsourced videos, such as YouTube videos, open in new tabs so that users do not lose their place on the website. The video mentions confidentiality, communication, and transparency as responsibilities of vocational rehabilitation counselors and provides a brief overview of the program. The video concludes by informing the viewer that the next step is a phone call or video chat.

After viewing the program video, an attestation forum is the next step. An image of the attestation form is pictured in Figure 28. This requires specific software such as Adobe Reader to sign the document digitally, a printer with scanning ability, or transportation to a library or public place that provides one or both of these services. The document should then be emailed or mailed via post to the department. Instead of cumbersome externalizing of this required document, a digital signature should be integrated on the website.

Phone contact is the next step. Many of the counselors listed on the website have phone numbers, but these phone numbers do not include videophone or TTY services. Addresses for each counselor are also listed. Only the area director's email address is listed at the bottom of each respective service area. The directions suggest contacting a counselor within your area, but they do not specify which one to contact via phone, videophone, or video chat as mentioned in the video, which is confusing. Why are email addresses and designated counselors not assigned to a specific area or client population? If they are, where is this information? Consumers take a "shot into the dark" when selecting who to designate their email to. The implementation of a streamlined digital

submission area would alleviate document barriers and contact confusion and streamline clients to designated counselors that specialize in the disability or resources that the client seeks. The presence of mostly accessible information is helpful, but the onboarding process should be simplified.

A survey for potential clients that integrates the existing accessible video and the document listed below would streamline the application process and alleviate any cumbersome barriers. Clients would be directed to the appropriate counselor, and there would be no need to fill out a survey, which many clients might need help doing. Similarly, some documents are downloaded in a Microsoft Office format. The cheapest version of Microsoft Office is Microsoft 365 Personal for \$69.99 (Microsoft, 2023). All initial onboarding documents that require filling out should be completed on the website and not require any downloading, printing, faxing, or emailing. Future website design could create locked portals. These portals, or user accounts, would provide a space for clients to log in and fill out additional surveys, take career quizzes, ask discussions, and interactively engage with the program. Intranets are also suggested. Below is a screenshot (Figure 28) of the document that is listed under the attestation forum link under the orientation video.




**FLORIDA DEPARTMENT OF
EDUCATION**
fldoe.org
 

**Vocational Rehabilitation (VR) Orientation Video
Attestation Form**

Please sign this form after you have viewed the VR Orientation Video and provide the signed document to your local VR representative to be kept in the physical VR case record.

Individual's Name: _____ VR ID: _____
(Please print First and Last Name)

Attestation

I, _____, hereby acknowledge that I have viewed and completed
(Please print First and Last Name)
 the Vocational Rehabilitation Orientation Video and understand the contents. I further
 acknowledge that I would like to move forward with the Vocational Rehabilitation Process.

 Individual's Signature Parent or Guardian Signature

 Date Date

The Florida Vocational Rehabilitation program receives 78.7 percent of its funding through a grant from the U.S. Department of Education. For the 2020 Federal fiscal year, the total amount of grant funds awarded were \$153,000,001. The remaining 21.3 percent of the costs (\$41,409,148) were funded by Florida State Appropriations.

RehabWorksVRW314 (August 2020)

Figure 28. Attestation Form from the Florida SVRSP Website. Taken on November 11th, 2022. Accessed at https://www.rehabworks.org/_resources/docs/orientation/orientation-video-attestation-form.pdf.

Future adaption to the CUITA codebook should add the “streamlining of services,” “the presence of client and staff portals,” and “presence of surveys” as features to code for under the “Content” portion of the CUITA codebook. Streamlining of services can be defined as the design of dialogic processes that create minimal work for the users of a website and decrease the use of stray or excessive forms. In the case of social program websites, a streamlined process would be a survey link that requires users to

submit basic information after watching the orientation video. The orientation videos could be embedded in the survey link, allowing users to choose which video best suits their communication needs. The survey could also track the numeric data for which videos are watched the most so that clients' communication preferences could be measured for the internal departments' research or analytic sector.¹⁷ Programs such as Qualtrics automatically collect this data and convert it to a Microsoft Excel spreadsheet with the click of a button. That spreadsheet could be imported to SPSS or R to run statistical data and analyze patterns, or calculated in Microsoft Excel. The resulting data can be used to improve the program. Basic information would not be limited to a home address, mailing address, e-mail address, phone or video phone number, cell phone number for texting phone calls (or other accessibility phones), and a list of services they are interested in.

A comprehensive survey is drafted in the discussion section of this study. Other pertinent and necessitated intake information, informative data points, and videos can be added to the onboarding survey. The “presence of surveys” in future CUITA codebooks is defined as the use of a survey on a platform akin to Qualtrics hosted by the state website to collect client information, organize it, and analyze trends to create improvements. The use of surveys would fulfill Title 44 – 3401’s third regulation to “(3) coordinate, integrate, and to the extent practicable and appropriate, make uniform Federal information resources management policies and practices as a means to improve the productivity, efficiency, and effectiveness of Government programs, including the

¹⁷ These suggestions are made in the case that they do not currently exist, and to recommend these practices for all SVRSP websites. Departments were not interviewed and asked about the nature of their intranets or how data is collected. Again, all information and data used for this study was publicly available.

reduction of information collection burdens on the public and the improvement of service delivery to the public.”

Due to the integration of ASL, the large number of tools present on the site, and the push towards accessibility for all disability types, it was concluded that the Florida state site uses the Cultural model of Deafness. This aligns with the principle that “The DHH are limited only if a society does not provide adequate accommodations through social programs and appropriate assistive devices and technology.” (Deering, Model Theme Categories). The use of YouTube technology proactively constructed equal accessibility. Many elements of the website portrayed the DHH as member of a culture and provided services for that cultural group. The positive use of language constructs linguistic, semantic, structural, and cultural elements that interweave the notion of vocational programs serving as a DHH support system.

The WAVE Tool

The WAVE, or Website Accessibility Evaluation tool, was then used to assess the Florida SVRSP website homepage. One error was found: a missing forum label in the search box. Live videos using accessibility voice readers cannot access the description of a search box if the search box is not externally labeled. The box is labeled inside of where individuals type, but text readers may not pick up on this. An image to demonstrate the finding is below in Figure 29.

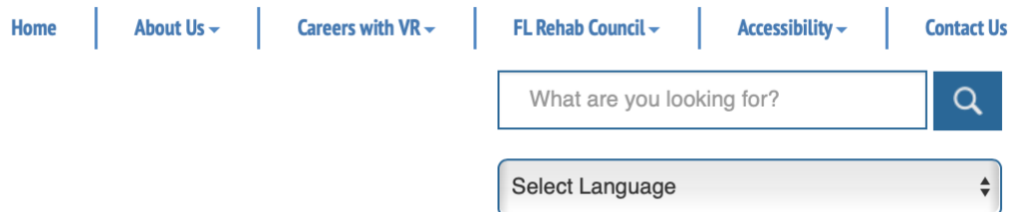


Figure 29. Screenshot of the Florida SVRSP Website Header and Search Box. Screenshot taken on November 19, 2022. Accessed at <https://www.rehabworks.org/about/policies.html>.

The contrast error highlighted the light blue text with a white background, as some readers may have difficulty reading this. Four errors were present, and one was an orphaned form label, meaning that there was a label present, but it was not correctly associated with a form control. Two warnings were associated with an image with long alternative text, which ended up being a redundant label as the image was described in textual formatting for those with low vision. The last error had a redundant link, which was hyperlinked as “home.” When clicking this button, it simply refreshed the page.

Overall, the website provided usable, updated information. Still, it could be improved by integrating the information present into the actual website, streamlining the intake process through electronic surveys, integrating images into the website, and adding email addresses as contact information. Additionally, counselors should be assigned clients based on their specialty. Counselors should create the first contact, rather than clients taking a “shot in the dark” and attempting to contact the correct counselor. Data from an internally hosted survey could automatically assign clients via an intranet to appropriate counselors and alleviate the time burden of hunting for the appropriate contact person.

Notable Mentions

All state and U.S. territory websites not in the best and worst practice analysis were analyzed for approximately an hour each to uncover other notable SVRSP website features. The notable websites are mentioned for a variety of reasons. Some of them were towards the top regarding the number of features present, others were towards the bottom, and some had eye-catching designs. Useful, notable features are mentioned to encourage their implementation and application into other SVRSP websites. These features are suggested for amending website requirements in public policy. This research argues that vocational rehabilitation should have its own website link, independent of other state services, to streamline navigation and avoid the confusion or possible mental intermixing of services and programs.

The research found that websites should have a straightforward dropdown menu at the top of the page that clearly lists the available programs and "about us" information. Using a main header and a secondary sidebar navigation header was rendered confusing, especially if the SVRSP did not have its own website. Using two headers and integrating the vocational program into a greater labor program website created navigation problems and confusion.

Website Layout, Contact Information, and More

The state of California had 35 CUITA features present. The California Department of Rehabilitation has a self-explanatory dropdown menu that organizes information into main sections. These sections are "About Us," "I Am Interested In," "Programs," and "Search." A visual example of this is pictured below in Figure 30. When the cursor hovers over one of the menu options, more subsections are displayed to

redirect the user to the appropriate subsection area. However, printed or downloadable documents were still prominent on the site. The deaf and hard of hearing services page stated that a form must be filled out and physically returned to the nearest office. A survey should be used in lieu of downloadable documents. The WAVE program found no errors, no contrast errors, and 31 accessibility features on the homepage. However, the California Department of Rehabilitation had a multitude of useful resources.

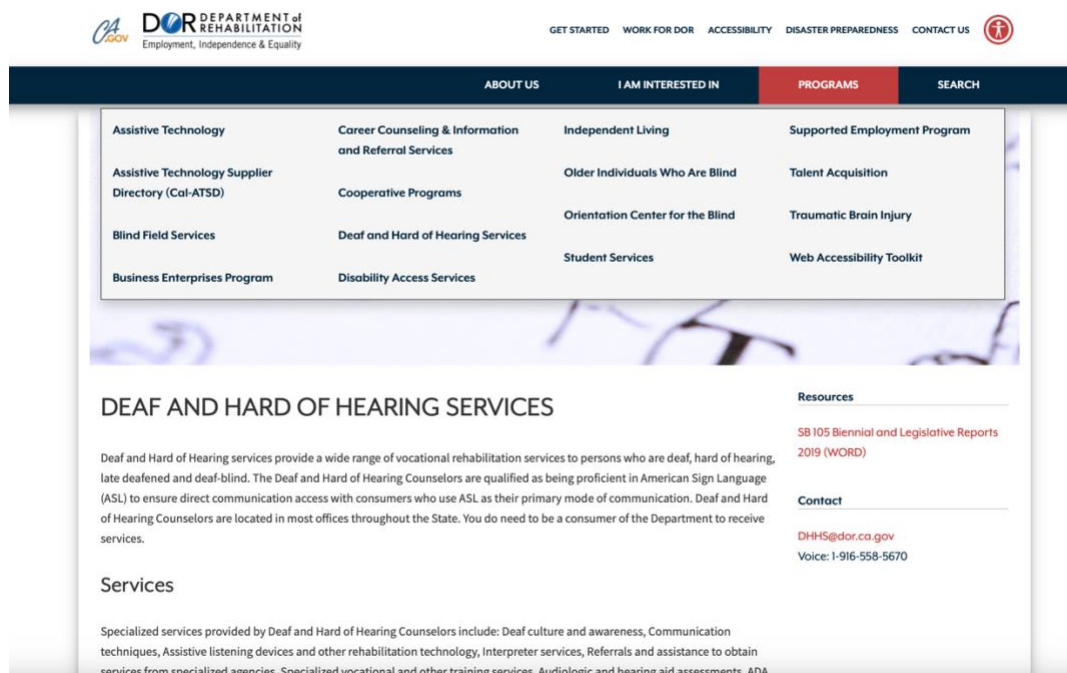


Figure 30. California Department of Rehabilitation, Deaf and Hard of Hearing Services Website Section. Screenshot taken on November 15th, 2022. Accessed at <https://www.dor.ca.gov/Home/DeafandHardofHearingServices>.

The state of New Jersey, with 37 features present, had a wonderfully organized site, with arguably better visuals than the state of California. On the flip side, a downside was that the New Jersey website integrated vocational rehabilitation services under the umbrella of the Department of Labor and Workforce Development. While integration is mostly discouraged, the vocational section had a large heading menu to make program easy to find. A notable problem that the WAVE program found on the New Jersey

website was the lack of text for some of the hyperlinked images. All images should be described for screen readers.

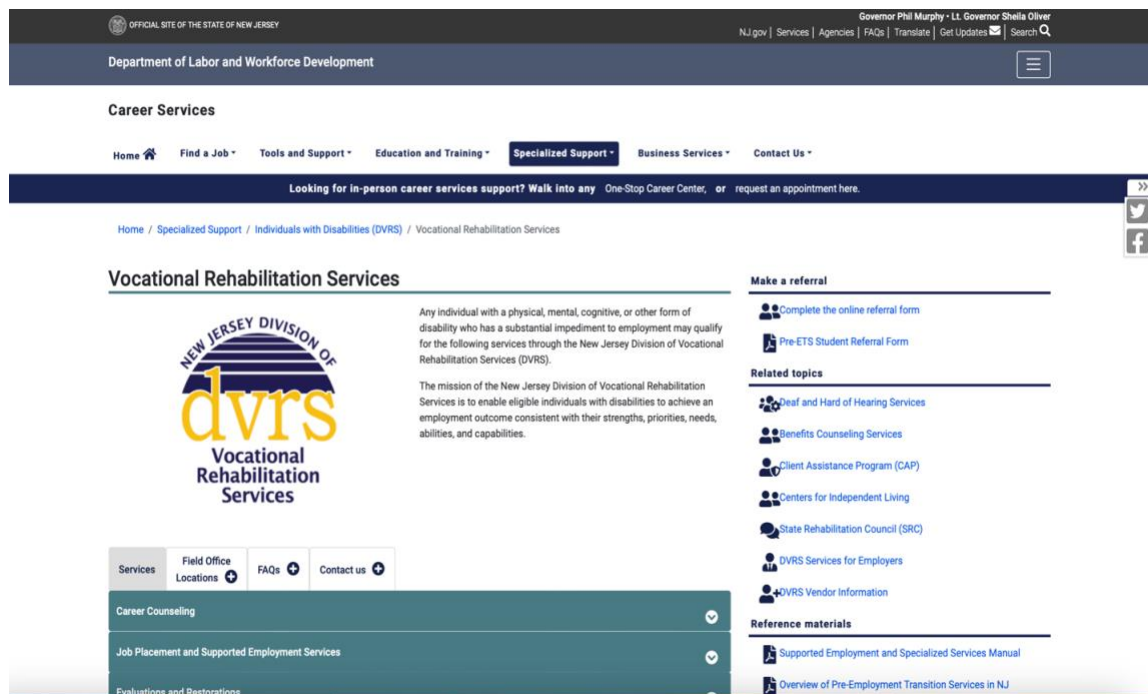


Figure 31. New Jersey Vocational Rehabilitation Services Homepage. Screenshot taken on November 15th, 2022. Accessed at <https://www.nj.gov/labor/career-services/special-services/individuals-with-disabilities/>.

All websites should provide counselor contact information, as most sites state that the SVRSP process begins with contacting a counselor within reasonable proximity to the client. If the onboarding process for the program is changed to a survey, counselor contact information should still be present. In addition, the specialties of the counselors should be listed, along with a phone, email, and accessible phones such as a TTY and/or a video phone. The contact information should be an extra resource for clients rather than the primary modality of initial contact.

Optimization, Videos, and Surveys

All videos provided should have closed captions in English at the minimum and offer separate, alternative videos that use languages such as ASL. Ideally, all SVRSP websites should have the presence of each feature listed within the updated CUITA codebook. Other essential practices that sites should implement are reducing block texts and integrating images and content into the actual website rather than only providing a downloadable option with PDFs.

Mobile optimization and introductory videos promote usability and grant access to a larger audience. Downloadable information pamphlets for distribution would be helpful only if the contact information, a survey link, or a QR code to an intake survey are provided. The first step should not be to “call a counselor,” but rather take a survey that measures communication preferences and other items within this study's discussion portion. Websites could designate different sections of websites for employers and clients. Further customization would implement the use of portals. An onboarding survey would fulfill Title 44-3501’s purpose to “(1) minimize the paperwork burden for individuals, small businesses, educational and nonprofit institutions, Federal contractors, State, local and tribal governments, and other persons resulting from the collection of information by or for the Federal Government.”

Below is a screenshot of the Maryland homepage (Figure 33). The design is bright and visually distracting. This highlights the importance of primacy in visual communication and the application of directive clear labels. For reference, the Maryland webpage had 32 features present. The content is usable and present, but the website is visually distracting and unprofessional. Title 44-3501 mandates that government

website(s) “(7) provides users of the new or redesigned website, web-based form, web-based application, or digital service with the option for a more customized digital experience that allows users to complete digital transactions in an efficient and accurate manner.” Maryland’s Division of Rehabilitation Services website does not seem to fulfill this federal stipulation. When accessed on a smartphone, the Maryland mobile website was not optimized.

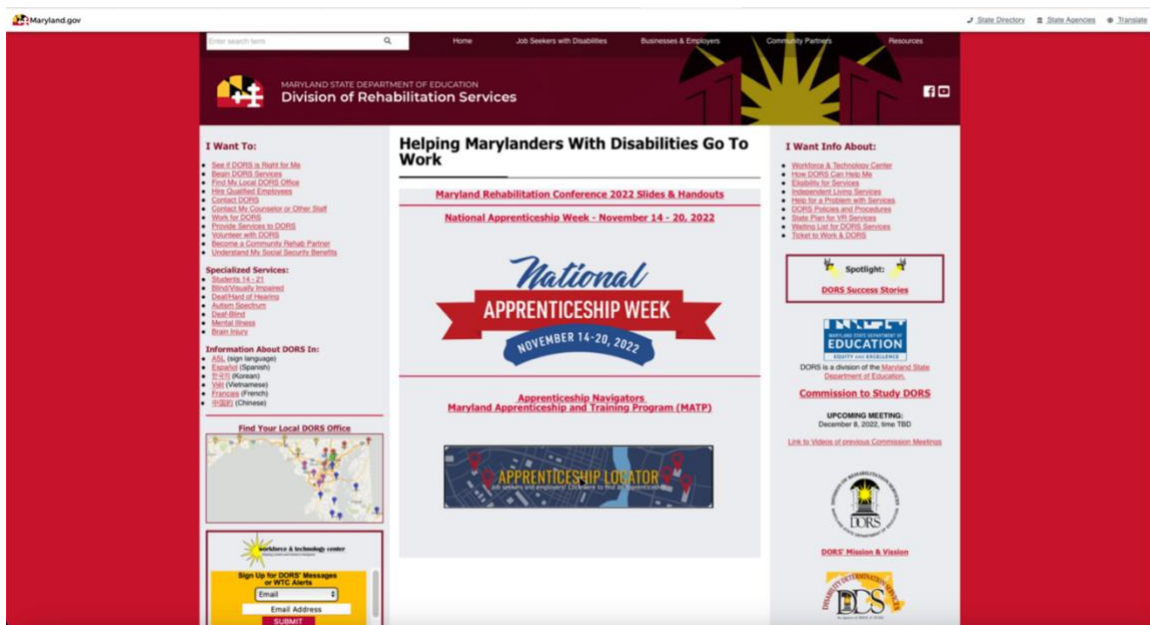


Figure 32. State of Maryland State Department of Education: Division of Rehabilitation Services Website Homepage. Screenshot taken on November 15th, 2022. Accessed at <https://dors.maryland.gov/Pages/default.aspx>.

This study argues that future adaptations of the CUITA codebook should include the primacy of features, clear hyperlinked labels, and the appropriate use of graphics. The Maine Department of Labor website that integrates the SVRSP with 29 features present also needed a clearer organization. As the vocational service program was integrated into the greater Department of Labor, navigation was confusing. There were two main menus.

However, the website includes resources for the blind, and the default text size is 10-point font. The hyperlinked labels are unclear and it uses abbreviated terms such as “word” which likely references a Microsoft Word® document. Other outdated items persisted across the site, such as the spelling of the word online as “on-line.” However, the site does have a streamlined online application survey. Additionally, Maine calls blind individuals “visually impaired.” Terms such as “blind” should be used instead of “visually impaired,” as previously discussed. States should follow the New York State Legislature’s striking of the word “impairment” from legal documents. Below, in Figure 33 is a screenshot of the Maine SVRSP homepage.

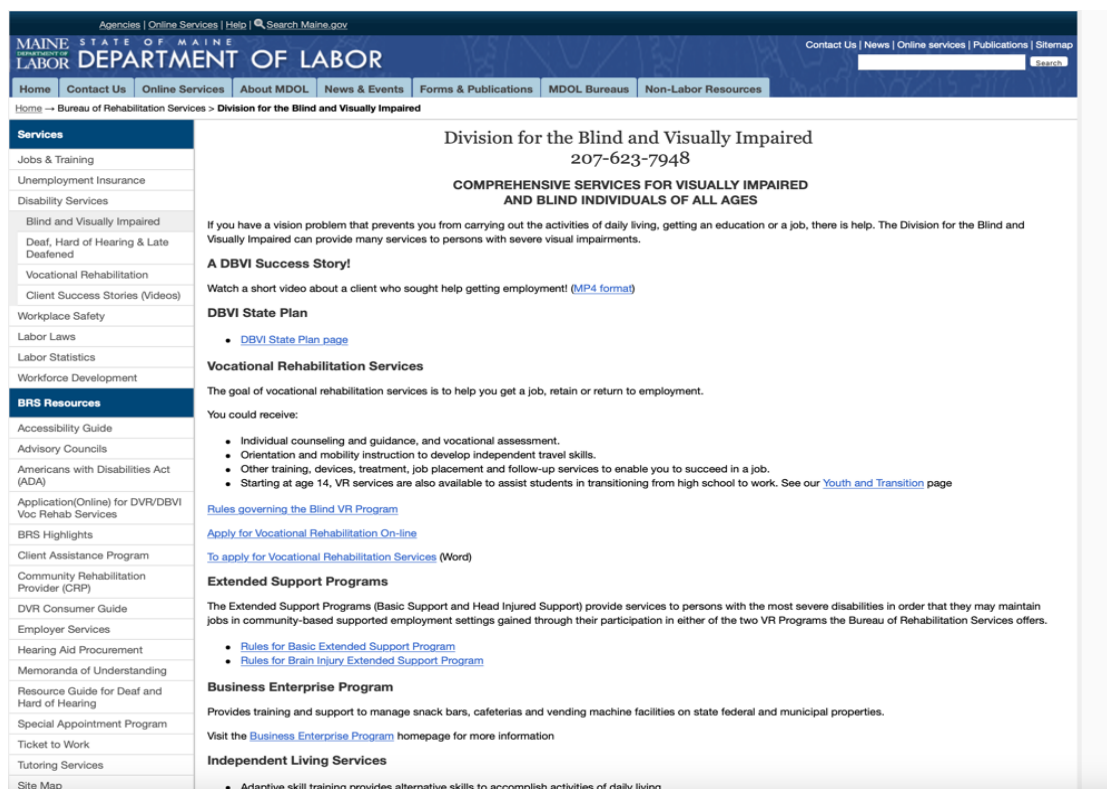


Figure 33. State of Maine Department of Labor: Division for the Blind and Visually “Impaired” Website. Screenshot taken on November 15th, 2022. Accessed at <https://www.maine.gov/rehab/dbvi/>.

The New Mexico website had a useful font resizer in the bottom left hand corner of the website. This is pictured below. A font resizer assists people who simply need to

enlarge the website screen quickly if they do not know how to use controls such as “command +” to increase font or “command – “ to decrease the size of the font. This is pictured below in Figure 34.

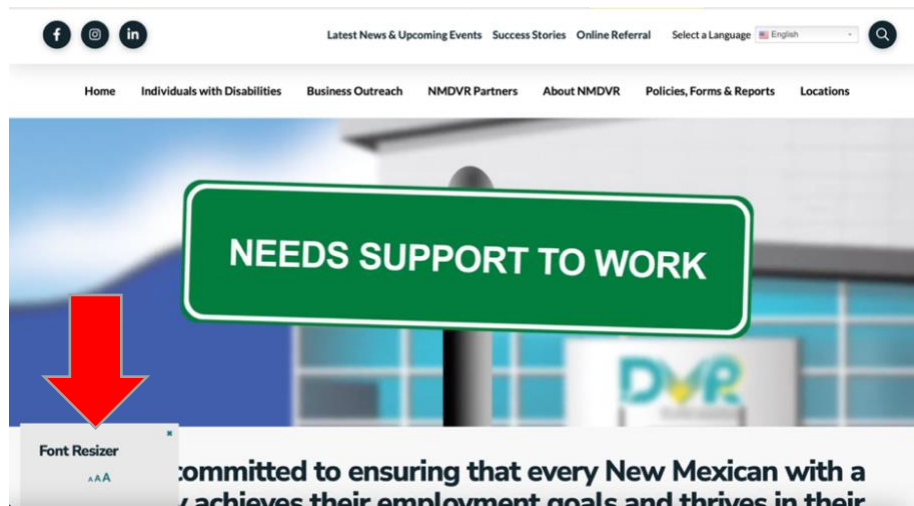


Figure 34. New Mexico Division of Vocational Rehabilitation Website. Screenshot taken on November 15th, 2022. Accessed at <https://www.dvr.state.nm.us>.¹⁸

An Abundance of Information

It would seem as if an abundance of information is a good thing to have for state and federal programs. However, visual distractions and the overwhelming push of disordered primacy features detract from a site’s purpose. Similar to the state of Maryland, the Texas Workforce Commission website was overwhelming. Various shades of blue, green, and red prevented clear calls to action and primary features that push for any particular action.

¹⁸ The red downwards pointing arrow on the New Mexico screenshot (Figure 33) was added to provide clarity and demonstrate where the font resizer is on the website.

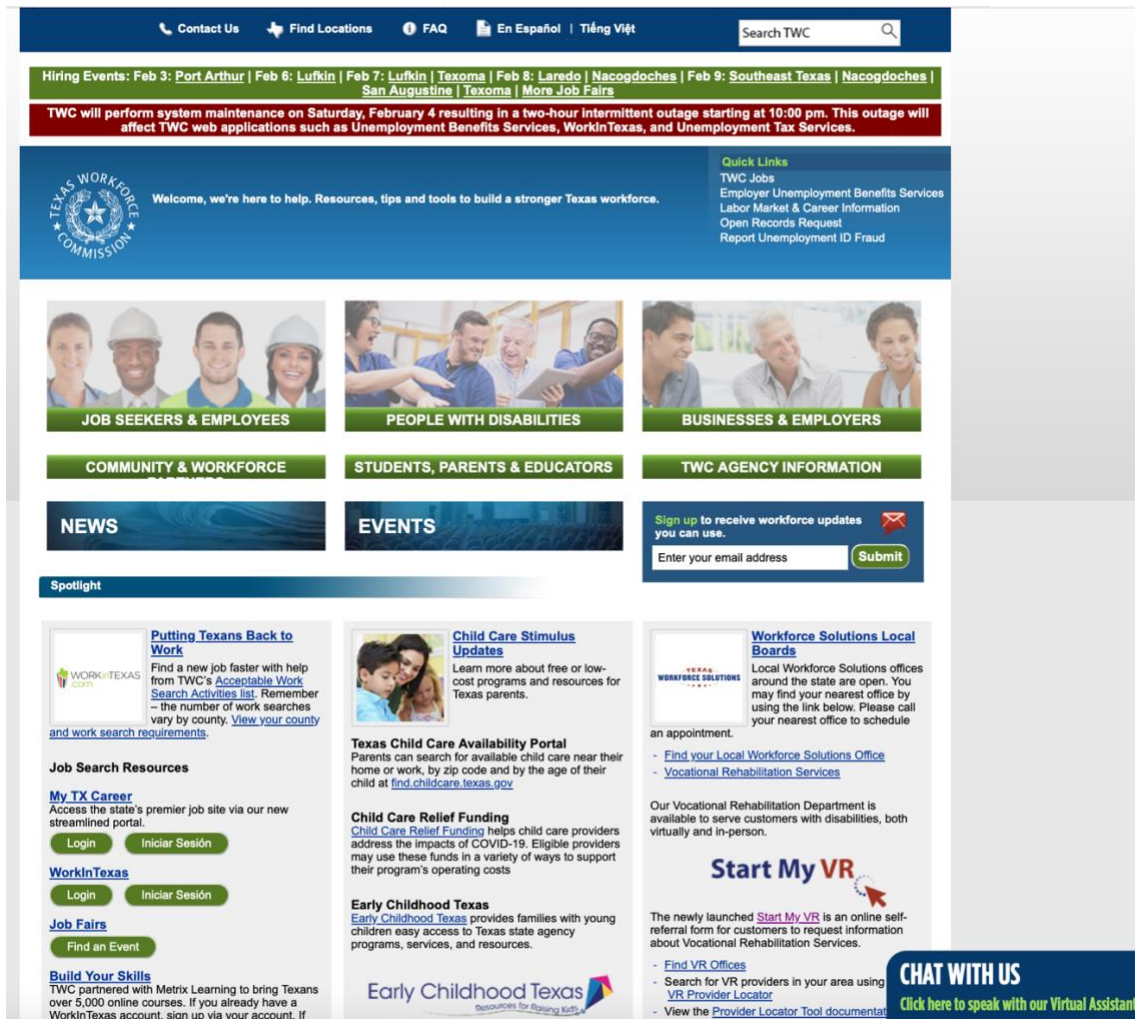


Figure 35. Screenshot of the Texas Workforce Commission Homepage. Screenshot taken on February 3rd, 2023. Accessed at <https://www.twc.texas.gov>.

The font on the Texas Workforce Commission website is in 9-point. Font formatting in American Psychological Association, Modern Language Association, and the Chicago Manual of Style all suggest a minimum of 12-point font for Times New Roman. The Chicago Manual permits Arial font at a minimum of a 10-point size, but the Texas site uses 9-point Arial font¹⁹. Additionally, item consolidation on the Texas website would be

¹⁹ The font of the sentence was changed to Arial 10-point font and Arial 9-point font to provide a visual example of the fonts used on the Texas Workforce Commission website.

useful. Some may prefer having all of the options in one area to use the “command F” function to search for items, but that is why a site map is suggested for all SVRSP websites.

The lack of primacy across 15 or more sections is extremely confusing. Clearly, there is information present, but clicking on the wrong area will prevent a user from redirecting to the correct section. Should users want to create a portal and log in on the left side, they must click on the “Start My VR” (Figure 36) on the bottom right, click on “Vocational Rehabilitation Services” on the right hand column, or hover over the tab where it says people with disabilities and click on the menu item that states “Vocational Rehabilitation Services, including Blind Services (VR)” (Figure 36 pictured below).



Figure 36. Screenshot of the Texas Workforce Commission Website with the Middle Drop-Down Menu Open. Screenshot taken on February 3rd, 2023. Accessed at <https://www.twc.texas.gov>.

There are over six dropdown menus on the heading of the homepage, which is extremely confusing to a user with limited navigation skills and unfamiliarity with the Texas website. This does not include the numerous side navigation panes. This pictured dropdown link outright mentions the inclusion of blind services but does not mention services for the deaf. While a separate site for the blind may be necessitated, an adjacent hyperlink or text should mention other disabilities. If consumers are not directly mentioned, vocational seekers may incorrectly assume that the blind are the only clients served under the vocational program. Linguistic and semantic choices on sites that seek

to hold those with limited attention spans cannot neglect the importance of nuanced choices or placement.

The Future of Website Design and Modification - A Brief Summary

This study encourages the use of CUITA and the “Go Live Checklist for Federal Public Websites and Digital Services Excel Spreadsheet,” hereby referred to as the “Federal Checklist” for an abbreviated name. However, this Federal Checklist should be used by the internal departments of SVRSPs as some of the data or information on the spreadsheet is inaccessible to individuals who do not work for the SVRSP or elsewhere in the government. The Federal Checklist was designed by the U.S. General Services administration as a tool for departments to organize updates and reflexively examine changes and can be located at <https://digital.gov/resources/checklist-of-requirements-for-federal-digital-services/>. While similar to the CUITA codebook, the Federal Checklist lays out a plan for each site and provides a space for hired department designers to write down concerns or notes. It also includes the laws and regulations pertinent to each section and uses a similar code of “present” or “absent.” The CUITA codebook was not designed based on this spreadsheet, and the primary researcher found the Federal Checklist codebook after the quantitative and qualitative analyses were completed. The CUITA codebook is better suited for quantitative research and program analysis conducted by external researchers. The Federal Checklist is best used for internal department review, intragovernment reporting, designers, or those in charge of updating websites. The Federal Checklist spreadsheet does not examine all of the features of the websites. Still, it creates a space for department employees to evaluate and fill out the goals for website remodeling.

The Federal Checklist has 14 separate tabs that suggest an organization for website design. These 14 tabs are labeled as overview, site launch, redesign, accessibility, analytics, content, Design UX, governance, privacy, search, security, trust, internal, and lookup. Many of the concepts and categories in the Federal Checklist overlap with those in the CUITA codebook. However, the CUITA model is better suited for examining specific features pertinent to the DHH, and it measures a larger array of specific website features. The content and link to the Federal Checklist Excel spreadsheet are pictured in APPENDIX E. The federal checklist has been added to APPENDIX E, even though it was not used for the analysis, due to its holistic design. This study hopes to draw attention to the importance of the Federal Checklist and the CUITA codebook for Federal and State website design. All of the relevant items listed on the Federal Checklist were also present in the CUITA codebook.

The CUITA model checks the presence and absence of all of the elements within the Federal Checklist, which reinstates CUITA's validity, reliability, credibility, and authenticity in its use as a tool for future website evaluation. The Federal Checklist is designed for the departments that develop the websites and functions as a regulatory tool. This regulatory tool, in conjunction with CUITA, should be the foundation for creating a uniform SVRSP website for each state. Future research can use the CUITA codebook in conjunction with the Federal Checklist spreadsheet to quantitatively and qualitatively examine other government websites. However, there are elements on the Federal Checklist that cannot be studied by researchers who are not employed by a SVRSP or the Federal Government, which strengthens the argument that CUITA has a higher usability rate for a wider array of website analysis.

Another suggestion would be to enact a law that mandates a yearly review of each state website and the submission of this review of the Federal Checklist to the Federal Government or another intra-government reviewing body, if one does not yet exist. Website review could be submitted in conjunction with other mandated reporting. The Federal Government could better regulate SVRSP websites if each state, territory, and the District of Columbia filled out this spreadsheet annually.

Often SVRSPs mention a special extension of the site for the blind but do not mention anything about or for the deaf and hard of hearing. Sites should provide access for all disabilities. However, it is arguable that the blind may need a separate site that is more compatible with screen readers. The wording of a specific site for the blind is tricky as it may leave a false impression that vocational services do not include the deaf or other (dis)abilities.

Qualitative Limitations

The close reading examined only a select number of state vocational websites. The smaller sample size for the extensive analysis of four states may have left out notable features or problematic features on other websites. The project's scope and time constraints did not permit the primary researcher to qualitatively write up an assessment of every state. The qualitative analysis uncovered the sampled websites' underlying cultural, structural, semantic, and linguistic elements. The WAVE tool, the Flesch-Kincaid scale, and the model analysis designed for this study were implemented to examine a limited number of states. However, the sites are subject to change daily, which leads to findings quickly becoming obsolete. It is likely that many elements that were “bad practice” on the studied websites will appear across other websites. The study had a

small sample size and focused on examining states on the high and low end of the CUITA codebook's analysis. However, the primary researcher defends the purposeful sampling employed as it is standard practice in qualitative research. However, standard practice is not enough of an argument. Therefore, it is argued that “A better understanding of these issues can inform the design of interventions, strategies and health systems and their implementation to develop more personalized approaches that benefit patients and improve outcomes” (Noyes et al., 2018, p. 3). Sites on opposite ends of the quantitative findings likely draw out a diverse pool of information. The nature of qualitative readings digs deep into a small sample in hopes of improving or helping the studied element(s). The quantitative portion strengthens the qualitative findings by demonstrating that the nuanced qualitative differences are broadly generalizable.

Due to the sequential methodology employed, the quantitative study's results may have affected the primary researcher's perception of the websites. Additionally, the primary researcher supports the state vocational rehabilitation program and acknowledges the scope and reach of its possible utility, which increased the critical view of the findings reported in the qualitative section. The primary researcher likely has stronger feelings about the vocational program due to her extensive prior research on the California Department of Rehabilitation, and familiarity, knowledge, and support of DHH services. The primary researcher's employment at NTID in 2015 consisted of extensive examinations of available vocational resources. Due to the program's potential, the primary researcher was more apt to “attack” and “pick apart” elements to reshape them for the benefit of disabled populations. The critical findings were not limited to

encouraging the dedication of fiscal resources to SVRSPs and further regulation of the program for equality.

The qualitative analysis dug into the “why” in terms of language, finances, population, and grants. Still, it did not survey participants such as clients and counselors who use the websites on a routine basis. Additionally, the qualitative portions were examined based on existing federal laws rather than nuanced state laws that may have contributed to the integration of SVRSP into the overarching state labor department websites. Another limitation was the lack of extensive examination of the allocation of formula grant money. The research examined the overall budget of SVRSPs but not the finite details of how or where it was allocated.

Summary

The website design was highly variable by state. The qualitative analysis deemed the quantitative CUITA codebook as a reliable way to assess websites. However, despite the presents of features, some material may be inaccessible to users who rely on assistive technologies, or do not have a computer to access the internet. Some of the contact methods across various states were inaccessible to the DHH. Other sites had archaic measures in place. Various themes and recommendations were discussed and will be further analyzed in the Discussion, or Chapter 10.

CHAPTER TEN: DISCUSSION

The Interpretation of Key Themes

Significant findings were uncovered for all statistical tests that were applied and the respective quantitative research questions. The variation of content, usability, interactivity, transparency, and audience (CUITA) varied drastically among all 50 states, the District of Columbia (D.C.), and the five territories. The CUITA codebook was again shown to be a reliable model, or codebook, for assessing state government websites. All the state vocational rehabilitation websites and their features varied widely across the Cook Political Report, Elazar's Political Culture Scale, the sum of CUITA features on state websites, the state's population, vocational budget, and political party. Additionally, the WAVE Tool, the Linguistics Themes and Model Themes, the Online Consumer's Hierarchy of Needs, and the Flesch-Kincaid Test qualitatively demonstrated the vast differences across states and their provision of information online. The quantitative and qualitative findings, along with recommendations, are discussed below.

Content

A website's content changes how individuals connect with a counselor and the subsequent actions available to users. The study recommends that email addresses for counselors, program directors, webmasters/web administrators, and counselors' information be present. Routine updates to the contact information areas are suggested to avoid invalid inquiries and email bounce failure(s). This study also recommends that the communications department of respective agencies send out mandatory intradepartmental emails that link to a survey if an intranet does not yet exist. These surveys would provide opportunities for staff to update their contact information, office location, phone

numbers, TTY and fax numbers, communicate any frequently asked questions that they have received, and provide an area for feedback or suggested updates. The surveys would benefit website users and potential clients, and staff would be reassured that their concerns are being addressed. The use of an online portal for counselors and clients could send out push notifications to update information into the system and avoid manual labor altogether. Press releases and stories of success only appeared in 18 states, demonstrating ample area for improvements in public relations. It was unexpected that only 41 states listed email addresses, and 44 states had an address for a physical location available. Vocational programs should not rely on external media and politicians to distribute publicity but rather control the narrative of their representation through public relations outreaches. A website's content is the foundation for the rest of the features.

Items must be present for there to be any transparency or interactivity. The study also uncovered that many CUITA features were highly dependent on one another. For example, interactivity is usually not possible without content. Some website content is useless if it is not interactive and accessible to its users, while other content such as physical addresses are still somewhat useful even if they are not interactive. A YouTube instructional video that is not captioned will not encourage further actions it will only increase the DHH user's uncertainty. The placement of website content is also important. Discursive content placement, or the “hiding” of information in obscure areas requiring multiple clicks through landing pages, is an obstacle to access. Too much information on the website's home page, as in Maryland and Texas, limits salient information as it overwhelms the user and stagnates use.

Future updates should state precisely what vocational rehabilitation is, as many potential clients do not know of SVRSP's existence. The statement in the following paragraph is an example coined for this study. This statement or a similar one can be posted on the home page and recorded in an ASL video, with spoken English (sim-com), and closed captions. A standard video, funded by a government grant, can support the research and development of a recorded ASL video. This video could be used for all state websites. Other videos that provide specific information for different types of disabilities could be made. These videos could be designed for various parts of the website and various disabled populations. These videos should be designed with an emphasis on the visual or auditory components so that Deaf or blind users can adapt. In addition, other disabilities and their preferences for communication should not be left out. Similarly, a standardized survey could be created and used for all states. A sample onboarding survey is proposed later in the discussion of this study. Finally, videos and surveys could be optional tools sent to each webmaster or administrator.

This is the sample text authored by the primary researcher for a video or to be included on the homepage of a website:

The State Vocational Rehabilitation Service Program (SVRSP) is an education to employment program that will assist you in obtaining a job. The program does not cost anything. To receive help, you must have a qualifying disability. There are six disability categories. These categories are Blind/Visual, Cognitive, Deaf/Hard of Hearing, Intellectual/Developmental, Learning, Physical, Psychiatric, and Traumatic Brain Injury. The program provides services such as funding for education, job training, counseling, assistance with job placement, as well as

equipment (hearing aids, glasses, work clothes), and transportation to and from work. The goal of the SVRSP program is to help individuals with disabilities become self-sufficient and achieve their employment goals. Qualifying disabilities vary by state. To obtain more information, apply, or find out if you are eligible, fill out the following survey.

Each state could provide a second, customized video with more detailed information, such as which disabilities and educational training are supported, the timeline of an average client based on previous success stories, and the types of education programs or locations of the programs that are supported. If the resources across states were standardized, one video could be used for multiple states. Videos about program rules, options, and specific funding would also be helpful to many. A follow-up survey may list comprehensive resources and allow clients to click the boxes of disability-related resources that apply to them. For example, a video specific to California could follow up with something like the following-

There are various rules and restrictions that you, the client, need to follow to keep your vocational rehabilitation services. First, communication with your counselor is important. If you have difficulties, always remember that it is your job to work with your assigned counselor to adjust any goals. Employment is considered successful when an individual is employed for 90 days.

Much of basic and absolutely necessary content for most SVRSP websites was present, but cumbersome, confusing, or difficult to locate. The layout, location of keywords, and the words used on a site can alter its likelihood of appearing higher up in search engine results (Zhang & Dimitroff, 2005). When users search for health-related

information, search engines give government websites precedence over commercially funded websites (Cochrane et al., 2012). State government website content should be reliable and efficient enough to be present on the first search page on which the user lands. Future research can examine the search engine optimization of vocational rehabilitation websites.

The suggestions of standardization for surveys and website design as reiterated throughout this study is listed on The 21st Century Integrated Digital Experience Act. The act suggests that agencies provide standardization across their internal websites and the websites of similar programs. Therefore, the findings of the content portion of the study are consistent with the federal act.

- (a) Design and Implementation.--Each executive agency shall, to the extent practicable, seek to maintain as much standardization and commonality with other executive agencies as practicable in implementing the requirements of this Act to best enable future transitions to centralized shared services.

(21st Century Integrated Digital Experience Act, SEC. 7 - Standardization, a).

This suggests that design and user testing should be integrated into future research, and a template should be made available for all vocational sites. However, research on website design and user testing should be conducted to ensure that the standardized design serves and is accessible for a wide range of needs. However, complete standardization has drawbacks and may disallow for customization. Therefore, more research and testing is necessitated to find a practical solution for overall standardization. However, this does not mean that specific features are not necessitated.

Usability

A website's usability is highly likely to change a user's subsequent behavior. The intended top-down hierarchy and engagement can be easily overlooked if large quantities of information are present (Short et al., 2015) A website was deemed usable if it did not have any dead links, provided a website-wide search tool, had multiple languages available, and provided closed captions on all videos. Unusable sites discourage users from returning and increased uncertainty. Usability also relates to accessible language, as information is not helpful if written in technical jargon instead of simplistic terminology easily understood by the public. Writing that is accessible according to the Flesch Kincaid test is suggested for all portions of the site. The Federal Government mandates the tailoring and simplifying of information to the intended population. Departments can research website usability using mock-ups and variations of their own based on general information about the audience's needs and past research conducted on usability design. According to data from the National Assessment of Adult Literacy (NAAL), the average reading level of American adults is around the 8th-grade level. The reading level, when assessed by Vocational Programs in conjunction with NTID and other Universities, found that the average deaf individual is hypothesized to be at a 4th-grade level (Dew, 1998). Videos, images, and infographics on SVRSP are suggested, as the DHH rely on visual cues. Any infographics should provide alternative text to accommodate low-vision vocational consumers.

The program's features varied drastically by state, as did their websites. If one website design is not used for all vocational programs, there should at least be website consistency within the state. For example, all the landing pages of the California

Department of Rehabilitation have the same website banner, menu options, state program seal that acts as a logo, blue color scheme, font, and organization. The described consistency of the California Department of Rehabilitation demonstrates a consistent use of website design. A consistent intrastate appearance would benefit staff, counselors, and users. Consistent appearances in businesses create brand recognition and assist visual learners in remembering the placement or orientation of items. It is difficult to estimate the number of people who know what vocational rehabilitation is, as it depends on the population being surveyed, the method of measurement, and the criteria used to define "knowing what vocational rehabilitation is." Members of the general public may have heard the term before but would need to familiarize themselves with the exact use and services of the program to understand its use as a resource. Public awareness, coupled with an adequate website, will generate greater awareness of the program so that it reaches the intended population.

Prior research has developed intricate usability scales (Wang & Senecal, 2007). However, this study used the Web Accessibility Evaluation Tools (WAVE) within the qualitative section to demonstrate issues that can easily be avoided if websites are checked with a free resource. One of the reasons that the WAVE tool was chosen was because it is free of charge, simple to use, explains the problematic features of a site, and does not require extensive computer knowledge. Other paid tools that measure the usability of a site are likely to be just as reliable. However, the availability of free tools and the proliferation of online resources and information about website design suggests that specialists, while preferred, are not required for basic website usability design. According to Statista, in 2016 approximately 89.3% of households in the U.S. had a

computer at home as compared with 69.7% in 2007 (Alsop, 2020). Worldwide, 45.8% of the population had a computer at home in 2016, which grew to 47.1% in 2019 (Alsop, 2022). These numbers suggest that the US has a high rate of technology use which grew almost 20% in a period of 10 years. As information is increasingly digitized, and the digital natives are entering the workforce, it is essential to provide a reputable, usable, and secure website.

Interactivity

The interactivity of a website creates opportunities for the two-way exchange of information and influence. The definition of interactivity has been a hot topic since the early years of the internet, and the exact terminology used to describe the phenomenon continues to evolve (Dholakia et al., 2000). Interactivity propels engagement, entertainment, and the two-way exchange of information; it is not limited to intricate business functions, humanistic gratifications, or information collection. High user engagement and the successful collection of potential client data streamline the processes and functions of vocational rehabilitation, all the while alleviating the burden of repetitive communication. Vocational websites decrease uncertainty when they are appropriately used as tools for collecting and providing information. As suggested, departments that conduct organized data collection, internally and externally, through surveys will eventually have a large data set that can be ethically applied statistically or analytically. The outcomes of these analyses can provide proof within research that supplements ideas for policy modification. As clients provide questions, data, and other information via the websites, the communication receivers or vocational programs can translate this data into practical communication tools to help current and future clients.

Past studies have been conducted via collaboration between the Social Security administration and the National Technical Institute for the Deaf. Other collaborations that protect data while also serving research purposes are encouraged.

Interactive communication via social media and email provides quick solutions while surveys are better for addressing long-term modifications and design of communicative information for the future provision of supplemental communication resources, such as pamphlets. A public forum (social media) and suggestion box, which 15 states had, produced a space for disgruntled or confused users to express their immediate complaints. A public forum also created a space for satisfied users or clients to encourage the repetition or the enhancement of a working strategy. Only 11 states had active email updates for users to immediately send a message when the hyperlink was clicked. Interactivity features had the lowest number of sum present features out of all the CUITA categories. This demonstrates that vocational programs do not leave the two-way communication channels open to the public, and likely have underdeveloped communication solutions and practices implemented into website design. As the government is by the people and for the people, such communication between the program and the public is the basis for amending discursive practices and facilitating change. Public relations staff and communication departments can focus on facilitating internal and external communication. Although it was not accounted for in this study, it is unknown how many vocational rehabilitation departments have communication agencies and if so, at what locations. Intranets or the presence or absence of one could not be measured as intranets are for Government employees only and not accessible by the general public. However, the presence of an intranet likely increases communication

across departments. Increased interactivity unmutes the DHH and all current or potential vocational clients by giving them a space to voice ideas. Although the program is a service for those who are disabled, it can also aid and serve as a reference for those who are trying to help a friend or relative. Interactivity can only improve for future clients and generations if potential clients of all abilities can interact with the resource. In addition, staff, counselors, and clients should be able to anonymously report interactivity related concerns if they feel the need to do so.²⁰

Transparency

With complete transparency, a few things a website informs users about are the program's purpose, who is behind the program, what money is available and how it is allocated, and what data are collected from site visitors. Transparency adds a layer of trust and authenticity to online interactions, especially those that request the communication of personal information. Website transparency is metaphorically the person that shakes your hand after a large purchase or informs you about the features unique to the product. The person shaking your hand is present to assure you, inform you, and assuage concerns. In an online-mediated communication space or context, transparency is the preexisting information and the ease of access to the information. Transparency also allows researchers, who are not a part of the program, to scrape publicly available data, analyze the data, and suggest revisions to existing policies or practices.

²⁰ This would exclude mandated reporters as all mandated reporters are required to provide their personal information in the report, but their identity is kept confidential except in some circumstances.

Within the transparency section of the CUITA codebook, the transparency features were the least homogenous compared to the homogeneity of features in other categories. Many features in other portions of the CUITA codebook were categorically similar in ways other than their grouping word in the CUITA acronym. For clarity, the word “Transparency” stood for “T” in the CUITA model and was one of the grouping word mentioned above. Therefore, the diversity of the features within the transparency section was unique. For example, a privacy statement ensures the user that their data is secure online. Cookies delineated the possible use of collected information. The provision of budget information relates to the transparency of funds, and the use of tax money. It lets the website user formulate a positive or negative opinion of the program’s fiscal allocations. These features all provide transparency differently, either by protecting users or providing them with more information. Program improvements are more easily made when there is a presence of transparent information, as they provide the data for public research.

Open access and open data have become popular as they promote the repetition of prior studies and the expansion of existing research. Transparency is often used as a buzzword (Peerenboom, 2002), yet the true transparency of government data is one of the most efficient ways to analyze performance measures (Ruppert, 2012). Transparency coupled with online-mediated communication has pushed research toward big data. Big and public data have paved the way for researchers to use existing numbers and phenomena without interacting with the subject or idea being researched. Like a modern-day electronic drone, researchers can view, collect, record, examine, and analyze without being noticed or touching the elements being studied, which in quantitative data analysis,

completely avoids bias in data collection, prevents data massaging as the data is public, and other problematic experiment manipulations. In addition, qualitative research is no longer limited to an in-person setting; qualitative phenomena can be examined remotely or textually.

Audience

People, events, and organizations must know their audience to communicate with them effectively. A comedian doing stand-up about global warming at a funeral or the Pope reciting a sermon at the opening of a new company building is not an appropriate fit for the rhetorical situation. The government, like a business, must tailor its services to the audience that uses its provisions. A business will often immediately fiscally profit from the exchange between a user and a website. On the other hand, education and employment programs are long-term investments that lead to a return on interest (ROI).

Audience features were intermittent and sporadically placed on SVRSP websites. The vocational programs that have yet to organize and plan website design goals in conjunction with communication departments may incorrectly assume that consumers using the website are already familiar with the interworking and nuances of the program. Overestimating the audience's knowledge is an easy, frequently made communicative mistake. Communicators must survey and understand their audiences to communicate efficiently. Other vocational sites may take the opposite communicative approach by overloading the home page with too much information "all at once," by infusing it with an overabundance of documents. Finding a negotiated middle ground of information provision has proven to be complicated as the quantitative and qualitative studies demonstrated, which is congruent with prior research (Witte & Faigley, 1981). Future

internal government program research should examine available texts' cohesion, quality, and coherence to uncover syntax, rhetoric, and other stylistic language choices. Case studies and focus groups should qualitatively investigate the level of understanding of different sample texts to find nuanced linguistic choices that will benefit the widest audience. Drafting, modifying texts, and testing variations are some of the ways to adequately modify texts for the intended audience, as specified in section 508 of the Rehabilitation Act.

Many large businesses spend extensive monetary resources and time studying their audiences, examining user interfaces, engaging in product research, and reformulating the communication message. Vocational rehabilitation departments may have limited funding, time, staff, and resources. The department may have no extra money for research and design expenditures, especially if clients are waitlisted. However, standardized surveys, standardized website designs, and information videos are made for these departments with research grant money. In that case, it knocks out a flock of birds with one stone, or so to speak. The stress and burden of expending department resources for updating and maintaining the website are lessened. Decreased uncertainty will occur when it is clear to an audience that the resources are tailored to them and that they have landed on the appropriate website. If consumers know their options, they can also make an informed choice about whether to move forward in the program. If audience information is not transparent, consumers will have to take time to write a question to a counselor, who may already be pressed for time. Frequently Asked Question (FAQs) boxes are another solution to streamlining the information process and alleviating the burden of repetitive questions.

Overall Limitations of the Study

The data for the study were collected during the ending months of 2022. The data analysis was finalized during the beginning months of 2023. As programs evolve and change, so do their websites and the data that are available to them. While the coders may have entered the correct information at the time, replications of the study may find updated or different features on SVRSP websites. Another limitation, yet also a strength, was the project's scope. Examining over 50 states, the District of Columbia, and five territories was a significant undertaking. Due to the enormous scope, it was possible to provide qualitative data for only some states when the study was conducted. Quantitatively, the territories were not statistically examined due to their lack of representation in Congress and the populations' inability to participate in presidential elections. With the Cook Political Report conversion, the District of Columbia was an outlier, but it was still included in the statistical analyses that used the Cook Political Report. This may have slightly changed the data, but the prominence of D.C. and housing the Capitol of the U.S. was the reason it was included. However, D.C. has a non-voting representative and "shadow" Senator, so an argument could be made to re-analyze the data without D.C. and only assess the states or to analyze the data with D.C. and the U.S. territories. The intercoder reliability of the project, conducted by Master of Science degree students, was high but imperfect. Reliabilities are reported in APPENDIX C. Items with questionable reliability were checked by the primary researcher and appropriately assessed.

As this was a sequential study, the quantitative portion was conducted first. The qualitative part of the study found other features that could have been added to the

CUITA analysis, so they have been suggested as additions for future projects. If the qualitative portion were to be conducted first, the results may have been different, and elements within the CUITA codebook may have differed. Despite access to contacts, no former or current clients, vocational counselors, or employees were interviewed before, during, or immediately after the study. If members of vocational rehabilitation were interviewed prior to the creation of the CUITA model modifications or qualitative analysis, the insight provided, or results may have varied.

What Features Are Necessary? A List of Recommendations for Vocational Websites

Websites constitute the public face and means of interaction for businesses. While vocational rehabilitation is not a business, it should still adhere to the recommendations and guidelines of business websites. A simple search of “features for websites” pulls up endless lists of recommended features. Essential yet necessary features, according to business websites, are as follows: a straightforward domain name, a tagline, a phone number, an e-mail address, a clear call to action, top navigation, breadcrumb navigation, images, reviews or testimonials, about information, quality content, internal and external links, footer navigation, social media buttons, a newsletter subscription, additional accessible contact information, a contact form or survey, a privacy policy, explanation of the use of cookies, frequently asked questions page, a blog page if needed, larger readable font with a clear contrast, mobile optimization, and hamburger menus (Guta, 2021).

This list mentioned above, in addition to the modified CUITA code book, the Flesch-Kincaid test (Kincaid, Fishburne, Rogers & Chissom, 1975), the Online Consumer’s Hierarchy of Needs (Valacich et al., 2007), and the Wave tool, should be

employed when designing SVRSP websites. A standardized YouTube video that provides basic information about the services available in ASL should be created and posted on all vocational rehabilitation websites. The information video should contain information about the application process, services available, time frame, monetary concerns, and more. A collaboration of common concerns and questions, integrated with a step-by-step application process video guide, could alleviate the problems associated with stray documents and discursive inquiries. Standardization of the application form with a streamlined process could become a reality with a single research grant. Such features and lists could be implemented in project expansions following research.

Below is a list of features, or a checklist, categorized by the CUITA model and codebook. The list contains a list of features and ideas that are recommended for all State Vocational Rehabilitation Service Websites. In addition, some of the features are further explained to explain their exact utility.

Comprehensive List of CUITA Codebook Features (Post-Analysis)

This list has been modified and adapted based on the quantitative and qualitative portions of the study. It provides a holistic account of all modifications made before the quantitative analysis was conducted (APPENDIX B) and the suggestions to improve the CUITA model post-analysis. This can be used for future studies related to government websites and the state vocational rehabilitation program.²¹

²¹ The updated, post-study codebook and recommendations have not been moved to the APPENDICES section as the updated codebook necessitates discussion, and brief explanations are provided.

Content

- Physical addresses
 - The physical address of all vocational rehabilitation offices within the state should be listed. An interactive feature that helps clients search by county or by the nearest location should also be integrated.
- Fax numbers
 - Albeit dated, fax numbers may be useful for document transfers from physicians and the transferring of other official documentation.
- E-mail addresses
 - All counselor, director, and staff member emails should be listed next to their job position. If a counselor has a “specialty,” list it may prove useful.
- FAQ
 - A frequently asked question list that is routinely updated would alleviate the burden of repetitive questions asked to counselors and also enhance transparency.
- List of services available to prospective clients
 - There should be a simple bulleted list or summary explaining the general services offered to the DHH, Deaf-Blind, Blind, and all other disabilities served. Additionally, making this list interactive, allowing users to click on each item to see/hear what services are available, could benefit users and condense information into respective areas.
- List of current VR counselors/staff

- Meeting minutes
 - A summary of policy updates or changes that have been made to the program should be present to encourage transparency, progress, and program evolution.
 - If there are meeting minutes, they should use clear language, avoiding references to nuanced laws. References should be explained. The presence of meeting minutes, if periodically published, counts as a transparent summary.
- A list of committees within the respective program, and public officials who serves on these committees.
 - A survey application for members who wish to serve on public committees that relate to the DHH should be made available.
 - An example of this can be found [here](#).
- Contact information for all counselors, staff, directors, and others—
 - There should be a clear way to move forward with the VR program and a way to contact a VR counselor if a survey is not being used.
 - Contact information should be listed for all of the office locations.
- Reports of fiscal and periodic updates:
 - A yearly report of statistics and a summary that explains the modifications made to the program should be available.
 - Reports on the number of people waitlisted and what funds, staffing, and other resources needed would allow for individuals to advocate for specific elements of the program in detail.

- A report of staff or hiring needs, potential expansions, and necessary or needed physical space expansion should be documented.
- Laws and regulations pertaining to the program
 - Items that explain who may or may not be eligible for the VR program should be present.
 - Regulations that individuals must abide by and follow in order to obtain or keep their VR services should be mentioned. (Ex/ a minimum GPA of 2.5/4.0 in a University/College setting).
- A searchable website
 - The text on the website should allow for users to “type Control – F” and search for items on the webpage. All content that is made available in a PDF should also be integrated into an accessible format on the webpage itself.
 - The website should integrate its own search function tool and not depend on users knowing how to “Control –F” search a website. Users who have screenreaders and use the mobile version of the website should be able to quickly search elements on the website.
- Press releases and announcements—
 - These should be periodic and follow a consistent schedule to demonstrate consistency, reliability, and progress.
- Archived releases and information-
 - Press releases and information that are over two years old should be archived to safeguard organizational history.

- Event calendar—
 - Community events and information sessions should be publicly listed on a website calendar. Periodic Zoom or Microsoft Teams information sessions that have closed captions and an interpreter should take place. Other deadlines and dates should be made available as well for the general public.
- Stories of success—
 - Video or textual testimonials of former clients allow potential clients to relate to the program. These video and textual testimonies should cover a range of disabilities served to avoid the exclusion of any one disability.
- Reasonable accommodation solutions—
 - Examples of reasonable accommodation solutions should be listed. This pertains to options that disabled employees have to help them in the workplace to make sure that employers comply with ADA requirements. This is a lot like extending the time of exams for students who have a learning disability. The intent of a reasonable accommodation is to help employers comply with the ADA and inform the disabled about options they have in the workplace.
- A comprehensive list of assistive technologies provided by the program and any costs to consumers, if there are any consumer costs. Counselors may encourage clients to take out a small loan for school, apply for FAFSA, or apply for scholarships if necessary for their IEP.
- A separate site—

- A separate section of the site designed for blind with updated speech to text software that reads elements would be useful. All general website data should be usable by screen readers and software that reads text out loud for those who may have difficulty reading or dyslexia. However, if the blind are mentioned, the site should make it clear that the DHH and other (dis)abilities are also served.
- A separate section of the site designed for DHH with the use of ASL, Captions, services just for them, and infographics would be useful.
- A clear domain name
 - A tag line for the tab that abbreviates the site name provides a clear marker for individuals who open multiple tabs. This assists with user navigation, cross referencing, and multitasking.
- Mobile Optimization
 - The website should be usable for those who access website via their phone, iPad/tablet, laptop, computer, console, or any other reasonable internet accesable device.
- Additional (External) Resources
 - An additional yet separate page for all the links that outsource clients to variable resources.

Usability

- A website search engine
 - Each vocational website should allow for searches where the landing page result is within the vocational website itself, and not the entire internet.

- A website map/index
 - There should be a link that says “site map” or “index” to allow for a simple, condensed way for users to navigate the website. This assists screen reader users to quickly access appropriate areas.
- Access for disabled
 - Features such as “read aloud” or ways to increase the font size, change colors of the text, and enable closed captions.
- Additional languages
 - There should be multiple language options listed on the website
- Downloadable documents:
 - Downloadable documents are not limited to formats such as PDFs or Microsoft Word. However this should be optional, and all information should be listed without having to download anything.
- Interactive forms
 - Many people do not have the ability to download documents, print them, or use Adobe PDF. All forms should be interactive and filled on the site without downloading them. The documents should take the form of an online, interactive PDF. Alternatively, a survey can be used and is actually recommended in lieu of interactive forms, unless the forms can be automatically submitted upon their completion.
- Cookies
 - The website should inform users about tracking cookie use and allow them to adjust what data and information the user wishes to share.

- Assessing where users connect from geographically might give program analysts a better understanding of geographic areas in need. However, this data must comply with privacy protection rules and regulations.
- Disability access
 - The websites should be checked with the WAVE tool to ensure they are disability friendly (<https://wave.webaim.org>), Any other reputable accessibility tool would serve this purpose as well.
- Multiple browsers supported
 - The website should at least be accessible in Safari, Google Chrome, Firefox, Opera, Microsoft Edge, Brave Lynx, Tor Browser, DuckDuckGo, and hopefully more.
- No dead links
 - All dead links should be removed to avoid confusion. Every link should be tested and redirected to the appropriate area.
- Video(s) posted should include the use of American Sign Language:
 - All of the videos should have a professional, trained ASL interpreter in them. It is recommended that simultaneous communication, better known as “sim-com,” is used in all videos for the DHH. Sim-com is the use of ASL and spoken language at the same time. Specialized videos that are designed for individuals with other disabilities should also be available. For example, a blind individual, a deaf individual, and an individual with a brain injury may all require different audio or visuals within online-

mediated communication and digitized media that includes sound and images.

- Video(s) posted use closed captions
 - Closed captions should be accurate and checked. Reliance on auto-generated captions should be avoided.
 - If important visuals are used, they should also be verbally described to include populations who cannot see the visuals.
- Video(s) posted to YouTube
 - All videos that are posted to YouTube should also be embedded into the website. These videos must use ASL, closed captions, and spoken English.
- Top and bottom website navigation
 - Breadcrumb navigation should be present.
- The average Flesch-Kincaid readability score across all of the websites' pages
 - This score should be at an 8th grade level or below. With the Flesch-Kincaid formula, the text should have a score of 60-70 or higher (Kincaid, Fishburne, Rogers & Chissom, 1975).

Interactivity

- Active email to members:
 - Clicking on the email address, or a live link allows a message to be sent to the person whose email address is listed. The address as listed on the site will redirect to their email inbox. A user does not have to copy and paste the address into their email application or open their email in a separate window.

- Toll-free phone number
 - Toll free area codes are 800, 888, 877, 866, 855, 844, and 833.
- Relay services should be available for individuals who use them to communicate.
 - Relay services include teleprinter or teletypewriter (TTY), voice carry over (VCO), speech to speech (STS), captioned telephone service (CTS), video relay service (VRS), internet protocol relay (IP Relay), or internet protocol captioned telephone service (IP CTS).
- A subscribe to updates button should be present on the homepage.
 - Vocational sites should have a way to subscribe to periodic email updates that are sent out. Email updates can include text, videos, or any other pertinent information about the program at the federal level, updates, and other related information.
- A way to contact the webmaster should be present on the website:
 - The public or staff members should be able to contact the webmaster in case immediate updates to the site are necessitated. Additionally, bugs, malfunctions, dead links, and other problems can be reported by staff and users alike via an intranet, if one exists.
- A public forum, and/or social media links or buttons should be present.
 - All social media sites should be routinely updated and provide useful information.
 - The website should have a link to the state's related social media sites.
- Suggestion box (recommendations)

- An open box that allows for users to submit suggestions should be placed on the website.
- Interactive map
 - This map assists clients and the interested public in finding the nearest vocational office.
- End-user adjustments
- A limited use of graphics or contrasting, distracting images.
 - Infographics are great only if descriptive text is provided for screen readers.
 - The amount of information listed on each landing site should be limited to avoid an over-abundance of information in one spot that would overwhelm a user.
- Links to related sites for more information or resources.
 - If a vocational program does not provide a service, access to external providers or other government programs that may provide aid should be present. IF a program does not provide a specific service that is commonly used by a population (ex/ hearing aids), the website should be transparent about not providing the service(s).
- Portal to log in and save personal information.
 - User Portal: Client portal
 - Administrator Portal (Intranet): Staff, managers, counselors, web administrator(s), reporting and compliance.

Transparency

- About us
- Vision/mission statement
- Board members
- Staff information: names, accessible contact information, the specific population a respective counselor serves
- Program budget:
 - Transparency on state and federal budget information should be present.
- Privacy statement
- Policy statement
- Hypertext Transfer Protocol (HTTPS) domain name prefix with Secure Sockets Layer (SSL) and Transport Layer Security (TLS)
 - HTTP should be avoided and HTTPS should be used in lieu.
- A the presence of a secure content distribution network (CDN)
 - Ex/ Cloudflare, Akamai, Imperva, Amazon CloudFront, or Microsoft Azure
- A .GOV domain name suffix
- Cookies:
 - What the cookies collect, how it is used, and the availability to opt out.
 - Non-essential cookies should be present to obtain data for research, but compliant with laws, regulations, and ethics.
- Editing content policy

Audience

- DHH services
- Blindness (field services)
- Deaf/blind services
 - This refers to those who are deaf and blind.
- Brain injury services
- Closed captions in video
- ASL in video
- Student services
 - Information to help students whether K-12, or College/University, and beyond.
- Educational information
 - Anything referring to educational programs should be clearly depicted.
- Community living services (independent living)
- Business opportunities
 - Local businesses hoping to partner with vocational rehabilitation should be able to access basic information and stipulations, or processes to move forward via a state's website.
- Hiring/supervising employees with disabilities
- Career counseling
- Job seeking opportunities
- Employment programs
- Hearing Aids

- Cochlear implants
- Child Services
- Health benefits
- List of disabilities served
- Veterans
- Companion “service” animals²²
 - Seeing-eye dogs, hearing dogs
 - Please note that “service animals” are different than “emotional support” animals.

Suggestions for State Vocational Rehabilitation Service Programs Beyond CUITA

The following suggestions may be integrated to the CUITA codebook for future research, but they should also be added to the SVRSP websites. These are separate from the additions that were already added and modified for the CUITA codebook used in this study. As noted earlier, the additions to the original CUITA codebook (Ferber, Foltz, & Pugliese) can be found in APPENDIX B. The CUITA model used for the study, with the additions mentioned in APPENDIX B, can be found in APPENDIX A. The discussion section includes suggestions for future CUITA models and the creation of streamlined processes.

A routine survey that collects updated information about the staff, such as contact information, office location, business hours, and caseload should be sent to the internal

²² This research uses the term companion animal in lieu of service animal to give respect and acknowledge the animal as a companion rather than an objectified being “only providing a service.”

departments of SVRSPs. An area for comments, and concerns should also be made available on these surveys. While updates every three months is ideal, surveying over six-month intervals would increase timeliness.

Additionally, onboarding forms and physical paper documents are required by law to be available at the physical state vocational rehabilitation office. According to the 21st Century Integrated Digital Experience Act, physical availability of services should still serve as an option for those who are not able or want to fill out information online.

“(e) Physical Availability.--Each executive agency shall maintain an accessible method of completing digital services through in-person, paper-based, or other means, such that individuals without the ability to use digital services are not deprived of or impeded in access to those digital services.” (21st Century Integrated Digital Experience Act, SEC. 4 - Digitization of Government Services and Forms, e).

However, it seemed as if many organizations are moving to fully online service provision. The study encourages the transition to the online provision and streamlining of services. However, consumers without access to information technologies and the internet should not be left out or overlooked.

Future Adaptations to the CUITA Codebook by Section

The following additions are listed under the respective categories to which they were added. This section points out what additions were made from the CUITA Codebook for this study, and what was added to the one listed above (Comprehensive List of CUITA Codebook Features: Post-Analysis), which is the suggested CUITA codebook to be utilized for future research. *The additions listed below were made after*

the study was completed and based on findings from both the quantitative and qualitative portions of the study. These additions are listed above, but are pulled out here to demonstrate what the current study added. For clarity, it should be noted that additions made to the original CUITA codebook before the study was conducted can be found in APPENDIX B.

The above list under the “Comprehensive List of CUITA Codebook Features” is a new, comprehensive, version of CUITA and include the additions listed below. The list “Additions to CUITA After the Quantitative and Qualitative Assessment” provides a list of the additions that were created after analyzing the quantitative and qualitative portions of the study.²³

Additions to CUITA After the Quantitative and Qualitative Assessment

Content

- Streamlining of services
- Presence of surveys
- Appropriate use of graphics
 - The graphics should be timely, appropriate, include a variety of disabled populations, and have descriptives for blind consumers.
- A clear domain name
 - A tag line
- A committee survey for interested community members

²³ The additions and recommendations to the post-study codebook have not been moved to the APPENDICES section. These elements have not been moved to the APPENDICES section in order to distinguish notable additions that were added based on the quantitative and qualitative findings of the study.

- Additional (External) Resources
 - An additional yet separate page for all the links that outsource clients to variable resources.

Usability

- Clear hyperlinked labels
 - Any internal link that is hyperlinked should clearly state where it redirects.
- Top and bottom navigation tools
 - Breadcrumb navigation
- The average Flesch-Kincaid readability score across all of the websites' pages
 - This score should be at an 8th grade level or below. With the Flesch-Kincaid formula, the text should have a score of 60-70 or higher.

Interactivity

- Effective onboarding survey for the program
- Reporting
 - All sites should have an area to report concerns or act as whistleblowers. The feature should ask for the user's name and email address but allow for users to anonymously submit. An accessible reCAPTCHA can be used when the user clicks submit to avoid potential spam or bots. It should be noted once again that

the suggestion of this space does not include a space for mandated reporters, as mandated reporters are not allowed to be anonymous.

- The presence of a communication team or person responsible for public relations as well as intradepartment communication.
 - This feature is likely difficult to measure outside of noting the presence or absence of a public relations team, but a special note should be made if there is communicator information.
- Social media buttons that are hyperlinked to the SVRSP's social media sites.
- Portal to log in and save personal information
 - Client portal
 - Staff/counselor/administrator/reporting portal

Transparency

- Program director
 - The name and contact information of the program director should be easily accessible.
- Understandable, and clear hyperlinks
- A clear domain name:
 - The domain name should have the program acronym, include the state name, and avoid extensive uses of dashes, periods, words, or symbols. It should be simple and to the point.
 - The standarization of SVRSP domain names is suggested.

- Hypertext Transfer Protocol (HTTPS) domain name prefix with Secure Sockets Layer (SSL) and Transport Layer Security (TLS)
 - HTTP should be avoided and not used whatsoever.
- A the presence of a secure content distribution network (CDN)
 - Ex/ Cloudflare, Akamai, Imperva, Amazon CloudFront, or Microsoft Azure
- A .GOV domain name suffix

Audience

- Primacy of features
 - Features that explain what the SVRSP is and how to navigate the site should take precedence.

Discussing Other Suggestions for State Vocational Websites

It is suggested that each state's Vocational Rehabilitation Service Program have a similar domain, color scheme, layout, and be separate from other related services for that state. Future research could create a template to standardize all state vocational rehabilitation websites. At a minimum, the vocational site for each state should have its own color scheme, pattern, and design. This design should be separate from other services offered by the state government.

Separating the vocational rehabilitation site from other programs in a state has many benefits. First, it avoids confusion and the accidental overlapping of information across programs. For example, in Delaware, the Division of Vocational Rehabilitation is accessible as a drop-down tab from the general Department of Labor website. The site

should be accessible through the Department of Labor, but it should redirect to a separate domain with its own similar color scheme with independent features and searchability. Separating the vocational program by a unique hyperlink and design demonstrates that the site is related to labor but functions as an independent program with separate rules, uses, and goals.

Universal Resource Locator and Security Suggestions

A suggested universal domain format for each state could be something along the lines of https://vr.STATE_NAME.gov, or https://dors.STATE_NAME.gov. This link is short, direct, and includes the title of the program. It is suggested based on Idaho's current link of <https://vr.idaho.gov>, and <https://dors.maryland.gov/>. Just using VR in a link may confuse some individuals, as "VR" often refers to "virtual reality." Due to the possible confusion between virtual reality and vocational rehabilitation, the acronym DORS (Department of Rehabilitation Services), albeit slightly longer, is suggested for website link standardization. The standardization of links avoids long and cumbersome links that can easily be mistyped. An example of an excessively long hyperlink is the Kentucky state vocational website that has a link of <https://kcc.ky.gov/Vocational-Rehabilitation/Pages/Kentucky-Office-of-Vocational-Rehabilitation.aspx>, or the New Jersey website link of <https://nj.gov/labor/career-services/special-services/individuals-with-disabilities/index.shtml>. This list, in addition to the CUITA code book and the Wave tool, should be employed when designing SVRSP websites.

A client service guide for new consumers and existing consumers should be formulated in separate sections. A new client service guide, such as the one listed on the Wyoming vocational website, is one example of this. It can be accessed at the following

link, or <https://dws.wyo.gov/dws-division/vocational-rehabilitation/clients-guide-to-vocational-rehabilitation-services/>. While these resources are very helpful for new clients, large amounts of data should be condensed. Users who are overwhelmed by excessive scrolling and mountains of data should have the option to condense the information with a click-through guide. However, those who use a screen reader may appreciate the lack of clicking and use the headers to jump to appropriate sections.

Other portions of the qualitative analysis uncovered essential elements not discovered within the quantitative section. Future transparency elements of CUITA should check for the presence of Hypertext Transfer Protocol (HTTPS) with Secure Sockets Layer (SSL) and Transport Layer Security (TLS). Government websites should use HTTPS and not HTTP.

Internal departments and web administrators should ensure that a site mediator such as Cloudflare are in place. Cloudflare is one of the many secure content distribution networks (CDN) that uses proxy servers to distribute information from the cloud swiftly. A content distribution network further protects the department, clients, existing portals, and information databases. Cloudflare protects from basic distributed denial of service (DDoS) attacks, brute force attacks, screens out malicious users (like bots), site assaults, and other threats. Akami, Imperva, Amazon CloudFront, and Microsoft Azure are a few of the many other secure content distribution network alternatives to Cloudflare. However, common sense should delineate that the presence of a content distribution network does not protect against lousy online choices and judgment. The current President, Joseph Biden, has recently emphasized cybersecurity.

From day one, my Administration has worked to strengthen our national cyber defenses, mandating extensive cybersecurity measures for the Federal Government and those critical infrastructure sectors where we have authority to do so, and creating innovative public-private partnerships and initiatives to enhance cybersecurity across all our critical infrastructure. (The White House, 2022a, para. 2).

In addition, The Department of Homeland Security's Cybersecurity and Infrastructure Security Agency (CISA) has been working on a 'Shields-Up' campaign (CISA, 2023). This website offers an abundance of security features and measures for departments to enact promptly. The issue with websites is the lack of implementation and utilization of existing security tools rather than a lack of security tools available (The White House, 2022b). For employees and individuals, The White House (2022b) suggests using multifactor authentication, backing up and encrypting sensitive data, educating employees on threat identification, and employing modern security tools.

If websites ask users for their location data and use website cookies, this information should be protected. Assessing where users connect geographically might give program analysts a better understanding of geographic areas in need. This data should only be collected if websites enact the appropriate security protocols.

Future research on all levels of Government website research should assess domain name compliance, ensuring that the websites assessed have .GOV in their URL. Using a .GOV domain suffix transparently informs users that the website is affiliated with the U.S. Government.

Onboarding Survey

Throughout this study, it has been mentioned that clients could be onboarded through a streamlined vocational rehabilitation survey. Below is a list of suggestions that can be integrated into a standardized survey. This survey has integrated various elements of existing surveys, modified wording, and changed the order of its presentation. However, the survey below can serve as the template for the standardization of state vocational rehabilitation onboarding surveys. The use of onboarding surveys fulfill part *e* and *f* of the Executive Order 13571 (2011) which state that the government should:

“(e) streamlining agency processes to reduce costs and accelerate delivery, while reducing the need for customer calls and inquiries; and (f) identifying ways to use innovative technologies to accomplish the customer service activities above, thereby lowering costs, decreasing service delivery times, and improving the customer experience” (Executive Order 13571, 2011, para. 9-10). A sample survey is below²⁴.

- Please fill out the demographic information below.*
 - Name
 - Birthday
 - Sex
 - Ethnicity/Race
 - Age
 - Address

²⁴ Some State and Federal law may prevent the collection of some portions of this information. This warrants a follow-up study to ensure that all elements of the proposed survey are in compliance with State and Federal agency data collection policy. However, some elements of this study were suggested based on various states' current survey(s).

- Phone number
- Email address
- RTT/VP/Relay/ phone number
 - What is your preferred method of contact?
 - Is it okay if we send voicemails, texts, or emails to the provided contact information?
 - *(Allow for users to check yes/no for each contact method).**
- Answering the following section will help us connect you with the right counselor. Many of our counselors specialize in working with youth, or with specific disabilities. Please check the boxes for all the options that apply to you.
 - Currently attending high school
 - Currently attending a post-secondary program (College or University)
 - Currently attending a trade school program
 - Aged 15-26
 - An adult over the age of 26 looking for employment
 - Blind or low vision
 - Deaf
 - Hard of hearing
 - Experiencing mental health or behavioral health challenges or have an existing mental health diagnosis. These are not limited to PTSD, depression, schizophrenia, bipolar, or anxiety.
 - Neurodiverse or on the autism spectrum
 - Physical mobility barriers

- Spinal cord injury
- Brain Injury
- Learning Disability
- Intellectual/Development disability
- Experiencing homelessness
- Other: _____
- Please describe your physical or mental difference that constitutes or results in a substantial impediment to employment.
- Please provide the name and phone number or email address of a person not in your home who will always know where you live.
- What is a good emergency contact?
- Briefly, in your own words, how can we help you?
- Are you currently employed? If yes, please fill out the following details:
 - Where?
 - What are the number of hours that you work per week
 - What is the name of your employer
 - Do you need assistance at this job?
- Can you legally work in the U.S.? If no-
 - An alien lawfully admitted for permanent residence (Alien Number _____)
 - An alien authorized by the Immigration and Naturalization Service to work in the United States (Alien Number _____) or Admission Number (_____)
 - None of the above, please explain (_____)

- Are you currently receiving any of the following benefits?
 - Supplemental Security Income (SSI)
 - Social Security Disability Insurance (SSDI)
 - Unemployment
 - Interim Disability Assistance (IDA)
 - Food Stamps
 - Survivor Benefits
 - Child Support
 - Temporary Assistance for Needy Families (TANF)
- Do you have Medical Insurance? (Check the box for all that apply)
 - Medicare
 - Medicare and a Secondary Supplemental Insurance
 - Medicaid
 - Public Insurance from Another Source
 - Private Insurance
 - No Insurance
 - I would like help with obtaining medical insurance
- Do you have any children?
 - If so, will you need assistance with childcare?
 - If you feel comfortable doing so, please describe the current care in place and their age(s).
- Do you require any special accommodations for your first appointment? If so, please enter the details below.

- What is your current level of education?
 - What is the level of education required/desired for your employment?
 - Do you currently have a job goal?
- Please list your interests, hobbies, skills, and talents.
- How can vocational rehabilitation help you with employment or any of these?

Check all that apply:

- Short- or long-term training (This may include on-the-job training, certificate program, or further post-secondary training)
- Job development (may include 1:1 assistance in finding a job, either from internal or external providers)
- Job coaching
- Orientation and Mobility Training (Example: assistance with learning new environments for those who are Blind)
- Mental restoration services (This may include working with a psychologist, therapist, or other services to support behavioral health needs)
- Physical restoration services (This could include physical therapy)
- Assistive technology (may include accommodations, may be technology such as screen readers, hearing aids, or cochlear implants)
- Self-Employment services (assistance in starting a new business)
- Assistance in applying for disability benefits such as SSI or SSDI
- Did you fill out this survey by yourself?
 - If someone assisted you, who?

The survey should conclude with a video that describes basic services for different types of disabilities. Additionally, a list of consumer rights and laws should be present on the survey to clearly inform them about the confidentiality and the use of the data, before it is submitted. This information could be processed and put into an intranet system.

Concluding The Vocational Rehabilitation Act of 1973

Section 7 of the Vocational Rehabilitation Act of 1973 states what administrative costs are covered in order to carry out the program as it is described in the Act. With regard to funding, Section 7 states that items that have been discussed within this research should be financially covered.

- (B) budgeting, accounting, financial management, information systems, and related data processing;

- (C) providing information about the program to the public;

- (D) technical assistance and support services to other state agencies, private nonprofit organizations, and businesses and industries, except for technical assistance and support services described in section 103(b)(5)

(Rehabilitation Act of 1973, Section 4, 29 U.S.C. 702, p. 6)

Websites can be generally classified as information or data processing systems due to their capability of carrying out both functions. Vocational Rehabilitation websites provide information about the program to the public. Appropriate funding, as stated in the Act, is needed to maintain, adjust, and execute functional website information sources. Appropriate funding for those unable to access the internet, such as in-person information sessions at public schools, public libraries, city halls, and other public community resources should also receive such funding for outreach support. The percent of funding

allocation that is designated for each section of the program is not listed in this section. It is simply stated that sections of program and tasks should be funded in order for the program to be carried out as stated under Title I.

The Rehabilitation Act of 1973 designates the meaning of assistive technology. Assistive technology for vocational rehabilitation borrows the definition formulated in section 3 of the Assistive Technology Act of 1998 (29 U.S.C. 3002). Examining the definitions, laws, and regulations regarding assistive technology would require a follow up study. However it should be briefly examined within the discussion as the findings demonstrate that there were differences between states based upon their funding and population. A discriminant analysis was used to measure the relationship that a budget and population of a state have on the presence of hearing aids on vocational websites ($X^2 = 6.163$, $df = 2$, $p = .046$). The population ($p = .035$) had a stronger predictive relationship than the budget of a state ($p = .072$). The population and budget had a significant impact on features when assessed together ($p = .046$) According to Section 4 of the Assistive Technology Act, the minimum assistive technology expenditure is \$410,000 by state and a minimum of \$125,000 by territory. The base calculation is based upon the prior year's expenditure. Once minimums are reached, additional allocations of 20% are distributed to the states equally; the other 80% is distributed to states and territories based on the population. Section 6 opens additional funding to competitive grants. It should be noted that federal and state agencies are not permitted to reduce assistance or benefits under any federal law as a result of the Assistive Technology Act. This demonstrates that the Assistive Technology Act, the state population, and the state budget all play a role in what resources are available to vocational clients. If resources are

not available and limited by the formula grant, modifications to the formula grant are necessary so that all disabled individuals seeking vocational rehabilitation services, regardless of their geographic location, have an equal opportunity in education and work success.

CHAPTER ELEVEN: CONCLUSION

Summary

How can state and federal agencies improve access to vocational rehabilitation for the deaf and hard of hearing? To uncover similarities and differences across state lines, U.S. vocational rehabilitation websites were examined through an analysis of quantitative and qualitative data. The quantitative content analysis assessed the availability, inclusion, accessibility, usability, clarity and transparency of vocational information, as well as the potential correlation between a state's political leaning and the nature of information provided. The qualitative reading delved deeper into the best, worst and notable visual design practices of vocational rehabilitation state websites in order to propose a model website based on best practices. Should these websites be standardized or should the program as a whole become standardized across states to ensure and provide equal services to all individuals with hearing loss?²⁵ The study seeks unmute the DHH population through providing information, empowering the DHH. The discourse of deafness is empowering only if knowledge is collected and made public.

Contributions

This is the first study that has used the CUITA codebook to examine state vocational rehabilitation service program websites across all 50 states, the District of

²⁵ Standardizations to the program as a whole would be beneficial if the program used a model from a state that is well-known for assisting vocational clients. It would not be beneficial if it limited or redacted items, but this is another discussion altogether.

Columbia, and five (5) U.S. territories. Vocational programs are usually reviewed on their fiscal returns or ability to give back to the public and decrease reliance on other social programs. To the primary researcher's knowledge, this study is the first public study not funded by the federal or state government to examine the presence or absence of features across all vocational websites. This study contributes to uncertainty reduction theory by demonstrating that the presence of content when usable, interactive, transparent, and tailored to the audience is a crucial factor in reducing uncertainty about social program resources. A name change to online-mediated communication is proposed to computer-mediated communication, a conceptual model commonly used with uncertainty reduction theory. The conceptual model is linked to the main categories of CUITA, to strengthen existing measurements of online interactivity.

The study transforms muted group theory into unmuted group theory, proposing it as a new, solutions-focused theory. The study suggests that integrating language to the muted population can also be unmuted, theoretically, if integrative services, or unmuting tools are present, usable, interactive, transparent, and adjusted for the muted audience. The inclusion of language is important but may be unhelpful if the information does not have CUITA features present. The language preferences of the DHH are highly variable which demonstrates that *language and unmuting tools* are necessitated for some populations to unmute themselves. In contrast to muted group theory, unmuted group theory focuses on empowerment through not only language, but also the presence of accessibility tools.

Additionally, this study examines the DHH population, an understudied population comprising 2-6% of the U.S. population, and their access to a resource

designed to benefit them with employment and education. Many of these services or websites demonstrated problematic functions and a need for more information, organization, and modification(s). Now that this gap, or need for updates, has been established, researchers, policymakers, and all interested parties can work towards a common goal.

The study employed various qualitative tools such as the Flesch-Kincaid Readability test, created DHH theme categories, and delved into the interworking of an Online Consumer's Hierarchy of Needs. The study demonstrated how these tools could be applied to future website analysis, vocational rehabilitation research, and other communication studies.

The study draws attention to accessibility accountability in state and federal governments and businesses, as well as in universities. With the provision of resources, public and private services better serve their constituents, users, clients, and students. Society thrives when all the individuals within it can integrate their unique viewpoints and evolve communication. However, retroactive checks that encourage accountability and compliance with existing and future measures are necessitated. This study has provided one way for accountability measures and solutions to evolve in a digital space that would quickly reflect on physical spaces.

This study further advocates for the foundation of Deaf Communication-Psychology as a discipline to integrate deaf epistemology, socialization, education, and general deaf research. To name a few, visuals, language, social interactions, and education are often distinctly different to the DHH and within their communities. Building upon concepts such as deaf epistemology, the psychology of people who are

deaf or hard of hearing, the development of language, and the dinner table syndrome, it is clear that Deaf research is a unique yet nuanced area of research that crosses every existing discipline, challenges dominant schools of thought and ideology. Deafness affects all races, ethnicities, ages, and other physical or mental health differences. Deafness is distinctly different from a disability studies discipline as deafness completely changes a person's psychology, learning, and socialization.

Future Research: A Compilation of the Many Areas in Need

Studies that Expand the CUITA Codebook

Future research can further explore the program differences between individualistic states and moralistic states. Within the present study, the political culture of a state significantly changed the provision of online vocational information for the DHH. Understanding and researching the history of policy differences by political culture classification may explain some of the drastic differences. A quantitative study conducting random sampling of members in Elazar's three political culture classifications could uncover additional relationships between culture, policy, and disability.

Another area for future research can examine the presence or absence of vocational rehabilitation information on congressional members' websites. Is there a relationship between the SVRSP and its presence on campaign websites in specific states? Social programs are likely not mentioned by name, leaving voters to assume what the incumbent politician or potential candidate supports based on their political leaning or online and verbal public blanket statement(s). Other studies can examine how candidates and incumbents use the general term "social program," and whether positive or negative connotation has a significant relationship with the budget, waitlisting, political party, or

features of state vocational programs. This research could be measured textually through a politician's website or linked social media sites such as Twitter, Facebook, or Instagram. The DHH likely search for political information online, not through auditory modalities such as broadcasted radio debates or live local television. Audible modalities are likely avoided unless the user knows that accurate captions and an interpreter will be present. Other tangential studies could examine what politicians have ASL interpreters at their rallies or campaigns.

Another open area for research is the use of service animals for the DHH. A study of this nature would uncover the relationship that vocational rehabilitation has with service animals, not only for the blind but also for those with other disabilities. The availability or accessibility of vet services and licensing programs for service animals, generally and online, can also be examined. Few states had listed information about service animals. Only six vocational rehabilitation states mentioned service animals, and many of them do not mention their companionship for disabilities other than blindness.

Technology Research & The Assistive Technology Act

Other research can examine the Assistive Technology Act. Supplemental to the Assistive Technology Act, the formula grant that is affected by the 80-20 fiscal split, which is modified by the state or territories population. The relationship between the budget, population, and number of vocational clients waitlisted should be examined to determine the efficacy of the program.

Future research should employ content analysis to examine the emails that are sent to vocational rehabilitation subscribers on various state websites. This study could analyze the intended target, the content, the frequency of the mail sent, the subscriber

retention rate, and more. The content can be assessed for disability and usefulness. Email is a widely used form of marketing that has grown in popularity in recent years. While email recipients usually perform a cursory glance at the message, the awareness of the program becomes part of the subscriber's recall memory. Recall memory is sparked in communication. This area of exploration would expand online-mediated communication and disability research.

The use of animated videos such as the one used on the Wyoming state vocational website should be examined (<https://www.youtube.com/watch?v=bfsEUsJDqm0&t=240s>). Animations may be useful for providing information to people with select disabilities, but others may prefer to see a human representative. Surveys can be conducted on a variety of disabilities to understand video preferences. With the results, the videos should be altered for the served population.

Finding Services

The ease of finding services for the disabled population should be examined. For example, parents may have difficulties finding resources such as vocational rehabilitation for their children. The way current and past consumers found vocational rehabilitation services should be studied so that the "marketing" of disability programs has a higher chance of being reached through effective "advertising" and publicity. This study suggests that doctors in specialized areas, such as audiologists, primary care doctors, "ear nose and throat" (ENT) doctors, and psychiatrists, should have information flyers about these programs. Programs should be made available so student disabilities can be addressed proactively rather than reactively. Public school systems should provide testing

for disabilities when difficulties become evident. Perhaps state disability and standardized testing should be conducted or begin between 1st and 2nd grade, around the age of 6 to 8, instead of the current standard of 4th grade or later, where the students are already 9 to 10 years old. Early testing should be conducted to prevent students from falling behind. If disabilities are addressed earlier, research can examine changes in education outcomes. Vocational systems can provide speaker representatives that visit local schools and high schools. These representatives can provide information flyers or informative brochures, contact information, PowerPoint® slides, and early intervention techniques.

Numeracy and Decision Making

Another study could examine numeracy and decision-making regarding vocational rehabilitation websites. When making decisions online, consumers can seek out numbers, statistics, percentages, and information about success rates. Those who are more numerate rely on numbers, but less numerate individuals rely on infographics and images that supposedly provide an accurate representation (Peters et al., 2006). A future study could look for the self-reported presence or absence of numeracy and self-efficacy to assess what types of information and wayfinding items are used to guide the DHH when using websites. Statistics are difficult to understand for those who are less literate and numerate. Lower numerical literacy leads to a reliance on mood and visual affect (Peters et al., 2006). "...choices of the less numerate showed a large effect of the affectively tinged frames above and beyond any influence of their evaluations of the separate options, whereas choices of the highly numerate were almost completely accounted for by their attractiveness ratings of the separate options" (Peters, 2017, p. 8).

People understand probability conditions better than frequency conditions (Peters, et al., 2014) and view numbers framed in probability better than the same numbers presented in frequency conditions. The DHH rely on visuals and sight more than hearing people, making them more visually oriented, yet the blind rely on text and screen reading. Mockup SVRSP websites, funded by a grant, could be formulated, and tested on different populations to determine the most efficient way of communicating program information to potential and current clients. Additionally, the affect of numeracy and decision-making processes between hearing, hard of hearing, and the deaf should be examined.

A pre-test with questions from the New General Self-Efficacy Scale formulated by Chen et al., (2001) could measure the DHH, blind, hearing, or another population's feelings of efficacy before interacting with a mockup state vocational website. The sample groups would be randomly and evenly split into two controls. First, the control group will interact with a well-designed website mockup with visuals, captioned audio-visual material, and infographics. Next, a separate test group would interact with a website mockup presenting the same information with less visual material, more numbers, and a different layout emphasizing text-based items instead of visuals. After interacting with the website mockup, both groups would retake the quantitative survey that examines elements such as self-efficacy, ease of use, and what they remember from the mock websites.

On another note, the research could include State Vocational Rehabilitation departments and integrate the actual employees of the SVRSP. This research would incorporate factors of usability design and examine existing problems through controlled focus groups. Other outreach studies can estimate the number of people who know about

vocational rehabilitation and their perceptions of the program to create “rebranding” and formulate a positive, or at least accurate public perception of the program.

The advent of disability research being conducted is wonderful! However, the research will be rendered useless if it is not integrated into policy, schools, public awareness, and the life of a disabled person. Summaries of research should be provided in an accessible format for the population that they serve.

Significance

The online provision of information and usability of State Vocational Rehabilitation Service Program websites has seen little to no research. SVRSPs are usually studied in regard to their relationship with universities or trade schools, work outcomes, effectiveness, budgets or other fiscal affairs, and program retention levels. The online global village, internet access, digitization, and abundance of information are expanding exponentially. Vocational Rehabilitation is a government program and resource of the people, by the people, and for the people. It is the role of those with access to research and knowledge to conduct and improve the program.

To comply with Federal policy, knowledge about the State Vocational Rehabilitation Service Program and various laws that protect the Deaf and Hard of Hearing should be widespread knowledge and easily accessible online. Providing vocational information through clear online-mediated communication and transparent communication, in general, will prevent situations like the one that Mr. Perez in Luna Perez V. Sturgis Public Schools experienced. However, the content, usability, interactivity, transparency, and audience of online state-provided information about accessibility services and education must be present to fulfill policy stipulations. No one,

regardless of ability, should be left out of their right to free and appropriate public education as stipulated by the Americans with Disabilities Act, Vocational Rehabilitation Program, and Individuals with Disabilities Education Act. Vocational Rehabilitation can supplement the needs of individuals; however, online information and the awareness of programs for the DHH must be widespread information. This study hopes to empower vocational programs and their consumers by identifying and providing solution-based approaches.

This study hopes to draw attention to Title 44-3501, also known as The 21st Century Integrated Digital Experience Act. Section 3 of the act focuses explicitly on website modernization, the Vocational Rehabilitation Act of 1973, and the Assistive Technology Act. In addition, this study hopes to strengthen the case for a discipline of Deaf Psychology-Communication.

The study expands muted group theory to a new theory, unmuted group theory, demonstrating that language and resources are needed for populations to be unmuted. Accessibility to resources frees the people from uncertainty; accessibility to resources frees the people from muteness. When groups have resources and are not muted, they are empowered. Research is an imperative part of democracy within the United States of America. Research, as it is knowledge, empowers the people.

Refocusing research to actual policies has led to significant accessibility shifts, an increase in the quality of life, and enhancement programs that promote the wellbeing of the populace. Focusing on solution-based approaches has enabled researchers to create timely legal prescriptions that can be used in the public policy sphere.

The research conducted was “*of the people.*” This research involved the people and public policy that regulates the government, which fulfills the “*by the people*” aspect of governance. The application of research demonstrates the utility of research within public policy formulation to ensure the government is reflexively modified “*for the people.*”

“The world will little note, nor long remember, what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us, that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion, that we here highly resolve that these dead shall not have died in vain, that this nation, under God, shall have a new birth of freedom, and that government of the people, by the people, for the people, shall not perish from the earth.”

(Abraham Lincoln, Gettysburg Address, November 19th, 1863).

APPENDICES

APPENDIX A

Codebook

Vocational Rehabilitation Website Evaluation Form

CUITA Codebook

<https://rsa.ed.gov/about/states>

<https://www.rit.edu/ntid/tuition/state-by-state-vr>

State:

URL:

Coder:

Internet Browser Used:

Evaluation Key

1 = present 0 = not present

Content

Feature	Present or not	Comments
Physical addresses		
Fax numbers		
E-mail addresses		
FAQ		
List of services		
List of VR counselors/staff		
Meeting minutes		
Committees		

Contact information		
Reports		
Laws and regulations		
Searchable?		
Press releases/announcements		
Archived?		
Events calendar		
Stories of success		
Reasonable accommodation solutions		
Assistive technologies provided		
Separate site for blind		
Mobile Optimization		

Usability

Organizational features	Status	Comments
Site search engine		
Site map/index		
Access for disabled		
Additional languages		
Downloadable documents		
Interactive forms		
Cookies		

Disability access		
Multiple browsers supported		
Dead links		
Video in ASL		
Video with closed captions		
Video posted to YouTube		

Interactivity

Feature	Status	Comments
Active e-mail to members		
Toll-free phone number		
Relay services		
Subscribe to updates		
Contact webmaster		
Public forum (social media)		
Suggestion box (recommendations)		
Interactive map to find offices		
End-user adjustments		
Limited use of graphics		
Links to related sites		
Portal		

Transparency

	Status	Comment
About us		
Vision/mission statement		
Board members		
Staff information		
Budget		
Privacy statement		
Policy statement		
Cookies		
Editing content policy		

Audience

	Status	Comment
DHH services		
Blindness (field services)		
Deaf/blind services		
Brain injury services		

Closed captions in video		
ASL in video		
Student services		
Educational information		
Community living services (independent living)		
Business opportunities		
Hiring/supervising employees with disabilities		
Career counseling		
Job seeking opportunities		
Employment programs		
Hearing Aids		
Cochlear implants		
Child Services		
Health benefits		
List of disabilities served		
Veterans		
Service animals		

APPENDIX B

Modifications to the Original CUITA Codebook

For clarity, it should be noted that these modifications were applied before the quantitative assessment. They are different than the ones mentioned in the discussion. These adaptations were made based on the original CUITA codebook by Ferber, Foltz and Pugliese (2008), and demonstrate what was added and redacted for the codebook used in this study. The codebook used for this study is listed in APPENDIX A.

The codebook was originally used by Ferber, Foltz and Pugliese (2008) to uncover the differences across state legislature websites. As vocational rehabilitation is a different program and had a different use, the code book should be appropriately modified period below are the different sections of the additions and reductions to the CUITA codebook. Many of the modifications are self-explanatory, and for those that are not, explanations have been added. The primary researcher worked with the two coders and one of the original CUITA authors to formulate a modification to the codebook.

Content Section Modifications

- Removed: Maps of Districts, floor calendar/schedules, committee schedules, list of pending legislation, privacy statement (this feature was moved to the transparency section), video feed from floor, audio feed from floor, staff info, and votes.
- Added: List of VR counselors/staff, meeting minutes, laws and regulations, Stories of success, reasonable accommodation solutions, assistive technologies provided, separate site for blind, mobile optimization.

Usability Section Modifications:

- Removed: Banners, fees, frames
- Added: Interactive forms, disability access, multiple browsers supported, dead links, video in ASL, video with closed captions, video posted to YouTube.

Interactivity Section Modifications:

- Removed: This was the only section where nothing was removed from the original CUITA codebook.
- Added: Relay services, Suggestion box (recommendations), interactive map to find offices, end-user adjustments, limited use of graphics, links to related sites, portal.

Transparency Section Modifications:

- Removed: Ownership, contacts/reachability, organizational information
- Added: About us, vision/mission statement, board members, staff information, budget, privacy statement, policy statement, cookies, editing content policy.

Audience Section Modifications:

- *Removed:* Usefulness for citizens, usefulness for experts, clarity of separation for citizens and experts.
- *Added:* DHH services, Blindness (field services), deaf/blind services, brain injury services, closed captions in video, ASL in video, student services, educational information, community living services (independent living), business opportunities, hiring/supervising employees with disabilities, career counseling, job seeking opportunities, employment programs, hearing aids, cochlear implants, child Services, health benefits, list of disabilities served, veterans, service animals.

APPENDIX C

Cohen's Kappa by Variable

Variable Name	Corresponding Kappa
Physical Address	.571
Fax Number	1.0
Email Address	.571
Frequently Asked Questions	.667
Webmaster	1.0
Information Forum	.667
Suggestion Box	.571
Website Map	1.0
Links	1.0
About Us	1.0
Vision/Mission	1.0
Staff Information	1.0
Budget	.571
Privacy Policy	.667
Website Cookies	1.0
Editing Policy	1.0
Blind Services	1.0
Deaf-Blind Services	.667

Brain Injury Services	.667
Student Services	1.0
Education Information	1.0
Community Information	1.0
Business Information	1.0
Hiring (Staff)	1.0
Career (Clients)	1.0
Job Information (Clients)	1.0
Laws & Regulations	.667
Law Search	.667
Public Relations Information	1.0
Success Stories	.571
Reasonable Accommodations	.667
Assistive Features	1.0
Site Search	1.0
Downloadable Documents	1.0
Languages	1.0
Information Forum	.667
ASL Videos	1.0
Closed Captioned Videos	1.0
YouTube Videos	.667
Active Mail	.667

Tollfree Number	.571
Relay Phone	.571
Subscribe Button	1.0
Webmaster	1.0
Suggestion Box	.571
Deaf and Hard of Hearing Services	1.0
Employment Information (Clients)	1.0
Hearing Aid Information	.571
Cochlear Implant Information	.667
Child Services	.571
Health Services	.571
Disability List	1.0
Vet Information	.667
Service Animal Information	1.0
Services Available	1.0
Policy Information	1.0

APPENDIX D

Useful Resources for Government Web Design, Vocational Rehabilitation Resources, and More

- Useful Resource(s) from the U.S. General Services Administration (Digital.gov, 2023)
 - Checklist of Requirements for Federal Websites and Digital Services:
<https://digital.gov/resources/checklist-of-requirements-for-federal-digital-services/>
- U.S. Digital Service Playbook: <https://playbook.cio.gov>
- Relevant Policies and Regulations: <https://digital.gov/topics/policy/>
- Required Web Content and Links: <https://digital.gov/resources/required-web-content-and-links/?=checklist>
- More Information on the 21st Century Idea Act: <https://digital.gov/topics/21st-century-idea/>
- How to Test Websites for Accessibility: <https://digital.gov/resources/how-test-websites-for-accessibility/?dg>
- Guides and Resources: <https://digital.gov/resources/#data>
- Vocational Rehabilitation Resources listed by the National Technical Institute for the Deaf: <https://www.rit.edu/ntid/tuition/vr#overview>
- State By State List of Vocational Rehabilitation Agencies Online:
 - <https://www.rit.edu/ntid/tuition/state-by-state-vr>
 - <https://rsa.ed.gov/about/states>

- Rehabilitation Services Administration:

<https://rsa.ed.gov/about/programs/vocational-rehabilitation-state-grants/vr-program-reference-guide>

APPENDIX E

Go Live Checklist for Federal Websites and Digital Services

This is the “Go Live Checklist for Federal Websites and Digital Services” that should be used by department designers after the CUITA codebook examines the state website.

This spreadsheet in conjunction with the CUITA model should serve as the foundation for standardizing State Vocational Rehabilitation Service Program Websites. It is referenced in the qualitative portion of this study and found online [here](#).

Overview

	A	B	C	D	E	F	G
1	Go-Live Checklist for Federal Websites and Digital Services (v1.0)						
2	This checklist references the laws and policies governing federal public websites and digital services (both at launch, and over time).						
3	INSTRUCTIONS: Navigate through each tab and use the drop-downs to provide a status for each requirement; columns C and D below will auto-populate to show overall status for each topic.						
4	Topic Tab	Description	% launch criteria met (auto-populated)	% mgmt criteria met (auto-populated)	If site does NOT meet all criteria, describe remediation needed to meet policy requirements	Estimated remediation cost	Expected date (FY) to reach compliance
5	Accessibility	Accessible to and usable by individuals with disabilities	0%	0%			
6	Analytics	Data-informed analysis influences management and development decisions	0%	0%			
7	Content	Content team is empowered to edit content so it meet user needs and work well on the web	0%	0%			
8	Design, UX	Site is consistent in appearance, modern, designed around user needs, and fully functional on common mobile devices	0%	0%			
9	Governance	Management processes are in place that empower web teams to improve digital experience	0%	0%			
10	Privacy	User information is protected	0%	0%			
11	Search	Site contains a search function to allow users to easily search content; content is optimized for search	0%	0%			
12	Security	Content is provided through an industry standard secure connection; site meets all current security requirements	0%	0%			
13	Trust	Content is current, authoritative, unique (no duplication), and clearly identifies as an official government site	0%	0%			
14	Internal	Site follows all relevant internal agency policies and guidelines.	0%	N/A			
15	Key overarching policy: OMB M-17-06 Policies for Federal Agency Public Websites and Digital Services (OMB M-17-06).						
16	Key overarching law: 21st Century Integrated Digital Experience Act (21st Century IDEA).						
17	Find implementation guidance: Digital.gov .						
18							

Site Launch

1	Site Launch	
2	Description: General information about the site, team and funding.	
3	INSTRUCTIONS: Complete this tab if you're planning to launch a new website or digital service; provide to your agency's Digital Council for review before you build or contract for anything!	
4	Note: DO NOT expend any resources on this project until you have approval from your agency's Digital Council to begin work.	
5	About the site, the team, and the funding model	Response
6	What is the proposed name of digital service, website, or project?	
7	What is the URL (actual or planned)?	
8	-- Have you reserved the domain name yet?	
9	What is the anticipated launch date?	
10	What is the purpose of the site?	
11	What are the primary goals of the site?	
12	Who is the primary audience?	
13	Who is the secondary audience?	
14	What are the top 1-3 customer tasks for the site? List them.	
15	Is the site required by policy? If yes, list the policy.	
16	What is the hosting solution for the site?	
17	What content management platform or system will you use?	
18	Is a login required to use the site?	
19	Does the site integrate with any other systems? If yes, list them and explain the connection.	
20	Do other sites exist (within your agency, or at another federal agency) that provide similar content or services? If so, list them.	
21	Have you considered whether this content could be integrated into an existing site? If so, but you still feel that a separate site is needed, please provide a link to any research you've done that supports the need for a new site.	
22	Is this site a collaboration with other internal offices or teams within your agency? If so, please list them.	
23	Is this site a collaboration with another federal agency or agencies? If so, please list them.	
24	What is the sponsoring business office or organization?	
25	What is the number of the support contract?	
26	What is the business owner's name?	
27	What is the business owner's email address?	
28	What is the business owner's phone number?	
29	Does your office have staff with the following skills to support and manage the site over time? If No, explain how you plan to cover each function.	
30	-- Chief Digital Experience Officer	
31	-- Digital Communications Strategist	
32	-- Web Manager	
33	-- Writer or Editor (Digital Content)	
34	-- IT Accessibility Specialist	
35	-- User Experience Specialist or Designer	
36	-- Customer Experience Specialist	
37	-- Social Media Manager	
38	-- Web Developer	
39	-- Contracting Officer's Rep (Technology)	
40	What is the estimated cost to build and launch the site?	
41	Do you have sufficient funding to launch? If no, how do you plan to secure funding?	
42	What is the annual estimated cost to manage and maintain the site over time?	
43	Do you have sufficient funding to maintain the site for the next (1-5) years? If no, how do you plan to secure funding? If you've completed a "cost estimator" spreadsheet for this site, please provide a link to it.	

Redesign

1	Redesign	
2	Description: General information about redesign plans and funding.	
3	INSTRUCTIONS: If you're planning to redesign an existing website or digital service, provide this info to your agency's Digital Council for review before you build or contract for anything!	
4	Note: DO NOT expend any resources on this project until you have approval from your agency's Digital Council to begin work.	
5	Redesign Plans	Response
6	What is the URL address of the site you're redesigning?	
7	What is the goal of the redesign?	
8	When was the last time the site underwent a significant redesign?	
9	About how long do you expect the redesign to take?	
10	What is the estimated cost of the redesign? If you've completed a "cost estimator" spreadsheet for this site, please provide a link to it.	
11	Do you currently have sufficient funds to complete the redesign? If not, how do you plan to secure funds?	
12	Have you done any research to support your redesign decisions? If so, list data sources, with links, below.	
13	– Accessibility testing	
14	– Usability testing	
15	– User interviews	
16	– Customer service, email, or help desk feedback	
17	– Site analytics	
18	– Search analytics	
19	– Other (please explain in Column B)	
20	What were the 10 most-visited pages on your site over the past month? Use DAP or another analytics tool to identify them, and list the URLs.	
21	What types of devices did visitors use to access your site over the past month? List % of traffic for desktop, mobile, other.	
22	What were the top 10-20 search terms on your site over the past month? List them.	
23	How do most users find your site (search, organic visits, email, social media, other referral)?	

Accessibility

1	Policy Area: Accessibility		
2	Description: Accessible to and usable by individuals with disabilities, as defined by Section 508 of the Rehabilitation Act.		
3	Criteria for Site Launch	Relevant Laws and Policies	Status (select from dropdown)
4	1. All design elements have been tested to ensure conformance to the information and communication technology (ICT) Accessibility 508 Standards; pay particular attention to sufficient color contrast, and presence of HTML anchor elements, which will be reported on digitaldashboard.gov. Collaborate with your agency's 508 Program Manager to ensure your team follows agency-specific testing guidelines.	Section 508 of the Rehabilitation Act; OMB M-17-06; 21st Century IDEA	
5	2. All site content (including HTML pages, images, and documents) has been tested to ensure conformance to the ICT Accessibility 508 Standards; pay particular attention to presence of text descriptions for images, which will be reported on digitaldashboard.gov. Collaborate with your agency 508 Program Manager to ensure your team follows agency-specific testing guidelines.	Section 508 of the Rehabilitation Act; OMB M-17-06; 21st Century IDEA	
6	3. Site has an accessibility statement , linked from site footer (required link).	OMB M-17-06	
7	Total % of site launch criteria met		0%
8			
9	Criteria for Ongoing Management	Relevant Laws and Policies	Status (select from dropdown)
10	1. Plan for and build accessibility requirements into the contracting, development, operations, and management lifecycle of your websites and digital services. Validate the requirements with your agency's Section 508 Program Manager.	Section 508 of the Rehabilitation Act; OMB M-17-06; 21st Century IDEA	
11	2. Incorporate accessibility testing into your site's standard publication process, so all new content and design changes are tested to ensure conformance to the ICT Accessibility 508 Standards before publication. Validate your publication process with your agency's Section 508 Program Manager.	Section 508 of the Rehabilitation Act; OMB M-17-06; 21st Century IDEA	
12	3. Collaborate with your agency's Section 508 Program Manager to train your team on their responsibilities related to accessibility.	Section 508 of the Rehabilitation Act; OMB M-17-06; 21st Century IDEA	
13	4. Collaborate with your agency's Section 508 Program Manager to train all content contributors to create accessible digital content, to avoid the need for remediation prior to publication.	Section 508 of the Rehabilitation Act; OMB M-17-06; 21st Century IDEA	
14	5. Develop and follow a standardized process to quickly remediate accessibility issues when discovered. Validate the process with your agency's Section 508 Program Manager.	Section 508 of the Rehabilitation Act; OMB M-17-06; 21st Century IDEA	
15	Total % of ongoing site management criteria met		0%

Analytics

1	Policy Area: Analytics		
2	Description: Data-informed analysis influences management and development decisions.		
3	Criteria for Site Launch	Relevant Laws and Policies	Status (select from dropdown)
4	1. Site is running the Digital Analytics Program (DAP) (Google Analytics) tracking code to collect site usage and performance data (quantitative).	OMB M-10-22, Guidance for Online Use of Web Measurement and Customization Technologies ; OMB M-17-06; 21st Century IDEA	
5	2. Site has at least one statistically valid customer satisfaction survey or other mechanism in place to collect customer feedback (qualitative).	OMB Circular A-130 Section 280 ; OMB M-17-06; 21st Century IDEA	
6	3. All public surveys, forms, etc. have OMB approval with the OMB control number clearly displayed on the collection.	Paperwork Reduction Act	
7	4. Set and socialize performance standards, and evaluate the site regularly (at least annually) to ensure the site is meeting them.	Government Performance and Results Modernization Act (GPRAMA)	
8	Total % of site launch criteria met		0%
9			
10	Criteria for Ongoing Management	Relevant Laws and Policies	Status (select from dropdown)
11	1. Regularly use qualitative and quantitative data, metrics, and user testing to understand user goals, needs, and behaviors, address customer feedback, and continuously improve site and program. Make this data available to staff. Consider making data available to the public, as well. Share findings and validate action plans with your agency's Digital Council before execution.	OMB M-17-06; 21st Century IDEA	
12	2. Use customer feedback and analytics to prioritize modernization of sites and services that are most frequently accessed by users. Validate modernization plans with agency Digital Council before execution.	21st Century IDEA	
13	3. Maximize the use of digital processes (forms, filing, signatures) whenever possible.	21st Century IDEA	
14	Total % of ongoing site management criteria met		0%

Content

1	Policy Area: Content		
2	Description: Content team is empowered to edit content so it meet user needs and work well on the web.		
3	Criteria for Site Launch	Relevant Laws and Policies	Status (select from dropdown)
4	1. Content is written in plain language and tailored to the site's target audience. Content and navigation are organized around user-friendly topics, not internal organizational structure.	Plain Writing Act ; OMB A-11 Section 280; OMB M-17-06; 21st Century IDEA	
5	2. Content is optimized for viewing on small screens (concise, structured, most important content first).	Connected Government Act ; OMB M-17-06; 21st Century IDEA	
6	3. Site follows current federal guidance on required content and links .	OMB M-17-06	
7	4. All forms are available in digital format and can be filled out and submitted via a paperless process.	Paperwork Reduction Act ; Gov't Paperwork Elimination Act (GPEA); Small Biz Paperwork Relief Act of 2002; OMB M-11-26 PRA Fast Track Process; OMB M-17-06; 21st Century IDEA	
8	5. Information is structured in a way that enables data to be fully discoverable and usable.	OMB M-13-13 Open Data Policy - Managing Information as an Asset ; OMB M-17-06	
9	6. Site follows NARA guidance to establish an inventory, priority, and records schedule of content.	Code of Federal Regulations (CFR), Parts 1220-1238 ; OMB M-17-06	
10	7. Appropriate access is provided for people with limited English proficiency , based on agency mission, analytics, and user feedback.	EO 13166 Improving Access to Services for Persons with Limited English Proficiency ; OMB M-17-06	
11	8. Site follows current guidance on use of third-party websites and applications (valid Terms of Service are in place per the Anti-deficiency Act; such tools comply with federal requirements around privacy and data collection).	Federal Acquisition Regulation (FAR) Clause 52.212-4(u) ; OMB M-10-23 Third-Party tools; OMB M-13-10 Antideficiency Act/ToS; OMB M-17-06	
12	9. Site complies with existing laws that prohibit federal public websites from being used for direct or indirect lobbying , and does not advertise for, nor provide preferential treatment to, private individuals, firms, or corporations.	18 USC 1913 Prohibition of Lobbying	
13	Total % of site launch criteria met		0%
14			
15	Criteria for Ongoing Management	Relevant Laws and Policies	Status (select from dropdown)
16	1. Develop and enforce editorial processes to ensure trained web writers review and approve all content before it's published.	OMB M-17-06	
17	2. Consistently follow plain writing best practices when creating new digital content and services.	OMB M-17-06	
18	3. Develop and follow a standardized plan to regularly delete or archive content that is obsolete and is not required by law or regulation.	OMB M-17-06	
19	4. Ensure content management processes are sustainable at scale, across the organization, over time.	OMB M-17-06	
20	5. Register all public-facing digital services associated with this site (such as social media, collaboration accounts, and mobile apps) in the U.S. Digital Registry .	OMB M-17-06	
21	6. Review the site's records schedule at least annually, and update site content accordingly when needed, to ensure the agency's ability to identify, retrieve, and preserve agency records created and maintained on this website or associated third-party sites.	Records Management Laws	
22	7. Consider publishing a page at [agency].gov/copyright with language that allows others to legally use or reuse user-generated content on your site (reference https://www.usa.gov/government-works).	Copyright laws	
23	Total % of ongoing site management criteria met		0%
24			

Design UX

1	Policy Area: Design, UX		
2	Description: Site is consistent in appearance, modern, designed around user needs, and fully functional and usable on common mobile devices.		
3	Criteria for Site Launch	Relevant Laws and Policies	Status (select from dropdown)
4	1. Site complies with federal website standards through use of U.S. Web Design System (USWDS) principles, guidance, and code.	Federal Website Standards ; 21st Century IDEA	
5	2. Site provides a consistent look, feel, and experience to users that is consistent with internal agency design and branding guidelines.	OMB M-17-06 ; 21st Century IDEA	
6	3. User testing is conducted during design and development phases, and user feedback influenced design decisions. Test results have been shared with content and development teams.	OMB M-11-24, Streamlining Service Delivery and Improving Customer Service ; OMB M-17-06; 21st Century IDEA	
7	4. Users on non-desktop devices (e.g., mobile devices, tablets) have equivalent access to government information and services.	Connected Government Act ; OMB M-17-06; 21st Century IDEA	
8	5. Responsive design is used to deliver content so it performs equally well, and can be easily consumed, on a variety of devices, browsers, and screen sizes (fully functional and usable on common mobile devices).	OMB M-17-06; 21st Century IDEA	
9	6. Site supports the latest versions of the three most popular web browsers (desktop and mobile).	OMB M-17-06; 21st Century IDEA	
10	Total % of site launch criteria met		0%
11			
12	Criteria for Ongoing Management	Relevant Laws and Policies	Status (select from dropdown)
13	1. Conduct regular, ongoing user or usability testing, and use findings to improve the digital experience.	OMB M-17-06; 21st Century IDEA	
14	2. Ensure site works on all web browsers that are used by more than 5% of users (including mobile).	OMB M-17-06; 21st Century IDEA	
15	Total % of ongoing site management criteria met		0%

Governance

1	Policy Area: Governance		
2	Description: Management processes are in place that empower web teams to improve digital experience.		
3	Criteria for Site Launch	Relevant Laws and Policies	Status (select from dropdown)
4	1. Coordinate with your agency's Digital Council to ensure your site aligns to the agency's plan for governing its websites, data, and digital services; plan should be published on the agency's Digital Strategy page at [agency].gov/digitalstrategy/.	E-Government Act of 2002 ; OMB Circular A-130; Digital Government Strategy; OMB M-17-06	
5	2. Content team is empowered to edit content to improve findability and readability, and ensure adherence to agency style guidelines and plain writing principles.	OMB M-17-06	
6	3. Site has a documented records schedule , developed in consultation with the agency Records Officer.	Records Management Laws ; OMB M-17-06	
7	4. If third-party websites or applications are used, agency has confirmed that terms of service are compatible with federal law or regulation.	OMB M-17-06	
8	Total % of site launch criteria met		0%
9			
10	Criteria for Ongoing Management	Relevant Laws and Policies	Status (select from dropdown)
11	1. Regularly review the agency's digital governance plan, and update as needed to reflect the current status of the agency's digital governance structure.	OMB M-17-06	
12	2. Site managers participate in GSA's Web Manager Community of Practice , to enable coordinated communication from DHS and GSA during incidents of national significance (emergency response).	Emergency Support Function 15 (ESF-15)	
13	Total % of ongoing site management criteria met		0%
14			

Privacy

1	Policy Area: Privacy		
2	Description: User information is protected.		
3	Criteria for Site Launch	Relevant Laws and Policies	Status (select from dropdown)
4	1. Standardized processes are in place to protect user privacy ; site follows the latest policies, principles, standards, and guidelines on privacy.	View all, including OMB M-17-06	
5	2. Agency principal website has a Privacy Program page , available at agency.gov/privacy and linked from the agency's "About" page (required link); page contains all the information required in M-17-06. All other agency sites link to this page from their "About" page.	OMB M-17-06	
6	3. Site has a privacy policy , written in plain language, linked in the identifier , and containing all the information required in M-17-06.	OMB M-17-06	
7	4. If site collects information using an online interface, a Privacy Act statement is available to explain that the information collected will become part of a system of records under the Privacy Act.	Privacy Act ; OMB M-17-06	
8	5. Site offers a privacy notice whenever a Privacy Act statement is not required but members of the public could nonetheless provide PII to the agency using an online interface.	OMB M-17-06	
9	6. If site delivers content to children under the age of 13 and site collects, maintains, or discloses children's PII , site complies with the Children's Online Privacy Protection Act.	Children's Online Privacy Protection Act ; OMB M-17-06	
10	7. Use of any third-party websites and applications complies with all relevant privacy protection requirements.	OMB Memo M-10-23, Guidance for Agency Use of Third-Party Websites ; OMB M-17-06	
11	8. Site follows current identity management processes and federal best practices for design and functionality of authentication pages , to ensure a consistent experience for users of more than one government system or site.	OMB M-17-06; 21st Century IDEA	
12	9. If site has login or transactional features, a shared service such as login.gov is used to authenticate users , and ensure they can complete digital transactions in an efficient and accurate manner.	21st Century IDEA	
13	10. Site allows repeat visitors, who have logged in, to auto-populate forms with saved information, such as contact information (customized experience).	21st Century IDEA	
14	Total % of site launch criteria met		0%
15			
16	Criteria for Ongoing Management	Relevant Laws and Policies	Status (select from dropdown)
17	1. Follow the latest policies, principles, standards, and guidelines on privacy, in accordance with FISMA and other laws.	OMB M-17-06	
18	2. Review privacy risks at the earliest planning and development stages of agency actions and policies that involve PII, and continue throughout the life cycle of the information.	OMB M-17-06	
19	3. Update the site privacy policy whenever the agency makes a substantive change to privacy practices.	OMB M-17-06	
20	4. Stay current with evolving federal policy and best practice for design and functionality of authentication pages, and customization of user experiences.	21st Century IDEA	
21	Total % of ongoing site management criteria met		0%
22			
23			

Search

1	Policy Area: Search		
2	Description: Site contains a search function to allow users to easily search content; content is optimized for search.		
3	3. Site is registered with the major commercial search engines.	OMB M-17-06	
4	4. A sitemap exists on the site in XML format.	OMB M-17-06	
5	5. A robots.txt file exists on the site to instruct automated web bots how to crawl and/or index the site.	OMB M-17-06	
6	Total % of site launch criteria met		0%
7			
8	Criteria for Ongoing Management	Relevant Laws and Policies	Status (select from dropdown)
9	1. Use third-party web tagging services (such as Google Analytics) to track search analytics.	21st Century IDEA	
10	2. Regularly review and analyze customer search terms to identify top task content and make it easier to find.	21st Century IDEA	
11	3. When redesigning a site that uses Search.gov, complete all actions in the Checklist for a Successful Website Redesign .	OMB M-17-06; 21st Century IDEA	
12	Total % of ongoing site management criteria met		0%
13			
14			
15			
16			

Security

1	Policy Area: Security		
2	Description: Content is provided through an industry standard secure connection; site meets all current security requirements.		
3	Site is hosted on a .gov or .mil domain. 2nd-level domains must have OMB approval; 3rd-(or lower) level domains must have internal management (IT or Comms) approval.	eCFR Part 102-173 Internet Gov Domain; OMB M-17-06	
4	Site has a secure (SSL) certificate, and provides content and services through a secure connection (HTTPS-only, with HSTS); SSLv2 and SSLv3 are disabled; 3DES and RC4 ciphers are disabled.	OMB M-15-13, Policy to Require Secure Connections across Federal Websites and Web Services; 21st Century IDEA	
5	Total % of site launch criteria met		0%
6			
7	Criteria for Ongoing Management		Relevant Laws and Policies
8	1. Stay current with, and implement, the latest policies, principles, standards, and guidelines on information security, in accordance with FISMA and other laws.	OMB M-17-06; 21st Century IDEA	Status (select from dropdown)
9	2. Remain up-to-date with major technical changes in internet protocol (i.e., IPv6).	OMB M-17-06	
10	3. Prioritize and maintain secure, private interactions with customers.	OMB M-17-06	
11	4. Maintain a list of agency-operated nongovernmental URLs at https://search.gov/developer/govt-uris.html .	OMB M-17-06	
12	Total % of ongoing site management criteria met		0%
13			

Trust

1	Policy Area: Trust		
2	Description: Content is current, authoritative, and unique (no duplication within or across agencies), and clearly identifies as an official government site.		
3	4. External links to non-federal sites are clearly identified, and a mechanism is in place to notify visitors that those websites do not necessarily operate under the same laws, regulations, and policies as federal websites.	OMB M-17-06	
4	5. Content is unique and does not duplicate content on any other government website.	OMB M-17-06; 21st Century IDEA	
5	6. The USWDS banner and identifier components are implemented to assure users that the site is an official website that is maintained by the federal government.	21st Century IDEA	
6	Total % of site launch criteria met		0%
7			
8	Criteria for Ongoing Management		Relevant Laws and Policies
9	1. Coordinate with the Department of Homeland Security (DHS) and the Federal Web Council during incidents of national significance or emergencies. Join the Digital.gov Web Managers Community to receive web-related information during such events.	FEMA Emergency Support Function (ESF) #15	Status (select from dropdown)
10	2. Conduct regular (at least annual) content audits to identify and remove duplicative content, or identify content gaps that need to be filled (and fill them).	OMB M-17-06	
11	3. Clearly identify all external links to non-federal sites, and update or remove those links when the external information is no longer sufficiently accurate, relevant, timely, necessary or complete.	OMB M-17-06	
12	Total % of ongoing site management criteria met		0%
13			

Internal

1	Policy Area: Internal Agency Policy		
2	Description: Sites and content follow all relevant internal agency guidelines related to digital content and service delivery.		
3	INSTRUCTIONS: Customize this tab to reflect requirements unique to your agency. Sample criteria have been provided below to get you started. (If you add or remove lines, review the "total" formula to ensure it's calculating correctly.)		
4	Criteria for Site Launch and Ongoing Management	Relevant internal policy reference	Status (select from dropdown)
5	Site follows internal agency governance policies and procedures for creating and managing websites and digital services.		
6	Site provides a consistent look and feel, and user experience, following all internal agency design and branding guidelines.		
7	Site follows all internal agency Section 508 (IT accessibility) policies and guidelines, such as use of standardized testing tools, and transparency around testing results.		
8	Site meets all internal agency requirements for both application and platform security (e.g., an approved authority to operate (ATO); use of the Standard Agency Content Delivery Network (CDN)).		
9	Site follows all internal agency content and style guidelines.		
10	Site follows internal agency standards for imagery and videography (including bitrate).		
11	Team has documented a plan to address any remaining issues, and bring the site into full compliance.		
12	Total % of criteria met		0%
13			

Lookup Status

	A	B
1	Lookup-Status (Do Not Edit)	
2	Done	
3	Partial	
4	Not Done	
5	N/A	
6		
7		
8		

APPENDIX F

A List of All State Vocational Rehabilitation Service Program Websites by State

- Alabama: <https://www.rehab.alabama.gov/services/vr/vr>
- Alaska: <https://labor.alaska.gov/dvr/>
- Arizona: <https://des.az.gov/services/employment/rehabilitation-services/vocational-rehabilitation-vr>
- Arkansas: <https://dws.arkansas.gov/ar-rehabilitation-services/>
- California: <https://www.dor.ca.gov>
- Colorado: <https://dvr.colorado.gov>
- Connecticut: <https://portal.ct.gov/AgingandDisability/Content-Pages/Programs/Vocational-Rehabilitation---Bureau-of-Rehabilitation-Services>
- Delaware: <https://labor.delaware.gov/divisions/dvr/>
- District of Columbia: <https://dds.dc.gov/service/vocational-rehabilitation-services>
- Florida: <https://www.rehabworks.org/>
- Georgia: <https://gvs.georgia.gov>
- Hawaii: <https://humanservices.hawaii.gov/vocationalrehab/>
- Idaho: <https://vr.idaho.gov>
- Illinois: <https://www.dhs.state.il.us/page.aspx?item=29737>
- Indiana: <https://www.in.gov/fssa/ddrs/rehabilitation-employment/vocational-rehabilitation-employment/>
- Iowa: <https://ivrs.iowa.gov>
- Kansas: <https://www.dcf.ks.gov/services/RS/Pages/Employment-Services.aspx>

- Kentucky: <https://kcc.ky.gov/Vocational-Rehabilitation/Pages/Kentucky-Office-of-Vocational-Rehabilitation.aspx>
- Louisiana: https://www.laworks.net/workforcedev/lrs/lrs_rehabilitation.asp
- Maine: <https://www.maine.gov/rehab/dvr/>
- Maryland: <https://dors.maryland.gov/Pages/default.aspx>
- Massachusetts: <https://www.mass.gov/vocational-rehabilitation>
- Michigan: <https://www.michigan.gov/mrs>
- Minnesota: <https://mn.gov/deed/job-seekers/disabilities/>
- Mississippi: <https://www.mdrs.ms.gov>
- Missouri: <https://dese.mo.gov/adult-learning-rehabilitation-services/vocational-rehabilitation>
- Montana: <https://dphhs.mt.gov/detd/vocrehab/>
- Nebraska: <http://www.vr.nebraska.gov>
- Nevada:
https://detr.nv.gov/Page/Rehabilitation_Division_Bureau_of_Vocational_Rehabilitation
- New Hampshire: <https://www.education.nh.gov/who-we-are/deputy-commissioner/bureau-vocational-rehabilitation>
- New Jersey: <https://nj.gov/labor/career-services/special-services/individuals-with-disabilities/index.shtml>
- New Mexico: <https://www.dvr.state.nm.us>
- New York: <https://www.acces.nysed.gov/vr>
- North Carolina: <https://www.ncdhhs.gov/divisions/vocational-rehabilitation-services>

- North Dakota: <https://www.hhs.nd.gov/vr>
- Ohio: <https://ood.ohio.gov/individuals-with-disabilities/services/vocational-rehabilitation>
- Oklahoma: <https://oklahoma.gov/okdrs/job-seekers/dvr.html>
- Oregon: <https://www.oregon.gov/dhs/employment/VR/Pages/index.aspx>
- Pennsylvania: <https://www.dli.pa.gov/individuals/disability-services/ovr/pages/default.aspx>
- Rhode Island: <https://ors.ri.gov/programs/vocational-rehabilitation-program>
- South Carolina: <https://scvrd.net>
- South Dakota: <https://dhs.sd.gov/rehabservices/vr.aspx>
- Tennessee: <https://www.tn.gov/humanservices/ds/vocational-rehabilitation.html>
- Texas: <https://www.twc.state.tx.us>
- Utah: <https://jobs.utah.gov/usor/>
- Vermont: <https://vocrehab.vermont.gov>
- Virginia: <https://www.dars.virginia.gov/drs/vr/>
- Washington: <https://www.dshs.wa.gov/dvr>
- West Virginia: <http://www.wvdrs.org>
- Wisconsin: <http://dwd.wisconsin.gov/dvr>
- Wyoming: <http://wyomingworkforce.org/workers/vr/>

List of U.S. Territory State Vocational Rehabilitation Service Program Websites:

- American Samoa: <https://www.americansamoa.gov>
- Guam: <https://disid.guam.gov/division-of-vocational-rehabilitation/>
- Northern Marianas: <https://www.ovrgov.net>
- Puerto Rico: <https://www.dli.pa.gov/individuals/disability-services/ovr/pages/default.aspx>
- Virgin Islands: <http://www.dhs.gov.vi/disabilities/index.html>

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