Building an Inclusive Library through Staff Accessibility Training

by

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ABSTRACT

Libraries provide a needed third place for students to engage with their peers and faculty, both academically and socially. Staff behavior, knowledge, and skills in providing an accessible and inclusive environment are key to helping students with disabilities feel that they belong in the libraries. This makes training in disability and accessibility awareness a necessary component of the overall program for the library. This study assessed a locally-developed, online training program for staff of all levels that was intended to improve staff knowledge and skills in disability etiquette, library services and spaces that support people with disabilities, and the policies that govern this work. The program used the four-part Deines-Jones (1999) model for its content and the core principles of andragogy for its instructional design. Assessment focused on changes in beliefs and knowledge using an adapted standardized scale, and evidence for learning from responses to training program questions, focus group discussions, and survey responses. Further development of the training program was informed by the principles of andragogy. Participants in the training program improved their scores in the knowledge domain but had no change in their beliefs domain. Learning was most evident in spaces where it engaged with previous knowledge and supportive customer service approaches. Participants identified and, in several cases, independently pursued new questions that were prompted by the training program. On the whole, participants found the training to be supportive and engaging, with minor changes to structure and focus recommended for the next iteration.

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TABLE OF CONTENTS

Page

LIST OF TABLES

Table Page

LIST OF FIGURES

Figure Page

Chapter 1

LEADERSHIP CONTEXT AND PURPOSE OF THE ACTION

Disability in Society

In the 2015-16 school year, 19.4% of U.S. undergraduate students and 11.9% of graduate students reported having a disability, according to the National Center for Education Statistics (2017). This percentage of undergraduates with disabilities is higher for some racial and ethnic minorities (27.8% of Native American and 22.1% of multiracial students), nontraditional students (22.6% of students over the age of 30), and veterans (25.8%). The NCES includes learning, vision, hearing, speech, orthopedic and mobility, and health impairments in their definitions of disability.

The NCES further estimates that more than 4.1 million undergraduate and graduate students with disabilities were enrolled at colleges and universities in the United States (NCES, 2017). At a large public institution such as James Madison University, nineteen percent of the student body is equivalent to approximately 4,500 students with disabilities. This is a large number of students who may be experiencing a wide range of barriers in their scholarly careers. There is evidence that having one or more disabilities impacts retention, graduation, and time to graduation (Knight, Wessel, & Markle, 2016).

Over the past forty years, the field of disability studies has identified several different approaches to studying the lived experiences of people with disabilities. Perhaps the most common understanding of disability is termed the *medical model*, in which a person is called “disabled” when they have a physical, mental, emotional, or learning disability or impairment that impedes their ability to participate in society. This model

suggests that the disabling problem is centered in the individual, and that it can, and should, be cured or treated with medical or psychological interventions. An opposing model to this is the *social model* of disability, in which a person is disabled by barriers that are constructed physically or socially by others and the environment. In this model, a person may have a permanent or temporary physical, mental, emotional, or learning impairment, but they are not disabled until they encounter something like stairs or poor signage that inequitably impacts their ability to participate. In this case, the burden of improving the life of the impacted person lies not on the individual, but on society (Haegele & Hodge, 2016; Marks, 1997; Masala & Petretto, 2008; Shakespeare, 2013).

Throughout this study, I use terminology aligned with the social model of disability whenever possible. I use the term "impairments" to refer to individual elements that may interact negatively with barriers in the environment. Examples of these are physical impairments like blindness, diseases such as chronic fatigue syndrome, emotional/psychological disorders like ADD/ADHD, and learning impairments such as dyslexia. In contrast, "disabilities" are the socially constructed results of the interaction between impairments and the environment. For example, a person with blindness and another with dyslexia may both be disabled by signage that has a lot of low-contrast, small print.

When referring to people, I use the term *people with disabilities* rather than *disabled people* or *differently-abled people*. The use of person-first language is a central component of the social model, as it centers personhood over disability as the most important feature of any given individual. There are some groups that do not use person-first language, and I honor that in this study. For instance, there is a difference between a

person who is deaf and a Deaf person. In the former case, the person has a hearing impairment. In the latter, the person is part of cultural and linguistic minority population that uses, in the U.S., American Sign Language. In addition, I use the gender-neutral singular "they" to refer to individual participants, as supported by the 7th edition of the APA publication manual (2019).

Research Context

James Madison University

James Madison University (JMU) is a large, Master's Comprehensive, public university located in the Shenandoah Valley of western Virginia. The university is focused on engaged undergraduate learning, with a strong emphasis on undergraduate involvement in research, the creation of faculty and student scholarship, and engagement in civic and community life. In the fall of 2019, the university matriculated 4,625 first-year students and 2,358 transfer students. Of these students, 76% were from Virginia, 78% were white, and 58% were female. The acceptance rate for freshmen was 73%; it was harder to be admitted as a transfer student, with 57% of transfer applicants being accepted. The university performed well in various indicators of success, including first-year retention (90%) and 6-year graduation rate (82%) in academic year 2018/19 (James Madison University, 2019).

JMU supports and advocates for students with disabilities through the work of the Office of Disability Services (ODS). The 14 staff in ODS provide a range of services for students with disabilities, including negotiating reasonable accommodations with professors and support staff, converting text and graphical materials to accessible formats, teaching study skills for students with learning and developmental disabilities,

providing a safe community for students with disabilities, and educating students, staff, and faculty at JMU about disability. Their offices in the JMU Student Success Center include an accessible technology lab as well as student study spaces, a conference room, and consultation offices for ODS staff.

In the fall of 2017, approximately 400 students, or 2% of the total student body, registered with ODS in order to receive classroom accommodations and access to other services such as the accessible technology labs. These students had one or more of eleven specific impairments or disabilities that ODS supports, including blindness/visual impairments, Deafness/hardness of hearing, developmental disabilities, health impairments such as chronic fatigue or fibromyalgia, learning disabilities such as dyslexia, orthopedic impairments including the use of braces and wheelchairs, and psychiatric disabilities. While 2% of the student body represents a large number of students, it is only a tenth of the estimated total campus population with impairments and disabilities. Students may not register with ODS for a variety of reasons. They may not identify as being disabled or may not need help. They may wish to avoid the stigma associated with disability or may not want to receive accommodations. They may not be aware of the support that ODS could give them. In addition to students registered with ODS, many more students, staff, and faculty will experience a major, often temporary, disability during their JMU career, due to injury, illness, or age. As a result, ODS advocates for universal design, accessibility, and inclusivity in physical spaces and services to support the needs of the broadest range of students, regardless of their current ability status.

JMU Libraries

The JMU Libraries is one of eleven academic units that reports to the Provost through a dean. The Libraries maintains two main libraries, Carrier and Rose, with a combined public space of approximately 150,000 ft^2, as well as two branch libraries for music and educational media. Traditional library services include basic and technology-enhanced student study and collaboration spaces, print and electronic resource collections, and faculty and staff dedicated to reference and instruction, circulation, and special and digital collection management. In addition, the Libraries supports the educational technologies needs of campus with instructional designers, innovative makerspaces, and a unit that installs and maintains technology in 99% of classrooms.

Out of all these services, the physical spaces of the two main libraries is the most popular among students. In the 2017/18 fiscal year, students and other users visited Carrier and Rose a combined 1.6 million times (JMU Libraries, 2018). The most common behavior among students in the libraries is studying, though this may be silent and single study, co-learning and group study, or non-studying socialization, sometimes all within one visit to the library. Computer login statistics indicate that the information commons (public) computers are also heavily used.

Carrier and Rose are each zoned to support different types of study and collaborative use. In general, the libraries are noisy on the first floor and silent on the top floor; the intent is to encourage social behavior in some zones and solo behavior in others. The book and journal stacks are kept as contiguous as possible in an open browsing environment. Each library has a makerspace equipped with equipment such as 3D printers, Arduino stations, a virtual reality lab, audio recording and editing stations,

and woodworking and fiber arts machinery. Both main libraries have restricted-use labs supporting accessible technologies that are managed in partnership with ODS and University IT. Carrier Library houses the Special Collections reading room and stacks, as well as the bulk of the Libraries' staff and faculty.

Although we have attempted to provide similar services and spaces in both Carrier and Rose, there are significant differences between the two that impact accessibility. Carrier Library was first built in the late 1930s and then added onto in the 1960s, late 1970s, and 1991. Small renovations to increase office space and improve traffic flow have been completed since 1991. Rose Library was built in 2008 and has not been renovated since. As a result, the two libraries have very different architectural and structural features. Carrier's historic side fits with the campus neoclassical architecture, while the "new" side is in the brutalist tradition of the 1970s. Rose is a modernist building. As a result, while Rose Library is officially ADA-compliant, only the top floor of the new section of Carrier Library is so. However, Carrier Library's central location on campus makes it the more popular of the two libraries, with nearly one million visits per year, compared to Rose Library's 600,000.

Personal Context

My current role at the JMU Libraries is as the Associate Dean with responsibility for the physical facilities of the two main libraries. My team coordinates all aspects of facilities planning and operations, including coordinating renovations, assigning room functions, identifying and deploying furniture, designing signage, working with campus maintenance to fix elevators and replace lights, and identifying and resolving problems such as an overabundance of pigeons on the portico. I am also the academic unit head for

the departments that manage what may be considered the traditional public and technical services of the Libraries. These include the liaison program to academic departments, the Public Services department that manages the transactional services of circulation and light reference, the branch libraries, several departments and teams with collection management and resource access responsibilities, the cataloging and metadata department, and the communications and outreach department. This pairing of responsibilities puts me in a unique position in which I have positional authority over all the physical spaces as well as most of the services that take place within them.

I have come to care about the success of students and faculty with disabilities in general and in the context of library support by a number of paths. As a librarian, I agree with my professional association that "all libraries are forums for information and ideas" (American Library Association, 1939/1996, n.p.) and should be available to all users on an equitable basis. Article 19 of the *Universal Declaration of Human Rights* states that the right to freedom of opinion and expression includes the right to "seek, receive and impart information and ideas through any media and regardless of frontiers" (United Nations, 1948, n.p.). Librarians consider access to information by way of libraries to be an important means of ensuring this freedom. In addition, the literature on student engagement and retention suggests that students who are connected to the university both academically and socially are more likely to succeed and graduate (Tinto, 1975). Libraries, in their roles as "third places" (Oldenburg, 1999) on campus, can provide environments that allow students to build those academic and social ties that are so important in the engagement process. Third places combine the social and productive features of the first place, home, with the second place, work or class, to provide

environments that are neutral, conversational, and diverse. Oldenburg's third place theory and its relevance to libraries will be discussed further in Chapter 2.

From my position as a faculty member and administrator within the university, I am invested in minimizing barriers to success in the faculty and student body as a whole. I am interested, however, in focusing not just on the majority of students and faculty in the university, but on those groups who may be on the margins. The disability community came to my attention through a series of events and conversations that the Office of Disability Services (ODS) initiated with the Libraries' Outreach and Partnerships department in the 2016/17 academic year. These conversations led to some initial partnerships with ODS, including book displays and an open training event for Libraries staff and faculty about the work of the ODS. Learning more about the huge variability among people with disabilities at JMU sparked my interest to learn more about how the libraries could support their success.

I also have a personal interest in disability studies. As a result of my work in this area, my identity as a person with or without a disability has shifted. I have struggled with joint pain since injuring my knees as a teenage athlete. Before I began this research, I would not have claimed disabled status, though I might have agreed that I was impaired. Now I am more likely to identify in public as a person with a disability. At times the interaction of a societal barrier such as a lack of ramps or elevators with my impairment has caused me to become disabled in context. I am keenly aware of the othering that happens when I must split off from a group to use a different path. This othering harms my sense of inclusion and engagement with the group, and can impede my ability to participate fully in activities. In addition, in the summer of 2018 I had shoulder surgery

that immobilized my dominant arm for several months. This temporary impairment meant that I had to find ways to cope with an inability to type, drive, and even feed and dress myself. This was a remarkable demonstration to me that even impairments of similar types, in this case joint pain and immobility, can have radically different impacts on a person's life depending on their nature, severity, and context.

Taken together, the professional, local, and personal connections make a compelling case for me to focus on the success of students with disabilities at JMU.

Improving Accessibility in the Libraries

The idea of accessibility, including universal space design (UD) and universal design for learning (UDL), is growing in popularity at JMU and within the Libraries. The University started a new minor degree program in disability studies in the fall of 2017, with faculty drawn from a variety of different disciplines and nonacademic units. The annual JMU Diversity Conference in early March has had sessions on disability each year, including a talk that I delivered during the 2017 conference. ODS sponsors Disability Week in late March every year, with programming on topics as diverse as cooking, sports, and poetry. The Libraries has partnered with ODS during Disability Week by hosting book and movie displays.

In the summer of 2017, the Libraries held a series of internally focused diversity dialogues, out of which came an extensive list of diversity-related programming and projects supported by the Libraries. This list was, for many Libraries staff, the first time that they had heard about some of the programs or projects at all, and the first time that anyone had seen a comprehensive list of all of them together. The Libraries' breadth of support for students with disabilities as identified through these dialogues is extensive.

Examples from just one academic year included: staff in the makerspaces 3D-printed anatomical and acoustic slides for a blind student in the communication sciences major, staff in Digital Collections converted psychological tests to accessible PDFs for a Master's degree student, the Public Services department developed plans for a new service to retrieve books from the stacks without requiring a reason, the outreach department mounted a book display during Disability Week and sponsored mindfulness programming during exams, an instructional designer incorporated a session on UDL into the online course development institute, and a liaison helped a faculty member in a summer research program find articles about teaching chemistry to Deaf students.

The increase in interest on campus, paired with the realization that the Libraries has a lack of awareness of what we can and already do to support people with disabilities, prompted me to start researching library accessibility as a problem of practice for the JMU Libraries. I identified three dimensions of accessibility and inclusion that are relevant in this context: the physical accessibility of the main library spaces, outreach promoting existing accessibility services, and the socio-cultural environment that we create for students and other people with disabilities in the libraries. These dimensions informed the following cycles of research.

Cycle 1: Audit of Physical Accessibility in the Libraries

Neither Carrier Library nor Rose Library were originally designed with accessibility as a goal, even the parts that were built after the passage of the ADA. Most of the services within the physical spaces were likewise created to facilitate access but not necessarily accessibility. Many examples of inadvertent physical inaccessibility exist, from manual doors to poor signage, and from fixed furniture heights to a lack of assistive

technologies on the computers. For example, the book collection is housed in open, browsable stacks that are available 110+ hours per week during the academic year. This is a high degree of access. The bookshelves themselves, however, reach from floor level to seven feet tall. People who have difficulty reaching either high or low shelves are thus disabled by these bookshelves. To compensate, the Libraries created a robust book and article retrieval and delivery service. Students can request a book be retrieved from the stacks and delivered to their preferred library on campus, including the one in which the book is housed. Faculty and staff can have books delivered directly to their campus mailboxes, and can likewise return them through campus mail. Requests are made through the online library catalog, which presents different accessibility barriers than physical browsing.

In an effort to identify and prioritize areas of Carrier Library that were less accessible than others, I piloted an accessibility audit instrument in the fall of 2017 with six library student workers, four non-student library staff, and six students in a disability justice class. None of the participants themselves had a disability; this study was to pilot the instrument and to identify the most egregious perceived areas of need within the building. Several areas of Carrier Library were perceived to be excellent in quality of accessibility, including the automatic entrance doors and the main public elevator. The entrances and elevators were last improved in 1991 when the most recent renovation was completed, and are compliant with the Americans with Disabilities Act. Most items on the audit were perceived to be somewhere around acceptable, including items like the height and spacing of furniture in the study and information commons areas, the security gates, and the quality of computer software in the information commons. It is possible

that the students and faculty rating these items, however, did not have sufficient information to provide a reasonable estimate of actual accessibility, since they had neither the ADA Guidelines nor a ruler or formal checklist to which to refer, and were not themselves in need of accommodations.

I was not surprised by which items were perceived as having poor accessibility. For instance, the restrooms on the first floor were largely perceived as inaccessible. This included stall size, stall approach, and sink height. The restrooms assessed in this study were last renovated in the late 1970s and include narrow stalls with five-foot high walls. While the restrooms are in desperate need of renovation, the library does not have the financial means to do so at this time; instead, they will be addressed during a large-scale renovation and expansion of Carrier Library, expected to start after 2023. There are accessible restrooms on the third floor, including a gender neutral/family room, but these are far from the library entrance.

The category of items that interested me most in this study were items perceived to be of poor accessibility and that I could improve in my role as Associate Dean. These included restroom and general signage, shelving height, the readability of bookshelf labels, and service point furniture height. The libraries are already engaged in a signage and wayfinding project, into which the findings from the audit have been folded. We recently expanded the book delivery service to include within-library delivery, which will help mitigate the inaccessibility of the bookshelves by providing an alternate method for library users to get books without having to self-advocate or disclose their status. In a separate study, I examined the environmental fit between staff and the service points, and made recommendations for redesigning the service points in both libraries to be more

accessible for both staff and patrons (Vaughan, in press). A new service point for Carrier Library was installed prior to the fall 2019 semester.

Cycle 2: Improving Outreach and Promotion of Libraries Services

My second cycle of research was to identify best practices in promoting library services to people with disabilities. The primary means of communication with library users and internal staff is through the Libraries' website, http://www.lib.jmu.edu. This website was redesigned in the summer of 2018 to reflect the balance and interconnectedness of Libraries units that had previously been held separate. Prompted by the realization that we had no content about accessibility in the Libraries, the website redesign team and I each independently concluded that we should create a dedicated page that could serve both external and internal audiences. The *Accessibility and Universal Design* report from the Association of Research Libraries (Spina & Cohen, 2018) provided excellent recommendations and examples of accessibility websites from several dozen research institutions. I supplemented these examples with a content analysis of accessibility and disability services pages from Virginia four-year institution libraries (Vaughan & Warlick, in press).

Working with the director of the Public Services department and the user experience librarian, I developed a new Accessibility page (http://www.lib.jmu.edu/accessibility). This page is included in the new Libraries website, launched in August of 2018. The page includes content aimed at supplementing and augmenting information available on the Libraries' website, from the perspective of supporting the broadest range of accessibility needs. The page draws heavily from the Libraries' diversity statement, which specifically identifies the provision of accessible

and inclusive spaces and services as an aspirational goal. In the fall of 2018, I shared the Accessibility page with contacts in the ODS. Based on their feedback, I included a new section titled “Help Us Improve.” This section is intended to encourage students and other visitors to contact me with complaints, comments, and other feedback about the Libraries. At the ODS’ suggestion, I also included information about my ongoing studies of library accessibility, including the Carrier Library audit and related interviews. They felt that this section would serve a dual purpose of recruiting both formal and informal feedback while also demonstrating in a very visible way my desire, and that of the Libraries as a whole, to engage people with disabilities in the ongoing development of library accessibility.

Cycle 3: Survey of Social Inclusion in the Libraries

Reports of microaggressions and discrimination against students with disabilities at JMU have surfaced in recent years. In a third cycle of research in the spring of 2018, I surveyed library and accessible technology lab users who were registered with the ODS to get information about their library and technology use. One question asked whether the participant had had any problems in the libraries in the previous year. Out of 16 respondents, five reported having had some sort of problem on a recent visit. Four of the five had a problem finding appropriate and accessible study space. This is a serious and general problem in the libraries. A few other physical barriers were mentioned, such as malfunctioning automatic door buttons and the chronically malfunctioning elevator. One student shared the following complaint about how they had been actively discriminated against by a staff person:

> I have a heart defect and a fainting syndrome, along with other issues. Therefore, I'm registered with disability services and I have access to the accessible technology room. Library employees come about to do checks, and one actually told me I would have to leave, and that it wasn't a room for people without disabilities, and that my jaccard [campus ID] shouldn't have opened it, without letting me get a word out or explain my condition.

Informal complaints about poor customer service when the elevators or automatic entrances fail similarly point to a problem of staff training and awareness about the needs of students with disabilities, particularly invisible ones.

This need was highlighted in a 2015 student-led campus climate survey. The course-based study found that approximately 4% (60 of 1445) of survey participants reported experiencing discrimination or harassment in the libraries, placing the libraries just behind the University Recreation Center (81 reports) in terms of number of incidents reported. Ten of the 60 library incidents were reported by students self-identifying as having a disability. Up to 40% of all library incidents were perpetrated by someone perceived to be library staff or of unknown non-student status, according to respondents. While the study had methodological problems with sampling and analysis, any report detailing multiple incidents of problems due to library staff behavior is concerning. Library users often have a hard time recognizing the difference between library staff or faculty and, for example, campus IT staff working in the Accessible Technology Labs. Regardless, minimizing the negative interactions between library employees and library users is in keeping with the library's value of user-oriented practice.

One reason that library student workers and staff may interact poorly with people with disabilities is a lack of understanding of the nature and needs of this population. In the fall 2017 focus groups and Carrier Library audit (Cycle 1), I found that library staff

and student library workers have a very limited understanding of different types of disabilities. Their comments about accessibility showed that they were nearly always thinking about the needs of students in wheelchairs, not other types of visible or invisible disabilities. Out of 41 total comments on the accessibility audit about a specific type of disability, only one mentioned something other than mobility barriers. This lack of awareness may, for example, lead library student workers and staff to question the right of students and faculty with invisible disabilities to use the Accessible Technologies Labs. It could also mean that the Libraries is not considering a wide range of needs when developing new or improved services.

Building on Research Cycles 1-3: Developing a Libraries Staff Training Program

Accessibility and inclusion are made up of physical and social components. The audit of Carrier Library (Cycle 1) highlighted areas needing improvement in the physical spaces. Qualitative data from a variety of sources pointed to a lack of knowledge about disability and the Libraries' accessibility policies among both Libraries staff and our student users (Cycles 1 and 3). In my previous cycles of action research described above, I both identified these problems and started taking steps to improve them. Changes to signage, furniture selection and arrangement, and the Carrier service point were implemented as a result of the Carrier Library audit and service point study. The creation of the Accessibility page on the Libraries' website (Cycle 2) was a first step in communicating more effectively about our policies and services. At this point in the overall research program, I was interested in the social aspects of providing an accessible and inclusive environment for people with disabilities in the libraries. Findings from the

above research suggested that developing and assessing an intervention that addresses the knowledge, skills, and attitudes among frontline staff was the best next cycle.

Best practices in interacting with students with disabilities were not part of the student worker or staff training and orientation program. Based on these prior cycles of research, I developed a training program to improve staff knowledge about and comfort with supporting people with disabilities in the Libraries. This program formed the core of this cycle of my action research, and is the focus of this dissertation.

Purpose of the Dissertation Study

The purpose of this study was to assess and improve the front-line services accessibility and the inclusive culture in the two main libraries at JMU, Carrier and Rose, in order to improve student experiences in and use of the libraries and the connection between the libraries and campus partners in disability support. This study focused on the culture of inclusion and partnership among the Libraries' staff and faculty as shown in knowledge about and comfort with providing support to students with disabilities, by implementing and assessing a training program centered on the basic beliefs, attitudes, skills, and knowledge needed to help people with disabilities in the Libraries context.

Intervention

In order to develop the inclusive service culture among frontline staff at the libraries' service points, I worked with ODS and library stakeholders to implement a reflective training program to improve staff knowledge about and comfort with disability at JMU, and the services that the libraries offer to support students with disabilities.

The training was aimed primarily at the full- and part-time faculty, staff, and student workers who are the bulk of the labor at the circulation, reference, and technology

troubleshooting service points, or who provide direct service through consultations, instruction, or transactions at other service points such as the makerspaces and Special Collections. The training program was designed and deployed using Canvas, the JMU learning management system, as a fully online and self-paced tutorial.

Research Questions

The accessibility training program was intended to improve basic knowledge about the types of disabilities that people at JMU experience and to increase comfort with providing support to people with disabilities among student workers and the part- and full-time staff and faculty of the JMU Libraries ("the staff"). This study examined the effects of the training. The research questions were:

> RQ1: How does training centered on accessibility for people with disabilities affect participants' knowledge about and comfort with supporting people with disabilities, in comparison to a control group?
>
> RQ2: What strengths and weaknesses of the training program do participants identify?

Chapter 2

THEORETICAL PERSPECTIVES AND RESEARCH GUIDING THE PROJECT

Introduction

Libraries have traditionally struggled to justify their centrality to student success. In the theoretical framework section, I consider the role of engagement and a sense of belonging in student success, both in general and for students with disabilities. Libraries can show that students who use their services tend to have better educational outcomes. I argue that this is because modern academic libraries function as third places on campus. Unlike the "first place" of home or the dorm and the "second place" of the classroom or office, "third places" are where students can build their social engagement and sense of belonging through conversation and play, while also developing their academic engagement through study.

In the literature review section, I discuss global research into library accessibility and staff training programs. These studies agree that while libraries have much to improve in their physical spaces, the real need is for effective staff training in disability awareness and services that is grounded in the social model of disability. This aligns with the third-place theory, which identifies cultural and social environmental factors as key to third place development. Examples of effective training programs, including both delivery and assessment, are also considered.

Theoretical Framework

Engaging Students with Disabilities

Like other under-represented minority populations, students with disabilities tend to have poorer outcomes in higher education, including retention past the first year and

on-time graduation (Brown & Broido, 2015; Mamiseishvili & Koch, 2011, 2012). Tinto's model of student retention through academic and social integration with the university (1975, 2006) is a common framework for predicting and influencing student persistence and non-persistence. This model theorizes that students with a higher amount of integration, or engagement, with both the academic and the social life of the university are more likely to stay in school and to graduate. Academic engagement may be measured by the extrinsic measure of grade point average or by the intrinsic measure of knowledge attainment. Social engagement relates to the development of friend groups, participation in extracurricular clubs, and building connections with faculty outside of the classroom. Together, academic and social engagement support the motivation to complete school by supporting goal attainment and institutional loyalty.

The Tinto model has been applied to specific minority student populations, including students with disabilities. Mamiseishvili and Koch (2011) identified several factors related to the persistence from the first to second year of students with disabilities. They found that students who participated in academic engagement activities such as study groups and meeting regularly with an advisor were more likely to persist to the second year, as were students engaged socially with university activities such as school clubs and sports teams. DaDeppo (2009) found that, for students with learning disabilities, social engagement and academic engagement both predict persistence, with social integration weighing more heavily in the model. She recommended focusing on ways to support student integration into the social and academic fabric of the university as effective means of retaining students with learning disabilities. This shift from an

accommodation to an inclusion culture in the university supports not only students with disabilities, but the whole campus population (Huger, 2011).

The question, however, is how to build a sense of integration between students with disabilities and their universities. Yuen and Shaughnessy (2001) suggested that integrating students with disabilities into the academic and social environment of the university teaches them that they are "'part of' rather than 'apart from'" the greater university culture (p. 203). Vaccaro, Daly-Cano, and Newman (2015) built a theory of belonging for students with disabilities that pulls together themes from both Tinto's model of integration and previous work on self-advocacy and self-determination. In this model, a sense of belonging is influenced by and reinforces social engagement through relationship-building, academic engagement through mastery of information and roles, and the growing sense of self through self-advocacy. Fleming, Oertle, Plotner, and Hakun (2017) similarly found that a sense of belonging influenced satisfaction with the university among students with disabilities. This was tied to an increased sense of self-advocacy and an improved perception of the campus climate for students with disabilities. Thus, engagement in the classroom supports social engagement outside the classroom, and vice versa, as students build community with their peers and faculty and staff (Yuen & Shaughnessy, 2001).

Barriers to engagement may be attitudinal, definitional, physical, or institutional. A student with a disability may not identify as needing accommodations, or may be discriminated against by a faculty member unwilling to accommodate their learning needs. Universities may meet the legal definition of accessibility under the ADA, but still present physical and policy barriers to students with unusual or invisible disabilities. The

solution to these barriers is not just to make campus facilities more physically accessible, but to focus on empowering students with disabilities to seek help and to educate faculty and staff about how to provide it (Brown & Broido, 2015). The reverse of this is that high-quality teaching services and infrastructures, including libraries, may improve student satisfaction with, trust in, and loyalty to the institution, and thus promote greater engagement and better student outcomes (Fleming et al., 2017; Hennig-Thurau, Langer, & Hansen, 2001; Mavondo, Tsarenko, & Gabbott, 2004). Student loyalty to the institution may be linked particularly to the quality of library spaces and services (Helgesen & Nesset, 2011). This link may develop early; students with disabilities may in part base their choice of college on perceived quality of services and supports such as library website and e-resource accessibility (Guder, 2010).

This focus on loyalty, belonging, and engagement with both the academic and social fabric of the university brings forward barriers to access for people with disabilities that are not necessarily physical in nature. It also highlights that contribution to university culture is the responsibility of all participants, including faculty, students, and administrators (Huger, 2011). In addition to making sure that the campus is physically accessible, the university has a responsibility to address the affective components of inclusive spaces through staff culture and behaviors, as is the focus of my current study. This begs the question of what evidence exists that libraries are important factors in student engagement, as Hennig-Thurau et al. (2001) suggested they could be.

Library Use and Student Success

Several recent studies have found a correlation between a variety of library-related behaviors and improved student outcomes. Higher grade point averages and

retention to the second year were correlated in several studies with logging into library computers (Haddow, 2013; Soria, Fransen, & Nackerud, 2013a, 2013b), checking out print books (Allison, 2015; Goodall & Pattern, 2011; Haddow, 2013; Montenegro et al., 2016; Soria et al., 2013a, 2013b; Stone & Ramsden, 2013; Wong & Webb, 2011), receiving library instruction in one or more courses (Gaha, Hinnefeld, & Pellegrino, 2018), and logging into library-subscribed databases and e-journals (Allison, 2015; Goodall & Pattern, 2011; Montenegro et al., 2016; Soria et al., 2013a; Stone & Ramsden, 2013). Retention to the following year was also correlated with library computer use (Haddow, 2013; Soria et al., 2013a, 2013b), book circulation (Haddow, 2013; Soria et al., 2013a, 2013b), the number of professional library staff for every student at the university (Emmons & Wilkinson, 2011), database use (Soria et al., 2013a), and participation in a writing composition tutorial (Soria et al., 2013a).

The link between library use and student success may look different for minority student populations. Kuh and Gonyea (2003), in their study of the library's impact on student success, found differences in patterns of use by racial identity. Students of color used the library more frequently than white students, indicating that "perhaps students of color find the academic library to be a safe haven, a place that supports and nurtures academic success in collaboration with peers" (p. 267). No quantitative studies linking library use with the success of students with disabilities were found.

One advantage of studies that look at automatically generated student behavior data from circulation and login systems is that it is relatively easy to generate large sample sizes with a minimum of effort. However, this data does not allow researchers to understand why library use influences student success. Only a few studies have looked at

library use in relation to student engagement, loyalty, or the sense of belonging. Soria et al. (2107) attempted to correlate library behaviors with the academic outcomes of academic engagement, engagement with scholarly activities, academic skills development, and grade point average. They found that book and e-resource use correlated strongly with all four outcomes, participation in library instruction correlated with GPA, and use of reference services correlated with academic engagement and skill development. A sense of belonging as measured through the 2012 Student Experience in the Research University (SERU) survey was included as a control factor for engagement, but was not tested for direct correlation to library use (Soria et al., 2017).

In their literature review, Hagel, Horn, Owen, and Currie (2012) argued that persistence and retention is likely more influenced by engagement with the academic program than by any small-impact behaviors in the libraries such as checking out a book (p. 223). Hagel and colleagues suggested that academic libraries should focus on known drivers of student retention, such as Tinto's (1975) model of integration. They recommended that libraries could influence student outcomes through a proactive program of student support that caters to diversity in programs and services, ensures that programs and services do not disadvantage some groups, and works closely with faculty and staff partners in both the academic and student support units (Hagel et al., 2012).

Libraries as Third Places

If libraries are to follow a more proactive model of student engagement, as encouraged by Hagel et al., then a new way of considering what the library's space and services environment looks like is needed. This would be a more relationship-oriented model that treats the library as a component of academic and social engagement for the

university. One framing theory for such a relational model is that of the library as a third place for students on campus.

Third place theory. Ray Oldenburg first presented third place theory in his book *The Great Good Place* in 1989. Third places are "a great variety of public places that host the regular, voluntary, informal, and happily anticipated gatherings of individuals beyond the realms of home and work" (Oldenburg, 1999, p. 16). Home is the first place, and is where an individual can be safe, relaxed, and nurtured with family and close friends. Work is the second place, and is where the individual holds a role that is bounded by structure and competition for resources. The third place blends some characteristics of both, in that it provides a bridge between public and private spheres, and between formal and informal life. There are seven characteristics of third places:

1. They are neutral ground. People who gather in a third place are all visitors to it, which means that no one person has power derived from ownership of the space.
2. They are levelers of social hierarchy. Everyone who visits a third place has equal rights to be there, so there is a democratization of rank. This facilitates people knowing each other as people and not just as their work role or social status role.
3. The primary activity is conversation. People visit third places to be in community with other people. The community is built around discourse, and is driven by the people who are there at that moment.
4. The community is defined by a group of regulars. These people serve to both include and exclude new members of the community.

5. The physical space is generally plain. Third places tend to be humble in their architecture, with close and cozy spaces that encourage small group conversation.
6. "The mood is playful" (p. 37). These places are for entertainment and stimulation, not for hard labor. The place may be full of laughter and noise.
7. Regular visitors may describe the place as a home away from home, in the sense of a place where one feels comfortable and safe, not where one bathes or keeps one's valuables.

Oldenburg (1999) noted that the Greek agora was one original (European) third place, as was the Roman forum. In the book, he profiled different third places such as cafés and coffeeshops, bars, hair salons and barbershops, and bookstores. He did not mention libraries. This may be because traditionally libraries have been seen as formal, quiet spaces that do not allow conversation and are definitely not fun.

Studies of libraries as third places. Academic libraries have changed over the last three decades, however, with the idea of library as third place emerging as a driver of library engagement with users of all kinds. Libraries meet many of Oldenburg's criteria, by being neutral and leveling ground focused on individual and collaborative learning (Lawson, 2004). Expanding the idea of library spaces as services in the third-place theory has significant appeal in framing a proactive approach to engagement. The physical spaces of the library are often the only non-commercial places available to students and other library users looking for a third place to support their social and academic lives (Montgomery & Miller, 2011). Elmborg (2011) described this as a cultural shift from that of domination through the strict control of library spaces and what may be done in them

to one of collaboration through user-engaged approaches to space creation and management. “Place must be understood as the interaction between humans and natural forms. Culture creates space, and once we realize that fact, we can become more conscious and more intentional about what we create” (p. 340).

There is some evidence that this cultural shift is underway in both academic and public libraries. As libraries and publishers have placed more and more materials online, their former purpose as the location where books and journals are kept has become obsolete. In its place, the idea of the library as “a place of collaborative learning and community interaction” (Montgomery & Miller, 2011, p. 229) in which students can access not just resources, but also technology and student study partners (Stone & Ramsden, 2013), has arisen. Several studies have found through either direct observation (Ferria et al., 2017) or user surveys (Houghton, Foth, & Miller, 2013; Waxman, Clemons, Banning, & McKelfresh, 2007) that students and other library users both perceive and use their libraries as community centers for collaborative learning and relaxation.

Setting up libraries to be third places is a complicated process. Architects, designers, and librarians need to consider how the library as a place of “connections between different groups of library users, connections between library users and library staff, [and] connections between library users and resources” is built and organized differently from a library that is focused on the management of print book and journal collections (Latimer, 2011, p. 113). Kim (2016) found three behavioral clusters that defined library place for users: library services and information, including reference, circulation, workshops, and staff; reading and study areas for both groups and individuals; and relaxation areas such as cafés and exhibition spaces. Together, these

create a multi-faceted environment that is defined by the physical space, the relationship of the user with the space, and the events and behaviors that contribute to the character of the space. Thus, renovating a space to bring in a coffeeshop and replacing large study tables with soft furniture is not enough alone to create a third place in the library. For instance, Rollins University's Olin Library changed their furniture layout, but also loosened policies about noise and food, opened up their room booking system, broadened their displays to include student art and other content, partnered with campus groups to present events, and retrained their staff to focus on the user experience and user's learning needs (Montgomery & Miller, 2011).

Library third places and the sense of belonging. Out of the seven criteria for third places, only one specifically notes the spaces' architecture. The others relate to the way people feel in the place. While much of this is defined by the regular visitors, the culture of a place is also heavily influenced by the policies, events, and behaviors of the library staff who design and manage it. Library users are not likely to feel that they belong in a space if they do not feel welcome in it. As Houghton et al. noted, "a sense of belonging is integral to engagement; those who felt like outsiders were less likely to engage" (2013, p. 38). In Vaccaro et al.'s (2015) study of the sense of belonging among students with disabilities, one participant said that "she felt a sense of belonging when she studied in the library… and knew that the other people around her were studying too" (p. 679). It is the job, then, of the library wishing to support student engagement to build not just spaces but also a culture of inclusion for students of all kinds, making them feel like welcome members of the community from the start.

A case study of the University of Malaysia library by Bayat Bodaghi and Zainab (2013b) demonstrated how a high degree of library accessibility and inclusion can help students identify the library as a third place. Bayat Bodaghi and Zainab interviewed eighteen visually impaired students who had been assigned a carrel in the library. The library reserved 21 of its 53 carrels for students with visual impairments and provided other accommodations to ensure maximum accessibility to the space and services for these students. The students used language very similar to Oldenburg's third place criteria to describe their carrels, including referring to them as "my second home" (p. 45). They built a sense of ownership around these modest spaces, and recruited other students to come to the university and the library in order to join the carrel community. Students described using the carrels for quiet study, a second-place behavior, but also for collaborative work and counseling and for social conversation with both sighted and blind friends. This linking of the third place with the library further served to engage the students with the library and, by extension, the university. "The carrel provides an environment that makes me think and feel positively about the library," said one student (p. 45), and, "The carrel makes me feel welcomed by the library" noted another (p. 46). Bayat Bodaghi and Zainab (2013b) concluded that the provision of carrels led to a sense of belonging among these students that supported their engagement with the university. In a follow-up study, they further connected librarians' awareness of and empathy for visually impaired students' needs with an improved sense of belonging among these students. They concluded that his was because librarian training in awareness and empathy created a welcoming and inclusive environment both physically and socially (Bayat Bodaghi, Loh, & Zainab, 2015).

The proactive approach to supporting students with disabilities at the University of Malaysia is in keeping with Hagel et al.'s (2012) recommendation to craft services that take the diverse needs of students into account. The University of Malaysia balanced both the physical and the affective environments of the library to create places for these students that fit their need for a place that functions as both a second place supporting their academic engagement through individual study and work environments, but also as a third place that reinforces their social engagement through the development of social spaces. Thus second and third spaces may overlap in a hybrid way, with any given area serving one or the other function at any given time. Unfortunately, this case study is a rare example of a successful holistic approach to support for students with disabilities or library accessibility.

Third place theory allows libraries to frame the problem of how to support student engagement. It directly ties places and the activities and culture contained within them to the sense of belonging that is critical to community engagement and student success. In this project, third place theory, combined with models of student engagement and belonging, supports the focus on staff training as a means of developing an inclusive socio-cultural environment for all library users, including those with disabilities.

Literature Review

Creating an inclusive environment by improving the library's physical space, reaching out to and engaging with the local disability community, and strengthening staff attitudes, knowledge, and skills in the area of accessibility and disability services allows libraries to build physical and affective spaces in which people with disabilities feel they are not just welcomed, but belong. U. S. libraries have had a long history of supporting

the information needs of people with disabilities, with such historical benchmarks as establishment of the first library for the blind in 1835, the first American Library Association committee focused on services for people with disabilities in 1906, and the creation of the National Library for the Blind and Physically Handicapped in 1931 (Jaeger, 2018). There has been significant growth in the English-language library literature since the passage of national laws such as the ADA in the US in 1990 and the UK's Special Educational Needs and Disability Act (SENDA) in 2001. The literature on library accessibility focuses first on assessing physical facilities and staff practices, with a smaller corpus that includes descriptions and evaluations of programs designed to improve inclusive culture.

Assessment of Library Spaces and Services

The bulk of the literature on accessibility and inclusion in libraries presents assessments of the physical spaces, from the point of view of librarians and of library users. The International Federation of Library Associations and Institutions (IFLA) *Access to libraries for persons with disabilities – CHECKLIST* (Irvall & Nielsen, 2005) is the most commonly used instrument for published accessibility studies of physical facilities. The *Checklist* focuse on physical access to the library, with sections about the external approach to and entrance of the building, general physical space, restrooms, service desks, special departments for children's services and disability services, computers, and the availability of special media formats such as talking and Braille books. There is also a secondary, short section about service and communication that includes very simple comments about staff training, special services and information for patrons with disabilities, website design, and outreach to disability groups. The IFLA

Checklist has been used in studies of library accessibility in Iran (Bayat Bodaghi & Zainab, 2013a), Scotland (Forrest, 2006), and South Africa (Phukubje & Ngoepe, 2017). These studies found similar weaknesses in physical facilities as I identified at JMU. For example, shelf access and spacing (Phukubje & Ngoepe, 2017) and study table height (Forrest, 2006) were both problematic. In these studies, a librarian or researcher team assessed the facilities using the IFLA *Checklist*, and did not necessarily engage people with disabilities in the assessments.

International research that focused on surveys of students with disabilities directly in addition to or instead of applying the IFLA *Checklist* or a similar instrument likewise found common problems. Researchers in Greece (Koulikourdi, 2008), Malawi (Chaputula & Mapulanga, 2016), Nigeria (Ekwelem, 2013; Lawal-Solarin, 2012), and Pakistan (Awais & Ameen, 2015) interviewed library users and non-users with disabilities. These studies found that overall library accessibility was poor, not just due to physical barriers in the library space, but perhaps more importantly also because of a lack of consideration of accessibility in planning for services and spaces (Chaputula & Mapulanga, 2016; Ekwelem, 2013), a lack of awareness of the need for accessibility or skills in helping people with disabilities (Ekwelem, 2013; Koulikourdi, 2008), or because the library made materials available but not accessible (Lawal-Solarin, 2012). A factor that impacts whether physical barriers or social barriers are more problematic to any particular individual is the nature of that person's unique impairment or disability, and its relationship to library spaces and services. Awais and Ameen (2015) found that students with mobility impairments experienced more barriers in the physical environment, while

students who were deaf had more problems with library staff's attitudinal barriers related to poor communication.

Relatively little research into library accessibility has been published in the United States. Khailova (2005) deployed a survey to the directors of public libraries in South Carolina that asked about the physical access, accessible collections and services, and staff training and policymaking of those libraries. Directors indicated whether their libraries did or did not comply with each statement. Seven of the eight most positive areas were in the physical accessibility category; three of the bottom five were in the staff training and policymaking category. Only 10% of responding libraries used community surveys to identify and gather feedback from people with disabilities, and only 5% had held a workshop or other training event related to disability services. Weak staff training was particularly problematic for rural libraries and those with facilities constructed before the Americans with Disabilities Act went into effect in 1991.

Qualitative studies of library users' experiences similarly find a gap between the accessibility of library spaces and services. Copeland (2011) reported on a series of in-depth interviews with five academics with a variety of disabilities, four of whom were librarians, and found that while these users perceived that libraries had improved over time, there were still problems of physical barriers and a lack of consistent, widespread services outside specialized, segregated facilities. Copeland suggested that these findings may reflect the different legal environment for physical and services accessibility, as described by the ADA. Pionke (2017b) interviewed eight library users at his institution and found that accessible facilities and knowledgeable and empathetic staff help create welcoming and inclusive spaces. Participants identified problems tied to an overall lack

of disability awareness and inconsistency in taking disability and accessibility into consideration at the time of space and service planning.

The Association of Research Libraries (ARL) has sponsored several surveys of member libraries on the topic of support for people with disabilities. The most recent, *SPEC Kit 358: Accessibility and Universal Design* (Spina & Cohen, 2018), found that 80-100% of the 64 respondents provided services such as book retrieval from the book stacks, availability of accessible and adaptive technologies and furniture, and specific accessibility information on the website. In contrast, slightly less than half had a staff person (47%) tasked with accessibility services, and only a third (33%) were including accessibility in their collection development procedures. In the area of training, just over half (55%) provided staff training on the use of available accessible technology. The most common methods of delivering training were by external webinars, conferences, and workshops, training manuals for specific technologies, and hands-on trainings led by the accessibility specialist in the library. In a study of eight midwestern universities, Samson (2011) identified best practices for supporting students with disabilities, including tracking user demographics, incorporating universal design into planning for physical spaces and instruction, creating an accessibility plan, evaluating the website and e-resources for accessibility, providing staff training, and designating a librarian to be the primary contact and coordinator of accessibility services.

Improving Accessibility through Staff Training

Outreach and strategic planning serve to raise awareness of the library's spaces and services, to make people want to visit the library. Improvements to the physical facilities make it possible for people to visit the library. However, the main change

needed in libraries is more regular staff training on types of disability and how to help library users with disabilities (Awais & Ameen, 2015; Bayat Bodaghi et al., 2015; Bayat Bodaghi & Zainab, 2013a; Chaputula & Mapulanga, 2016; Echezona, Osadebe, & Asogwa, 2011; Forrest, 2006; Harris & Oppenheim, 2003; Khailova, 2005; Koulikourdi, 2008; Phukubje & Ngoepe, 2017; Spina & Cohen, 2018; Saar & Arthur-Okor, 2013). Positive interactions with staff help people want to return to the library again and again. This builds the sense of belonging in the library that is important to the development of the library as a third place that supports academic and social engagement.

Staff training should not simply improve library staff skills competency, but contribute to a cultural shift in the approach to providing services and support for people with disabilities focused on developing soft, cultural skills such as empathy and respect (Bayat Bodaghi et al., 2015; Mutula & Majinge, 2016; Nichols & Schnitzer, 2015; Pionke, 2017b). While many staff may be competent in supporting a user with a mobility or hearing impairment, helping someone who has an invisible disability without forcing them to out their impairment requires additional skill. Nichols and Schnitzer suggested that "cultural competency is as critical to providing excellent public service as high-level competency in information retrieval." They continued, "One bad encounter with a staff member who is not knowledgeable or who acts inappropriately can permanently sour a patron's relationship with the library" (p. 22). Training staff to provide excellent service to people with disabilities is the most important component of building an accessible and inclusive library, because poor staff behavior due to a lack of training results in negative and excluding experiences (Bayat Bodaghi et al., 2015; Henczel & O'Brien, 2011; Pionke, 2017b; Small, Myhill, & Herring-Harrington, 2015).

Longitudinal surveys of libraries by the National Library Service for the Blind and Physically Handicapped (NLS/BPH) have consistently found that inadequate training on the basics of service to people with disabilities continues to be a barrier to hiring and onboarding qualified librarians. Survey respondents indicated a concern that library schools are not adequately teaching accessibility, inclusion, and disability services in professional degree programs (Bonnici, Maatta, Brodsky, & Steele, 2015; Bonnici, Maatta, & Wells, 2009). Although library schools are increasingly adding curricular content to meet basic ALA guidelines in this area, they lack advanced content that would allow "information professionals to be ready to build born-accessible programs and services" (Jaeger, 2018, p. 60). Finally, library school training, by definition, only reaches those who attend library school; non-degreed staff and student workers are excluded from these programs. It thus falls to either professional societies or local institutions to provide such training.

Impact of training on library accessibility. Disability awareness training programs generally found that participants report improvements in their skills, knowledge, and beliefs (Kulkarni, Gopakumar, & Patel, 2018; Seewooruttun & Scior, 2014). One challenge to creating disability training programs is that any intervention seems to have some impact, but there have not been comparison studies to identify which types of training are more effective than others (Seewooruttun & Scior, 2014).

Beyond simply improving library staff skills in communicating with and helping people with disabilities, Henczel and O'Brien (2011) found that providing training in accessibility and disability topics increased the overall awareness of accessibility in library planning and service provision. After the training, staff identified barriers and

potential improvements in library circulation policies, physical facilities, collections, assistive and adaptive tools and technologies, and programs that could support library patrons with disabilities. In addition, partnering with agencies and offices in the local area improved awareness of library services, resulting in improved relationships with both individuals and groups in the community. This type of improvement, however, may be linked to organizational characteristics such as a pervasive culture of inclusion and positive change attitudes. Systemic, rather than individual change, may only persist in organizations already oriented towards cultural improvement. (Kulkarni et al., 2018).

Developing a Staff Training Program

Grounding training in the social model of disability. Many of the published reports of library staff training programs did not explicitly reference the social model of disability as their guiding theoretical frame. This may be due to a cultural weakness in library research, where practitioner/scholars tend to skip the theoretical framework step of research, but it could also be attributed to a general orientation toward accessibility and disability services that assume a social justice bent. The language used in published reports indicates that authors were using principles of the social model in their justification for and development of these trainings. For example, common across reports was a focus on attitudinal training in order to build inclusive environments (Bayat Bodaghi et al., 2015; Brannen, Milewski, & Mack, 2017; Carter, 2004; Deines-Jones, 1999; Harris & Oppenheim, 2003; Henczel & O'Brien, 2011; McGowan, Martinez, & Marcilla, 2018; Nichols & Schnitzer, 2015; Saar & Arthur-Okor, 2013; Small et al., 2015). This language implies that the authors accepted the idea that libraries bear at least

a portion of the responsibility for easing exclusion caused by social barriers to access (Oliver, 1990).

A few authors, however, explicitly framed the need and purpose of library improvements in the social model. Mutula and Majinge (2016) identified staff awareness and skills training as an essential strategy for ensuring "that students living with visual impairments are enabled to seek, access, and use information resources housed in the library." They framed this as relating to socially constructed barriers that Oliver (1996) identified, such as prejudice and discrimination. Similarly, Pionke (2017a) and Roth, Pure, Rabinowitz, and Kaufman-Scarborough (2018) suggested that the purpose of a training program is to move staff from thinking of disability using the medical or individual model to the social model. By approaching training through the lens of the social model and the library's responsibility to break down oppressive structures and behaviors, training thus transforms from a routine service improvement task to one rooted in librarianship's social justice tradition (Kumbier & Starkey, 2016; Pionke, 2017a). The goal is to ensure that all library users are treated equitably and to the same standard of service (Miller-Gatenby & Chittenden, 2000). Accessibility in the libraries is not just about tweaking spaces and services to solve little problems, but involves addressing systemic cultural and structural problems that create disability in context (Kumbier & Starkey, 2016; Samson, 2011).

A training program grounded in the social model of disability thus would engage community members and staff with and without disabilities in its planning and implementation (Kumbier & Starkey, 2016), focus on shifting attitudes about disability and people with disabilities (Pionke, 2017a), and build skills and habits around language,

behavior, and specific services and technologies designed to support people with disabilities (Mutula & Majinge, 2016; Samson, 2011).

Training framework and content. A four-part framework developed by Deines-Jones (1999) provides guidance for selecting content for introductory training, as well as an outline for how a training proceeds (Carter, 2004; Deines-Jones, 1999). The first category, Attitudinal Training, is to normalize staff to an affective standard. This is sometimes referred to as sensitivity, etiquette, or awareness training (Bayat Bodaghi et al., 2015; Brannen et al., 2017; Harris & Oppenheim, 2003; Miller-Gatenby & Chittenden, 2000; Saar & Arthur-Okor, 2013) and should include a focus on customer service (McGowan et al., 2018), different types and needs of both visible and invisible disabilities (Henczel & O'Brien, 2011; Nichols & Schnitzer, 2015; Small et al., 2015), local context such as information about the university's specific disability community (Brannen et al., 2017), and practical guidance on communicating with people with disabilities (Henczel & O'Brien, 2011; McGowan et al., 2018; Miller-Gatenby & Chittenden, 2000) including appropriate person-first language (McGowan et al., 2018; Vincent, 2012). The purpose of this step is to help improve staff comfort with interacting with people with disabilities by discussing that they are people first, and have disabilities second (Carter, 2004; Deines-Jones, 1999; Charles, 2005). This demonstrates a shift in thinking about disability from the medical to the social model by moving from the identity-first language of "disabled person" to the person-first language of "person with a disability" (Pionke, 2017a).

The remaining three categories focus on developing staff skills and knowledge about serving people with disabilities. The second category is Services Training, and is

intended to build awareness of relevant library services and programs as appropriate to the particular staff member's role (Deines-Jones, 1999; Nichols & Schnitzer, 2015), as well as to whom to refer people who need help beyond what the library can offer (Vincent, 2012). Closely related to Services Training, and following on it, is the third category, Facility Training. This may include topics such as how to adapt policies about facilities use for people with special needs, the location of accessible features such as entrances and restrooms (Carter, 2004; Deines-Jones, 1999; Henczel & O'Brien, 2011; Saar & Arthur-Okor, 2013), and the function and use of any assistive or adaptive technologies that library users have access to in the library (Brannen et al., 2017; Carter, 2004; Charles, 2005; Deines-Jones, 1999; Henczel & O'Brien, 2011; Saar & Arthur-Okor, 2013; Vincent, 2012). The fourth category is Legal Training, and focuses on the legal responsibilities of the library under the ADA and other relevant laws (Harris & Oppenheim, 2003; Small et al., 2015), as well as how guidelines for service will be enforced (Miller-Gatenby & Chittenden, 2000). Carter (2004) noted that "staff members act as representatives of the library and must be aware that their actions, or inactions, can result in legal ramifications against the library" (p. 18). The purpose of each of these three steps is to develop staff knowledge about, and skill in providing, a high level of service to people with disabilities (Carter, 2004).

Many successful training programs were based on building a partnership with the local disability services office, such as ODS, to provide or review content (Brannen et al., 2017; Carter, 2004; Charles, 2005; Deines-Jones, 1999; Harris & Oppenheim, 2003; Nichols & Schnitzer, 2015). Leveraging the voices and bodies of community members with disabilities to talk about their experiences and needs in the library was described as

highly effective in attitudinal training sessions. Carter (2004) also suggested that legal training should be handled, when available, by an attorney or other credentialed person.

Hands-on experiential training was generally recommended, but with some caveats. Asking staff to try moving around in a wheelchair or with a blindfold on has fallen out of favor as a training tool within the library training literature, though it was common in programs outside of libraries (Colwell, 2012; Reynolds, 2010). Not only does play-acting disability not work to expose the actual lived experience of a person in a wheelchair or with low vision, it may reduce the reality of impairment to that of a game (French, 1992). This is offensive to many people who live with their impairments, and should be avoided (Carter, 2004; Charles, 2005; Deines-Jones, 1999; Timms, McHugh, O'Carroll, & James, 1997). Such simulations may even backfire by supporting negative attitudes towards people with disabilities because of the inadequate experience of the simulation (French, 1992), although the evidence for this is mixed (Colwell, 2012). Since the goal of training is to improve both attitudes and skills, several authors suggested turning the experiential learning around by focusing on the staff skills of how to help a person with low vision or mobility impairments through appropriate communication and guiding behavior (Charles, 2005; Deines-Jones, 1999; Miller-Gatenby & Chittenden, 2000). Although one person may still be blindfolded, the point is for the other person to experience practice navigating that person through the library, rather than for the blindfolded person to experience needing guidance.

In cases where representatives from the local disability community are not available, researchers recommended discussing case studies that center on realistic interactions with people with disabilities in the library (Carter, 2004; Deines-Jones,

1999). These can be written to focus on one of the four steps or to combine several at once. For instance, Deines-Jones (1999) described two case studies designed to challenge participants' prejudices about different types of disabilities, while also working them through the appropriate response to the patrons' needs in the context of local library facilities, services, and policies.

Principles of andragogy and disability training. Staff training is generally developed for adult staff, sometimes including undergraduate student workers. The context of learning for work or for life skills, rather than for the sake of learning, places staff training into an andragogical model. Malcolm Knowles popularized the term "andragogy" to describe the different assumptions important for teaching adults compared to child-oriented pedagogy (Merriam & Bierema, 2014). The andragogical model makes certain assumptions about the learner that may be different from assumptions made in traditional pedagogical contexts. Over time, Knowles, Holton, and Swanson (2011, pp. 63-67) developed the model to include six core learning principles:

1. The learner's need to know. Adults need to understand why they need to know information before they are ready to learn it.
2. The learners' self-concept. Adults need to feel in control of their decisions and demonstrate self-direction in their learning process.
3. The role of experience. Adults learn more effectively when their prior experiences are acknowledged and engaged in the learning process.
4. The readiness to learn. Adults are most ready to learn the things they need to know in order to do their current or next set of life-related or developmental tasks.

5. Orientation to learning. Adults are oriented to learning that is contextual, practical, task-oriented, or problem-based, rather than for the sake of gathering new knowledge.
6. Motivation. Adults learn more effectively when they have an internal motivation such as increased job satisfaction than an external motivation such as a job promotion.

Clearly not all adult learning fits within these assumptions; many adults enjoy learning for the sake of learning. However, this is one of the most popular models for adult learning, particularly in contexts such as workplace learning and continuing education (Merriam & Bierema, 2014).

These principles are evident in much of the discussion about how to develop disability awareness training as described above. Attitudinal training focused on shifting learners to a social model approach aligns with internal motivation to social justice and collaboration. The more practical aspects of skills and facilities training appeal to the principles of need to know, self-concept, readiness to learn, and orientation to learning. Legal/policy training also speaks to motivation, by indicating external motivations, but may also engage the learner's understanding of their need to know. Recommendations to make training highly contextualized and practical aligns directly with the orientation to learning principle, while developing exercises that engage and challenge learners' prior knowledge and assumptions aligns directly with the principle of the role of experience.

Training Program Models and Examples

Programs developed on the national level. Several online training programs related to disability and accessibility exist that are either specifically designed for library

contexts or that focus on customer service skills. The Association of Specialized, Government, and Cooperative Library Agencies (ASGCLA), a division of the American Library Association, provides a variety of learning products for libraries of all types. ASGCLA has a goal of providing a series of modules for their AccessAbility Academy for a small fee. At the time of this writing, only the first module, *Positive Interactions: Making the Library a Welcoming and Empowering Place for People with Disabilities*, was available (ASGCLA, 2016). This is a recording of a roughly 50-minute webinar that covered the basics of disability awareness and sensitivity. In the Deines-Jones (1999) framework, only the first step of attitudinal training was included. The webinar is not interactive, though there are two points in which participants were encouraged to reflect on their local context. This allowed for some engagement of participants' prior experience and beliefs, which can be difficult in an online-only training environment. ASGCLA also provides a series of resource guides and toolkits for self-directed learning (ASGCLA, n.d.), that cover specific types of disability as well as concepts such as universal and equitable access.

The Center for Digital Literacy at Syracuse University produced and maintains *Project ENABLE: Expanding Nondiscriminatory Access by Librarians Everywhere* (Center for Digital Literacy, 2010-2016), a web-based training system that covers all four of the Deines-Jones (1999) training steps in a series of six modules. These are: disability awareness, disability law & policy, creating an accessible library, planning inclusive programs and instruction, and targeting autism in libraries. The system is very interactive, with both in-lesson prompts for text-based participation and regular quizzing, and leverages a variety of learning objects such as videos, vignettes, and checklists. It is

written for professional librarians in a variety of settings, with occasional digressions into specifics for contexts such as working with individual educational plans in schools or creating sensory story times in public libraries.

Other helpful online training materials include the Mid-Atlantic ADA Center's (2019) variety of text-based training programs and the University of Washington's (2019) *DO-IT: Disabilities, Opportunities, Internetworking, and Technology* resources website. These sites provide training modules in print and by video, as well as case studies, checklists, handouts, and other resources for a general audience.

A critique of all these options is that they are both too general and too specific to support the unique needs of any given local context. They thus fail to engage several of the core principles of adult learning, particularly the need to know, the role of experience, and the importance of internal motivation. For example, the library-oriented programs assume that the participant is a professional librarian with control over the creation and deployment of services. For this study, I am focused on front-line staff who deploy but generally do not create services. All the programs include content that is not relevant for my university library context, either because they discuss other types of libraries or because they are aimed at the business community. Bruhn (2008) noted these general weaknesses of national and/or general training programs, and suggested that the real need is for common training materials such as bibliographies and resource guides that in turn support the specific training programs of each context. While general online programs are preferable to no training, the better approach would be to target training both to the local context and to the specific type of staff member, such as student worker, administrator, front-line staff person, or technical services staff person (Deines-Jones, 1999).

Programs developed at the local level. In-person training programs reported in the literature included extended workshops ranging from a half-day to one-day or to multi-day programs (Henczel & O'Brien, 2011; Vincent, 2012), and professional development series that included tours, participation in campus events, webinars, and panels with community members with disabilities (Brannen et al., 2017; Schroeder, 2018). These programs allowed trainers to go into some depth in each of the four training areas in the Deines-Jones (1999) model. For example, Henczel and O'Brien (2011) described a two-part series of half-day workshops that covered types of visible and invisible disabilities separately. In each session participants learned background about different types of disabilities, the roles of support agencies, communication and service training relevant to each disability type, and different assistive and adaptive tools or technologies. The extended time each day allowed for in-depth discussion of multiple topics, with both expert presenters from the community and hands-on and discussion activities to promote learning. In contrast, Brannen et al. (2017) offered a wide range of activities, such as tours of the campus accessible technology lab, to achieve the same content goals in a less formalized manner.

A critique of in-person training is that it does not support the core andragogy principle of the learner's self-concept, which emphasizes the desire to have autonomy over the pace and direction of learning. This could be avoided by dividing training into very small units, so that participants may pick only those for which they are ready and motivated to learn on their own path. Schroeder (2018) reported that the Michigan State University Libraries had sponsored or offered 29 different voluntary training sessions

over a two-year period. It was unclear whether these were connected by a program or simply offered as stand-alone events.

Hybrid programs can be developed to extend learning over time, space, and different teaching modes (Deines-Jones, 1999). Charles (2005) described a hybrid approach to training, in which library staff first participated in a hands-on, in-person training. This training focused on raising awareness and offering practical advice on working with people with disabilities, and was aimed at the front-line staff at the University of Dundee Library and Learning Center. Later, Charles developed a supplemental guide that provided key points aimed at reinforcing communication and service behaviors at the front-line service points. The combination of the one-time training event and the guidelines helped build accessibility and inclusion awareness and skills among the staff beyond what either would have accomplished individually.

The DATE (Disability Awareness, Training, and Empowerment) program at Rutgers University-Camden took a similar hybrid approach for training faculty and staff across the university. The program included a 90-minute lecture and collaborative learning exercise session with online readings and videos. The exercise portion of the in-person session used small group discussions of several different scenarios intended to prompt thinking about resources available to faculty and staff, and the roles of different members of the university community in supporting students with disabilities. Participants in the pilot program found it helpful, but also recommended that it be part of an ongoing, required training environment that focused on specific disabilities relevant to the local context. They also suggested that online training would be more accessible to a

wide variety of faculty and staff, and that students should be trained using a targeted set of scenarios (Roth et al., 2018).

The hybrid approach would appear to support adult learners effectively by addressing the majority of the core principles of andragogy. However, a hybrid approach may be difficult to sustain. The second iteration of the University of Dundee training program was an online-only series of modules for more widespread staff training, in recognition of problems of scalability and staff schedules found in the first iteration (Forrest, 2007). Unlike the online programs discussed above, these were developed specifically for the local context, and were delivered through the campus learning management system. This allowed trainers and participants to take advantage of tools like discussion boards and out-of-course discussions.

Program Assessment

The assessment of adult learning using the andragogical model may differ from that of traditional pedagogical learning, because of the focus on the development of skills and the impact of learning on the institution and society. The Kirkpatrick Evaluation Model (Brewer, 2011; Farmer & Parker, 2011; Kirkpatrick 1975; Knowles et al., 2011) provides a four-step process for evaluating adult training programs:

1. Reaction: Immediate feedback about how learners feel about the training, including what positive or negative responses they have to it.
2. Learning: What participants learned in terms of attitudes, knowledge, or skills, measured through pre- and post-testing.
3. Behavior: Observational or self-reported assessment of changes in what the learner does on the job after the training, compared to prior behavior.

4. Results: The impact of the training on organizational success, measured by metrics such as patron satisfaction, staff turnover, productivity and efficiency, etc.

In addition, Knowles et al. (2011) recommended a fifth step:

5. "Rediagnosis of learning needs" (p. 132): Information from learners about what they want or need to learn next.

This model has been used in a wide variety of contexts, and allows instructors to assess student satisfaction, knowledge acquisition, skills application, and overall effectiveness of the training (Brewer, 2011). The first four steps follow linearly on each other, as they increase in both depth and cost of assessment as they progress. The fifth step, rediagnosis of learning needs, was added by Knowles et al. (2011) to represent the cyclical nature of adult education and the importance of engaging the self-directed learner in their learning.

Assessment of a training program may be formative, in that it helps develop the content and delivery of the training, or summative, in that it helps determine whether the participant learned something during the training. In the expanded Kirkpatrick model, formative assessment is appropriate at the first and fifth step, while summative assessment is appropriate in steps two, three, and four. Both types of assessment are important in determining whether a training is effective, and they can be performed in parallel using similar tools (Schilling & Applegate, 2012). In addition, assessment measures may be direct or indirect. Direct measures, such as written or applied tests, can be used to identify the effect of training on knowledge and skills. Indirect measures, such as satisfaction surveys, measure changes in attitude or perceived improvement in skill or knowledge. Schilling and Applegate (2012) suggested that researchers should decide what they wish to measure, and select tools appropriately. In their review of the

assessment of learning literature in libraries, they found that students were good at evaluating affective changes in emotions, feelings, and attitudes, but were poor self-judges of skill or knowledge development. Indirect measures are appropriate for all steps of the Kirkpatrick model; direct measures would be most appropriate to assess changes in learning, behavior, and organizational results.

Assessment tools. Assessment tools represented in the literature on library training programs for attitudinal, facility, service, and legal training in accessibility cluster mainly around qualitative satisfaction and behavioral/attitudinal questions such as "What will you do differently from now on?" (Henczel & O'Brien, 2011), quantitative Likert-like satisfaction surveys (Charles, 2005; Forrest 2007), and pre- and post-training tests (Forrest, 2007).

Although some training programs used knowledge-based quizzing to assess knowledge acquisition quantitatively, others used standardized and validated attitudinal scales focused on changes in attitudes and emotions like sympathy, disgust, and fear. The oldest of these scales, the Measurement of Attitudes Toward Disabled Persons (ATDP: Yuker, 1970), predates the development of the social model by several years. This is evident in the language used in the scale, making it questionable to use as a modern instrument. Timms et al. (1997) used the ATDP to assess the impact of a disability awareness training with two groups. One group worked in a disability support organization, and the other had no overt connection to disability services. They found that the group without a connection to disability services had a significant improvement in its ATDP scores after the training, compared to scores before the training. The group connected to the support organization had no significant change to its scores.

Over the last five decades, more advanced scales have been created that differ in terms of constructs, intended population, and format (Lam et al., 2010). One of these is the Interaction with Disabled Persons Scale (IDP: Gething, 1991), which modernized and expanded on the ATDP. The Sentiments, Attitudes, and Concerns about Inclusive Education Revised (SACIE-R) Scale was developed in 2010 for assessing pre-service teachers' readiness to work with students with disabilities or other needs (Forlin, Earle, Loreman, & Sharma, 2011). It used both the ATDP and the IDP as foundational instruments. In his action research dissertation, Leckie (2018) adapted the SACIE-R to use as a pre- and post-intervention test to assess the training that he led for practicing teachers.

These scales may be influenced by several confounding factors. Several researchers suggested that having prior experience with disability services, having exposure to a person with a disability, or being female may positively affect scores (Findler, Vilchinsky, & Werner, 2007; Gething, 1991; Gething & Wheeler, 1992; MacLean & Gannon, 1995; Timms et al., 1997). This explains both why scores would be expected to improve before and after a training intervention and why it is important to confirm that population differences in gender and prior experience are considered when deploying any one of the scales.

A few researchers also used other means to gather group feedback on the training, such as focus groups and an online discussion board (Forrest, 2007; Henczel & O'Brien, 2011). These assessments were primarily restricted to the first two steps of the Kirkpatrick model, reaction and learning. Deines-Jones (1999) recommended the use of role play using standardized case studies in order to both train and assess the impact of

training. However, course-based role play does not fulfill the real-world context need of Kirkpatrick's third step, behavior evaluation.

Conclusion

Students with disabilities need university support, both academic and social, to succeed in college, as do all other students on campus. Providing an engaging and supportive environment to these students means more than building ramps and elevators. Perhaps more important is building an inclusive staff culture through attitudinal and skills training. Libraries, as part of the academic and social fabric of the university, can support student success by providing a third place where people with and without disabilities equally feel like they belong. All campus centers have a responsibility to be part of the larger learning environment (Mamiseishvili & Koch, 2011; Yuen & Shaughnessy, 2001), because student success is tied to the quality of the system as a whole, including infrastructure elements such as libraries (Hennig-Thurau et al., 2001). As Mamiseishvili and Koch note, "accessibility, both environmental and attitudinal, of [non-academic buildings and events] must be given the same attention as the accessibility of the classroom" (2011, p. 102). Staff training is a vital component of building an inclusive culture within the libraries' environments. Examples of successful programs that develop staff attitudes and skills using approaches from the social model of disability approach and grounded in the principles of adult learning provide examples of content, format, and assessment that can guide the development of local programming. Supporting the attitudinal accessibility of the JMU Libraries through staff training is the focus of this study.

Chapter 3

METHODS

Introduction

The central intervention for the cycle of action research on which this dissertation focuses is the development of a training program for library student workers, staff, and faculty. The choice to develop a training program was informed by previous cycles of research—including the Carrier Library accessibility audit, focus groups and interviews with people with and without disabilities, and the creation of the Accessibility page on the Libraries' new website—as well as prior research by others in the fields of disability studies and library science. The program was focused on new staff training for part-time and full-time staff and student workers. Its purpose was to improve staff awareness and skills related to disability etiquette, and to raise awareness of accessibility services for library users and staff within the JMU Libraries. The research questions focused on the effect of training and professional development on the knowledge and comfort levels of Libraries staff. They were:

> RQ1: How does training centered on accessibility for people with disabilities affect participants' knowledge about and comfort with supporting people with disabilities, in comparison to a control group?
>
> RQ2: What strengths and weaknesses of the training program do participants identify?

Data about the training program's effectiveness, with recommendations for improvements to consider for the next cycle, was collected through discussion questions and a reflection in the training module, focus group discussions with participants in the training program and members of the Council on Diversity, Equity, and Inclusion

(CDEI), and a pre- and post-test quantitative questionnaire administered to both participants and non-participants in the training program. This consecutive mixed-methods approach allowed each data instrument to inform the next through adjustments to content or questions and triangulation across methods and participants.

Intervention: JMU Libraries Accessibility Training

The training program was aimed at new student workers, part- and full-time staff, and faculty, particularly those in front-line positions who support the primary service points and makerspaces in each main library. For simplicity, this group will be referred to collectively as "staff" from here forward. The program was designed to fit into new Libraries staff orientation.

New full-time Libraries staff participate in the LOOP (Library Orientation & Onboarding Program). This training and onboarding program consists of a series of online modules and checklists currently in transition between the Sharepoint and Canvas systems. New staff are expected to complete certain required LOOP modules within the first month of their employ. These include reviewing the Libraries' mission/vision/values document, learning how to use the intranet, and meeting with their associate dean. The LOOP is a relatively new program, with new optional modules specific to departmental needs being added on a regular basis.

At present, most student workers are trained by their department, as they do not have access to the Sharepoint intranet platform, and generally receive targeted training relevant to their current assignment. Students in the Public Services Department receive ongoing training via a Canvas course, while other departments do not have a formal student worker training program. All staff were asked to voluntarily take the online

portion of the accessibility training, even if they were well past the onboarding period. The version of the training program used for this dissertation was housed in a standalone Canvas course, titled "JMU Libraries Accessibility Training," to protect participant anonymity through the test and assessment process.

Objectives for the training program were based on the four Deines-Jones (1999) categories: attitudinal, services, facility, and legal/policy topics. Content was informed by the online Project ENABLE training system, materials from the University of Washington DO-IT Center, an etiquette factsheet from the National Disability Navigator Resource Collective (2015), the literature, and advice and input from the JMU Office of Disability Services (ODS). Unique content includes a new JMU Libraries Disabilities Etiquette Guide and the Accessibility webpage.

Training Program Content and Development

The training program consisted of one Canvas module, titled "Basics of Library Services for People with Disabilities." The module was intended to require 1-2 hours to complete. The training program was designed as a single-module course in order to make it easier to move the module into the LOOP and Public Services training platforms, and to make it clear that this was intended as a basic, rather than comprehensive, program for now. As noted above, it was loaded into a standalone Canvas course shell. Staff were invited to participate voluntarily in the online module and the research through the IRB consent process.

The training program outline in Appendix A presents the specific training objectives, content, and activities covered in the training program. Each objective is tagged with the Deines-Jones (1999) category. The module was arranged such that each

objective was addressed in its own section, with a combination of uniquely developed content and external content from trusted sources. Discussion questions were presented on their own pages; participants had to respond to a discussion question before they could see other responses. All activities were optional.

Development and testing of the training. In early stages of this research, I considered a hybrid training program that would present much of the content through in-person, one-on-one instruction with the Public Services departmental trainer followed by supplemental and reinforcing content via Canvas. The departmental trainer left the JMU Libraries just before deployment of the program, however, necessitating a change in the intervention to a fully online model. The Public Services department uses Canvas as a training platform, but the LOOP is still primarily contained within the Sharepoint file-management system. I chose to create this program within Canvas in recognition of its advantages as a learning management system, including personnel management, discussion boards and quizzing, statistics generation, support for multimedia content, ease of export, and ease of development.

As noted above, I used a variety of online training programs, examples from online informational clearinghouses and content experts, the literature, and advice from the JMU ODS to develop page content. I wrote all content. In late January 2019, two colleagues reviewed the full training program for content, clarity, and design. One of these colleagues, a staff member who is currently in a library science master's program, has extensive experience in the Public Services Department and a professional interest in inclusion and accessibility. The second colleague is a faculty member with expertise in educational technology and instructional design. Before releasing the program, two

community members, a student studying American Sign Language and a retired librarian with no background in disability studies, took the training to provide a baseline for timing and to provide their perspective on the content and questions.

Setting and Participants

The intervention and assessment took place in the spring of 2019 and involved JMU Libraries staff at all levels. The program was advertised to all staff via the Libraries News Digest weekly newsletter, departmental update emails, and word of mouth. Staff were invited to participate regardless of their recency of hire or their role in direct public interaction. There were approximately 200 staff in the Libraries in the spring of 2010, of whom 60 were student workers. Staff who were under 18 years at the time of the study were invited to take the training as a job function, but their assessment data was excluded from the study, as was any participant who declined consent via the reflection.

The training was promoted over a six-week period from the middle of February through the end of March. While in the future the training program would be primarily intended for new staff, recruiting staff from the entire organization served to bring the general knowledge about and comfort with service provision up to a baseline standard and expanded the study population. In order to make sure that certain populations were included, I sent specific invitations to the Public Services and Innovation Spaces and Services departments and to members of the CDEI. These two departments are responsible for most direct library user interactions, so were invited as the primary targets for this training. CDEI members were invited in order to leverage their expert status in issues of diversity and inclusion, and to engage their unique perspective as the traditional

owners of training and other programming on topics such as accessibility and disability in the Libraries.

In all, there were two different groups of Libraries staff involved in this study. These were the intervention group who completed the reflection portion of the training program, and the control group who did not participate in or complete the training program but did respond to one or more of the assessment instruments. These two groups together constitute a response of 38.5% for at least one of the five data collection instruments including student workers, and 51.4% excluding student workers. The following table outlines which group participated in which portion of the intervention and assessment.

Table 1
Number of Participants in Each Research Group, by Assessment Instrument

Instrument	Training Group	Control Group	Total
Pre-test questionnaire	12	37	49
Training discussion	21	0	21
Training reflection	23	0	23
Post-test questionnaire	8	15	23
Focus groups	12	3	15
Total	25	52	77

Only three people completed all five data collection strands: pre-test questionnaire, training program discussion responses, training program reflection responses, post-test questionnaire, and focus group discussion. Two post-test questionnaire respondents indicated that they had participated in the training program, but gave a code that did not match any of the reflection codes. These were included in the control group for analysis.

Seven people completed both questionnaires, based on matching of the identifying codes; four were training participants and three were from the control group. Fifteen people participated in one of the three focus groups. The first focus group, with members of the Council on Diversity, Equity, and Inclusion (CDEI), included four training group and three control group participants. One CDEI focus group participant indicated that they had completed the course, but they had not completed the reflection. This person was also coded as part of the training group. I did not ask focus group participants to provide a tracking code, so cannot determine if the three control group participants also took one or both of the questionnaires.

Demographic information. Demographic data was only collected using the self-reported measures in the two survey instruments, and is presented in Table 2.

Table 2
Participant demographics by questionnaire

Demographic	Pre-Test (*N* = 49)	Post-Test (*N* = 23)
Gender		
Female	40	17
Male/Other	8/1	6
Age		
18-22	5	0
23-34	16	7
35-49	20	10
50+	8	6
Employment Type		
Student worker	5	0
Part-time staff	5	3
Full-time staff	22	8
Faculty	17	12
Job Orientation		
Public facing	27	15
Non-public facing	22	8

Respondents were asked to indicate their gender identity, age bracket, employment type, and whether they were in a primarily public-facing role. This was based on reports in the literature correlating these factors with attitudes and perceived skill and comfort regarding people with disabilities (Findler, Vilchinsky, & Werner, 2007; Gething, 1991; Gething & Wheeler, 1992; MacLean & Gannon, 1995; Timms et al., 1997). No statistically significant difference in the population composition by gender, age, employment category, prior training, or experience with disability was found between the participant and control populations. As a result, the demographic and experience data shown in Table 2 and following tables is for the populations combined.

The number of participants from each employment category is statistically different from the Libraries actual population, using a chi^2 test with the number of staff in each type ($p < 0.05$). Specifically, the number of student workers is lower than would be expected. Approximately 30% of Libraries employees were students (60 of 200), but only 10% of pre-test respondents and no post-test respondents were student workers. The full-time staff and faculty are over-represented in the sample. This is unsurprising; these are the populations most likely to engage with Libraries organizational development, including taking the training program or responding to requests for survey participation. The lack of student worker representation also impacted the age distribution, as this category trends younger, and may have affected the overall scores on the questionnaire. Gender and job orientation are within expected ranges given the composition of the Libraries.

Prior experience with disability. Several studies found correlations between prior experience with disability, either through having taken prior training, having

worked with people with disabilities or from having a disability or having a close relationship with a person with a disability. Several questions on the survey asked about prior experience. The pre- and post-test training and control groups did not differ significantly in the mean number of types of training, mean number of types of disability, distribution of having taken any training, having or knowing a person with any type of disability, identifying as being a person with a disability, or having worked with a person with a disability in the last year. The distributions are thus presented with all responses for each survey instrument combined.

Approximately two-thirds (63.3% of pre-test and 69.6% of post-test) of respondents had attended at least one type of training in the past year. On average, respondents who had participated in training had gone to multiple different types of trainings (1.7 for pre-test respondents; 2.3 for post-test respondents). There was a fairly even distribution across the different types of trainings (Table 3). Other responses included formal coursework and informal self-directed reading.

Table 3
Number of Participants with Previous Training in Disability and Accessibility

Question	Response	Pre-Test (N = 49)	Post-Test (N = 23)
Which of the following staff development programs or modules about accessibility and/or disability have you participated in, in the last five years?	Office of Disability Services panel / brownbag event sponsored by the Libraries	15	8
	JMU Diversity Conference session about accessibility or disability	16	9
	Disability Week event(s) sponsored by the Office of Disability Services or the Libraries	8	7
	Professional development program sponsored by a non-JMU group such as ALA	10	12
	Other	4	1
	None	18	7

A large proportion of respondents to both surveys had personal experience with disability through either having a condition, impairment, or disability or through knowing a close friend or family member with one. The distribution of responses in each of the two survey instruments is given in Table 4, below.

Table 4
Number of Participants with Personal Experience with Disability

Question	Response	Pre-Test (N = 49)	Post-Test (N = 23)
Do you or a close friend or family member have any of the following conditions, impairments, or disabilities?	Chronic illness	30	14
	Hardness of hearing / deafness	25	11
	Learning disability	20	7
	Low vision / blindness	14	3
	Mental health condition	39	16
	Mobility impairment	23	12
	Other	5	3
	None	6	1

Only 12.2% of pre-test respondents and 4.3% of post-test respondents indicated that they did not know anyone with any of the six broad types of disability or another, unlisted type. Most respondents knew either multiple people with disabilities or at least one person with multiple disabilities; the mean number of types per respondent was 3.6 for the pre-test and 3.0 for the post-test. Of the six types of disabilities listed, the most common for both surveys were mental health conditions (79.6% and 69.5% of pre- and post-test respondents) and chronic illnesses (61.2% and 60.9%), both of which generally manifest as invisible disabilities. The most common response to the "other" category was autism, with a few additional responses that could be considered chronic illnesses or mental health conditions also given.

While this distribution of familiarity with impairments is high, it is not completely surprising, given U.S. census figures for the rates of disability in the population. However, many fewer respondents on each survey indicated that they were or knew a person who identified as a person with a disability (see Table 5). The number of people responding yes to the identity question is significantly different from the number indicating the presence of an impairment on the pre-test ($x^2 = 10.26$, $p = 0.0014$), but not on the post-test surveys at the $p < 0.05$ level. This suggests that some respondents see a difference between having an impairment and being disabled.

Table 5
Number of Participants with Disability Identity

Question	Response	Pre-Test ($N = 49$)	Post-Test ($N = 23$)
Do you or a close friend or family member identify as a person with a disability?	Yes	29	18
	No	20	5

The number of people who had prior experience helping a person with a disability or working with the Office of Disability Services in the last year was relatively small (see Table 6).

Table 6
Number of Participants with Prior Work Experience with Disability

Question	Response	Pre-Test ($N = 41$)	Post-Test ($N = 19$)
Last academic year, did you help a person with a known disability in the context of your work at the JMU Libraries?	Yes	19	7
	No	22	12
Last academic year, did you work with the JMU Office of Disability Services on a program or project related to your work at the JMU Libraries?	Yes	3	4
	No	39	15

These data suggest that while the study population had a high amount of personal experience with impairments, they had less experience with significant disability

sufficient to impact identity. In addition, their work-related experience was relatively low.

The relatively small population size for this study did not allow for a full factor analysis to identify the relative contribution of demographics, prior experience with or exposure to disability, or the training program itself on post-test scores. Given that there were no significant differences found between the intervention and control groups for the non-intervention characteristics, data analysis focused on between-group changes.

Intervention Timeline

The intervention was deployed in the spring semester of 2019. Table 7 presents the complete timeline for data collection and the intervention.

Table 7
Intervention and Assessment Timeline

Month	Intervention Step	Population
January – February 2019	Pre-Test Questionnaire	All staff of the Libraries in the intervention and control groups (49 total)
February – March 2019	Training Program available and promoted	Intervention group only (25 total)
April – May 2019	Post-Test Questionnaire	All staff of the Libraries in the intervention and control groups (23 total)
May 2019	Focus groups	Intervention group and members of the CDEI (15 total)

Instruments and Data Sources

In this mixed-methods action research study, I assessed the effectiveness of the accessibility training program using steps 1 (reaction, satisfaction, and impressions), 2 (change in beliefs and knowledge), and 5 (identification of new learning needs) of the

expanded Kirkpatrick Evaluation Model (Knowles et al., 2011). The short timeline of this cycle of research, and the small intervention population compared to the total staff population, precluded observational assessment of behavior change or the longitudinal systems-based approach necessary to evaluate organizational results.

I used several different data collection methods to evaluate the training program's content and structure, assess change across the organization in attitudes and knowledge, and identify possible next steps in training and staff development related to accessibility. Results from each data collection instance were used to inform later instances. Preliminary findings from the pre-test questionnaire informed the content of the training program and of the discussion and reflection questions. Preliminary quantitative and qualitative findings from the questionnaires and training questions informed questions asked during the focus groups.

In order to protect participant anonymity while allowing for cross-instrument linking, participants generated a code that they included on each instrument. They were prompted to create the code using the following formula: "The street number of your (favorite) childhood house, plus the last two letters of your mother's first name (ex: 305CA)." This method provided complete anonymity, as I have no way of knowing either input, while likely ensuring uniqueness. There is a chance that a person could create a different code on two different instruments. For instance, I could have chosen either "305CA" or "1408CA" depending on about which of my two childhood homes I was feeling most nostalgic in the moment. Each instrument reminded respondents to use the same code as they had previously, to control for this user error.

Respondents could participate in one or more of five data gathering instruments: the pre-test questionnaire, the training program discussion questions, the training program reflection, the post-test questionnaire, and the focus groups. The complete protocol for the intervention and assessments was approved as exempt by the Arizona State University and the James Madison University Institutional Review Boards as STUDY00009398 and No. 19-0315, respectively (Appendix B). Table 8 summarizes how the data sources and methods of analysis contribute to answering each of the study's research questions. For simplicity, the pre- and post-test questionnaires and the training program discussion questions and reflection are each combined in the table.

Table 8
Relationship of Data Sources to Research Questions

Research Question	Data Source(s)	Type of Data
RQ1: How does training centered on accessibility for people with disabilities affect participants' knowledge about and comfort with supporting people with disabilities, in comparison to a control group?	Pre- & Post-Test Questionnaires	Mainly quantitative; Likert-like
	Training Program Discussion Questions and Reflection	Qualitative; text responses to discussion and reflection questions
	Focus Group Questions	Qualitative; session notes and transcripts
RQ2: What strengths and weaknesses of the training program do participants identify?	Training Program Discussion Questions and Reflection	Qualitative; text responses to discussion and reflection questions
	Focus Group Questions	Qualitative; session notes and transcripts

Pre- and Post-Test Questionnaires

In order to quantify perceived cultural, attitudinal, or awareness change in Libraries staff, I deployed a questionnaire (Appendix C) to all staff in January 2018 and

again near the end of the academic year in April-May 2018. This was a largely quantitative instrument with questions aimed at assessing staff attitudes towards and comfort with accessibility and inclusion for people with disabilities. The questionnaires were primarily used to assess progress towards informing Research Question 1, the impact of the training program on the intervention group compared to the control group.

The questionnaires were initially developed in the summer of 2018. In the fall of 2018, a colleague with a professional interest in library inclusion and accessibility reviewed the instrument for clarity and context. This colleague later reviewed the training program as well. I then piloted the questionnaire with eleven staff at the Virginia Commonwealth University Tompkins-McCaw Library for the Health Sciences. These led to small-scale changes to the questionnaire that supported changes to wording and order to help ensure better validity of results. Changes to the informed consent declaration and to stop Qualtrics from collecting IP or GPS data were requested by the ASU IRB and implemented before release.

I constructed the survey in three sections. The first section requested demographic information to identify possible patterns in knowledge and comfort levels by employment category, gender, age, and job role. Employment category was defined using the university's PeopleSoft designations: student worker, wage (part-time) staff, classified (full-time) staff, and faculty. Gender identity was an open-ended question to allow whatever language the respondent chose to use. Age was bundled into ranges roughly corresponding to population sizes: 18-22 years, 23-34 years, 35-49 years, and 50 years or older. It was important to me to avoid any concern that individuals could be identified through combining demographic data. As a result, the job function question only asked

for whether working directly with library users was a primary component of the respondent's job. This allowed me to distinguish between people with public-facing roles and those with more technical positions, while avoiding asking for specific departments within the Libraries. These demographics were chosen based on reports in the literature cited above that suggest that they may correlate with more positive responses on the standardized scales. In addition to identifying whether there were patterns to the scale responses, these questions also allowed me to identify whether the sample reflects the demographics of the Libraries as a whole. The demographics section concluded with a question about the types of training the respondent had attended in the last year relevant to accessibility and disability in libraries, and, for the post-test questionnaire, whether they had participated in whole or in part in the training program. These questions were intended to identify whether taking a greater variety of training programs correlated with standardized scale items or with likelihood of volunteering for the training program.

The second section asked the respondent to rate their degree of agreement with statements about their knowledge, attitudes, and comfort with disability and support for people with disabilities. I used several published scales as models for questions in this section. The Interaction with Disabled Persons (IDP) Scale (Gething, 1991) and the Sentiments, Attitudes, and Concerns about Inclusive Education Revised (SACIE-R) Scale (Forlin et al., 2011) were the most applicable published instruments for this study. SACIE-R itself used the IDP as a developmental model. Questions were updated for modern, person-first language such as "person with a disability" rather than "disabled person" and to clarify language such as "different types of disability" rather than "disabilities."

The instrument was designed to support two constructs: one for beliefs, attitudes, and concerns, and a second for perceived knowledge, skills, and experience. Items in the first construct were adapted from the IDP and SACIE-R standardized scales; items in the second construct also included questions on the demographic and prior experience section of the SACIE-R.

The scale items required a combination of normal and reverse coding for responses. For questions like "I tend to make contact with people with disabilities brief," the most desirable response would be "Strongly Disagree." The next item, "I find it rewarding when I am able to help people with disabilities," however, would have had "Strongly Agree" as the most desirable response. Context-sensitive coding allowed for the more desirable choices to have higher scores, regardless of whether that choice was to agree or disagree with the item statement. This problem of assigning values to responses was managed in the data analysis phase, to retain the original language of the standardized scale items as much as possible.

There were two open-ended questions in the second section. The first asked respondents to list up to three current library services relevant to people with disabilities. The second asked, "What main question do you have about supporting people with disabilities?" These were intended to provide qualitative data to triangulate and explain responses on the scale items and to measure change from the pre- to the post-test instances.

The final section was intended to help control for prior personal and professional experience with disability, accessibility, and universal design. As noted in the literature review, there is evidence that prior experience may correlate with better pre-training

scores on the standardized scale items. There were four questions in this section about the types of conditions, disabilities, or impairments that the respondent or a close friend or family member currently had, whether the respondent or a close friend or family member identified as a person with a disability, and whether the respondent had worked with either a person with a disability or with the ODS in the context of their library job. The list of disabilities or impairments used in this section was adapted from the ODS registration form for students requesting accommodations. The decision to broaden the disability and identity questions to include either the respondent themselves or a close friend or family member was done deliberately to protect the respondent's privacy. There is some concern in the community that the difference in knowledge, skills, and particularly empathy between a person with a disability and their close relations is significant. However, I did not want to cause any perceived risk to an individual by potentially putting them in a position to disclose an otherwise invisible disability. The third section also included two open-ended questions that displayed only if the respondent indicated they had worked with a person or the ODS in the past year. The questions asked for a brief description of how they had helped or worked with the person or ODS.

The questionnaire was distributed to both the intervention and control groups via Qualtrics as an online, self-paced instrument. The pre-test questionnaire was available from mid-January through the end of March. Participants in the training program who had not already completed the questionnaire were asked to do so before starting the training. The post-test questionnaire was deployed in mid-April in order to minimize any

halo effect from immediate post-training assessment while enabling responses before some staff left employment at the end of the academic year.

Training Program Discussion and Reflection Questions

Throughout the training module, participants were prompted to respond to a series of nine discussion questions (Appendix D). These were set up as optional discussion forums within Canvas. Respondents were forced to answer the prompt before they could see other posts, but then they could upvote or comment on other participants' posts, and edit or delete their own. The discussion questions were intended to test participants' immediate understanding of content from each section or to prompt respondents to reflect on their beliefs in the context of that section. In creating the questions, I wanted a balance between practical experiential questions and theoretical "what do you think" prompts. Questions were modeled on examples in the literature that emphasized case-based and applied learning. Data from these questions primarily informed Research Question #1. The quality of the responses also helped inform recommendations for improving the training, which is at the heart of Research Question #2.

The online module concluded with a reflection section containing eight questions, six of which were reflective (Appendix E). In order to be included in the study, staff were asked to complete and submit the reflection. Consent information was linked in the first question of the reflection, and respondents were asked to accept or decline at that time. Only the consent yes/no question was required. Some people may have taken the training without responding to the reflection, or without submitting it. Only the reflection and discussion questions for those participants who consented to be part of the study and who submitted their reflection were downloaded and analyzed. One person declined to consent

and was thus excluded. The second question was a prompt for the unique code to track responses anonymously across assessment instruments.

The reflective questions were intended to inform both of the research questions. Unlike the discussion questions, these were entirely focused on the participant's attitudes, beliefs, and feelings. Two questions asked the participant to suggest things that the Libraries does well or poorly, with respect to accessibility. The second part somewhat duplicated Discussion Question #6, "What is the first thing you would change…?" but using less action-oriented language. This was intended to explore the answers to both questions in context of the other. The next three questions were intended to explore perceived knowledge or attitudinal gains, gaps, and resulting changes in behavior as a result of taking the training. These three questions were also asked, in slightly different language, in the focus groups. They were also intended to serve as comparisons to the open-ended question from the pre- and post-test questionnaires, "What main question do you have about supporting people with disabilities?" The final reflective question, "What other comments or questions would you like to share?" served as a means for participants to share any other thoughts, including comments about the structure and content of the training proper.

Focus Group Questions

The final piece of the assessment of the training program was a set of three focus groups with a total of 15 people. Focus groups followed a semi-structured protocol, in which I developed a list of questions but had the freedom to ask clarifying or expanding follow-up questions, change the order of questions, or drop questions as appropriate to the conversation. Each focus group was held in a conference room in either Rose Library

or Carrier Library during working hours. The sessions lasted between 50 and 70 minutes. They were digitally recorded to capture comments verbatim from participants. I supplemented the resulting transcripts with handwritten contemporaneous notes in cases where a speaker was inaudible, unclear, or had used nonverbal communication such as a head nod.

The focus groups, as the last data collection activity, were intended to provide explanatory information about data collected from the previous four instruments. As a result, some of the questions duplicated or closely matched questions from the training program, including "What idea, fact, or skill was new to you in the training?" This was to compare participant responses several weeks after taking the training with their responses immediately upon completion. I also asked a series of questions referring specifically to findings from the quantitative surveys. These questions were reviewed and revised with the assistance of colleagues in my ASU Learner Scholar Community.

The first group included members of the Libraries' Council on Diversity, Equity, and Inclusion (CDEI). The committee had been specifically invited to participate in the training program and focus group, in recognition of their standing as the primary owners of diversity-related training. In the last five years the CDEI has provided webinar and panel-based training opportunities in accessibility and disability topics to the Libraries. This focus group featured directed conversation about impressions of the training program through the lens of the CDEI's work, including the CDEI's role in training or supporting the training of Libraries staff. I considered this group to be an expert panel based on their high knowledge and awareness of inclusion topics. Please see Appendix F for the list of initial questions.

The other two focus groups were for volunteer participants in the training program. These groups were asked to reflect on the accessibility training program specifically with a goal of assessing content and delivery (see Appendix G for initial questions). These focus groups were organized by library in which the respondents had an office. Five people participated in the focus group in Carrier Library, while three participated in the Rose Library group. The Carrier focus group had more diversity by department, and included people with direct patron responsibilities and those in more technical roles. The Rose focus group drew from two departments, both with public-facing instructional design or instructional technology duties.

Data Analysis

Data analysis followed a mixed-methods approach in which data from each of the instruments were analyzed and integrated on a rolling basis. This allowed for some adjustment to program planning. For instance, based on the finding from the quantitative data that staff knowledge scores were lower than beliefs scores, the training program was adjusted to highlight communication skills and etiquette. This impacted both the training materials and the questions asked in discussions and the reflection. Likewise, the focus group questions were adjusted to allow for triangulation of specific items of note from the questionnaires and the training questions.

Quantitative data from the broad survey was analyzed for descriptive and differences in means results using SPSS version 12. Items were considered significant on Student's *t*-tests for differences in means using the a priori standard of $p < 0.05$. Effect size was calculated for *t*-tests using Cohen's *d*. Qualitative data was analyzed using an a priori coding schema (Table 10) derived from the Deines-Jones (1999) framework, the

Knowles et al. (2011) core principles of andragogy, and the expanded Kirkpatrick Evaluation Model (Kirkpatrick, 1975; Knowles et al., 2011).

Table 9
A Priori Coding Schema

Source	Code
Deines-Jones (1999)	Attitudinal Services Facilities Policy
Knowles et al. (2011)	Need to know Self-concept Experience Readiness to learn Orientation to learning Motivation
Kirkpatrick (1975)	Reaction Learning Behavior/Results
Knowles et al. (2011)	Rediagnosis of Learning Need

Steps 3 and 4 of the Kirkpatrick Evaluation Model, behavior and results assessment, were included for coding purposes in case relevant references were made to them in the focus groups or reflection responses, but were not a focus of this study.

Validity and Reliability

The training program and the instruments went through several iterations before being deployed for this study, as described in the sections above. In keeping with the consecutive mixed-methods design, I used preliminary results and findings from each instrument to inform the content and structure of the following instruments. The focus groups thus allowed for member checking of early findings based on the quantitative and qualitative data from the pre-intervention questionnaire and the discussion and reflection

responses. Participants in these focus groups included two people with known disabilities, one currently enrolled in a disability studies degree program, two with disability studies as professional scholarly and service interests, four instructional designers, and two instruction librarians. There is overlap among these categories. It became clear in the focus groups that several additional participants had deep personal experience with disability that I had not known prior to the training.

During the analysis phase, I used the findings and results from those later instruments to inform understanding of earlier data. I also repeated the member checking stage. In June 2019, initial findings were distributed to the 15 focus group participants for voluntary review and comment. One participant responded that they felt the findings appropriately reflected the discussions of which they had been part; no other feedback was received.

Chapter 4

RESULTS AND FINDINGS

Impact of Training (RQ1)

The first research question asked, “How does training centered on accessibility for people with disabilities affect participants’ knowledge about and comfort with supporting people with disabilities, in comparison to a control group?” This question speaks primarily to the second step of the expanded Kirkpatrick Evaluation Model: learning assessment. Findings focused on what evidence of learning or lack of learning was seen in the quantitative and qualitative data for the intervention group. Data instruments to support findings for this question included the pre- and post-test questionnaires, the discussion and reflection responses in the Canvas training program, and the focus group discussion.

Secondary analysis to inform this question also used the fourth step of the Kirkpatrick Evaluation Model, results assessment. This step considers the effect on services, policies, and stakeholders of training. In this case, I was interested in whether there were any measurable changes in the control group, as seen in either the quantitative or qualitative data. Data instruments to support findings for this question were the pre- and post-test questionnaires.

Quantitative Changes in Beliefs and Perceived Knowledge

The instrument that I developed for the study included items adapted from the SACIE-R scale and supplementary sections. These were treated as two distinct constructs for data analysis. The first construct was for items that measured a respondent’s attitudes towards or beliefs about people with disabilities. This is referred to as the "beliefs

construct." Training to impact scores in this construct would engage only the first, attitudinal, category of the Deines-Jones model. The seven items were:

- I believe that accessibility guidelines unfairly privilege people with disabilities.
- I am afraid to look a person with a disability straight in the face.
- I find it rewarding when I am able to help people with disabilities.
- I believe that I will be more stressed by applying accessibility guidelines to my work.
- I am uncomfortable around people with disabilities.
- I tend to make contacts with people with disabilities brief.
- I believe that my workload will increase if I have to apply accessibility guidelines to my work.

The second construct measured an individual's perception of their knowledge, skills, and experience with disability. This was referred to as the "knowledge construct." Training to affect scores in this construct would include all four of the Deines-Jones categories: attitudinal, services, facilities, and legal. The eight items in this construct were:

- I know about different types of disabilities and impairments.
- I am confident in my ability to help people with different types of disabilities.
- I understand the needs of people with different types of disabilities.
- I have had significant interactions with people with disabilities.
- I have the knowledge needed to help people with different types of disabilities.
- I have the necessary skills to help people with different types of disabilities.

- I have had extensive experience helping people with disabilities.
- I have had adequate training on how to help people with different types of disabilities.

Content for the training program focused on the knowledge construct with goals of improving the mean scores for items in the construct and narrowing the difference between the constructs. The full table of mean scores for the total scale, each construct, and each scale item is in Appendix H.

Overall changes in total and construct scores. In order to measure the overall change in beliefs, attitudes, knowledge, skills, experience, and comfort with disability, the mean average for the complete instrument was derived for each of the four populations: control group pre- and post-test and intervention group pre- and post-test. T-tests for difference in means were performed, and the Cohen's *d* was calculated. Mean scores for the complete instrument and each construct are shown in Figure 1.

There was no statistically significant difference between the control group's pre- and post-test total score, either of the construct scores, or any of the individual item scores ($p < 0.05$). Although there appears to be some shifting in the mean scale scores, the relatively small sample sizes compared to the response variability means items cannot be reliably judged as having improved or declined from the pre-test questionnaire to the post-test questionnaire. This suggests that any impact of the training program on the control group is too small to quantify at this time or occurred in ways not measured by the scale instrument.

There was no statistically significant difference between the control and intervention groups for pre-test total score or either of the pre-test construct scores. The

mean post-test total score for the intervention group differed significantly both from the control group and from the intervention group mean pre-test total score. In addition, large Cohen's *d* statistics indicate that there was practical significance of more than a standard deviation's difference between the intervention group's post-test overall score compared the control group and to their pre-test score ($d = 1.21$ and $d = 1.04$, respectively).

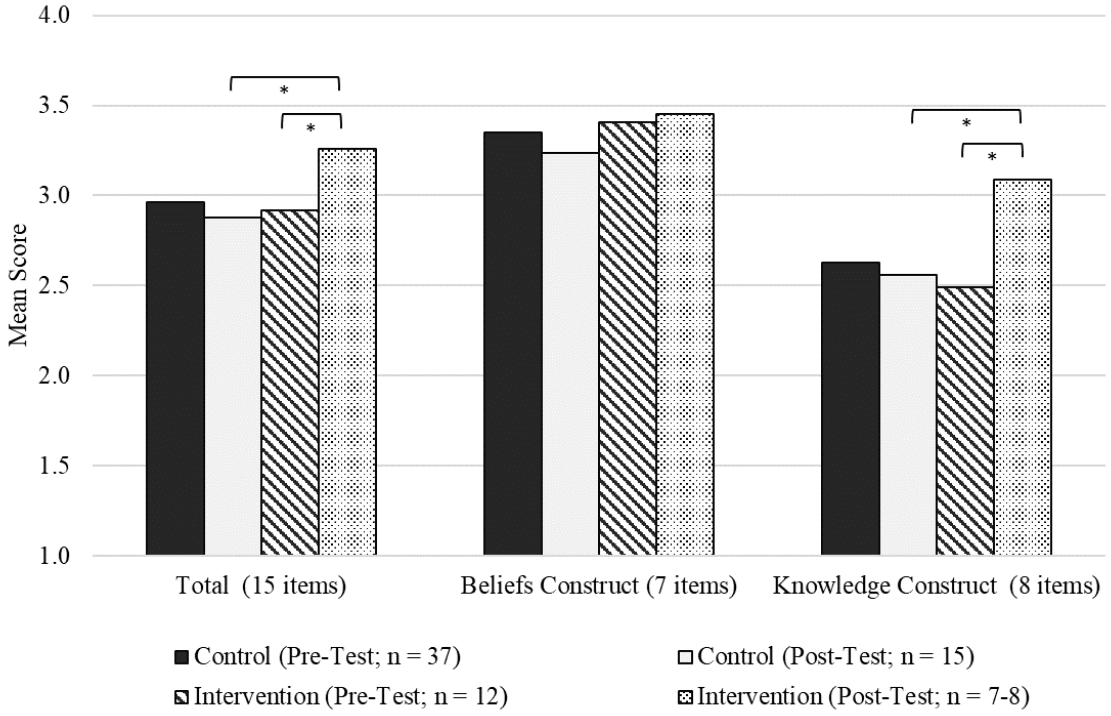

Figure 1. Mean average total and construct scale scores for items from the pre- and post-test questionnaires, separated by group. *Statistically significant difference between means ($p < 0.05$).

The mean for the intervention group's post-test knowledge construct score differed significantly from the control group's post-test score and from the intervention group's pre-test score. There was no statistically significant difference between the control and intervention groups in the mean post-test scores for the beliefs construct.

These results suggest that the training had an impact on participants' perceptions of their knowledge, skills, and experience with helping people with disabilities, but did

not have an impact on their beliefs and attitudes about disability. From a practical standpoint, intervention group participants moved from negative mean scores on the total instrument and on the knowledge construct to positive mean scores in both cases. The training did not have a quantified impact on non-participants in the control group, either on the scale as a whole or in either of the two constructs.

The training program was designed after finding that pre-test questionnaire participants rated their perceptions of knowledge construct items lower, on average, than beliefs construct items. One purpose of the training was to improve participant scores on the knowledge, skills, and experience items to be comparable to participant responses to beliefs construct items. In order to test whether this goal was achieved, I compared the mean average scores for the constructs with each other by group and test. The mean beliefs construct score was significantly higher than the mean knowledge score for the control group on both the pre- and post-test ($p = 0.000$ for each) and for the intervention group on the pre-test only ($p = 0.000$). The intervention group's mean scores for the beliefs and knowledge constructs did not differ statistically significantly on the post-test questionnaire ($p = 0.066$). However, the Cohen's d statistic for the difference in these means was large, at $d = 1.08$. The best conclusion given this mixed data is that the training program successfully improved knowledge, skills, and experience scores sufficiently for statistical significance, but not for practical significance. There is still a practical gap between beliefs and knowledge scores in the intervention group.

Next, I computed the mean scores for each of the fifteen scale items for the pre- and post-test intervention and control groups, and performed t-tests to identify significant differences ($p < 0.05$) in means between tests and groups. This allowed a finer-grained

understanding of what specific scale items were impacted by the training program. Results are presented in Figures 2 (beliefs construct items) and 3 (knowledge construct items), in descending order of pre-test control group mean. There were no significant differences in means of items either between the pre-test control and intervention groups or between the control group's pre- and post-test scores for any of the items in either construct. This further supports the finding that there was no measured impact of the training program on non-participants, using these scale measures.

Changes in beliefs construct items. No items in the beliefs construct showed a significant difference in means between the pre- and post-tests for the intervention group.

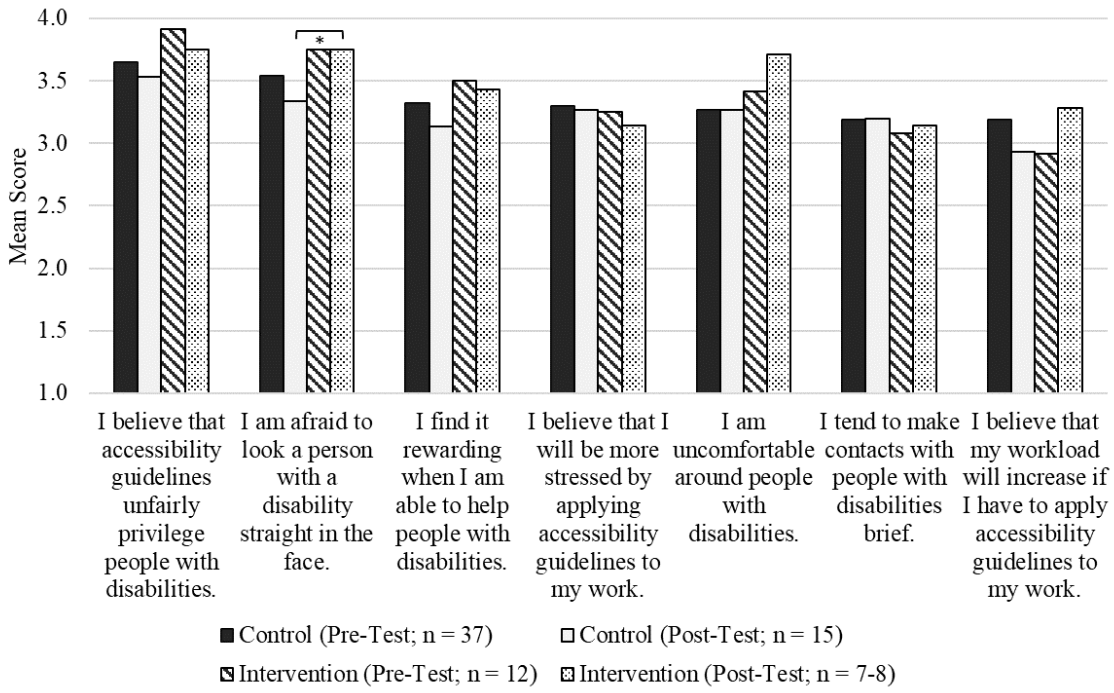

Figure 2. Mean scale scores for the beliefs construct. Data is presented for each scale item on the pre- and post-test questionnaires by group. *Statistically significant difference between means ($p < 0.05$).

Only one item in this construct, "I am afraid to look a person with a disability straight in the face," showed significant difference in means between the control and intervention

groups on the post-test questionnaire. Although the effect size is large (d = 0.883), the difference is likely due to the control group's score declining somewhat, albeit nonsignificantly, between the pre- and post-test questionnaires, as there was no improvement on the part of the intervention group. The small sample sizes on the pre- and post-test questionnaires for the intervention group (n = 12 and 7-8, respectively) make it difficult to measure small effects of the training; for this reason, other apparent changes in means shown on the figure would need more investigation to accept.

An attitudinal area that was not measured by the scale items but that emerged from the qualitative data concerned challenging pre-existing beliefs about how and when to help people in the Libraries. The importance of avoiding assumptions that a person needs help if they have a visible disability, or that they do not need additional help if they do not have a visible disability, was strongly expressed by participants in the discussion and reflection responses and the focus groups. The most common response to the reflection prompt, "What will you do differently as a result of this training?" was a variation on, "I will make sure to be mindful when I am working with someone who may have a disability and ask them questions about how I can best help them instead of just assuming and acting" (Reflection Response). Five participants reported being strongly affected by the District of Columbia Office of Disability Rights training video, particularly the scene in which a person assumes a woman using crutches needs help opening a door. When the person yanks the door out from her reach, she falls. There were other examples in the video and in the etiquette guidelines that showed how making assumptions about how to be helpful may actually be harmful. "That video specifically I think really got to that question that it's not about being a nice person or trying to be a

nice person in this situation but really is about, you know, being helpful or not helpful" (Focus Group, May 22, 2019).

Training in the Libraries often emphasizes the value of providing proactive help, which is "in tension," as several people called it, with the practice in the disability community of expecting people to self-advocate for the way they want to be helped. Several people expressed concern about this tension between providing consistent help and waiting for a person to ask for special help. One control group member asked on the pre-test questionnaire, "In today's hypersensitive academic world, how does one approach someone with a disability to ask if they need assistance when even presuming that they have one can be construed as some sort of micro/macro-aggression?" This concern about offering help from the pre-test appears to have been addressed for most participants by the training. Participants in each of the focus groups provided comments similar to, "because of the training, I think I feel more confident being like, how can I help you with this? Do you need help? And then to not feel offended in any way if they don't need that help" (Focus Group, May 30, 2019). However, one person was still concerned: "I think I still struggle with considering what our appropriate role should be in providing services without putting pressure on people to reveal their disability directly to me" (Intervention Group Post-test Questionnaire). The purpose of universal design of spaces, services, and teaching is to minimize barriers as much as possible so that people do not have to ask for more help. However, the literature on student success emphasizes teaching students how to self-advocate for unique needs as necessary. Some needs may be unique to an individual, and others may cause conflict with the needs of other students, so there will never be a fully accessible environment. The training program

appears to have done a good job of emphasizing the need to consider each person in their own context, but could perhaps do a better job of explaining the goals of universal design as part of that work.

Changes in knowledge construct items. In contrast to the beliefs construct items, most of the knowledge construct items showed significant differences between groups, tests, or both (Figure 3). These eight items do not show a uniform pattern for the intervention group's post-test scores compared to either their pre-test scores or to the control group's post-test score. Six of the eight items showed a significant difference between the control and intervention groups' post-test scores, and five of the six showed improvement in the intervention group from the pre- to the post-test.

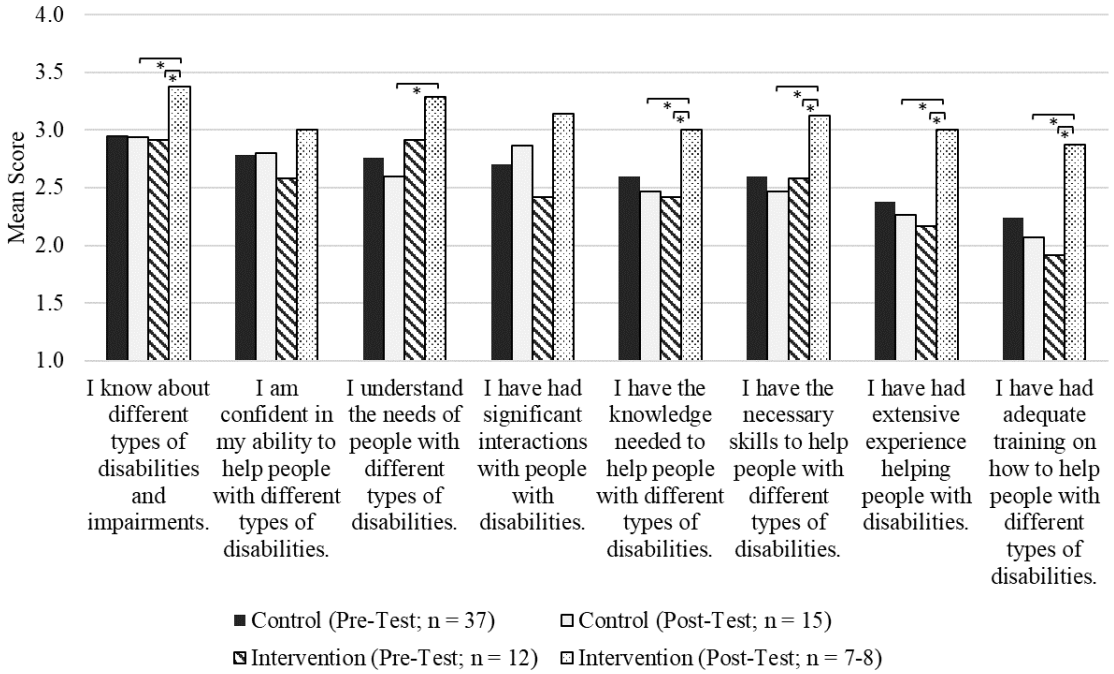

Figure 3. Mean scale scores for the knowledge construct. Data is presented for each scale item on the pre- and post-test questionnaires by group. *Statistically significant difference between means ($p < 0.05$).

Within these eight items, four have to do with perceived knowledge and skill and two with prior experience. These will be discussed below, with qualitative data from the

focus group discussions used to explain the results. This section will conclude with an exploration of the two items measuring confidence in ability to help and the perceived adequacy of training, which were linked together by participants.

Perceived knowledge and skill. Four items in the knowledge construct measured participants' perceived knowledge and skill with regards to different types of disability. These were "I know about different types of…" "I understand the needs of people with…" "I have the knowledge needed to help people with…" and "I have the necessary skills to help people with…" different types of disabilities. Intervention group post-test scores for each of these four items differed significantly from the control group's scores, and showed statistically significant improvement over their pre-test scores for every item except "I understand the needs of people with different types of disabilities."

Participants identified three components of the training program that helped them feel that they knew more about disability. First, participants in every focus group talked about how they were more aware of "things [they] may not have even thought about before as things that would be considered a disability," including invisible physical and mental illnesses (Focus Group, May 22, 2019). One participant in the May 30 focus group told a story about her heightened awareness of people with disabilities, including that she had noticed a person with a prosthetic limb while hiking. She attributed this in part to the training: "So that you can tell when you're exposed to this kind of knowledge, you become a little bit more observant" (Focus Group, May 30, 2019).

Second, several participants in the Council on Diversity, Equity, and Inclusion (CDEI) focus group said that the statistics about disability on campus were striking. There was a sense that this is hidden from public awareness, and is information that

should be shared more broadly for planning purposes. “Do you think that if we were reframing the situation and thinking of it as 10% of our student population and thinking about things in those terms, it would change the way people think about services across the campus?” asked one participant (Focus Group, May 15, 2019). While this group appreciated having the etiquette guidelines, they were more aware of the diversity within disability already; the university context was what they found interesting.

A few focus group participants had substantial prior experience with disability studies and services. One of these initially did not identify any increased learning on their part, but after some reflection said, “I think this module is good for me because [of] its specific accessibility features [and] things in the library.” Another participant followed up, “Yeah. I liked learning about how the libraries are specifically handling this” (Focus Group, May 30, 2019). This suggested that the training program may have helped develop more advanced knowledge for people with a basic understanding of the different types and prevalence of disability on campus.

Experience with disability. The pair of knowledge construct items “I have had significant interactions with people with different types of disabilities” and “I have had extensive experience helping people with disabilities” showed mixed results. The former item did not show a significant change from the pre-test to the post-test for the intervention group, while the latter item did. This may have been in part because of the high variability in responses; the standard deviation on the interactions item for the post-test intervention group was 1.069 on a 4-point scale. When asked to reflect on why these items did not follow the same pattern, focus group participants speculated that these mixed results may indicate a difference in how people read the nuance of the question

wording. It could be that people interpreted “interactions” on a wider range of meanings compared to the word “helping.”

Focus group participants felt that the change in the perceived experience with helping people may be due to a change in their perception of disability and its prevalence. One participant noted that the training had helped them realize how broad the definition of “disability” is in current society. “So just knowing how likely it is, you probably already interact with a person with disabilities and then also reading the comments and maybe not having realized that, oh, wow, a lot of my colleagues have disabilities” (Focus Group, May 22, 2019). Several people noted that they had a heightened awareness of disability in the community, perhaps because they felt less likely to avoid people based on their perceived abilities.

Participants suggested that the expansion of the definition of disability to include both visible and invisible disabilities made it likely that everyone had helped someone with a disability, possibly without knowing it. They also had an increase in their awareness of what accessibility services were provided by the Libraries.

> One thing that stands out in my memory was the library delivery service. I had not really considered that to be an accessibility feature that we offered, even though it's something I used and promoted a lot in the past years, but knowing that we can use that to meet other's needs, that's a pretty cool, different way of looking at that. (Focus Group, May 30, 2019)

This shift in perspective about what constitutes both disability and accessibility was also evident in how participants talked about themselves. One person noted that taking the training had reinforced their decision to declare an invisible disability on application materials, while another noted “I wasn't even thinking about like me having glasses as being a disability, but it really is” (Focus Group, May 22, 2019).

Confidence in ability and adequacy of training. The other scale item from the knowledge construct with no significant difference between groups or tests was "I am confident in my ability to help people with different types of disabilities." Given the significant improvements in training participant's perceptions of their knowledge and skills, this was an interesting lack of change. In the focus groups, several participants talked about feeling more confident in their ability to help people. This was related to their improved awareness of communication etiquette across different types of disability and of the wide range of services provided by the Libraries. Three people remarked that they had felt confident before, due to prior experience with disability or with disability studies, but that the additional information about library-specific and type-specific services and etiquette helped. "I definitely went into it feeling reasonably confident that I knew a lot about this, but I learned so much by going through the modules, just individual little, little pieces here and there stuck with me" (Focus Group, May 30, 2019).

However, several people noted that they had not had a chance to practice their new skills in the real world. One person commented that this is an inherent drawback of online training: "So I think maybe the lack of perhaps real-life application just by the nature of the medium could result in slightly lower confidence there" (Focus Group, May 30, 2019). Participants felt that there was a difference between knowing how to do something in theory and actually doing it in the moment.

Although the knowledge construct item, "I have had adequate training on how to help people with different types of disabilities" showed a significant change, there was a sense that this was largely due to knowledge rather than skills improvement. The mean score improved dramatically, but still was below "Agree" (3.0) on the scale. Participants

said that they felt like this training had been a good introduction, but that they needed more training that was problem-based and contextual to raise their confidence.

> I definitely feel better with the training, but I mean, I'm not going to lie. I feel like I probably still need either more training or maybe more practical experience. Like, I don't think until you're actually in the situation, maybe. That I still think I'd be a little bit nervous because I keep thinking, well I wonder if I'm going to accidentally say the wrong thing or do something maybe that I shouldn't do and I learned in training, but then I might get nervous at the time and forget. (Focus Group, May 22, 2019)

This lack of real-world experience, or of other hands-on training in working with people with disabilities, limited their confidence in their ability to respond well in practice. Further discussion about what training needs still exist for the intervention group, and how to best address them, is included in relation to Research Question 2, below.

The quantitative data suggests that the training program had an impact on the intervention group's knowledge, skills, and perception of disability compared to their pre-test state and to the control group. Gaps may still remain in participants' confidence in their ability to apply new knowledge and skills, which could be due to a sense that more hands-on training is needed. In the following section I will present an analysis of the evidence for learning, both perceived and measured through qualitative testing, in order to explore further the impact of the training program on participants.

Qualitative Evidence for Learning

Learning was assessed through reflection, recall, and scenario-based discussion. Participants were asked twice to reflect on the main topic or idea that they learned in the training: once on the reflection and again in the focus groups. In addition, the pre- and post-test questionnaires and the Canvas discussions and reflections prompted participants to list services that the Libraries provide, things that the Libraries does well or poorly to

support people with disabilities, and the first thing the participants would change about the Libraries. Each section of the training included one scenario-based discussion prompt. Responses to these were analyzed to identify learning among the intervention group attributable to the training. This phase of the learning assessment expands on the self-perceptions of knowledge and skill reported above. The qualitative data was analyzed and is presented using the framework of the four Deines-Jones categories: attitudinal, services, facilities, and legal.

Attitudinal learning. When participants were asked to identify the main idea, topic, or skill that they had learned in the training, most listed general attitudinal ideas, with a strong minority also identifying specific tips. Several of the general ideas were very broad. One person noted that they had already felt comfortable with interacting personally with people with disabilities, but that the training had helped them think more about etiquette and practices in professional or workplace interactions. Another said the training had helped them make connections to issues in the workplace, such as their concern about the cognitive load of open office plans. A third had a broader perspective. They noted that they learned how prevalent disability was on campus: "I learned that more people then [sic] one might think have a disability, and many of such we accommodate are ones one might not be able to see" (Reflection Response). Focus group participants in all three sessions talked at length about how valuable the etiquette section was for their learning. Specific pieces of general learning related to this section were about respectful language use and "the correct way to say and word certain things, or the correct way to approach an individual that you think might possibly want or need help" (Focus Group, May 22, 2019).

On the reflection, the most common specific attitudinal skills identified had to do with etiquette and tips for interacting with people with blindness/low vision (5) and deafness/hearing impairment (4). These included practical tips such as not playing with a service dog without permission, speaking to the person not their interpreter, describing visual interruptions to a blind person in the conversation, and how to guide a person with low vision through a space. Several people in the focus groups talked about learning more about Deaf culture and communicating with people with hearing impairments. This ranged from very specific and practical learning, such as fingerspelling, to very broad ideas, such as the use of identity-first language for Deaf people and the definition of American Sign Language as a "foreign language" distinct from Standard American English.

Fewer focus group participants noted a specific tip that had stuck with them; one example was the recommendation that staff meet people at the service points and lead them to staff spaces, rather than giving them directions to sometimes difficult to find offices: "Just a little gesture like that, come down there so that way it can reduce that cognitive load of them, you know, having to find their way all the way upstairs" (Focus Group, May 30, 2019). This was recognized as a universally supportive behavior, even if it was first raised in the context of helping people with mobility impairments.

The reflection included the question, "What do you think the Libraries do well, with regards to access for people with disabilities?" This was intended to encourage participants to reflect on what they knew about the Libraries' accessibility program. The majority of respondents (18 of 23) to this question highlighted attitudinal strengths in the Libraries. Most of the responses focused on cultural and attitudinal aspects of the

Libraries, including having an inclusive and welcoming focus that does not tolerate discrimination, taking a flexible approach to accommodations, and having a learning orientation that emphasizes "constant improvement" and a "striving to do better." An openness to changing local practice and learning about the needs and options for improvement was evident in many of these comments. There was a strong sense that the Libraries trains people well for customer service approaches emphasizing compassion and empathy, including through this training program. Unlike other comments about training, these highlighted the purpose of training, not the process, and thus demonstrate an attitudinal approach. Two respondents noted that the current buildings constrain space improvements, but that there seem to be "good faith efforts to accommodate and adapt within the bounds of the resources and spaces we have in place" (Reflection Response). Again, the focus was on the strength of the attitudinal approach to space improvement, rather than the weakness of the space itself. An additional person called out my research program as the driver of much of the change and improvement that has happened lately.

Attitudes demonstrated through language. It is difficult to gauge how much these responses reflect deep learning in the attitudes category, or how much they indicate an adoption of the social model of disability as a guiding frame for understanding and developing the service, facilities, and policy skills of the following sections. In order to get a better picture of the attitudes that participants may have developed regarding people with disabilities, I looked closer at the language that they used to describe people and services in the Libraries.

The etiquette guide in the training emphasized the use of person-first language for most situations, as well as avoiding the use of language that implies pity for people with

disabilities. Person-first language is a hallmark of the social model of disability, because it demonstrates inclusion of the person while recognizing the disability (Oliver, 1996). Responses to the attitudes section discussion prompt about how to correct a colleague who had used a slur were very strong. Several respondents provided more thoughtful posts than expected, including discussion of whether referring to a person by their ability status would even be relevant in the situation. People also wrote about wanting to refer to library users with respect and a lack of judgment. There was a range within the responses, however, including some that used language, such as "physically disadvantaged," that was not recommended by the training.

Use of supportive language from the training was mixed in other responses to discussion, reflection, and the post-test questionnaire prompts as well. While most training participants used the phrases "universal restroom" or "universally accessible restroom," a few used older terminology for these spaces such as "gender-inclusive restroom." The training program and the Libraries: Accessibility webpage refer to the rooms using the universal design language, which would have been new to many of these participants. That some people picked up and started using person first and universal language after the training program indicates that they are starting to internalize the training; that others did not suggests that their prior experience and behavior remain dominant in their thinking.

Language use may indicate attitudinal habits that were not addressed by the training. One concerning theme in the written responses was the use of othering language. Othering is a process of defining a minority population as something separate from and usually less than the main population, and may indicate a lack of empathy and

connection on the part of the speaker (powell & Menendian, 2016). Key othering language includes the pronouns “us” and “them” or refers to people without disabilities as “normal” (Martin, 2012; Oliver, 1996). A key indicator of adherence to the social model of disability is avoiding the use of such othering language (Oliver, 1996). The goal of training is to shift people away from the use of such language. However, in some cases the opposite may happen (Kulkarni et al., 2018).

Most respondents did not use this type of negative language, opting instead for supportive responses that fit with a social model view. For example, on the policies section discussion prompt about why the Libraries wants to be inclusive, most responses took an ethical stance similar to “the more people who have access to our collections and spaces, the better our community becomes” (Discussion Response). However, a few used othering language, such as “people with disabilities are people just like us” (Discussion Response). In answering the question about how etiquette differs for people with disabilities compared to people without, most respondents gave highly supportive answers along the lines of “people are people and should be approached with respect, understanding, and the assumption that each individual brings their own story to every experience” (Discussion Response). That is, a high customer service standard should be applied to anyone. However, a few used more negative language, such as “Even people who look ‘perfectly normal’ could have cognitive or mobility issues” (Discussion Response). There is a subtle difference between these statements that could be explored in future trainings.

Services learning. While much of the discussion in the focus groups and on the prompt about what the Libraries does well centered on attitudinal and awareness topics

such as types of disability and helping when needed, participants also showed evidence of learning in the services and facilities categories. However, learning about services seemed to be tied to the person's position or personal needs, and did not seem to persist from the time of the training to the post-test questionnaire or the focus group discussions.

Participants were asked to name or list Libraries services relevant to accessibility on the pre- and post-test questionnaires and in the discussion forum. The first of two services-related discussion prompts was "What accessibility-related services might be helpful to you?" Popular responses in the discussion forum were for interlibrary loan and document delivery (ILL), off-campus access, and the Destress for Success program. In response to the prompt about "ways the Libraries support people with disabilities," very few people listed a service. Two people named ILL, and one person listed three different instructional design services. The responses about ILL in the discussion forum differed slightly from those in the post-test questionnaire. Discussion responses focused on the broad service that includes retrieving articles and books from other institutions as well as from within the JMU Libraries, while the questionnaire responses largely focused on the specific service that retrieves books from the JMU Libraries stacks for retrieval at the service point of the student's choice or delivery via campus mail to faculty and staff.

Only one participant repeated their response from the discussion question as a service that the Libraries provides on the post-test questionnaire. That duplicate response was for ILL/document delivery. Additionally, one of the training participants who responded to the discussion question responded "I don't know" to the prompt on the questionnaire. Off-campus access and the Destress for Success program were not mentioned in the questionnaire responses as accessible services. The hope for the

discussion question was to start making the connection that universally designed services benefit all people, not just those with disabilities. It seems that writing about personally relevant services did not adequately cement those as services that would be relevant for other people on the later instrument.

The second services discussion prompt was to describe two ways to help a student with a service pony retrieve a book from the stacks. More than half of respondents (8 of 17) listed two appropriate options, and an additional three listed three or more options. All respondents at least suggested one appropriate answer. In some cases, participants interpreted the question slightly differently than expected:

> One: Offer 2 options and ask which they'd prefer - requesting the book to be delivered to the front desk (at that moment or later), or me walking with them to the stacks to help them. Two: Ask before I interact with the service pony. (Discussion Response)

This response has three ways to help get the book: the staff person retrieves it now, a request is made to retrieve it later, or the staff person guides the user to the book. The addition of asking before petting the pony was unexpected, but welcome. Another response included an aside, “If they were faculty or staff, I'd mention departmental delivery too. Not because they're blind, but because I used to mention that to everyone I thought might be interested” (Discussion Response). It may be that the high quality of responses is because these questions engaged participants’ prior experience with helping library users and allowed them to take an ethical and customer service-oriented approach to the answer.

The post-training reflection included a prompt to list ways the Libraries could or should improve. Services recommendations were highly variable, and relatively

uncommon compared to improvements to the physical facilities. The need for training to support service excellence was the most commonly mentioned, with six of the 23 respondents making suggestions. Three specific ideas for future training were for minimizing library jargon in communication, engaging supervisors in training, and ensuring service consistency. Three suggestions were much broader: “More training like this,” said one on the reflection, and two said, “Trainings like this need to be mandatory” (Reflection Response). The remaining six services suggestions varied from improving the website’s accessibility to investigating ways to bring accessible technologies to the open computer labs to needing to make existing accessibility services and spaces more widely known on campus, and to “promote inclusive events around the libraries” (Reflection Response). The only two services responses to the opposing question, “What do you think the Libraries do well,” were both about training “to provide service to all users” (Reflection Response).

Facilities learning. As with the services category, evidence of learning within the facilities category met an adequate standard. Responses to the post-test questionnaire prompt asking for “three ways the Libraries support people with disabilities” were primarily facilities-related, including the presence of elevators and automatic door openers. These did not differ significantly from the pre-test questionnaire responses nor from the control group’s responses.

A pair of questions in the discussion and reflection were used to identify whether participants were able to apply their learning about Library accessibility to a more abstract context. The discussion prompt was “What is the first thing about Carrier or Rose that you would change, with regards to accessibility?” The reflection prompt was,

"What do you think the Libraries should or could improve, with regards to access for people with disabilities?" Participants were very consistent in their answers between the discussion and reflection prompts. Responses to these questions were nearly unanimously about the physical aspects of Carrier Library, with some people noting problems in Rose Library and fewer listing improvement needs in Libraries services, policies, or culture.

Several people gave a fairly general response, such as recognizing the generally inaccessible nature of the historic portion of Carrier Library. Most, however, listed multiple different and often very specific items. Common responses, such as needed improvements to Carrier's entrances, restrooms, stacks, elevators, signage, internal doors and service point, were duplicated between the discussion and reflection responses. Examples of specific repeated suggestions included having sensory, quiet, or concussion-recovery spaces in both main libraries and the need to add automatic door openers to the side entrance of Rose Library and the 3rd floor of Carrier Library. Three people identified that the hoped-for renovation of Carrier would be a good opportunity to rehabilitate the spaces and furniture to be more accessible.

The majority of these recommendations were from the point of view of supporting people with mobility needs, and specifically of supporting wheelchair users. Recommendations to improve the height of the service point counters and cafe tables, the width and automatic opening availability of both external and internal doors, and the width of the bookstack aisles all referenced wheelchair or crutch use, usually overtly. The ideas about sensory spaces were notable for considering invisible disabilities.

The first facilities discussion prompt concerned a student who had lost their ID but wanted access to the Accessible Technology Lab. All but one respondent said they

would let the student in or find someone who could; the person who did not responded "I'm not entirely sure if I would even be able to have access to the lab" (Discussion Response). This is likely; a relatively small number of Libraries staff have access in order to ensure security and appropriate use. Most of the respondents would simply let the student in, often checking an alternate ID against the online system to confirm that the person is a current student. As with the services prompt about helping a student retrieve a book, additional training for service point staff is most likely warranted. This discussion prompt, as with the one in the services section about retrieving a book, highlights a problem with artificially differentiating library services from facilities. There is no real way to distinguish when a service is bound to a space, versus when the space is the embodiment of a service.

Policies learning. Policy training was the least interesting and least well understood of the four Deines-Jones categories, as shown by its lack of representation in most of the data strands. In response to the reflection prompt about what the Libraries does well, three of 23 people noted that the Libraries have "rules and policies in place to help those with a disability access library resources" (Reflection Response), including goals and policies that acknowledge and extend laws, university policy, and professional standards. Other than one brief mention in the CDEI focus group appreciating that the policy section existed as a means to prove that this was "culturally significant" and not just made up by the Libraries, no one mentioned a legal or policy topic in any of the other prompts on the reflection or the post-test questionnaire.

Training participants tended to answer the scenario-based discussion prompts for the attitudes, services, and facilities sections both reasonably accurately and from a

positive customer service orientation in line with the social model of disability. This was not the case for the first discussion prompt in the policies section of the Canvas training. This prompt asked what the person would do if a library user had an accessibility complaint. The best answer to this question is that all substantive barriers should be reported to the university Disability Resources Committee, as listed in the university policy, for tracking and resolving at a high level. An acceptable alternative is to forward the complaint to myself, as listed on the Libraries: Accessibility page. I would then gather information and make or support a report. Most respondents had very supportive answers that involved listening with compassion, attempting to fix the problem, and reporting it to their immediate supervisor or a "relevant department" of the Libraries. Only two respondents mentioned me by name. One of these said they would involve me "if it is something involving facilities" (Discussion Response). Two would have reported the barrier to the ODS, which might eventually get them to the right place. One would encourage escalating the problem to the dean, which is acceptable if she then makes a report to the university.

It seems that participants were viewing these complaints through a general customer service lens, when they should be viewed through a public safety and Clery Act lens for university tracking and remediation. It also seems likely that people did not read the campus policy document. That document, like many campus policies, is long, complicated, and written in legal jargon. While I am glad to see the supportive and nonjudgmental language, it is clear that this is a topic that needs to be emphasized more effectively in a revised training program. This may include providing a plain language summary of the policy as well as clear instructions for reporting problems.

Conclusion: Research Question 1

This exploration of participant learning has found rich evidence for progress towards improving staff attitudinal, service, facilities, and policy awareness. In the attitudes category, most participants identified either general concepts about disability or types of disabilities that they valued and could incorporate into their work. In the attitudes, services, and facilities categories, most participants were able to appropriately answer questions both factually and using supportive language in line with the social model. Many participants were also able to identify services and facilities that were personally useful and/or strengths of the Libraries' program, although it is not clear whether this new awareness will stick with participants over time. Participants were also able to list ways the Libraries could improve, particularly in the facilities category. The category with the least evidence for learning was policies. It appears that participants may not have explored the policies to the depth that they explored other content.

Research Question #1 was focused on the two questions of whether the training program had an impact on participants, and what kind of impact could be measured. This involved the second step of the Kirkpatrick Evaluation Model, results assessment. The findings from this section may help inform future iterations of this training, the development of new trainings and services, and will serve as a baseline for longitudinal assessment of the impact of the training over time.

Assessment of the Training Program (RQ2)

The second research question asked, "What strengths and weaknesses of the training program do participants identify?" Analysis to inform this question focused on the first and last steps of the expanded Kirkpatrick Evaluation Model. The first step,

reaction assessment, evaluated training participants' impressions about the training, including the setting, content, flow, and perceived strengths and weaknesses. The fifth step, rediagnosis of learning needs, was added by Knowles et al. (2011) to tie assessment to andragogical principles that emphasize engagement of the learner with their learning. This step evaluated participants' descriptions of what they wanted or needed to learn next. Data to inform these analyses included the focus group discussions, the Canvas discussion and reflection responses, and questions asked on the intervention group's pre- and post-test questionnaires.

Reaction Assessment: Alignment with the Core Principles of Andragogy

The reaction assessment step considered the immediate and long-term affective reactions that participants had to the training, including their feedback about the strengths and weaknesses of the training's structure and content. The focus group discussions were the primary data source for this step, with responses to discussion and reflection prompts and the qualitative questions of the pre- and post-test questionnaires as supplementary. Knowles et al.'s (2011) six core principles of andragogy provided a frame for identifying strengths and weaknesses of the training program based on participants' feelings and opinions about it. According to Knowles et al., well-organized adult training should show adequacy in each of these six principles. In the following sections, I will analyze participants' reactions as they align with the principles. There are a few additional findings about structure and flow that fell outside the framework, and will be discussed at the end of this section.

Principle 1: The learner's need to know. According to this principle, adult learners are most likely to choose to participate in training, and are most likely to learn

and apply content from the training, when they understand why the content of the training is applicable to themselves. In focus group responses, I found that most participants had felt a general need to learn more about disability before taking the training, often because the person worked in a public-facing position that interacted with students and/or had personal experience with disability. Seven participants mentioned wanting to "do better" with regards to accessibility in their work. Others talked about wanting to know more about disability because of a general interest or because they have friends and family members with disabilities. These were more diffuse needs to know than would normally be expected in adult learners, and did not differentiate the intervention group from the control group.

Some focus group participants suggested that perhaps people chose not to take the training because "perhaps they felt like they didn't need to do the training because they already felt good about their knowledge with working with this topic" (Focus Group, May 30, 2019). This suggestion was not supported by the quantitative data. As noted above, the knowledge construct scale item means were all below 3.0 for the control group, indicating that on average they also perceived that their knowledge, skills, and comfort level with helping people with disabilities were not sufficient. This control group would appear to have been equally good candidates for participating in the training program as the intervention group was, from the need to know perspective.

Other training participants suggested that there may be people in the Libraries who would have taken the training if they felt like it applied to them. This program was aimed at people who work directly with the student population, making it less relevant to Libraries staff who work in technical, clerical, and technology services roles. "Maybe

adding some additional language about interacting with colleagues, to make that a little more clear that this is also for me and not just for somebody who's teaching or working on the front desk" (Focus Group, May 15, 2019). Several people felt that the training focused too much on disability in the student population and on services that support students at the main service points. Shifting the purpose of the training to include language and discussions focused on other groups than just students could be more successful in helping people understand why the training is relevant to their learning needs. Another suggestion was to train supervisors so that they can help contextualize and reinforce the training for their new staff: "I think supervisors should be required to walk through key topics to talk about with student employees just so all topics are reinforced in a verbal aspect as well." (Reflection Response). Helping new staff build context at the level of their specific job duties and training needs is already a component of the LOOP onboarding program, in which supervisors guide the new staff person through a checklist of activities and trainings over the course of the initial six weeks.

The numerical data from the questionnaires suggests that the control and intervention groups had similar perceived deficits in their initial knowledge about accessibility and disability. In addition, there was no statistical or content difference in the average number of questions asked by control group participants compared to the intervention group on either questionnaire. Questions included very broad, theoretical queries such as, "What kind of disabilities do we need to support? All of them or just ones you can physically see?" (Control Group Pre-test Questionnaire), and more specific, practical ones, such as "Which tools and resources in the Libraries should I be fully aware of to better assist people with disabilities?" (Intervention Group Pre-test

Questionnaire). Nearly all of the questions asked by the control group and by the intervention group on the pre-test questionnaire were addressed within the training program. For instance, a control group respondent asked on the post-test questionnaire, "Some guidelines for preferred modes of interaction based on disability (e.g. ASD, palsy, blindness...) would be helpful; are there any collated into a single resource?" The etiquette guide in the training would have addressed that need, had the respondent taken the training.

If the focus groups are right and much of the reason for people choosing not to take the course even with a defined need to know was due to a mismatch between perceived need and perceived content, then there are some changes that could be made. Updating promotional and training content language to focus on a broader campus population than just students, and engaging the help of supervisors to contextualize the training for each staff person, may help improve alignment with the need to know principle.

Principle 2: The learner's self-concept. This principle suggests that training that engages adults' ability and desire to control their learning through self-direction is supportive of a mature self-concept. Participants felt that this was an area of perceived strength for the training program, related to its online, self-paced format. Some participants did the whole training in one sitting, while others worked at it over the course of up to a week between other duties. "I think the format was a strength because you could go at your own pace and you could break it up into sections if you just had a few minutes here that you can do this and then go on to something else and come back" (Focus Group, May 22, 2019). The ability to skip around in the program and to return to

certain sections at a later time were highlighted as specific advantages of the online format as well.

In addition, the availability of resource links to additional content, including links to source material in the main training space and as a separate page after the reflection, was highlighted as a strength. One person commented, “I was interested enough in the material that I actually did go through all the links and read everything there and yet it still didn't take me too long” (Focus Group, May 30, 2019). The phrase “knowledge repository” emerged in the May 30th focus group as a way to describe the training. If participants are able to go back to the training after completing it, then they could use it as a reference to refresh their knowledge whenever they have need. This is a built-in benefit to online trainings.

In general, asynchronous online training aligns well with the principle of self direction. This program allowed participants to work at their own pace, skip around sections as they wish, return to sections whenever they have a need for review, and to branch away from the training to learn more if they chose. These features support self-direction and should be maintained in future iterations.

Principle 3: The role of experience. According to this principle, acknowledging and leveraging the prior experience and knowledge of adult learners is a key, effective means of developing new understandings. A participant’s prior experience and knowledge interacted with new learning in several different ways, depending on the question asked. In some cases, I found a mismatch between participants’ experience and new content in their responses. While nearly all of the participants were able to talk about a service that was personally relevant to them and, in many cases, that they already used,

very few identified these services as ways the Libraries supports people with disabilities on the later questionnaire. Participants did not adequately connect their own high customer service experience with the university procedure for reporting accessibility barriers. In other cases, the prior experience helped bring context to helping people with different types of disabilities, such as in the cases of the person needing help retrieving a book or the student wanting access to the AT Lab. These cases were described as evidence of learning, above, and presented attempts at engaging prior experience with knowledge and skills in the work context.

Prior experience was also engaged through tying learning to the personal context. The first discussion question, in which participants were asked to reflect on either their own or a friend's disability and how it impacts work or school, was intended to engage participants' personal experience with disability early in the training. The question was modeled on recommendations from the literature to help people think about how they would like to be treated, rather than about how some theoretical person might like to be treated. This question proved to be highly controversial. On the one hand, participants valued the ability to read about their colleagues' experiences with disability. This social learning was a strength of the training. "I liked how there were discussion boards interspersed through it, so that way everyone could discuss the issues and things that we were thinking about. That's important for engagement and building community" noted one participant (Focus Group, May 30, 2019). A different person wrote on the reflection, "I learned the most from reading the discussion responses by other Libraries employees. I feel more connected to my colleagues through learning and sharing our experiences with disability and accessibility."

Another said they appreciated reading that “everyone who was on there knows someone or is a person with a disability. And so it's a nice [way] to see that it's very common and a lot of times it's hidden and that's the problem” (Focus Group, May 15, 2019). Seeing that nearly everyone either had or knows someone who had a disability “put a face on a variety of challenges” that people face, as a supplement to otherwise dry and impersonal statistical data (Focus Group, May 15, 2019). People felt like they were able to build a community of practice by learning from the experiences of their colleagues.

Other participants, however, felt uncomfortable writing about themselves or someone else. The prompt seemed to force people to be public with a topic they may wish to keep private. The CDEI focus group in particular was interested in discussing this problem. “So it might be one thing for somebody like myself who's been in the organization, has built relationships, feels comfortable putting myself out there” noted one person, and another talked about how they had deliberately chosen to write about a family member who is comfortable talking about their disability while protecting the privacy of others who wish to keep it personal. A third person who wrote about themselves said, “I struggle with, you know, finding that line between helping to open conversation and erase a stigma and just making people uncomfortable” (Focus Group, May 15, 2019).

This concern about how other people would respond to learning about a colleague’s disability was voiced in the abstract as well. Participants expressed concern that they did not know all of the people who were or could take the course, or for how long their responses would be visible, and so they did not have a sense of trust that their

personal stories would be respected. There was some worry that the question could suppress participation, particularly among student workers and new staff who do not have a relationship with more established colleagues. “Some people might feel shy about answering the questions since everyone else in the org will see their answers” wrote one participant (Reflection Response). One focus group participant was concerned that new staff might ask, “Why does the administration want to know this about me? Um, and am I going to be routinely asked to share stories like this that I may or may not be comfortable with at all?” (Focus Group, May 15, 2019). Unfortunately, people may have had a poor prior experience disclosing a disability, and so this question may engage negative emotions, rather than the intended supportive ones.

Part of the difficulty that people had with this question was related to the Canvas infrastructure. The system did not allow for anonymous or aliased discussion posts, and so every entry had a person’s name attached to it. In addition, Canvas automatically forwarded all new posts to every previous contributor; this meant that participants could continue to see who posted what content for an undefined period into the future. Respondents recommended that the question should be eliminated or reworded, the instructions should make it clear that responses are optional and could carry risk, or that discussions should be moved to a wiki space that allows anonymous posting.

Engaging the prior experience of the learner proved to be a powerful way to develop shared understanding about disability and accessibility in both the professional and personal contexts. However, prior experience did not always lead learners to the correct conclusion, particularly when it conflicted with new information. While the personal experience question was effective in building personal context and community

among participants, it also potentially went too far into exposing participants to possible harm, and should be altered in future iterations.

Principle 4: The readiness to learn. This principle suggests that a key to participation is reaching people at a time when they have identified their need to learn and are ready to act on it. This was difficult to evaluate within the strictures of timing for this study. Given that the participants expressed a very general need to know, it was not surprising that this group did not identify specific things that prompted them to take this training at this time, other than this is when it was available. Instead, people used phrases like "constantly seeking to increase [my] knowledge" (Focus Group, May 15, 2019) and "I was always thinking about it" (Focus Group, May 22, 2019). There was one person who described a coincidental connection between having a proposal reviewed and the start of the training period. The proposal included Deaf people, and the person had been corrected in the use of identity-first instead of people-first language. Encountering the same discussion in the training program reinforced the concept at the right time for that person. Another person suggested that carefully considering when the training should be required for new participants would be important. They suggested waiting a year before requiring the training, in order to give new staff time to acculturate to the organization as well as to avoid getting overwhelmed by all of the different programs required in the first six weeks: "I think it would be more meaningful to that person once they've already been in the organization for a year or two. It won't get mixed into [initial orientation] because I don't remember what those trainings I took were" (Focus Group, May 15, 2019).

Readiness to learn comes into play for both voluntary and mandatory training. In the former case, a person would need to have a compelling need to know (Principle 1),

readiness to learn, and motivation to learn (Principle 6) in order to choose to participate. In the latter case, a person would be compelled to take the training, but might not successfully retain the information, as in the case of the focus group respondent above. Identifying when in a staff person's orientation and regular training this program should fit will be an important way to satisfy this principle, and will require additional research.

Principle 5: Orientation to learning. According to this principle, training that focuses on active and practical knowledge and skills relevant to the local context is likely to be more successful than lecture-based and theoretical approaches. Participants highlighted three aspects of the training program as particularly supportive of the practical and task-based orientation. First, the discussion prompts were seen as providing "a good blend between content and interaction" (Focus Group, May 22, 2019) and allowing for the extension of learning through community building. However, there was the sense that "there were also times where this sort of prompted questions and written response would have been nice to have as more of a conversational answer," as one participant said (Focus Group, May 22, 2019).

Second, the etiquette guidelines were praised for being very practical and helpful. "I did appreciate the breakdown of different etiquette by people with mobility issues, people with blindness or with low vision, and I appreciated that being broken down" noted one participant (Focus Group, May 15, 2019). Several people remarked that they had never seen guidelines so explicitly written out and specific to different types of disability. Participants saw value in the focus on practical application of etiquette, rather than just highlighting that differences exist, as well as the language that discussed both

best and worst practices. Two different groups suggested adapting the guidelines for other purposes, including as a resource for teaching JMU students outside the Libraries.

Third, participants valued hearing the voices of people with disabilities though the embedded videos. Being able to hear directly from students and staff about their experiences and needs was highly impactful for many participants because it helped them "move from [the] theoretical to reality" (Focus Group, May 15, 2019). The videos also helped participants understand the difference between what they might think to be good practice and what is helpful in reality. "I'm thinking specifically of that video, where the different individuals with disabilities were saying like, this is what you do and this is not actually helpful for me," noted one participant (Focus Group, May 22, 2019). In response to my question about strengths of the training, another participant praised the videos: "Seeing some of the videos that you included really helps to cement it rather than just kind of going off of what you feel might be right" (Focus Group, May 15, 2019).

However, as with asynchronous forums compared to live conversations, the videos did not go quite far enough. Participants recommended that the next level of training should include hands-on and interactive in person sessions, most ideally led by people with disabilities who are part of the JMU community. In the CDEI focus group, two participants shared stories of how hearing from assault survivors and homeless people had helped cement learning and make it "stick." Others suggested training targeted to specific groups within the Libraries, perhaps including working through scenarios relevant to their work duties. One focus group had an animated discussion of a range of ways to help make learning more engaging, including, "If it's any other kind of training, you'd think, well hands on!" as well as discussions including ones based on

videos or the literature. One of them also noted, “Oh, please, no role play,” a request that met with unanimous approval (Focus Group, May 20, 2019).

The training program appears to have done a good job at engaging the andragogical principle of orientation of learning, by presenting scenario- and problem-based discussions, practical guidelines for behavior, and videos that supported contextualized learning. Limits of the online format, including not being able to practice new skills or discuss topics synchronously, could be addressed through supplemental or hybrid learning approaches in the future.

Principle 6: Motivation to learn. This final principle argues that effective adult learning is often prompted by an internal, rather than external, motivating purpose. The intervention group was different from a typical training population in two key ways related to motivation. First, very few of the participants were new staff to the Libraries. This meant that they did not have the external motivation to complete mandatory orientation training that new staff would have. The CDEI participants were asked to take the training in order to provide feedback on it; they may have had additional motivations that we did not discuss in their focus group. Half of the participants in the non-CDEI focus groups indicated that they had taken the training partially out of a desire to learn more about disability and partially in order to support my dissertation and related research: “I took it because I wanted to learn more and ’cause I wanted to help you out. So it's like a 50/50 there” (Focus Group, May 30, 2019). Three of the eight non-CDEI participants had special expertise and interest in disability studies, so participated in order to support the work by providing expert feedback, as well as for their own learning or to help me. While these are internally driven motivations, personal favor and expert review

would not normally be factors in staff training. Only two of the eight non-CDEI focus group participants took the training primarily to support their individual learning needs.

As noted in the need to know and readiness to learn sections, participants suggested that others may not have taken the training because they did not understand the benefit to themselves either from an internal or external viewpoint. Their suggestions included promoting the content and outcomes of the training in public presentations and non-email communication. Although none of the training participants commented on the length of time required to complete the training, one non-participant in the CDEI focus group was concerned. “I was thinking, how am I ever going to find 90 minutes. Making space in people's work life to do this training - I think for some people that's going to be important” (Focus Group, May 15, 2019). Participants in all three focus groups felt strongly that the training should be a required part of orientation for all staff, including student workers, providing an external motivation to complete it. “I think the library should consider having all library workers complete this training so everyone is on the same page and prepared for their job” noted one participant (Reflection Response). Interestingly, a few control group members also recommended the training be required for all staff, even though they were not themselves sufficiently motivated to take the training voluntarily: “Can training regarding support for people with disabilities be made MANDATORY in the libraries for all employees?” (Control Group Pre-test Questionnaire).

The findings related to motivation for this training are therefore mixed. All of the participants were volunteers, and not all of the CDEI members who were asked to take the training did so. This suggests that the internal motivations of supporting my research,

providing expert review, and participating in the committee's service activity were strong drivers for learning. It would be helpful to find out what motivational lack existed for control group members who were motivated to participate in the questionnaires but not in the training program.

Overall, the training program appears to have adequately achieved the expectations of the principles of andragogy, although there is room for improvement and for further study. In particular, it would be helpful to consider the larger context for the training in order to develop better ties to staff worklife, including building shared understanding of the purpose and benefits of taking the training. This could help to clarify for staff their need to know, readiness to learn, and motivation for learning, the three weakest of the principles. The online format worked well for supporting learner self-concept, and with some small adjustments to content and links to other trainings would continue to support the connection to prior experience and orientation to learning. In the next section I will discuss other findings relevant to participants' reactions to the training that fall outside the Kirkpatrick Evaluation Model framework.

Additional Reaction Assessment: Content and Structure

In addition to alignment with the core principles of andragogy, the validity of content and logical flow of the training program were assessed. Participants' comments about the content and structure of the training relevant to Research Question #1 were discussed above. Overall, participants complimented the content, structure, and flow of the training program. Participants did not identify content in the training program that they found superfluous or that should be added. Major areas of strength, such as the robust etiquette guide, have already been discussed above. Although there was no

evidence of learning in the policy area, two participants noted that they found the links in that section particularly helpful for setting context for the training.

> I think the training does a good job of pointing also to your supporting documents. Legal policy, and when it needs to, institutional policy here at JMU. So that it's not just kind of something that the JMU Libraries happens to think this is something we should be doing. You know, that it's culturally significant and something in our profession as well. (Focus Group, May 15, 2019)

One of these also appreciated that the legal section was at the end of the training, so that it did not interfere with the more practical content.

The choice of Canvas as a familiar and easy-to-use learning system was particularly popular. Two of the focus groups included instructional designers who mentioned that Canvas was a good tool, but with limitations. As noted above, all three focus groups had concerns about the inability of Canvas to support anonymous discussions. As discussed above, one of the instructional designers noted an additional major flaw in the Canvas discussion system: all previous participants received email notification of new posts unless they opted out, and every later participant could read all previous posts. This instructional designer recommended keeping the content within Canvas, but "depending on the topic, [a person's response] can be on a discussion board, or can be on a Wiki page" (Focus Group, May 30, 2019). "If you're not familiar with the role of the student within Canvas, then [the nature of discussion posts is] not evident," noted a different participant, "I think a sentence or two long disclaimer or something to iterate and reiterate that responses will be shown to others is a good idea" (Focus Group, May 15, 2019). Another instructional designer offered to help identify an external tool: "I'm thinking about one thing that's been developed in the computer science department

for having synchronous, sensitive conversations where the participants are anonymized in real time" (Focus Group, May 15, 2019).

Participants in each focus group independently suggested that future training could follow a flipped model of instruction, in which the online component contains information and an in-person component emphasizes discussion. This would maintain the ability to learn from each other and to engage their own prior experience and knowledge, while facilitating self-directed learning and the ability to refer back to training content at a later date. Discussion about personal experiences in a small group could be less risky than in the course, because people could choose to speak or stay silent, ground rules could be clear about written products and confidentiality, and people could have true conversation about topics rather than just making individual statements. The flipped model was also noted as a supportive way to encourage attention to the didactic portions of the training:

> If I'm just sitting somewhere in front of the screen it's like, I'm going to be doing that and then all of a sudden I'm doing something else. So I have to keep forcing myself back to it. But if there's some other component where someone in person is going to be holding me accountable later on will be more likely to be able to like, I don't know, focus on it. So some something to tie it to something else outside of just the online components would have been helpful. (Focus Group, May 22, 2019)

In this case, knowing that they would have been expected to participate in an in-person discussion with their peers may have helped the person keep focused on the training. This would also facilitate separating student workers from the permanent staff without having to create two different training programs. Everyone could receive the same online material, but would then be broken out into groups for discussion. These groups could be

arranged by department and employment type to help facilitate community development while protecting privacy.

There was a strong sense that this training could serve as an introductory survey of disability and accessibility services in the Libraries, but that additional targeted training would also be needed. To complement this, however, there was also a willingness to consider who else in the Libraries could participate in and support future training. Suggested groups were the CDEI, the Citizen 21 badging program for JMU students, and the Libraries Leadership group for training supervisors and other leaders in the organization. “If [adding a module to Citizen 21 is] something you want to pursue later, talk to me or get in touch with the experts” offered one focus group participant (Focus Group, May 15, 2019).

Finally, ten of 16 participants provided short messages of support in the final reflection response. A few were simple thank you’s, but most were statements of thanks with affective comments expressing what value the person saw in the training, the purpose of or need for the training, or the potential impact of it. One of the longer responses was,

> This is a very useful, informative and valuable course. I am appreciative that this course was offered to staff so that we could learn much more about disabilities regarding access, perception, policies, laws and awareness. (Reflection Response)

In some cases it was unclear whether the person was referring to just the training, or to my overall program of research and practice in accessibility: “I think this is important and it's great that someone is specializing in this kind of improvement initiative for the public space!” (Reflection Response). This feedback indicates that there is value to pursuing

continued improvements to the training program with the goal to improving the Libraries inclusive culture overall.

Participant reactions were, on the whole, somewhat general in nature. Although a few specific content items were highlighted as being strong, such as the District of Columbia Office of Disability Rights video, only the discussion question about personal experience with disability was specifically highlighted as a weakness. In general participants were highly complementary of the training, and expressed a desire to see it continue. Participants also discussed how the program fit into their larger interests for learning about disability and accessibility services in the Libraries. This led to analysis of the program through the last step of the Kirkpatrick Evaluation Model.

Rediagnosis of Learning Need

The fifth step in the expanded Kirkpatrick Evaluation Model, as added by Knowles et al. (2011) to support andragogical teaching practices, is the rediagnosis of learning needs. This is a collaborative practice to identify what questions or new interests are developed for training participants. The rediagnosis serves to clarify what about the training was particularly relevant and motivational for participants, as well as what outstanding or new questions exist. This then helps the trainer plan for the next cycle of training. Data to inform this step was gathered from the pre- and post-test questionnaires, discussion and reflection responses, and the focus groups.

The lowest score on the pre- and post-test questionnaire scale items was for “I have had adequate training on how to help people with different types of disabilities.” While this item improved significantly for the intervention group on the post-test compared to both the control group and to their pre-test score, it remained the weakest of

all of the items, and was the only one with a post-test mean score less than "Agree" (3.0). In their comments, training participants indicated that the training helped by providing a baseline of information about types of disabilities and Libraries services, spaces, and policies to support them. The training also either did not answer specific questions or prompted new questions, both of which impacted people's perception of how adequately they had been trained. One person noted that they had taken the training because they had "been thinking about this already," but that as a result of the training they "feel more prompted now to want to learn even more." They continued:

> I want on my own to do some more research about specific disabilities, learn more about the different types and what's involved and maybe read books, just things that have affected people in general and things people have been through. (Focus Group, May 22, 2019)

This remains a diffuse learning need focused on general knowledge, albeit perhaps with a narrower focus on specific types of disability.

A strong theme in the reflection responses and focus groups was learning more about specific services or behaviors that connected directly to the person's job. These included general interest in how to improve a service area or services to a population. Several people suggested they would like to explore specific types of disability needs and services more deeply. "I would like to learn more about some of the resources that the Libraries offer in regard to accessibility more in-depth, so that if I am asked about specifics of a program, I can more readily help" (Reflection Response). This could be accomplished by adding in hands-on training or by engaging with the ODS and people with disabilities to hear their stories and explore their needs together.

Other participants had much more narrow learning needs, focused on their particular work context. These people noted that they were interested in more training on topics including assessing and selecting accessible furniture for the buildings, universal design for learning, how to use AT Lab software in order to provide troubleshooting support, and "how ILL can continue to work to make library items accessible to our patrons, specifically with relation to our ability to provide accessible, OCR-enabled PDFs" (Discussion Response). The CDEI focus group discussed training to improve the accessibility of internal Libraries business, such as committee work. They were interested in considering how to improve internal and external events and communication, including both content and presentation. There was an acknowledgement that this training served as an introduction or survey course to the diversity of types of disabilities and services, but by its nature could not explore anything in depth.

In contrast, some participants were interested more in learning about Libraries services that were new to them out of general curiosity or personal interest. Examples included learning more about the partnership between the Libraries and ODS to make 3D printed models and accessible PDFs, or about the universal design for learning workshops provided by the instructional designers. Several people were also interested in learning more about specific types of disabilities, particularly invisible ones such as mental health conditions and learning disabilities. In response to the discussion prompt about which Libraries services were personally useful or interesting, several people identified that they would be interested in knowing more about the De-stress for Success program or off-campus access to online resources. "I believe that the connecting off campus resources are helpful as I do most of my work at home" was written in similar

ways by five different participants in the discussion response. Information about off campus access was relevant to their personal needs first, and useful for supporting people with disabilities second.

An unexpected area of continuing interest was to learn more about accessibility initiatives in the Libraries and on campus. Several participants asked for information about previous cycles of my research, including findings from the Carrier Library facilities audit and from my surveys and interviews with students with disabilities. Curiosity about the findings of this study of the training program came up in both the reflections and the focus groups: "I'm interested in how well-received this training is. I'm glad it exists and I hope it becomes required for all staff (not just students)" (Reflection Response). Other participants were interested in "general uptake and impact of our services, and campus-wide awareness of students and faculty about what we have to offer" (Reflection Response). In one focus group a participant asked, "Will any of these findings be presented?" to which another participant suggested I share findings at the Libraries' annual internal poster session and then in turn asked whether the Carrier Library audit would be repeated in Rose Library (Focus Group, May 22, 2019). All of these indicated a higher than expected level of engagement in Libraries and campus accessibility and disability initiatives.

These new or redefined learning needs can be addressed through future training and continuing education efforts. There was also a set of responses to the post-test questionnaire prompt that may be harder to address through training. Of the five questions from intervention group participants on the post-test questionnaire, three used some variation of the phrase "do better," at the individual, Libraries, and university

levels. This concept was touched on above, in relationship to the need to know principle. The difficulty with this diffuse desire to improve is that there is no declared starting or ending point for change; what, exactly, does "better" look like? This undefined dissatisfaction with the status quo deserves further exploration.

Acting on the learning need. The purpose of identifying the rediagnosed learning need is to enable the trainer to create future programming that engages the learner's need to know, readiness to learn, and motivation to learn. The assumption could be that learners would wait to explore their rediagnosed learning need until a program were available. In this study, several participants reported on self-directed efforts to act on their new learning need. Four different participants wrote in a discussion or reflection response about how they were independently pursuing additional learning prompted by the training program. These ranged from the playful, "I did not know [service ponies were a] thing and now have to stop myself from looking at adorable images of them!" (Discussion Response) to the more work-related, "I want to learn more about how to make online learning accessible. I'm actively learning about this in my job" (Reflection Response). One participant spent considerable time and energy on a "quest" to answer a question that they developed during the training. They were not comfortable with answering the discussion prompt about whether to let a student into the Accessible Technology Lab without identification without clear direction from the ODS.

> Um, and it actually, it kind of bothered me because I was like, I know I want to say the right answer is, 'Oh yeah, let anybody in.' I don't want to prevent access or create barriers to access. But then there was just this little thing nagging at the back of my head. It's like, you know, I don't know if that's quite a hundred percent correct. So it actually inspired me to go and talk with ODS about it. (Focus Group, May 30, 2019)

After talking with most of the ODS staff, they ended up having a discussion via email and in person with the ODS director. In the focus group they reported on the discussion, with the conclusion that yes, we should trust that people who ask for access need it. It was interesting that they were so persistent and so eager to share what they had discovered. They referred to putting on "sleuth shoes" to get the answer, noting "You know, when I say the word bothered, it's not like it upset me, like on an existential level, but it just burrowed in" (Focus Group, May 30, 2019). By digging into the question and then sharing what they found with the group, they were not only able to answer their own new question but also helped the rest of us learn.

For others, the training served as a touchstone to start thinking about ways to improve. "Throughout this course I found myself brainstorming to come up with ideas that might further accommodate Library users," noted one person (Reflection Response), while others talked about how they were seeking out other learning opportunities by following the links in the training, on the Libraries: Accessibility page, and on the Disability Studies resource guide. It will be interesting to see if these desires to continue to learn translate into changes in spaces, services, and policies that are prompted by training participants.

This fifth step in training assessment does not necessarily measure the quality of the training program. Assuming that participants affirm that their original learning needs were addressed, as was the case in this training, this step would normally only indicate what the next phase of training should include. In this case, however, I am pleased to see that the training not only prompted new questions for participants, but also inspired them to independently discover and share the answers to those questions. This suggests that the

training was successful in engaging them as adult learners and part of the greater learning community.

Conclusion

The two research questions for this study essentially assessed the efficacy and validity of the training program along two different lines. First, I considered the fundamental question of whether and how the program impacted participants and non-participants. This was accomplished through the measurement of changes in perceived beliefs and knowledge and the evaluation of evidence for perceived and applied learning for each category of the Deines-Jones (1999) content model. Second, I assessed validity by examining the strengths and weaknesses of the training program's content, structure, and format through the framework of the six principles of andragogy. I concluded by discussing what remains or emerged as learning needs for participations, using the final step in the expanded Kirkpatrick Evaluation Model as a guide.

Chapter 5

DISCUSSION

In this chapter I discuss implications of the results and findings from this study for practice and research in both the local and larger contexts, present limitations of the study, and end by reflecting on my lessons learned as a researcher-practitioner through the process of completing this study.

Implications for Future Practice

Impact of Training on the Libraries

In keeping with other studies of the impact of training on the organization (Henczel & O'Brien, 2011; Kulkarni et al., 2018; Seewooruttun & Scior, 2014), this study found that participants reported improvements in their perceived knowledge and skills compared to the control group and to their pre-test scores. In particular, they discussed improvements to their awareness of the prevalence of disability, how to support different types of disabilities, and of accessibility-related Libraries services and facilities. The training also appears to have supported more thinking and discussion about what the Libraries can do to improve in the areas of attitudes, services, facilities, and policies relevant to accessibility and disability services. This increased awareness of other aspects of Library accessibility than those included in the training is in line with previous studies (Henczel & O'Brien, 2011).

The most successful component of the training program was the detailed guide to helping people with different types of disabilities, referred to in this study as the etiquette guide. It appears that the guide helped participants redefine disability from the single

facet of wheelchair use to a much more complex diversity of physical and cognitive, visible and invisible impairments, disabilities, and conditions. In addition, the use of videos that presented ideas and described experiences from the perspectives of people with disabilities provided powerful learning opportunities for participants. More so than any text, the scene in one video where a well-meaning person pulls a door out from under a woman using crutches cemented the idea that one should only provide help that is wanted and needed.

Participants' learning seemed to be both encouraged and suppressed by prior experience. This group of participants generally used very supportive language and leveraged high customer service habits when responding to scenario-based skills questions. However, when the best answer was hard to find and did not track with the most immediately supportive instinct, participants went with their instincts. In addition, while participants understood the ethical and policy reasons why the Libraries wants to be inclusive, some used othering language counter to the person-first and inclusive ideals of the social model of disability. Prior studies have found that people with higher prior experience or familiarity with disability tended to have higher initial scores on standardized attitudinal questionnaires (Gething & Wheeler, 1992; Timms et al., 1997), though they may see smaller or no gains in scores after training (Timms et al., 1997). This study suggests that the lack of improvement in scores is possibly reflected in the persistence of incorrect assumptions about services and unsupportive language to describe people with disabilities.

At this point in the research program, the impact of the training on the overall Libraries culture is based in perceptions, rather than formal evaluation. Focus group

participants in each session discussed a strong sense that, regardless of the content or participation rate for the training itself, the fact that the training existed at all had value in defining and reinforcing the values of the Libraries. “I think it lets people know the culture that we’re aspiring to at least if not already have, are already experiencing,” stated one participant (Focus Group, May 15, 2019). This idea of institutionally supported training as a statement was echoed across the focus groups. If the training becomes part of the formal onboarding process, it could help “establish what our cultural values are. And then especially for new employees, they might feel more comfortable asking for accommodations if they know that’s something that we care about” (Focus Group, May 22, 2019).

Beyond improvements to the Libraries’ culture in general, the purpose of the training program was to improve staff ability to help people with disabilities in the context of their work duties. The literature suggests that library staff knowledge and skills are tied to an improved sense of belonging for people with disabilities (Bayat Bodaghi et al., 2015), perhaps because inclusive cultures are critical to the development of library spaces as third places (Elmborg, 2011). The literature cited above further links this sense of belonging to improved student outcomes for students with disabilities. This study represents a first successful step towards demonstrating that link in the JMU context.

Plans for the Next Iteration of the Training Program

Given the findings from this cycle of research, the training program should continue to be offered to staff in the JMU Libraries, on the basis that taking this training leads to demonstrably better outcomes compared to not taking the training. Tweaks to the

content, structure, and integration with other Libraries training will improve the training in its next iteration.

Improve content and structure. Study participants did not have substantive recommendations for additions or deletions to the overall content of the training. Based on the findings, however, changes in four areas could help further learning based on previous experience. First, the two sections of the training focused on attitudinal learning, including the local context and the etiquette guide were universally praised for being engaging, thorough, and informative. The only major change needed to content in this section is slightly less nuanced discussion about the perceived conflict between proactive customer service and expecting people to self-advocate for their needs. From a social model of disability perspective, this could be done by tying the "you think you're being helpful, but you're not" revelation to person-first principles of self-advocacy, and by trying to eliminate the need to provide help in most cases through better universal design of spaces and services.

Second, the services, facilities, and policy sections of the training were less impactful and possibly were less effective as instructional components. These three sections are also less universally applicable across the libraries. Dividing the training into two separate modules, with the first focused on attitudinal training and the second on the more applied services, facilities, and policy training, would allow clearer scaffolding of content between the two. Within the second module, changes to how content is presented and how discussion questions are connected to the content would also support better learning. As an example, the question in the policies section about what to do with a complaint was not well answered by many of the participants. This may be because the

correct procedure is buried within a long and difficult document. In this section, I would add plain-language summaries of the important components of the five linked policies. This would help to contextualize the content of the ADA and Rehabilitation Act and the JMU Disability Policy for the Libraries while sparing participants the need to read the full documents. Providing model answers for the skills questions and discussion of common thoughts for the reflection questions would connect those back to the instructional content and give participants needed feedback.

Third, some additional changes could help support community development and social learning while protecting participants' privacy and self-image. Two focus group participants offered to help find and integrate an alternative method for facilitating the discussion questions. Important considerations are the ability to post either anonymously or with credit, the ability to turn off by default notifications of new content, and the seamlessness of access from within the Canvas system. If such a platform cannot be found quickly, then I would make it very clear that the questions are optional, and give instructions on how to turn off notifications. Regardless, Discussion Question #1, which asked participants to discuss their own or a close friend or family member's disability, must be either converted to a thought question without any answers or reworded to better prevent the risk of harm to the respondent.

Another way to maintain the social learning and community development aspects of the discussion boards while supporting self-determination among the participants would be to move the program to a hybrid or flipped model. In this model participants would learn content through the online program and then meet up with others in a live session to discuss the content through the nine discussion questions. This model could be

similar to other hybrid programs seen in the literature (Charles, 2005; Roth et al., 2018). However, at least one of these programs was succeeded by an online-only training program due to problems of sustainability (Forrest, 2007). An alternative may be to supplement the basic training of this program with targeted hands-on and interactive in person sessions that welcome any participant. Topics suggested by focus group participants span all four of the Deines-Jones (1999) categories, including how to work with people with cognitive disabilities, specifics of the 3D printing service in the Makery, how to use the technology in the Accessible Technology Labs, and building accessibility into Library policies and communication.

Fourth, a major problem with the training program was the perceived emphasis on helping students with disabilities, to the exclusion of colleagues or other types of library users. This may have suppressed participation in the training program, because it did not align with the need to know or motivation to learn principles of andragogy. In the next iteration of the training program, I would review the language used within the program, including in the instructional text and the question prompts, to make sure that the general case is assumed to be a "person with a disability" rather than "a student with a disability," and that the specific cases show balance among students, staff, and coworkers. The promotional and descriptive materials for the program that are used, for example, in the syllabus for the LOOP orientation program should also be updated to focus on the applicability of the program across library departments.

Integrate into existing training. In addition to the small tweaks to content and structure outlined above, a necessary improvement for future cycles would be to incorporate this training into other existing ones. For the purposes of this cycle of

research, the training program was created as a standalone course within the Canvas system. This required participants to be invited to the class at their request. While supportive of the research, this was an artificial separation from regular orientation and other training. In the next iteration, the program should be transferred into the new LOOP shell as one or two module(s) within the larger orientation "course." This will require some functional changes to the program, including adjustments to fit within the look and feel of the LOOP and the loss of module-specific data, but also makes possible linking to and from other modules in the overall orientation program. One question that has arisen is to whom the training will belong, largely for updating and revising purposes. While the CDEI and the Organizational Learning Committee both have some stake in the training, this question has yet to be completely resolved.

One focus group participant suggested that components of the training program could be incorporated into the Citizen 21 student training program provided by the Libraries. Citizen 21 teaches digital media literacy skills to undergraduates in areas such as web 2.0 tools, copyright, digital communication, mindfulness, and online ethics (JMU Libraries, 2019). The etiquette guide, in particular, could fit into this program with some refocusing around online, rather than in-person, interactions. Although much of this program is taught in person and using a Wordpress site, the training content is also housed within a Canvas course shell.

Integrating the content into student worker training will be more difficult, as there is not a consistent standard for onboarding or continuing education across Libraries departments. The Public Services Department's Canvas course already houses a duplicate copy of the training program. None of the other departments have a formal student

worker training process in place. Resolving the larger question of student worker training across the organization will impact, and could be informed by, the future of this program.

Application of Findings to Other Contexts

One strong finding in this research was that participants endorsed the training program as a requirement for all Libraries staff. They recommended that the training be incorporated into mandatory orientation work, though perhaps at a later stage than in the initial few weeks. This would help to set organizational expectations for how to treat both Libraries users and staff, thus bending the culture to be more inclusive and welcoming at many levels. The online training was found to be easy to use and effective in raising awareness of accessibility and disability across the organization. Other libraries could incorporate similar training into their regular practice. This program is available under a CC:BY license that allows for any reuse and remixing of the content (Appendix I). The etiquette guide is easily adaptable, and could be used as a common training resource for use in multiple contexts, along the lines of the need highlighted by Bruhn (2008). National online programs, such as Project ENABLE, are also options for large-scale staff training. Regardless of the platform, this study supports previous findings that any training is better than no training.

Implications for Future Research

Continued Assessment of the Intervention

The timeframe for this study only allowed for assessment using steps one, two, and five of the expanded Kirkpatrick Evaluation Model. This is in line with most published studies of accessibility training. A complete evaluation of the training program would also include Steps 3 and 4, behavior and results assessments. Kirkpatrick and

others have discussed the increased difficulty of behavioral and cultural assessment compared to survey and test-based perceptions and recall evaluation (Brewer, 2011; Farmer & Parker, 2011; Kirkpatrick 1975). These steps require a larger percentage of the population to be trained and more time to have elapsed after the training.

Evaluation in the third step, behavior assessment, measures the ability of training participants to apply their new knowledge and skills to real-world contexts. Research to evaluate the training program using this step could include ethnographic observation of staff at the service points, reports of "secret shopper" tests by external personnel, surveys of or interviews with library users with disabilities regarding their experiences, or an analysis of comments and complaints about services received from Libraries users. Assessment in this step could further provide data to answer the question of whether the training works to improve staff ability to help people with disabilities. As focus group participants noted, all the knowledge in the world does not translate to ability without hands-on experience.

In addition, researching impact using the fourth step, results assessment, will help to further explore the overall environment of the Libraries after introduction of the training program. One focus of results assessment of the training could be of the internal culture of the Libraries, using climate surveys or analyses of changes to supervisor training and policy documents that either leverage or incorporate accessibility principles in their content. Another could include engaging with the JMU disability community to assess whether they have experienced a change in their perceptions of the Libraries' culture. This work would further tie together the theory that staff training leads to higher empathy through alignment with the social model. The literature suggests higher

perceived staff empathy leads to a stronger sense of belonging among students (Bayat Bodaghi et al., 2015), and further that students with a strong sense of belonging or social engagement have better outcomes (Fleming et al., 2017; Vaccaro et al., 2015). Measuring the theoretical connections in this model was beyond the abilities of this particular study, but should be possible given time and attention.

A further advantage of taking a longer timeframe for assessment would be the ability to gauge evidence for long-term retention of knowledge and skills. In this study, I found that some knowledge about Libraries services and spaces seemed to be lost in just the few weeks between when participants completed the training and when they took the post-intervention questionnaire. This problem is not addressed in the literature on accessibility training. Measuring retention over a longer period could include repeating the post-intervention questionnaire in the spring of 2020, thus essentially repeating step two of the Kirkpatrick Evaluation Model.

Future Cycles of Research

I have not completed working with this training program, so several future cycles of research will continue to be dedicated to iterations of the program and of its assessment. This includes taking a longer-term view of the impacts of the training and including non-participants in assessment, as described above. I am also interested in engaging with the CDEI and with stakeholders in orientation such as the Organizational Learning Committee and staff and student worker supervisors. These groups and individuals have additional needs for training that I was not able to incorporate into this first cycle but that will be critical to its sustainability and success moving forward. For example, the CDEI is interested in leading discussions about the next-level training,

including targeting training to different employment categories in the Libraries and providing hands-on, community-based, and live professional development sessions. Participants in all three focus groups supported the continuation of this training as an introduction, with additional offerings made available to extend learning. This research cycle also opened up space for discussions among student worker supervisors regarding how students are trained to work at our various service points, including how to standardize that training across units. This program would be part of that training.

I have also identified several additional areas of action research that relate to my larger problem of practice, building and sustaining an inclusive and accessible library environment for people with disabilities. One area of interest that emerged in the CDEI focus group was that of the Libraries' workplace culture for accessibility. This could include assessing current practices for committee processes and communications through an accessibility lens, and creating norms and training to improve areas of weakness or reinforce areas of strength. Participants in the CDEI also suggested auditing procedures specific to recruitment and retention of people with disabilities, such as language in job ads, treatment of candidates, and clarity surrounding the accommodations process.

Beyond these specific suggestions, there is rich qualitative data from the questionnaires, discussions, and reflection responses that I intend to analyze to identify areas of improvement in the Libraries' physical, service, policy, and cultural environments. One potential area is that of services and support for people with invisible disabilities such as ADHD and dyslexia. I am intrigued by the idea of creating special spaces for people with learning and cognitive disabilities that support both their academic and their social engagement with the university. This work would help further the

argument that disability and accessibility are not just about mobility, but are about all the ways people interact with the world.

Areas of Research Need

In building my conceptual model, I identified a gap in the literature between studies connecting library use with student success and models of student success. My theory is that the library may serve as an important third place on campus that facilitates both academic and social integration. This role is important for all students, but particularly critical for students in minority populations, including those with disabilities. This study did not address whether the JMU Libraries are third places; instead, I showed that training in disability awareness and sensitivity can improve knowledge about different types of disabilities and how to support library users in an empathetic and inclusive way. Further research is needed to connect increased staff knowledge with an increased student sense of belonging in Library spaces.

At a more practical level, there have not been any studies in which the same training program was implemented and assessed in different library contexts, and very few in other fields. This study found, for example, that there were no significant improvements in beliefs construct items for intervention group participants compared to pre-intervention results or to the control group. This could be due to the high pre-test scores across the board for JMU Libraries participants. According to Kulkarni et al. (2018), successful systemic change after the introduction of a training program across multiple industries was positively correlated with having a more inclusive pre-training organizational culture. In an older study, Timms and colleagues (1997) found that a group with higher pre-training experience performed less well on a pre-test/post-test

standardized attitudinal scale than a group with lower experience, using the same training. An institution with a weaker orientation towards access and inclusion than the JMU Libraries may see different patterns than were found in this study. The pre- and post-test questionnaires (Appendix C) and the Canvas training program (Appendix I) are easily adaptable to other local contexts and research.

Implications for Theory

Several research and practice models were used to develop the content and structure of the training program and its evaluation. Further research that engages these models would help to extend these findings by helping to clarify which findings are specific to the JMU context and training compared to which are specific to the models. There are some weaknesses to each of these that started to emerge in this research.

The Deines-Jones (1999) four-part model for disability and accessibility training in libraries generally performed well as a means of ensuring that content covered major areas of need and interest. However, the model was created before the idea of libraries as third places became popular. The "space as service" trend emphasizes that there are no spaces in libraries that do not also function as services, and all libraries services are contained within physical or virtual spaces. At this point, attempting to separate spaces from services in a training context feels artificial and causes some confusion, as was seen in the responses to discussion and reflection questions in this study. In addition, it was difficult to decide whether staff training itself belonged in the attitudes, services, or policies category, which caused minor problems during my data analysis.

The core principles of andragogy (Knowles et al., 2011) have not been used to a large extent in the library training literature. In my experience, they provided a useful

framework for developing and analyzing the training program. Findings seemed to support thinking about these six principles in two clusters. The need to know, readiness to learn, and motivation to learn principles related to whether a person chose to participate in the training. In this study, many participants appeared to be driven by nonstandard motivations, including the desire to be helpful to my research and to continued accessibility programming. This aspect of the intervention group may not have emerged as strongly as it did had I used a different framework. The role of experience, learner's self-concept, and orientation to learning principles, by contrast, related to what any individual participant learned as a result of the training. In general, findings related to this cluster were strongly positive. These findings helped to identify aspects of the program, such as the practical etiquette guide, the engaging videos, and the links to further learning, that should be retained in future iterations.

One limitation of the Kirkpatrick Evaluation Model is that it focuses on evaluating a training program using participants in the training. When paired with assessment using the core principles of andragogy, as done in this study, this allows for a deep understanding of the motivations and experiences of those who chose to engage with the training program. It does not, however, provide insight into why people either did not engage with the training or why they started but dropped out before completing it. In this study, approximately 50 Libraries staff chose to participate in one or both of the questionnaires, but did not take the training. Several of these indicated that they felt the training was important and should be mandatory for all staff, but they were not motivated to actually complete it. Twelve people started but did not complete the training. Two of these spent over an hour in the course, but left without answering any discussion

questions or submitting the end of course reflection. The control group may have had different needs to know, motivations, and other relevant pressures from the intervention group that would be informative for designing a future iteration of the training.

Limitations of the Study

This mixed methods action research study was far more robust than my previous work, but still had several important limitations that should be acknowledged. The study population for the control and intervention groups, the timeframe for the intervention period, and major organizational change within my context are important considerations in analyzing the above findings.

The number of people participating in each type of instrument allowed for significant statistical testing and robust qualitative analysis. There was no statistically significant difference between the control and intervention groups in terms of age, gender, employment category, or prior experience with disability training. The pre- and post-intervention questionnaires did not measure level of expertise, distinct from experience, in disability studies. Among the focus group participants were several people with arguably deeper didactic and personal knowledge of disability studies than I possess. As discussed in Chapter 4, these participants and others in the intervention group were motivated to participate in the program in order to support my research, rather than to develop their own skills. While this meant that I had a friendly and forthright intervention group that provided extensive feedback, it also meant that some of my findings about motivation, the need to know, and the readiness to learn may not apply to staff who will be required to take the training as a condition of their onboarding.

A second population-related limitation was the under-representation of student workers and the over-representation of faculty in both the intervention and control groups. The findings for the study thus best describe the full-time staff and faculty, and may miss ideas unique to the younger, less experienced student population. Certain aspects of student worker training may be very different from staff training for adults, including the applicability of Knowles et al.'s core principles of andragogy, because they are in the transitional period between childhood and adulthood. Findings relevant to orientation to learning, the engagement of prior experience, and the learner's self-concept could be contextually-specific to adult staff.

The timeframe for the study by its nature was shorter than ideal. The assessment of training programs using the full Kirkpatrick Evaluation Model (expanded) requires a longer period than the single semester available. For this reason, I was only able to assess the immediate and short-term reactions and learning of participants (Steps 1 and 2) and their short-term rediagnosed learning needs (Step 5). There was not time to do field testing of changes to behavior and skills (Step 3), or to assess systemic changes in the Libraries' service and policy environment (Step 4). As a result, the findings relevant to the question of how the training impacted participants depends on knowledge improvements, rather than the demonstration of skills development or systemic improvements in the Libraries' culture and policies.

Finally, major changes at several levels of the Libraries dramatically changed my intervention and analyses, even after my proposal and IRB materials were approved. As noted in Chapter 3, the departmental trainer who was my close partner gave her notice a week before the training program was supposed to be released. This required a major

rewrite of the intervention and data analysis program. In addition, the Libraries was in the middle of recruiting a new Dean, including hosting candidates for on-campus interviews and announcing the new executive leader, during the pre-intervention questionnaire period. This may have been a distraction for many in the organization, and meant that I was often required to navigate the power dynamic of being a senior administrator in the Libraries at the same time as leading a research program involving input from Libraries staff. It may be that some participants felt uncomfortable giving me critical feedback, or that others did not have the capacity to participate fully at different stages of the research.

Lessons Learned

This dissertation project and its affiliated cycles were my first introduction to rigorous mixed methods action research. I feel that I have learned much about myself as a researcher as well as about the process of this type of research that I could not have learned through regular practice. My background before becoming a librarian was in botany and systematics, and in libraries I have generally focused on collections analytics and survey-based research. This research has tended to be heavily post-positivist in nature. As a result, I came to these projects confident in my ability to design, analyze, and discuss quantitative research. While not fully comfortable with qualitative or mixed-methods analysis, I feel that my skills in this area have improved dramatically, with promise of continued development as I continue to pursue action research projects. In addition, the engagement of the Libraries and university communities in this project has taught me a lot about the challenges and benefits of collaborative research and practice, including navigating different motivations, perspectives, and capacities for the work.

One particular component of mixed methods research that I have wholeheartedly adopted and promote among my Libraries colleagues is the development and rigorous application of a conceptual model to inform all aspects of the research program. Developing an understanding and working knowledge of theoretical and conceptual models was a theme throughout both the didactic and research aspects of the doctoral program. As a librarian, I have a professional inclination to the literature, but had not previously used epistemological frames or models to help develop interventions, assessments, and analyses to the degree that I used them in this project. The book *Reason & Rigor: How Conceptual Frameworks Guide Research* by Ravitch and Riggan (2016) provided particularly clear arguments and guidelines for incorporating my framework throughout my research process. I am grateful to Dr. Bernstein for bringing this reading to my attention and for pushing me to find and use theories and models that support not just the why of my work, but also the how. I discovered in this process that a little more planning work makes the analysis work easier, more rigorous, and more applicable.

Separate from lessons learned regarding the mechanics of research, the process of immersing myself in the social model of disability has taught me much about myself as a person. I was forced to confront my own biases about disability at multiple points in this research, including during my literature review, while writing the training content and developing my assessment instruments, and when analyzing the resulting data. Through this process I have come to understand and accept my own physical impairments as disabilities, and have let go of the internalized shame that I had been allowing to define my relationship with my own body. This is a gift that I had never imagined my research could give me.

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APPENDIX A

TRAINING PROGRAM OUTLINE

Objective	Outline	Content/Materials	Activity
Understand the structure and flow of the training module	About This Module	• Welcome statement • List of objectives • Outline of sections	None
Develop awareness of the different types of disability found at JMU (Awareness)	Introduction to Disability and Accessibility • Disability at JMU • Introduction to Disability Question	• National data about disability in the college-age and general populations • "What's It Like?" video (http://www.washington.edu/doit/videos/index.php?vid=68) on the experiences of college students with disabilities. • Local data provided by ODS about disability at JMU • "JMU Office of Disability Services" video (https://youtu.be/GXbftHtaoEo)	Discussion question #1: Do you know someone who has, or do you have, an impairment or disability that gets in the way of work? How does their/your impairment or disability impact their work, study, or use of the library?
Demonstrate skills in effective and appropriate communication with people with disabilities. (Awareness)	Basics of Disability Etiquette • General Etiquette Guidelines • Basics of Disability Etiquette Question #1 • Helping People with Mobility Disabilities	• JMU Libraries Disability Etiquette guide. • District of Columbia Office of Disability Rights – Disability Sensitivity Training Video: https://www.youtube.com/watch?v=Gv1aDEFlXq8	Discussion question #2: You overhear a colleague talking about a library user who is "crippled." This language makes you uncomfortable. What would you suggest the colleague use instead?

	• Helping People with Blindness/Low Vision • Helping People with Deafness/Hardness of Hearing • Helping People with Communication, Learning, or Cognitive Disabilities • Helping People with Mental or Behavioral Health Disorders • Basics of Disability Etiquette Question #2		Discussion question #3: What, if anything, is different about etiquette for working with people with disabilities compared to people without disabilities?
Become familiar with the most common services that the Libraries provides to support accessibility. (Services/Facilities)	JMU Libraries Accessibility Services • JMU Libraries Accessibility Services Question #1 • JMU Libraries Accessibility Services Question #2	• JMU Libraries Accessibility page: http://www.jmu.edu/ accessibility	Discussion question #4: What accessibility-related services might be helpful to you? Which of these services would you like to know more about? Discussion question #5: A person who is blind and has a service pony approaches you on the first floor and asks for help getting a book from the stacks.

			What are two ways you could help them? Optional activity: Download and complete the Carrier Library Accessibility Audit. Discussion question #6: What is the first thing about Carrier or Rose Library that you would change, to improve accessibility? Optional activity: Try out speech-to-text technology! Open a Google Doc. Click the menu item "Tools" then the option "Voice Typing." A microphone icon will appear to the left of your document. Click the microphone, and talk normally. This technology is not only helpful for people who have difficulty typing, but also for those of us who find it easier to talk than to write. Discussion question #7: A
Identify areas of the Libraries' facilities that enable or disable access. (Facilities)	JMU Libraries Accessible Spaces • JMU Libraries Accessible Spaces Question #1 • Accessible Technology Labs • Accessible Technology Labs Question #1	• JMU Libraries Accessibility page: http://www.jmu.edu/ accessibility • JMU Accessible Technology Labs information: https://www.jmu.edu/ods/accommodations/ accessible-technology-labs.shtml	

			student comes to the service point on a Sunday, and asks to be let into the Accessible Technology Lab. They claim that they are registered with the ODS – so should have access – but that they lost their JAC Card and can't get a new one until Monday. What do you do?
Understand how the ADA and other laws/policies apply to libraries. (Legal)	Legal and Policy Issues • Legal and Policy Issues Question #1 • Legal and Policy Issues Question #2	• ALA ADA and Rehabilitation Act Sampler: http://www.ala.org/asgcla/asclaissues/adarehabilitation • JMU Policy 1331: Disabilities and Reasonable Accommodations: https://www.jmu.edu/JMUpolicy/policies/1331.shtml • ALA Library Services for People with Disabilities Policy: http://www.ala.org/asgcla/resources/libraryservices	Discussion question #8: What would you do if someone has a complaint about a barrier (physical or social) in the Libraries? Discussion question #9: Why do you think the JMU Libraries want to create an accessible and inclusive environment for people with disabilities?
Assess and reflect on the training	Basics of Library Services Reflection & Assessment	• Training program reflection	Required activity: Complete the reflection.
Learn more from	Resources	• References to websites, tutorials,	None

reputable external sources	and other materials used to create the training program.

APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL LETTERS

EXEMPTION GRANTED

Katherine Bernstein
Division of Teacher Preparation - Tempe
-
kbernstein@asu.edu

Dear Katherine Bernstein:

On 12/21/2018 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Building an Inclusive Library Through Staff Training
Investigator:	Katherine Bernstein
IRB ID:	STUDY00009398
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• Building an Inclusive Library - Pre and Post Intervention Questionnaire, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Building an Inclusive Library - External IRB Information, Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc); • Building an Inclusive Library - In Person Participant Reflection Questions, Category: Measures (Survey

	questions/Interview questions /interview guides/focus group questions); • Building an Inclusive Library - In Person Session Consent, Category: Consent Form; • Building an Inclusive Library - Recruitment Announcements, Category: Recruitment Materials; • Building an Inclusive Library - Training Outlines, Category: Other (to reflect anything not captured above); • Building an Inclusive Library - Questionnaire Consent, Category: Consent Form; • Building an Inclusive Library - Protocol, Category: IRB Protocol; • Building an Inclusive Library - Focus Group Questions, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Building an Inclusive Library - Online Module Assessment, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Building an Inclusive Library - In Person Trainer Reflection Questions, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Building an Inclusive Library - Focus Group Consent, Category: Consent Form; • Building an Inclusive Library - Online Module Consent, Category: Consent Form;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 12/21/2018.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Katherine Vaughan
Katherine Vaughan

JAMES MADISON UNIVERSITY

OFFICE OF RESEARCH INTEGRITY

REPORT OF COMMITTEE ACTION

TO: Ms. Katherine Vaughan, Principal Investigator
FROM: Carolyn Strong, Director
DATE: January 8, 2019
RE: Exemption Notice

The Human Subject Research protocol entitled, *"Building an Inclusive Library through Staff Training"* has been determined to be exempt from continuing review by James Madison University's Institutional Review Board (IRB) under regulation 45 CFR 46.101(b)(1). Your research protocol has been assigned the ID Number 19-0315 for tracking purposes.

Per federal regulations, research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior may be determined by an IRB to be exempt from continuing review unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Exempting an activity from review does not absolve you from ensuring that the welfare of the subjects participating in the research is protected and that methods used and information provided to gain subject consent are appropriate to the activity.

You are reminded that any changes in your protocol that affects human subjects must be submitted to the IRB to determine if review and approval will be required *before* implementing new procedures.

Cc: Dr. Katie Bernstein (Arizona State U), Libraries & Educational Technologies

From the desk of...
Carolyn Strong, MRA, CIM, CRA
Office of Research Integrity
James Madison University
Engineering/Geosciences, Room 3150
MSC 5738
Harrisonburg, VA 22807
Phone: 540-568-2318
strongcdHjniu.edu

APPENDIX C

PRE- AND POST-TEST QUESTIONNAIRE

Demographic Questions
These questions are intended to allow comparisons between groups of JMU Libraries staff and faculty. Data will be used in the aggregate. You will never be identified as an individual using this data.

To allow comparisons across surveys, please create a code for yourself using the following formula. Please use this code for the whole study of this training program. This code will never be used to identify you with your survey responses.

The street number of your (favorite) childhood house, plus the last two letters of your mother's first name (ex: 305CA): _____

What is your current age range (choose the one that best applies)?
- 18-22 years
- 23-34 years
- 35-49 years
- 50 years or older

What is your gender identity (ex: woman)? _____

What is your employment type with JMU Libraries (choose the one that best applies)?
- Student staff
- Wage staff
- Classified staff
- Faculty (Instructional or AP)

Is working directly with library users a primary part of your job?
- Yes
- No

Which of the following staff development programs or modules about accessibility and/or disability have you participated in, in the last five years (check all that apply):
- Office of Disability Services panel / brownbag event sponsored by the Libraries
- JMU Diversity Conference session about accessibility or disability
- Disability Week event(s) sponsored by the Office of Disability Services or the Libraries
- Professional development program sponsored by a non-JMU group such as ALA
- None of these
- Other (please specify):
  _____

Post-Test Questionnaire only: Did you participate in the JMU Libraries accessibility training, Basics of Library Services for People with Disabilities, this semester?
- Yes, I completed the training.
- Yes, I started but did not complete the training.

- No, I did not participate in any part of the training.
- Other (please specify):
  _____

Disability and Accessibility: Comfort, Awareness, and Skills
In this section you will be prompted to rate your level of agreement with several statements about your comfort, awareness, and perceived skill with helping people with different types of disabilities, in the context of your job at the JMU Libraries. There are a few open-ended questions to gather information about your current knowledge and awareness about disability and accessibility services currently in place at the JMU Libraries.

Please indicate your level of agreement with each of the following statements:
[Scale: Strongly Agree – Agree – Disagree – Strongly Disagree]

I tend to make contacts with people with disabilities brief.
I find it rewarding when I am able to help people with disabilities.
I understand the needs of people with different types of disabilities.
I have had significant interactions with people with disabilities.
I believe that I will be more stressed by applying accessibility guidelines to my work.

Please indicate your level of agreement with each of the following statements:
[Scale: Strongly Agree – Agree – Disagree – Strongly Disagree]

I have the knowledge needed to help people with different types of disabilities.
I have had extensive experience helping people with disabilities.
I believe that my workload will increase if I have to apply accessibility guidelines to my work.
I am uncomfortable around people with disabilities.
I am confident in my ability to help people with different types of disabilities.

Please indicate your level of agreement with each of the following statements:
[Scale: Strongly Agree – Agree – Disagree – Strongly Disagree]

I have had adequate training on how to help people with different types of disabilities.
I believe that accessibility guidelines unfairly privilege people with disabilities.
I have the necessary skills to help people with different types of disabilities.
I am afraid to look a person with a disability straight in the face.
I know about different types of disabilities and impairments.

Please briefly describe three different ways the JMU Libraries currently support people with different types of disabilities. If you don't know, please write, "I don't know." [Open response]

1: _____
2: _____
3: _____

What main question do you have about supporting people with disabilities? [Open response]

Prior Familiarity with Disability

This final set of questions is to get information about how much experience you may have with disability and accessibility because of personal or work experience. Again, you will not be identified individually at any time during this study. This information will be used to control the findings for prior familiarity only.

Do you or a close friend or family member have any of the following conditions, impairments, or disabilities (check all that apply)?

- Chronic illness (ex: chronic fatigue syndrome, diabetes, fibromyalgia)
- Hardness of hearing / deafness
- Learning disability (ex: dyslexia)
- Low vision / blindness
- Mental health condition (ex: chronic anxiety disorder)
- Mobility impairment (ex: difficulty reaching and/or walking)
- None of these
- Other (please specify):

  _____

Do you or a close friend or family member identify as a person with a disability?

- Yes
- No

Last academic year, did you help a person with a known disability in the context of your work at the JMU Libraries? If you did not work at the JMU Libraries last year, please select "Not applicable."

- Yes
- No
- Not applicable

Display Next Question: If Last academic year, did you help a person with a disability in the context of your work... = Yes

Please describe how you helped this person. [Open response]

Last academic year, did you work with the JMU Office of Disability Services on a program or project related to your work at the JMU Libraries? If you did not work at the JMU Libraries last year, please select "Not applicable."

- Yes
- No
- Not applicable

Display Next Question: If Last academic year, did you work with the Office of Disability Services on a program or project r... = Yes

Please describe the program or project. [Open response]

APPENDIX D

TRAINING PROGRAM DISCUSSION QUESTIONS

Discussion Question	Deines-Jones Category	Type
1. Do you know someone who has, or do you have, an impairment or disability that gets in the way of work? How does their/your impairment or disability impact their work, study, or use of the library?	Attitudinal	Beliefs
2. You overhear a colleague talking about a library user who is "crippled." This language makes you uncomfortable. What would you suggest the colleague use instead?	Attitudinal	Knowledge
3. What, if anything, is different about etiquette for working with people with disabilities compared to people without disabilities?	Attitudinal	Beliefs
4. You may want to refer back to the JMU Libraries Accessibility page to answer this question. What accessibility-related services might be helpful to you? Which of these services would you like to know more about?	Services	Beliefs
5. A person who is blind and has a service pony approaches you on the first floor and asks for help getting a book from the stacks. What are two ways you could help them?	Services	Knowledge
6. What is the first thing about Carrier or Rose Library that you would change, to improve accessibility?	Services/Facilities	Beliefs
7. A student comes to the service point on a Sunday, and asks to be let into the Accessible Technology Lab. They claim that they are registered with the ODS – so should have access – but that they lost their JAC Card and can't get a new one until Monday. What do you do?	Facilities	Knowledge
8. What would you do if someone has a complaint about a barrier (physical or social) in the Libraries?	Legal	Knowledge

9. Why do you think the JMU Libraries want to create an accessible and inclusive environment for people with disabilities?	Legal	Beliefs

APPENDIX E

TRAINING PROGRAM REFLECTION QUESTIONS

1) KT Vaughan is studying this training program as part of her ongoing research into the accessibility and inclusive environment of the JMU Libraries. The discussion and following reflection questions will be used to improve this training program as well as in other research. Your responses to the discussion questions and this reflection will only be included in her study if you agree. Please refer to the informed consent letter *(linked*) for more information.
2) Do you agree to participate in the study of this training program? Yes / No
3) Please create a code for yourself using the following formula. This code will never be used to identify you with your responses. Please use this code for the whole study of this training program. The street number of your (favorite) childhood house, plus the last two letters of your mother's first name (ex: 305CA):
4) What do you think the Libraries do well, with regards to access for people with disabilities?
5) What do you think the Libraries should or could improve, with regards to access for people with disabilities?
6) What new-to-you fact or idea did you learn in this module?
7) What would you like to know more about?
8) What will you do differently, as a result of this training?
9) What other comments or questions would you like to share?

APPENDIX F

FOCUS GROUP – COUNCIL ON DIVERSITY, EQUITY, AND INCLUSION

1) What idea, fact, or skill was new to you in the training?
2) What do you think were the strengths or weaknesses of the training module?
3) Was there anything missing from the training that you expected to see, or anything extra that you think didn't belong?
4) Who do you think should take this training?
5) I'd like your help interpreting some of the findings from the survey data. Training participants reported an improvement in whether they felt they'd had adequate training in accessibility – in fact, on the pre-survey the training participants had significantly lower scores than non-participants, and on the post-survey they had significantly higher scores than non-participants. What do you think is going on here?
6) Another score that improved significantly between the pre- and post- surveys was about having the necessary skills to help people with disabilities. Do you think that will still be the case in a year or more?
7) The third score that improved was for "I have had significant interactions with people with disabilities." Why do you think that may be?
8) What would you recommend the next level of training look like?
9) What do you think the impact of having a training program like this one is on the Libraries as a whole?
10) What should the Council's role be in training Libraries staff in topics like accessibility and disability?
11) What else would you like to tell me related to this training?

APPENDIX G

FOCUS GROUPS – TRAINING PARTICIPANTS

1) What idea, fact, or skill was new to you in the training?
2) How did you feel about working with people with disabilities before the training?
    a) How did this change after taking the training?
3) What are you doing differently in your job, as a result of the training?
4) What would be the next thing that you might like to learn?
5) What do you think were the strengths or weaknesses of the training module?
6) What would you change/improve about the training?
7) Why did you take the training?
8) Who do you think should take this training?
9) I'd like your help interpreting some of the findings from the survey data. Training participants reported an improvement in whether they felt they'd had adequate training in accessibility – training participants' scores improved from the pre- to the post- survey, and they were significantly different from nonparticipants on the post-survey. What do you think is going on here?
10) Several other cores that improved significantly between the pre- and post- surveys were about having the necessary skills and knowledge to help people with disabilities. Do you think that will still be the case in a year or more?
11) One score that did not change was "I am confident in my ability to help people with different types of disabilities." Why do you think that was the case?
12) A third score that improved was for "I have had extensive experience helping people with disabilities." Why do you think that may be?
13) In the Canvas comments, some people said they were uncomfortable being asked personal questions that anyone could see. Others liked the feeling of community and learning from peers that the discussion questions allowed. Can you help me think through how I could resolve the concern while keeping the benefit?
14) What other feedback do you have about the training module?

APPENDIX H

STANDARDIZED SCALE SCORES

Item	Pre-Test, Control Group	Post-Test, Control Group	Pre-Test, Intervention Group	Post-Test, Intervention Group
Total Score	*n* = 37 *M* = 2.96 *SD* = 0.412	*n* = 15 *M* = 2.88 *SD* = 0.320	*n* = 12 *M* = 2.92 *SD* = 0.341	*n* = 7 *M* = 3.26 *SD* = 0.311
Beliefs Construct	*n* = 37 *M* = 3.35 *SD* = 0.379	*n* = 15 *M* = 3.24 *SD* = 0.323	*n* = 12 *M* = 3.40 *SD* = 0.321	*n* = 7 *M* = 3.45 *SD* = 0.344
Knowledge Construct	*n* = 37 *M* = 2.63 *SD* = 0.538	*n* = 15 *M* = 2.56 *SD* = 0.369	*n* = 12 *M* = 2.49 *SD* = 0.469	*n* = 7 *M* = 3.09 *SD* = 0.320
I believe that accessibility guidelines unfairly privilege people with disabilities.	*n* = 37 *M* = 3.65 *SD* = 0.484	*n* = 15 *M* = 3.53 *SD* = 0.516	*n* = 12 *M* = 3.92 *SD* = 0.289	*n* = 8 *M* = 3.75 *SD* = 0.463
I am afraid to look a person with a disability straight in the face.	*n* = 37 *M* = 3.54 *SD* = 0.558	*n* = 15 *M* = 3.33 *SD* = 0.488	*n* = 12 *M* = 3.75 *SD* = 0.452	*n* = 8 *M* = 3.75 *SD* = 0.463
I find it rewarding when I am able to help people with disabilities.	*n* = 37 *M* = 3.32 *SD* = 0.475	*n* = 15 *M* = 3.13 *SD* = 0.352	*n* = 12 *M* = 3.5 *SD* = 0.522	*n* = 7 *M* = 3.43 *SD* = 0.535
I believe that I will be more stressed by applying accessibility guidelines to my work.	*n* = 37 *M* = 3.30 *SD* = 0.740	*n* = 15 *M* = 3.27 *SD* = 0.799	*n* = 12 *M* = 3.25 *SD* = 0.622	*n* = 7 *M* = 3.14 *SD* = 0.690
I am uncomfortable around people with disabilities.	*n* = 37 *M* = 3.27 *SD* = 0.608	*n* = 15 *M* = 3.27 *SD* = 0.704	*n* = 12 *M* = 3.42 *SD* = 0.669	*n* = 7 *M* = 3.71 *SD* = 0.488
I tend to make contacts with people with disabilities brief.	*n* = 37 *M* = 3.19 *SD* = 0.701	*n* = 15 *M* = 3.20 *SD* = 0.775	*n* = 12 *M* = 3.08 *SD* = 0.793	*n* = 7 *M* = 3.14 *SD* = 0.378
I believe that my workload will increase if I have to apply accessibility guidelines to my work.	*n* = 37 *M* = 3.19 *SD* = 0.616	*n* = 15 *M* = 2.93 *SD* = 0.458	*n* = 12 *M* = 2.92 *SD* = 0.793	*n* = 7 *M* = 3.29 *SD* = 0.756

I know about different types of disabilities and impairments.	*n* = 37 *M* = 2.95 *SD* = 0.575	*n* = 15 *M* = 2.93 *SD* = 0.258	*n* = 12 *M* = 2.92 *SD* = 0.289	*n* = 8 *M* = 3.38 *SD* = 0.518
I am confident in my ability to help people with different types of disabilities.	*n* = 37 *M* = 2.78 *SD* = 0.584	*n* = 15 *M* = 2.80 *SD* = 0.561	*n* = 12 *M* = 2.58 *SD* = 0.669	*n* = 7 *M* = 3.00 *SD* = 0.577
I understand the needs of people with different types of disabilities.	*n* = 37 *M* = 2.76 *SD* = 0.760	*n* = 15 *M* = 2.60 *SD* = 0.632	*n* = 12 *M* = 2.92 *SD* = 0.793	*n* = 7 *M* = 3.29 *SD* = 0.488
I have had significant interactions with people with disabilities.	*n* = 37 *M* = 2.70 *SD* = 0.968	*n* = 15 *M* = 2.87 *SD* = 0.834	*n* = 12 *M* = 2.42 *SD* = 0.793	*n* = 7 *M* = 3.14 *SD* = 1.069
I have the knowledge needed to help people with different types of disabilities.	*n* = 37 *M* = 2.59 *SD* = 0.644	*n* = 15 *M* = 2.47 *SD* = 0.516	*n* = 12 *M* = 2.42 *SD* = 0.669	*n* = 7 *M* = 3.00 *SD* = 0
I have the necessary skills to help people with different types of disabilities.	*n* = 37 *M* = 2.59 *SD* = 0.725	*n* = 15 *M* = 2.47 *SD* = 0.516	*n* = 12 *M* = 2.58 *SD* = 0.515	*n* = 8 *M* = 3.13 *SD* = 0.354
I have had extensive experience helping people with disabilities.	*n* = 37 *M* = 2.38 *SD* = 0.893	*n* = 15 *M* = 2.27 *SD* = 0.594	*n* = 12 *M* = 2.17 *SD* = 0.718	*n* = 7 *M* = 3.00 *SD* = 0.816
I have had adequate training on how to help people with different types of disabilities.	*n* = 37 *M* = 2.24 *SD* = 0.548	*n* = 15 *M* = 2.07 *SD* = 0.458	*n* = 12 *M* = 1.92 *SD* = 0.793	*n* = 8 *M* = 2.87 *SD* = 0.354

APPENDIX I

JMU LIBRARIES ACCESSIBILITY TRAINING

JMU Libraries Accessibility Training

Version 1
Created by K.T.L. Vaughan, January 2019
Contact: vaughakt@jmu.edu
James Madison University Libraries

BASICS OF LIBRARY SERVICES FOR PEOPLE WITH DISABILITIES

Outline

About this Module

 Welcome to the JMU Libraries Accessibility Training Module!

By completing this training, you will:

- Develop an awareness of disability in the undergraduate population.

- Build skills in effective and appropriate communication for people with different types of disabilities.
- Become familiar with the most common services that the Libraries provides to support accessibility.
- Identify areas of the Libraries' facilities that enable or disable access.
- Understand how the ADA and other laws/policies apply to libraries.

There are four main sections:

1. A very short overview of disability in the United States and at JMU.
2. Basic etiquette guidelines for helping people with disabilities in general and then by different types of disability.
3. Information about accessibility services and accessible spaces in the Libraries, including the Accessible Technology Labs.
4. The legal and policy requirements or expectations for library support of people with disabilities.

Each section includes text-based, and occasionally video, information. There are one or two discussion prompts in each section. You will need to submit your initial response before you can see others. The module ends with a short reflective survey intended to help assess and improve the training for future use.

The module takes approximately 90 minutes to complete from start to finish. You are welcome to work on it in stages or all at one go, as you wish. Contact KT Vaughan at vaughakt@jmu.edu if you have any problems or questions. Thank you!

Next >

Introduction to Disability and Accessibility

The National Center for Education Statistics estimates that 11% of undergraduate students in the U.S. have a disability. As people grow older, they are more likely to live with a disability. The American Community Survey estimates that just under half of people over age 75 have at least one disability.

It is hard to estimate how many people at JMU may be included in the disability community. The NCES estimate suggests that more than 2,500 JMU students have a disability. Students with significant needs for classroom, housing, or other service help can register with the Office of Disability Services. In 2017, only about 400 students did so.

The following short video from the University of Washington DO-IT Center shows what being a student with a disability is like, from the perspective of the students themselves.

<video embedded here: https://youtu.be/lfnjWpvsFsw>

Most people associate "person with a disability" with "person in a wheelchair." In reality, most people have disabilities that you cannot see just by looking at them. The JMU Libraries seeks to support all of our diverse communities, including those with visible and invisible disabilities. We are working to create accessible spaces, services, and inclusive environments through staff training and universal design of our spaces, services, and collections.

< Previous Next >

Disability at JMU

Students with significant needs for classroom, housing, or other service help can register with the Office of Disability Services (ODS). In 2017, approximately 400 students did so. You may want to review the list of programs and accommodations that the ODS supports.
This brief TV ad provides an overview of the JMU Office of Disability Services:

<video embedded here: https://youtu.be/GXbftHtaoEo>

ODS includes a wide range of physical, mental, learning, and other impairments, conditions, and disabilities in their services. These include things that may be familiar to you, such as orthopedic/mobility impairments, blindness/low vision, and deafness/hardness of hearing. However, more students register to receive help with learning and mental health conditions such as ADHD, autism, and dyslexia, or with other invisible disabilities such as fibromyalgia, traumatic brain injury, and anxiety.

Many people also experience short-term disabilities, including injuries or illness, that impact their ability to experience library services and spaces fully. People may not choose to register with ODS because they do not need additional help, they are worried about being labeled, or because they do not identify as having a disability.

All people deserve to have a welcoming and supportive experience when they work with or in the Libraries.

< Previous Next >

Introduction to Disability Question

Do you know someone who has, or do you have, an impairment or disability that gets in the way of work? How does their/your impairment or disability impact their work, study, or use of the library?

Basics of Disability Etiquette

Basic disability etiquette is essentially the same as good customer service etiquette. Universal principles such as listening to people's needs and responding with empathy and care apply.

Always treat people with respect regardless of whether they do or do not have a visible disability. Remember that most disabilities and impairments are invisible, and our goal is to support the most people to the greatest extent feasible.

<embed video here: https://youtu.be/Xkz-UNuvve0>

The following guidelines for interacting with people with disabilities were heavily influenced by the National Disability Navigator Resource Collaborative's excellent fact sheet and resources provided by ASGCLA.

Supporting People through Respectful Language:

- Always strive to use “person first” language. This focuses on the person in front of you as a person, not as a label. Examples of good language to use:
  - Person with a disability NOT disabled person or handicapped person.
  - Using a wheelchair NOT wheelchair-bound or confined to a wheelchair.
- Note that some communities have a strong identity that includes their physical, cognitive, or emotional impairments. Many Deaf people identify, for example, as a linguistic and cultural minority within the U.S.
- Many people with disabilities or impairments do not identify as “disabled.” Always respect the person’s choice of language.
- Avoid terms that imply pity for a person with a disability, such as “suffering from…” or “afflicted with…”
- Words that are slurs and should never be used include “cripple,” “deaf and dumb,” and “retarded.”
- It is ok to use language such as “do you see what I mean” or “walk with me” with people who have physical disabilities such as blindness and motor impairment.

General Etiquette Guidelines

General Guidelines:

Note that these guidelines track closely with standard customer service guidelines and expectations. These general guidelines should be followed with all Libraries users, not just those with visible disabilities.

- When you meet someone with a physical disability, act normally. If you usually would shake hands, offer to do so as normal. The other person will let you know if they prefer a wave, bow, or other formal greeting.
- Always ask if the person needs help and wait until the offer is accepted. This includes opening doors, retrieving books, reading signs, etc.
- Speak directly to the person you are helping, not to their interpreter, assistant, family member, dog, etc. This includes if the person is blind or is a child.
- Never touch another person or their belongings without their consent. This includes assistive devices such as wheelchairs and canes, and service animals.
- If you are moving from one place to another, ask if the person would prefer to use the elevator or stairs. Help orient them to the space by identifying landmarks as you go.
- It is ok to ask questions if you are not sure how to help someone, or what to do next.

< Previous Next >

Basics of Disability Etiquette Question #1

You overhear a colleague talking about a library user who is “crippled.” This language makes you uncomfortable. What would you suggest the colleague use instead?

< Previous Next >

Helping People with Mobility Disabilities

Mobility disabilities may impact people's ability to walk, climb stairs, push or pull doors open, reach for objects, or carry things like books. Many times when people hear the phrase "people with disabilities" they think about people who use wheelchairs.

- If you are walking with a person who uses a wheelchair or crutches, make sure to choose a path that is free of obstructions.
- Do not push or touch a person’s wheelchair without their permission.
- If you are speaking with a person who uses a wheelchair, place yourself at eye level with them to talk more comfortably. This could be by bending or sitting, as is most appropriate.

However, many mobility disabilities are invisible. Not everyone with a mobility disability uses obvious aids like a wheelchair or braces. You may not know that a person needs or wants help by looking at them. The best thing is to be supportive of all library

users, using principles of customer service, and let them self-identify if they need additional help.

- When walking with another person, match their pace if they are slower than you are.
- If you have to go up or down floors, ask the person if they prefer the elevator or the stairs.
- Tell people you can help if they need it with things like getting books or navigating to an office in the library.

< Previous Next >

Helping People with Blindness/Low Vision

When most people think about vision disabilities, they picture a person who is blind and may use a cane or seeing eye dog. However, vision impairment may take many forms, including near- and far-sightedness and color blindness.

When you are working with a person who is blind or has significantly low vision:

- Always introduce yourself and anyone else who is present. Let the person know when other people either join or leave the conversation.
- If there is an interruption or distraction during your conversation, explain it to the other person so they know what is going on.
- When talking in a group, make sure all people identify themselves before they speak.
- Speak directly to the person at a normal tone of voice.
- Offer to read information to the person if appropriate.
- If you will be walking with the person to another location, offer to guide them. If they accept, offer your arm. The person will take your elbow for you to lead them at a normal pace. Do not take the other person's elbow and push them.
- Walk on the opposite side of the person from their guide dog or cane if they have one.
- Help the person sit in a chair by guiding their hand to the back of the chair. Do not push people into chairs.
- Make sure the person has a point of reference, such as a wall or a table, when you leave the conversation. Do not leave them alone in the middle of a room.

< Previous Next >

Helping People with Deafness/Hardness of Hearing

As with mobility and vision disabilities, deafness and hardness of hearing may take many forms. Most people think of a person who uses American Sign Language and is completely deaf and non-speaking. However, the majority of people with hardness of hearing use devices such as hearing aids to supplement their hearing and have minimal, if any, speech impediments.

- Make sure you get the person's attention before starting to speak to them.
- Speak directly to the person at a normal tone of voice. If it will help to speak more loudly, they will tell you. Focus on the person and not their interpreter, if they have one.
- Let the person tell you what form of communication they prefer. This may be sign language, lip reading, or note writing.
- Lip reading is not very accurate, and works best when the speaker is well-lit, speaks clearly, and uses short, commonly known words.
- Use gestures and visual cues, such as pointing to things on the computer or in the space or holding up items, as appropriate.
- If there is an interruption or distraction during your conversation, explain it to the other person so they know what is going on.

Note that there is a difference between people who are deaf and Deaf people. The Deaf community is a cultural and linguistic minority in the United States that is generally defined by the use of American Sign Language. They do not see their deafness as a disability until they have to interact with hearing people, much as not being fluent in English is only a problem for a native German speaker when they have to talk in English.

< Previous Next >

Helping People with Communication, Learning, or Cognitive Disabilities

Communication disorders, learning disabilities, and cognitive disabilities cover a wide range of impacts on people in the libraries. Unless the person tells you that they have one of these, you may not know that they do. The following guidelines, like many in this training, are good customer service behaviors for all interactions.

- Keep it simple. Use short sentences and avoid jargon.
- Ask one question at a time and give the person time to respond.
- Offer to write down instructions or draw a map. This helps provide information in another form that may be more easily understood.
- Use pictures or visual aids as available.
- Ask often if the person has questions. Repeat back to the person what they asked to confirm you understood their question correctly.
- Be patient and respectful if it takes longer than expected for a person to complete a sentence or thought. Do not interrupt the person or try to finish their sentence.
- Signage and written instructions can be particularly confusing. Give people the time they need to read and understand written text.
- Busy areas such as the main floor of the libraries may be overwhelming. Ask if the person would rather meet somewhere quieter and less distracting, such as a meeting room or office.

- Take cues from the person about their comfort level with communication. Some people, such as people with autism, may be more comfortable with side-by-side communication rather than face-to-face.

< Previous Next >

Helping People with Mental or Behavioral Health Disorders

The Libraries is open to all people, regardless of their affiliation with the university and their current mental state. Occasionally you may encounter a person who is struggling with mental or behavioral health crises. This may be a chronic condition or may be made worse by the stress of college and work life.

Helping people in this state is a little different from other situations. The goal is to treat the person with compassion and empathy while fostering an overall environment of welcome for all students and other visitors.

- If a person seems anxious or agitated, stay calm and offer to repeat information. Reassure the person that you are there to help them.
- If a person seems nervous or confused, try to break down instructions to a step-by-step level. Offer additional help, for instance by taking them to the section of the Libraries that they need rather than telling them how to get there.
- If a person is behaving strangely, make sure your supervisor and/or the Directors of Public Service and Innovation Spaces are aware. Only contact Public Safety if the person is demonstrating illegal or threatening behavior to themselves or another person.

< Previous Next >

Basics of Disability Etiquette Question #2

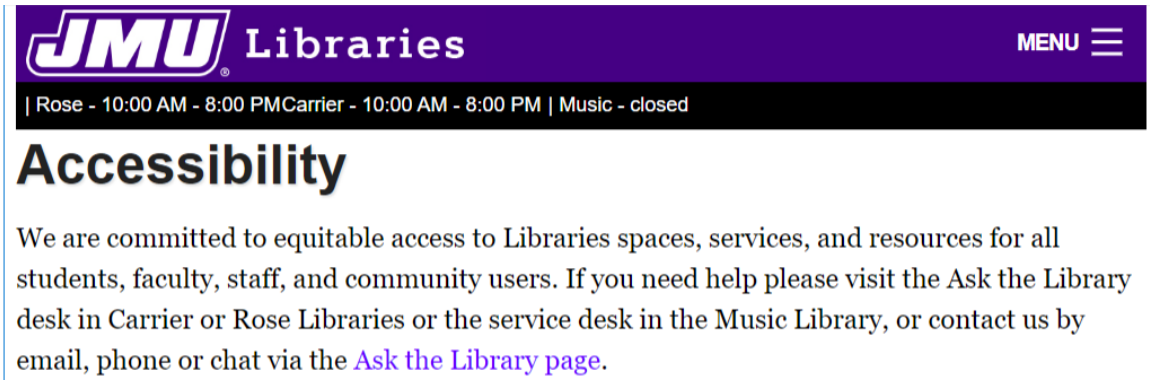
What, if anything, is different about etiquette for working with people with disabilities compared to people without disabilities?

< Previous Next >

JMU Libraries Accessibility Services

The JMU Libraries: Accessibility page on the Libraries' website describes a large number and wide variety of accessibility services that support students, staff, and faculty. Please

visit the page and read through the "Services" column to familiarize yourself with these services.



< Previous Next >

JMU Libraries Accessibility Services Question #1

You may want to refer back to the JMU Libraries Accessibility page to answer this question.
What accessibility-related services might be helpful to you? Which of these services would you like to know more about?

< Previous Next >

JMU Libraries Accessibility Services Question #2

A person who is blind and has a service pony approaches you on the first floor and asks for help getting a book from the stacks. What are two ways you could help them?

< Previous Next >

JMU Libraries Accessible Spaces

The JMU Libraries include nearly 200,000 square feet of public spaces across Carrier, Rose, and the Music Libraries. These spaces have been built over the course of 80 years, and present a variety of types of physical features. Entrances, hallways, stairs and elevators, signage, noise levels, and lighting all impact the accessibility of a space.

In the previous section, you visited the JMU Libraries Accessibility webpage. That page has links to more information about parking, navigating the libraries, and physical accessibility. Some additional tips to keep in mind:

- Carrier Library only has one public elevator that serves all floors. When it breaks, people may use the staff elevator. Signage will be placed on the public elevator instructing people how to do this. Please do not challenge someone's right to use the staff elevator at these times if they do not have a visible disability.
- The most common question at the service point is "Where is the bathroom?" The most universally supportive answer is, "There are stalls for men and women over there [and point], and a universal access room on the 3rd floor (if in Carrier) / in the 24-hour lab (if in Rose)."
- Navigating the buildings can be challenging for people with and without disabilities.
    - If someone is coming to the library to meet you for the first time, the most supportive habit is to meet them at an easily found location, such as the service point in either Carrier or Rose, and then escort them to your office or meeting room.
    - If a person comes to the service point who is trying to find another location in the Libraries (and is not being met), ask if they would prefer spoken instructions, written instructions, or an escort.

- When giving directions, ask if the person prefers to use the elevator or the stairs, and adjust your suggested path to accommodate.

Optional Exercise: One way to get a sense of Carrier Library's (in)accessibility is by taking the Carrier Library Accessibility Audit. Feel free to download the audit from <link>. To participate in an ongoing study of staff perceptions of Carrier's (in)accessibility, leave your completed audit in KT Vaughan's mailbox in Carrier 107.

< Previous Next >

JMU Libraries Accessible Spaces Question #1

What is the first thing about Carrier or Rose Library that you would change, to improve accessibility?

< Previous Next >

Accessible Technology Labs

Carrier and Rose Libraries each have a dedicated space for students, staff, and faculty who are registered with the Office of Disability Services. The Accessible Technology labs are located on the first floor of each library around the corner from the main service point to the right as you face the service point. These labs are on a JAC swipe.

The labs have adaptive furniture such as adjustable-height tables and adjustable chairs, assistive hardware such as ergonomic keyboards, large monitors, and magnifiers, and assistive software programs such as text-to-speech readers and speech-to-text transcoders. The Office of Disability Services maintains the labs, as well as a website that describes all of the technology. Please read over this page to familiarize yourself with the technologies available in the Rose and Carrier labs.

Remember that these spaces are available to any student, staff, or faculty member registered with ODS. If you see someone in the lab who does not appear to have a disability, assume they belong and do not bother them. For instance, students who need a distraction-free environment because of ADHD often use the labs.

Optional exercise: Try out speech-to-text technology! Open a Google Doc. Click the menu item "Tools" then the option "Voice Typing." A microphone icon will appear to the left of your document. Click the microphone, and talk normally. This technology is not only helpful for people who have difficulty typing, but also for those of us who find it easier to talk than to write.

< Previous Next >

Accessible Technology Labs Question #1

A student comes to the service point on a Sunday, and asks to be let into the Accessible Technology Lab. They claim that they are registered with the ODS – so should have access – but that they lost their JAC Card and can't get a new one until Monday. What do you do?

< Previous Next >

Legal and Policy Issues

Support for people with disabilities is required by federal and state law, JMU university policy, and professional society expectations. Please read the following linked documents to get a sense of the Libraries' roles and responsibilities in creating equitable, accessible, and welcoming spaces.

US Law: The Americans with Disabilities Act (ADA) and Section 508 of the Rehabilitation Act
These two laws are the primary sources of regulation for public institutions, including the JMU Libraries, in the areas of accessibility and disability accommodations. This sampler from the American Library Association summarizes the parts of each law that apply to the JMU Libraries.

JMU Policy 1331: Disabilities & Reasonable Accommodations
"The university will provide reasonable accommodation to qualified individuals with documented disabilities to ensure equal access and equal opportunities with regard to university employment, university educational opportunities, and the university's programs and services."

This policy lays out a minimum standard for supporting both students and employees with disabilities. This includes: who is eligible to request accommodations, the process for making such requests, how to report a barrier or harassment, and the roles of the Office of Disability Services and the Disability Resources Committee. The policy is long and technical; feel free to skim it.

American Library Association Library Services for People with Disabilities Policy
The American Library Association recognizes that people with disabilities are a large and neglected minority in the community and are severely underrepresented in the library profession. ... Libraries play a catalytic role in the lives of people with disabilities by facilitating their full participation in society. Libraries should use strategies based upon the principles of universal design to ensure that library policy, resources and services meet the needs of all people.

This policy suggests best practices for libraries in the areas of library services, collections, facilities, and assistive technologies, and for employment and librarian and library staff training and professional development.

< Previous Next >

Legal and Policy Issues Question #1

What would you do if someone has a complaint about a barrier (physical or social) in the Libraries?

< Previous Next >

Legal and Policy Issues Question #2

Why do you think the JMU Libraries want to create an accessible and inclusive environment for people with disabilities?

< Previous Next >

Basics of Library Services Reflection & Assessment

1. KT Vaughan is studying this training program as part of her ongoing research into the accessibility and inclusive environment of the JMU Libraries. The discussion and following reflection questions will be used to improve this training program as well as in other research. Your responses to the discussion questions and this reflection will only be included in her study if you agree. Please refer to the informed consent letter <link> for more information. Do you agree to participate in the study of this training program? Yes / No

2. Please create a code for yourself using the following formula. This code will never be used to identify you with your responses. Please use this code for the whole study of this training program. The street number of your (favorite) childhood house, plus the last two letters of your mother's first name (ex: 305CA):

3. What do you think the Libraries do well, with regards to access for people with disabilities?

4. What do you think the Libraries should or could improve, with regards to access for people with disabilities?

5. What new-to-you fact or idea did you learn in this module?

6. What would you like to know more about?

7. What will you do differently, as a result of this training?

8. What other comments or questions would you like to share?

< Previous Next >

Resources

The following resources were used to create this module. Please feel free to explore them for more information.

American Library Association, Association of Specialized Government and Cooperative Library Agencies: ASGCLA (n.d.) *Tools & Resources.* https://www.asgcladirect.org/resources/

District of Columbia Office of Disability Rights (n.d.) *Video Trainings by the Office of Disability Rights.* https://odr.dc.gov/service/video-trainings-office-disability-rights

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< Previous
