Digital Equity & Inclusion Strategies for Libraries: Promoting Student Success for All Learners

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Abstract

Student success in higher education depends on access to digital resources and services, and today's students rely heavily on the library to facilitate that access. Reliance on digital library resources and services surged in March 2020, when many U.S. higher education institutions moved to remote learning in response to the COVID-19 pandemic. This move exposed a lack of awareness about the ongoing digital divide in higher education in Montana, a rural state with a small population located in the Western U.S., and the underestimation of how student success would be affected in an online learning environment. Many students do not have a computer or device with internet access, or access to reliable, high-speed internet. These barriers inhibit students from experiencing digital equity and inclusion in the realm of remote learning. This article discusses the impact on students, and how librarians working at Montana State University are working to address challenges and advance digital equity and inclusion in their state. It demonstrates how access, or lack of access to resources impacts digital inclusion and digital equity, including personal device ownership, access to the internet or cell service, the ability of libraries to implement remote authentication methods, and digital accessibility. The article shares perspectives and strategies from librarians working in public services and instruction, acquisitions, and electronic resources management, and how they are working together to promote digital equity and inclusion and increase the accessibility of library resources in their community.

Keywords: access; digital divide; digital equity; digital inclusion; student success

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Introduction

A ccording to the National Digital Inclusion Alliance (NDIA), "digital inclusion refers to the activities necessary to ensure that all individuals and communities…have access to and use of Information and Communication Technologies (ICTs)" while "digital equity is a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy and economy" (NDIA Definitions, n.d.). Though great strides have been made to increase digital equity and inclusion over the past decade, the sudden shift to remote learning by many U.S. higher education institutions in March 2020 highlighted a lack of awareness of the ongoing digital divide in higher education. The divide

is especially prevalent in vulnerable student populations and impacts student success for these populations in remote learning environments.

Digital equity and digital inclusion hinge on access, which is complicated by the ongoing digital divide—if students cannot access electronic content or instructional materials, it limits their academic success (Nagle & Vitez, 2021). Attaining access includes many factors such as device ownership, internet access, availability of resources, and digital accessibility; however, race, age, socioeconomic status, and geographic location are also key facets of digital access (Fairlie, 2014, 2017; Walker et al., 2020). About three-quarters of adults in the U.S. (over age 18) use broadband internet at home, according to the Pew Research Center's *2019 Internet/Broadband Fact Sheet* (2019a). Income, race, and community type all impact an individual's use of the internet, with black and Hispanic adults using the internet much less than white adults. Similarly, adults living in rural communities and those that make less than $30,000 per year use the internet less than those in urban areas and those with higher income. Minorities, low-income, and rural households have the least access (56-63%) to broadband internet (2019).

As a rural state, Montana has even less digital access than many other U.S. states. The *IMLS Indicators Workbook: Economic Status and Broadband Availability and Adoption* (2020) shows only 63.6% of people in Montana have broadband available to them (this is the 12th lowest in the nation), and the average cost of internet access per month is $91.54 US (the 3rd highest in the nation). A little more than one-tenth (12.7%) of Montana residents do not have a home computer, and 21% have no home internet access, which is higher than the national averages in both categories. In more than twenty of Montana's counties, less than 50% of the population have access to broadband internet. Tribal members on Montana's reservations[1] suffer even further from a lack of broadband access. Only 23% of the Blackfeet Tribe of the Blackfeet Indian Reservation have access to wired broadband. Other tribes have higher individual access rates, but in total only 72% of the populations on Montana reservations have wired broadband access, and there is no low-cost access available (Tanberk & Cooper, 2020). Though these numbers are not specific to students enrolled in a Montana college or university, 61% of students at Montana State University are in-state residents and 4.3% are American Indian/Alaska Natives. As such, these students are affected by the limited internet options throughout the state (Montana Office of Planning & Analysis, 2019).

While the digital divide is not new, it was amplified by the 2020-2021 COVID-19 pandemic. This is an unfortunate reality of accessibility awareness; it took a major event for access to become a visible issue and priority, while people with disabilities have long been advocating for remote access and accommodations (Beery, 2020; Crespo, 2020; Keegan, 2020). This reality led to an increased awareness of digital equity and inclusion, and the ways in which libraries can enable and promote student success for all learners. De los Santos and Rosser (2021) note:

> [E]quitable [student] outcomes require that we invest equitably in technology, infrastructure, and practices that support equitable outcomes for all students. We will need to over-invest in some [higher education] institutions to ensure equitable access to the same technology and resources available at more robustly funded institutions. (p. 24)

Academic libraries are a central point of access for students in higher education, providing extensive digital resources, online services, and information literacy instruction. With their unique combination of services, academic libraries have the opportunity to advance digital equity

and inclusion with strategies and services that help bridge the digital divide, enable access, and promote digital accessibility.

This viewpoint article discusses how the COVID-19 pandemic amplified the impacts and challenges of the digital divide in Montana and describes a localized view with Montana State University as the case study for the paper. The authors discuss challenges facing students and libraries from various perspectives and share their responses and solutions. Then this localized example is extended to suggest specific strategies that any library could implement to better support digital equity and inclusion in their community. The challenges, strategies, and services that Montana State University Library utilized are discussed from the following perspectives:

- Access is an Essential Library Service

- Public Services to Advance Digital Equity and Inclusion

- Remote/Online Library Instruction

- Purchasing Accessible Materials for Library Users

- Digital Accessibility

These five areas are intertwined and work together to promote digital equity and inclusion and increase the accessibility of library resources. While the COVID-19 pandemic exposed remote access and digital accessibility as critical and ongoing issues, the challenges will remain even after the pandemic subsides. Therefore, the strategies discussed in each of these five areas are collocated into a concluding list of recommendations and actions that other libraries can take to help support digital equity and inclusion moving forward.

Access is an Essential Library Service

At the core of all libraries is the ability to provide equitable access to information for users in physical and electronic formats. The American Library Association (2019) states that "all information resources that are provided directly or indirectly by the library… should be readily, equally, and equitably accessible to all library users". To help accomplish this, academic libraries can support remote access for online resources and offer additional services to help make physical collections accessible to users based on their needs.

Remote Access for Online Resources

While many libraries can provide remote access to digital resources, not all are able to offer this to their users off-campus. The ability of libraries to implement remote authentication methods that allow for remote access to paid subscription resources directly impacts digital equity in their community. Even in communities where students have access to the internet and compatible devices, the right technologies and expertise are needed in order for a library to implement methods of remote access. In 2011, Sunithaland & Sreekumar asserted that "users in general prefer not to come to the library and expect access to library materials from remote sites. They expect to access all the resources seamlessly" (p. 64). However, while authentication methods and remote access for libraries have come a long way, "anywhere and anytime access" (Sunithaland & Sreekumar, p. 68) for some library users is still not a guarantee, thus continuing to further the digital divide.

The importance of remote access to library resources has been elevated due to the pandemic. In April of 2020, only 14 of 22 higher education institutions belonging to Montana's academic library consortium reported using a proxy server—an authentication method that relies on IP recognition by "proxy[ing] the user who is outside the IP range by relaying that request through an IP that is inside the IP range" (Third Iron, n.d.). The remaining eight institutions, seven tribal colleges, and one community college, noted relying on username and password authentication for remote access.

Proxy servers, IP authentication, and username and password are only a few options libraries have for remotely authenticating users. Large library resource providers, such as EBSCO, offer several alternatives for connecting users remotely to library resources including referring URL authentication, patron ID, cookie authentication, Google Sign-In, and more (EBSCOConnect, 2020). Federated access, a form of single-sign-on, is also becoming popular through the RA21 initiative and SeamlessAccess service. However, in addition to having the expertise and local technology required to implement some of these methods, the biggest challenge to libraries is still the lack of internet access by their users. Most patrons of Montana's tribal libraries have traditionally used electronic library resources while on-site, requiring no login, because they do not have a device or internet access at their home. In an interview for the Montana-based newspaper, *Billings Gazette,* David Yarlott, President of Little Big Horn College (LBHC) in Crow Agency, Montana, stated that "internet access has been the school's biggest challenge during the abrupt transition to remote learning this spring" (Hoffman, 2020, para. 10).

Perhaps there has not been a pressing need to implement remote authentication methods prior to the pandemic, other than username and password authentication for smaller libraries, but this need now seems more pertinent than ever to ensure continued access to library resources. Funds provided to these small institutions through the CARES Act[2] have offered some relief, for example, LBHC was able to replace college computers with new ones and give the older machines to their students to use at home (St. Amour, 2020) However, the issue of no internet access still prevails. Libraries understand that while they cannot solve the lack of internet singlehandedly, they can offer solutions to their patrons to try and help the issue.

Public Services to Advance Access, Digital Equity, and Inclusion

In addition to providing remote access to online resources, libraries offer a multitude of public services to help meet the needs of their users. The issues of internet access and device ownership are central to digital equity and inclusion, and libraries can support users by offering a technology checkout program to lend devices such as laptops, tablets, and even internet hotspots. As libraries work to support remote access to subscription resources and offer devices for checkout that enable access to the internet, they can also offer traditional in-person services virtually, such as research consultations to increase the ways that users can receive assistance from the library to further support inclusion.

Technology Checkouts

Many libraries provide technologies for patrons to facilitate self-checkout, to borrow laptops and iPads, and more recently, to utilize in-house Wi-Fi hotspots. Technology checkouts are an important public service that helps address digital equity and inclusion because not all students have access to a device with internet capabilities.

At Montana State University, the technology checkout service was especially helpful during the height of the pandemic (the year 2020) due to the increase in online instruction, when more students needed to access their courses or materials remotely. In response to this increased need, the library acquired an additional 100 laptop computers during the summer of 2020 and offered extended checkouts to users who needed to borrow a device. These laptops were purchased to add to an inventory of 16 existing laptops. The laptops have a 24-hour checkout period, and 24 iPads can be checked out for up to three days. The library also offers other expensive technologies for checkout that are commonly used by students, such as graphing calculators, and video and audio recording equipment. Having a comprehensive technology checkout program allows users to access the technology they need to complete coursework and assignments without having to spend valuable, and often limited, funds on personal equipment and devices.

Hotspot Lending Programs

To address the needs of users who do not have internet access, many libraries, including Montana State University Library, now lend wireless hotspots. The Wi-Fi Hotspot Lending program was funded by a Network of the National Library of Medicine (NNLM) Technology Innovation Grant (*Bridging the Gap: Ensuring Digital Equity through Wi-Fi Hotspot Lending*) and supplemented by the Montana State Library Hotspot Lending Program. The library was able to acquire 17 Wi-Fi hotspots and data plans to increase access to the internet for those students most in need. The Wi-Fi hotspots were loaned to students on medium to long-term check-outs to enable them access to their course content either as on-campus or online students. The hotspots "come with a prepaid one-year unlimited data plan…. with Verizon[3], there is a possibility that data could be limited if a device exceeds 25GB/month for three consecutive months" (Montana State Library, n.d.). In most situations, this amount of data should be plenty for users, however, Verizon states that "any data that's used while your device is connected to the Verizon Wireless network… uses your monthly data allowance" (Verizon, n.d.). David Yarlott, President of LBHC notes that "one house can have up to seven families living together, which does not leave much [hotspot] bandwidth" (St. Amour, 2020, para.17).

According to AT&T's[4] general guidelines for data (AT&T, 2021), streaming a standard-definition video for one hour would use 700 megabytes (MB) per hour, while streaming a high-definition video for that same amount of time would use approximately 2,500 MB per hour, or 2.5 gigabytes (GB). This means a user could potentially consume 10% of their allotted 25GB, after only one hour of streaming a high-definition video. Verizon points out that "it's hard to know how much each activity is eating up your data allowance because actual file sizes and download times vary" (Verizon, n.d). They further state that "for a 4G LTE smartphone, a text-only email could be as small as 10 KB. It might take 400 KB to gain Internet access" (Verizon, n.d.).

Table 1 shows AT&T's general guidelines for the amount of data that various activities might use, including opening an email, downloading a song, streaming a video, or playing a game. The figure demonstrates just how quickly data can be used by basic actions. If students are expected to read emails, watch streaming videos, and complete other various assigned tasks, their data will disappear quickly.

Table 1. Provides a general guideline for the amount of data used for each activity.

Activity	Data Size
1 email (no attachments)	20KB
1 email (with standard attachments)	300KB
1 min. of surfing the **web**	250KB (15MB/hr.)
1 **song** downloaded	4MB
1 **photo** upload to social media	5MB
1 min. of streaming **standard-definition video**	11.7MB (700MB/hr.)
1 min. of streaming **high-definition video**	41.7MB (2500MB/hr.)
1 min. of streaming **4K video**	97.5MB (5850MB/hr.)
1 min. of **online games**	200KB (12MB/hr.)

Note. These examples are just estimates based on typical file sizes. Your usage may vary.
1MB = 1,000KB approximately
1GB = 1,000MB approximately
1TB = 1,000GB approximately

While wi-fi hotspots may not be the perfect long-term solution, they do afford students remote internet access. To ensure that students are getting the most out of any hotspot they borrow from their library or pay for themselves, it would be ideal if more library online resource providers shared information about how much bandwidth their products require. Alexander Street Press, a well-known provider of streaming content, says that "variable bit rate streaming automatically selects the best quality based on a user's available bandwidth, all the way up to HD quality" (ProQuest Support Center, 2019). Kanopy, another popular provider of streaming video, states "our auto bandwidth detection calculates the quality of the user's internet connection, and will select the most appropriate file to stream" (Kanopy, n.d.). Essentially, what this means for students is that even if they can stream a video, the quality may be far less superior to that of their peers who have access to a reliable internet connection. Libraries invest a lot of money and time acquiring accessible materials for users, and the fact that they are limited from getting the highest quality access to subscription resources due to bandwidth restrictions is frustrating for students and library staff alike.

Remote Public Services

In addition to providing technology checkouts and wi-fi hotspots, libraries can increase access to their public services by offering remote options to help meet user needs. Mehta & Wang (2020) explain that "the pandemic has brought a revolution not only in the online teaching of higher education but also in the effective ways academic libraries can deliver their services virtually." (p. 355) Furthermore, Justin Harding, Senior Director for Instructional Design and New Media for

Arizona State University's EdPlus, predicts that after the COVID-19 crisis "students are going to want to have options and to be able to choose how they interact" (Hayhurst, 2020, para. 9).

Offering virtual research appointments, as well as in-person appointments, allows users to choose if an online or face-to-face meeting with librarians works better for them. In the spring of 2020, the Montana State University librarians began offering virtual research consultations to students, and while remote research consultations had occasionally been offered in the past, they were not the preferred option by librarians. Although this service expansion was the result of the coronavirus pandemic, the library plans to continue offering research consultations in both formats so that students can choose the option that best fits their needs. During these research consultations, trained librarians help students find and access print and electronic research materials. Offering the option for online consultations, in addition to an online chat and email service, allows users remote access to research help and supports digital inclusion.

Another important service the library offers is a Document Delivery Service through Interlibrary Loan (ILL) where library patrons can request scanned copies of physical articles or book chapters that are in the library's print collection and are delivered electronically. Often, students request an item through ILL not knowing that the library has it available in print, or even electronically, so the library adds a note to those requests letting them know it came from our collection. While the library has offered this service for many years, its importance was highlighted during the coronavirus pandemic when remote access increased, and in some cases, it was the only method available to access library print materials. Additionally, the library's ILL Department remained open and mailed physical materials to users when the library building was closed to the public in early spring 2020 and covered the shipping and return postage fees for both users who lived in town or elsewhere.

Lastly, the library established a new service for users to submit accessibility requests for library materials. If users encounter library resources that do not meet their accessibility needs, they can submit a request in multiple different ways to get the content in the format needed, including an online request form (Frank, 2021). While the library strives to provide accessible content and is continually improving the user experience, we also acknowledge that what works for one user may not work for another, because we all have diverse needs (One-Size-Fits-One, n.d). This service helps address that reality, and directly incorporates the advice of the *Floe Inclusive Learning Design Handbook* (n.d.) to harness "digital content and digital delivery mechanisms ...to assist in addressing the diversity of learning needs". Another opportunity to incorporate this advice is through instruction and instructional technology.

Instruction & Instructional Technology

Even if academic libraries can be aware of device and internet access issues, provide off-campus access through remote authentication to accessible digital materials, and create accessible services, students will still face barriers to academic success if the instructional tools and methods for their courses are not well planned. Online courses, by necessity, look and function differently than standard face-to-face courses. Online instructors must apply the tenets of Universal Design for Learning (UDL) to their course materials and assignments in order to accommodate students' varying levels of access. Many students use smartphones to complete their online courses as "reliance on smartphones for online access is especially common among younger adults, non-whites and lower-income Americans" (Pew Research Center, 2019b, para.

6). Accessing courses via smartphone leads to high data usage and furthers accessibility issues if the content is not optimized for mobile learning.

Universal Design for Learning (UDL)

Universal Design for Learning (UDL) as defined by CAST is "a framework to improve and optimize teaching and learning for all people" (2018). The guidelines for UDL are organized into these three areas: *engagement*, which stimulates interest and motivation for learning; *representation,* which is to present information and content in different ways; and finally, *action and expression*, which offers different ways students can express what they know.

In an online learning environment, the UDL guidelines for representation, action, and expression are especially important since some students will not have a device and/or internet access to utilize high-definition video, graphics, and complete timed exams or quizzes. Ensuring students can both access course content and provide required responses (assignments, quizzes, discussions, and exams) in a variety of ways alleviates stressors for those students already facing the digital divide.

Representation

While the UDL Guidelines 2.2 (2018) encourage the use of multiple means of representation because "there is not one means of representation that will be optimal for all learners", in an online learning environment, multiple means of representation takes on a new perspective. In an online course, it can be said that "there is not one means of representation that will be accessible for all learners" as certain high-bandwidth objects are unavailable to students with poor internet connections and/or those using smartphones. As noted in the section on remote access, streaming a high-definition video uses approximately 2.5GB/hour, and joining an hour-long Zoom or WebEx video call can use somewhere between 540MB and 1.62GB of data per hour (Abbott, 2020).

Some examples of low-bandwidth solutions for students with access barriers include:

- Downloadable transcripts for all videos

- Reducing the number of participants on video calls

- Turning off cameras and screen sharing during synchronous sessions

- Allowing call-in options for WebEx or Zoom meetings

- Provide independent student learning options (readings, podcasts, worksheets) that can be downloaded for offline access

- Use collaborative tools like Google Docs or Forms

- Limit the use of animations and transitions in presentations

It is important to discern students' access at the beginning of the course, so instructors can provide the necessary accommodations to allow students to fully participate in the course (LoBue, 2020).

Action and Expression

The UDL guidelines concerning action and expression encourage instructors to allow students to choose the way they convey what they know as "no one means of action and expression that will be optimal for all learners" (Principle: Provide multiple means of Action & Expression). It is also true that many forms of traditional assessment will be inaccessible to students without consistent internet access (including smartphone users). For this reason, synchronous or timed exams are not optimal in an online learning environment. Rather, instructors can offer project-based, low-bandwidth alternatives such as self-reflection papers, recorded video/audio responses, illustrations, storyboards, and visual art that can easily be completed offline and then emailed or uploaded to a central site.

Mobile Optimized Learning

When the outbreak of the COVID-19 pandemic necessitated an abrupt switch to full-time remote learning, many students were forced to use smartphones to complete their online courses as "reliance on smartphones for online access is especially common among younger adults, non-whites and lower-income Americans" (Pew Research Center, 2019b). Because of the unplanned transition, many instructors did not have the opportunity to optimize their course material for mobile learning, which inhibited students from accessing required resources. As the pandemic waned, instructors had time to rethink course design for online learning. Spencer's (2019) design techniques to maximize mobile accessibility can be utilized to optimize online course planning as follows:

- Collapse content to one or two columns

- Insert section breaks so students do not miss important information

- Reduce the number of clicks required to access materials

- Keep navigation obvious and simple

- Scale media to limit download size

- Clearly indicate interactive elements as there is no cursor or hover function

- Chunk your content in a way that can be divided into various arrangements

- Maximize space with icons

Library Instruction

Within the public services department at Montana State University Library, librarians were forced to change to remote learning in March 2020 (at the onset of the pandemic lockdowns) along with all other formal course instruction. Since the department collaborates with instructors across campus, the librarians adapted class sessions individually with either synchronous or asynchronous activities. For single guest lectures, the scheduled librarian and instructor worked together to choose the best format for instruction. For curriculum integrated instruction, librarians worked together to quickly create consistent instruction across multiple sections of a freshman seminar course.

After discussing the various issues facing both the students and librarians, it was decided an asynchronous approach would be best for instructors, librarians, and students. Librarians created videos based on the in-class presentation and uploaded these into the learning management system (LMS). Then, a dedicated discussion forum was created in each section of the seminar for students to post topics, ask questions, and get feedback from the librarians. A worksheet was also provided to students so they could track their work, and it gave the instructors an optional assignment to grade for the week's classes. This fast, asynchronous approach worked well enough for a quickly redesigned remote learning exercise, as it allowed students to view the content, work on the discussion forum, and receive feedback without requiring constant internet connectivity. Though not perfect, this effort worked given the quick turnaround required.

For individual guest lectures where librarians were invited to present during one class session, multiple means of instruction were available, and the librarian worked with the instructor to choose the best format. The university utilizes both WebEx and Microsoft Teams for synchronous learning, but as noted above, many students may not be able to watch a library demonstration via screen sharing if they do not have high-speed broadband connectivity. Asynchronous options for library instruction include pre-recorded video lectures and demonstrations created by individual librarians, discussion forums within the learning management system, tutorials, and broad topic cross-disciplinary interactive learning modules. Depending on the course level and the rigor of the material, any of these asynchronous forms of instruction can be successfully utilized to engage students with library content.

All students are also encouraged to reach out to the library via chat, email, or by making an appointment for one-on-one support. This combination of asynchronous instruction followed by individual support allows for scaffolding of instruction and better utilization of librarians' limited time. Both synchronous and asynchronous instruction has continued in the 2020-21 academic year and librarians are constantly updating techniques to better improve online learning.

Purchasing Accessible Materials for Library Users

Not only did instruction shift online in spring 2020, the library's Collection Development (CD) Unit suddenly found themselves fulfilling requests from instructors across campus to track down eBook versions of textbooks and other physical monographs that their students needed. For the most part, the CD Unit was successful in quickly finding alternative and low-cost or free solutions, thanks to initiatives like the HathiTrust Emergency Temporary Access Service and the National Emergency Library (Internet Archive). They were also able to fund several purchases of more costly eBook titles that met their access, technology, and pricing requirements.

While the pandemic certainly created a sense of urgency around using streaming media in online instruction sessions, over the last few years the library has seen a consistent spike in requests for digital materials. While libraries typically know which vendors are reliable, responsive, and affordable, they are usually not privy to who the ultimate end user is, and the digital challenges that they may face. Libraries are placed in a position to make assumptions about what their diverse student body can or cannot access, unfortunately. However, there are steps that libraries can take to make informed decisions about purchases.

Procuring Accessible Digital Resources

Implementing access to digital resources can be intricate and time consuming, especially if a library is working with a new digital provider for the first time. Setup often takes time and technical skills, two things that can be in short supply in many academic libraries. Additionally, budget constraints are making it increasingly more challenging to start new subscriptions that can benefit a diverse student body, and libraries must be savvy to the different formats they opt to purchase. The CD Unit at the library usually considers the following when procuring any new digital resource:

- Is the resource affordable with the library's current budget?

- Will it work with our current authentication methods?

- Does the resource meet accessibility standards?

- Can it be integrated into our discovery layer?

Montana State University, like many higher education institutions, is a heavy user of streaming films and eBooks in the classroom. Faculty rely tremendously on these modalities for effective teaching. In addition to the above requirements, to ensure that these resources will be accessible to users, the CD Unit has specific considerations when purchasing these formats:

- Does it allow for an unlimited number of simultaneous users?

- If it's a streaming film, does it come with Public Performance Rights (PPR)?

- How long is the length of the license? One-year? Perpetual?

- Does the streaming video include closed-captioning and transcripts?

- Is it hosted by the platform or will the library need to host it?

- Is it DRM-Free?

- Are their MARC records available for free (or for an additional fee)?

On-Demand Acquisitions

Up until Spring 2020, the library ran a well-used course reserves system, where instructors could place physical materials to be borrowed by students for short periods of time. This service was put on pause due to the pandemic. In response to this, instructors were left scrambling to find streaming versions of films, and electronic copies of books for their students. Ultimately, the CD Unit saw an increase in requests for the library to find and purchase these materials. While the CD Unit has slowly been moving to an on-demand acquisitions program, the pandemic, along with budgetary constraints, has sped up this move.

The Montana State University Library always tries to find if the requested resources are available from a platform that meets their requirements. The CD unit's preference is to find a streaming film license that is hosted by an outside platform, such as Kanopy. In fact, if Kanopy does have

a film available, the library will readily purchase a one-year film license. At a typical cost of $150.00 U.S. per license, while costly, Kanopy provides very easy access for instructors and students because the platform is user-friendly. Films can be accessed by going directly into the Kanopy database and searching for title, supplier, subject, and other field codes; by searching for a film in the library's online catalog; or, an instructor can share a film's proxied link with their students. The administrative side of Kanopy is also straightforward for librarians purchasing films, monitoring use, seeing which film licenses are due to expire soon, and managing budgetary expenses.

However, especially with streaming media requests, the resources cannot always be obtained on an institutional-friendly platform. In many cases, the films are available on popular streaming services meant for individual use like Hulu, Netflix, Amazon Prime, YouTube, and more. Librarians will inform the instructor of availability at these platforms and have stated on the library's "Streaming Media" webpage (MSU Library, n.d.) that the library may suggest instructors ask their students to rent from, purchase from, or subscribe to a streaming film platform. There have been times when instructors have pushed back, stating they do not want to ask their students to purchase one more thing for school. They, and the library, are aware that this is potentially an unexpected expense for students, one not necessarily budgeted for at the beginning of the school year. The library also encourages instructors to look through the film libraries that the library subscribes to prior to making a request for an additional film license purchase. We have had sparing success with that suggestion. Some state that they have looked through and do not find what it is they need or want. Many instructors have their favorites they have used year after year, and seemingly will not budge to using an alternative.

Hosting and Digitization Services

We often wonder if the library's inability to host streaming films on library servers is prohibiting access to streaming films for students and instructors. We often wonder, is this prohibiting access to streaming films for our students and instructors? With a small staff, the library is not able to support everything we would like to. We already spend a lot of time managing the acquisition of film licenses supported on other platforms and navigating those purchases for instructors. We do not have a good sense of how those are even being used, if at all, by the end user (i.e., the students). The idea of creating a whole new workflow, finding the staff to assist with hosting film licenses and the maintenance that comes along with that, is daunting.

The library also sees requests from faculty asking whether it is possible to digitize DVDs. While the legality of this is questionable, it also poses the questions: where would the digitized files live, and how can we ensure our users can access them seamlessly? Certainly in these times where many of our users are learning online, it would be advantageous to digitize the DVDs we already own and host them ourselves for explicit access to our students. The library has also investigated whether it is possible to host films that we have licensed on one of our servers. We did try this with just a few titles in March 2020, and it was not ideal. According to our library IT staff, the videos were not optimized for streaming, and not all of them provided transcripts that the university would have needed under an Americans with Disabilities Act (ADA)[5] requirement. The videos were low quality, low resolution, too large, and required re-encoding. There were also issues with lack of sound that needed troubleshooting. One must consider the maintenance of running a video hosting service to include licensing, ensuring that videos are removed after the license expires (if not a life of file purchase), and the time needed to possibly re-encode for compatibility. Again, every request will be a little different, likely involving a different vendor,

and need additional time devoted to each request. Most important is ensuring that the files are optimized for all devices and bandwidth.

Technical services librarians, as well as public services librarians, should make a concerted effort to keep up with the requirements that enable technology to be successfully accessed by users. It does not seem to be enough to educate ourselves as requests come in; it is increasingly necessary that we make this a part of our regular, daily work. Policy decisions need to be made across the library about what is acceptable when making a purchasing decision. Questions should be asked of libraries--are we reaching enough of our users with our current decision-making, or do we need to be more proactive to ensure that we continue to reach a diverse group of users. While on demand acquisitions have changed much of collection development for the better, it still requires constant librarian evaluation and assessment.

Digital Accessibility

Not only must libraries ensure the items purchased are accessible and help provide remote access to resources, services, and instruction, but also ensure the digital content they create meets accessibility standards as an important component of digital equity and digital inclusion. Digital content includes, but is not limited to, the library website, LibGuides, and library instruction materials such as Word and PDF documents. Even if students have a device, internet access, off campus access through remote authentication, and the library already owns the materials they need, the resources they come across might still not meet their accessibility needs. This may be due to the reality that digital library content does not always follow accessibility best practices, or the ongoing challenge that users have diverse and unique needs and what works for one person does not work for another (One-Size-Fits-One, n.d.). As libraries work to update their resources to meet accessibility guidelines, a process called remediation, they can share information about their efforts along with contact information and the option to request materials in a different and more accessible format, which would help meet the specific needs of the individual user. However, this is not a substitute for working to ensure that library resources meet current accessibility guidelines, because when accessibility best practices are followed, it increases user access to resources from the beginning (Gerard & Bronsema, 2020).

Another challenge to ensuring digital accessibility is that it is a distributed responsibility among everyone creating content, from librarians creating LibGuides or library instruction materials, to the library website, to instructors creating or choosing materials that may or may not meet accessibility standards. Therefore, the library created a Library Digital Accessibility Committee (LDAC), with members from each department in the library, to help track digital accessibility remediation as well as integrate accessibility guidelines into the creation process for new content across the library. Forming a library accessibility committee has allowed us to get an organization-wide lens on accessibility, including where we need to focus our improvement efforts moving forward to ensure equitable access for all users.

Having the knowledge of accessibility guidelines, and the skills to ensure digital content and documents meet those guidelines, are also challenges that take valuable time. However, it is much easier and faster to incorporate accessibility best practices when creating documents or digital content from the start, rather than having to remediate it in the future which can take far more time (Gerard & Bronsema, 2020). Therefore, libraries can play an integral part in promoting accessibility awareness, including why accessibility matters, the impact on student success, digital equity and inclusion, as well as training for accessibility best practices.

When promoting and offering training on digital accessibility best practices, it is helpful to start with why accessibility matters to gain buy-in, before explaining the best practices and showing examples of how they are used. This approach can help persuade people who might fall into the trap of mistakenly thinking that disabilities are not prevalent, that the time it takes to make resources accessible is not worth it, or that they will know if a student needs an accessible version and can make it accessible in the future. In reality disabilities can be invisible, such as hearing loss or learning disabilities (Dolmage, 2017, p. 244); students are not required to disclose a disability, and may not request accommodations or materials in a different format even if it might be helpful. One quarter of people in the U.S., or 26%, live with disability (CDC, 2020); one fifth, or 19%, of undergraduate students report having a disability (NCES, 2018); and everyone will experience a disability at some point in their life according to Access Lab (Sethfors, 2017). That is because disability can be permanent, temporary, or situational (Shum et al., 2016). For example, temporary injuries are common, and a cast or sling could hinder a student's ability to type an assignment or use a keyboard (Shum et al., 2016). Situational disabilities can range from being affected by a loud environment, to being extremely sleepy which impairs focus and performance (Sethfors, 2017).

Ultimately, following digital accessibility best practices benefits all users (W3C, 2019) and helps ensure library users can access what they need, when they need it. Without access to all learning materials, student success is limited (Nagle & Vitez, 2021) and therefore following accessibility best practices can help support student success, and ensure that students with disabilities have access. This in turn helps support digital equity and inclusion. Accessibility is, and should remain, focused on users with disabilities (Henry et al., 2014), although following accessibility best practices will benefit everyone (W3C, 2019). For example, making your PDF searchable by running OCR (optical character recognition) is not only a first step towards making PDFs more accessible to screen readers, but also allows users to search by keyword to locate specific information quickly; including headers helps structure documents so users can scan and navigate by section; captions help people who have hearing impairments, speak English as a second language, or who need to view videos in noisy or quiet environments without headphones; alt-text and transcripts allow users to read the content if they have visual impairments, insufficient internet or bandwidth to view the content, and can be read using glasses, magnification, a screen reader, braille, or other assistive technology. Additional information about digital accessibility best practices, how to use them, as well as training resources can already be found in the literature (Arlitsch, 2018; de Macedo & Ulbricht, 2012; Cervone, 2013; McCann & Peacock, 2019) and the Web Content Accessibility Guidelines (WCAG) from W3C Web Accessibility Initiative (2020).

Lastly, it is always best to get direct feedback from users with disabilities (Pionke, 2017) when creating new content for the library website, LibGuides, course materials, or any digital content, although following accessibility best practices is a fundamental first step. Following accessibility guidelines helps ensure access to library resources, and is an integral step to supporting digital equity and digital inclusion. User feedback and best practices for digital accessibility should be incorporated across library services, including offering remote access, public services, purchasing materials, and library instruction.

Strategies for Supporting Digital Equity & Inclusion in Libraries

Providing access, in all its many forms, is what brings together the ideas discussed from various perspectives across the library. Though the pandemic highlighted various challenges to providing

equitable and inclusive access, those challenges existed prior to COVID-19 and will remain ongoing issues. Access is still the root of accessibility as well as digital equity and digital inclusion, and the digital divide impacts certain communities more than others, even in higher education. While we have examined this from a local, case-study perspective in Montana, we also acknowledge that these challenges extend beyond the scope of our paper, and exist within the landscape of much broader circumstances like absolute poverty and the global digital divide (Hill & Lawton, 2018). Therefore, we invite others to build on this topic to include further comparisons and global perspectives.

Access is also at the heart of the purpose and work of libraries. Indeed, there are numerous ways that any library can support digital equity and inclusion, as shared throughout this article:

- Implement remote access authentication methods for patrons if possible

- Provide technology checkouts and hotspots to enable access

- Expand in-person services to offer remote options as well

- Offer the option for users to submit accessibility requests in order to get material in a more accessible format

- Utilize the UDL Framework when developing instruction

- When teaching, offer low-bandwidth solutions for students with access barriers

- Utilize design techniques that maximize mobile accessibility

- Suggest ways that your users can maximize bandwidth, such as downloading a resource for use offline rather than viewing resources in their browser

- Ask questions when procuring resources to ensure they are accessible

- Offer on-demand acquisitions in the preferred format of the user

- Follow digital accessibility best practices

- Form a committee to help implement digital accessibility workflows, and/or advance digital equity and digital inclusion in the library

These strategies are informed by our experiences at Montana State University and the five different perspectives discussed: Access is an Essential Library Service; Public Services; Online Library Instruction; Purchasing Accessible Materials; and Digital Accessibility. The strategies can also be extended to other libraries, and adapted for their communities. Academic libraries can work to promote digital equity and inclusion for their users through a range of cohesive services that help bridge the digital divide by supporting student needs and removing barriers that inhibit success.

Endnotes

[1] "A federal Indian reservation is an area of land reserved for a tribe or tribes under treaty or other agreement with the United States, executive order, or federal statute or administrative action as permanent tribal homelands, and where the federal government holds title to the land in trust on behalf of the tribe". https://www.bia.gov/frequently-asked-questions

[2] Coronavirus Aid, Relief, and Economic Security Act (CARES Act). To provide emergency assistance and health care response for American individuals, families, and businesses affected by the COVID-19 pandemic. Enacted by the 116th United States Congress. Effective March 27, 2020. https://www.govinfo.gov/content/pkg/PLAW-116publ136/pdf/PLAW-116publ136.pdf

[3] Verizon is an American Telecommunications company and provider of mobile telephone services https://www.verizon.com

[4] AT&T is an American Telecommunications company and provider of mobile telephone services. https://www.att.com/

[5] The Americans with Disabilities Act of 1990 (ADA) is civil rights laws in the United States that makes it unlawful to discriminate against citizens with disabilities. The ADA also outlines provisions to ensure equitable standards to access public services for disabled citizens. For more information, visit: http://www.ada.gov

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