A NEW LITERACY:
ADDRESSING THE BARRIERS TO DIGITAL LITERACY THROUGH PUBLIC LIBRARIES AND PEER-TO-PEER LEARNING

by

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Abstract:

In an increasingly digital world, spurred forward even faster by the COVID-19 global pandemic, people are being left behind. Social connection and learning have all been pushed online. Governments of all levels are asking for citizen input and engaging with citizens through digital means. However, the digital divide is growing and valuable perspectives are being left out of the decisions shaping communities. Society is developing in the digital sphere and that requires that people within that society are digitally literate. Public libraries could be the key to addressing the barriers leading to digital inequality. This study worked to understand digital literacy, the role public libraries are currently playing in the development of digital literacy skills, as well as the barriers libraries face in this endeavour and found that while there are many digital resources available for individual learners to increase their literacy, efforts could be improved by using a connectivist approach to learning and focusing on peer to peer level support.

Keywords: digital literacy, public libraries, barriers, civic engagement, digital divide, community building, digital inequality.

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It takes an entire village to bring something like this to life and I am intensely grateful for mine.

Table of Contents:

List of Figures

List of Appendices

Introduction

Thanks to increasing technological capabilities and digital capacity, we now have access to unfathomable amounts of information, a democratization of storytelling and media distribution, and instantaneous communication across the globe. With these advancements and the world becoming increasingly more digital, are people able to keep up or are they being left behind? How do we harness this incredible potential to work for humanity's benefit? This paper looks to explore what digital literacy is, how and where digital literacy skills are taught, and identify the barriers people may experience while building their own levels of digital literacy. The focus of digital literacy skill-building activities has been on the individual, both in academic and professional practice, missing out on the incredible collaborative knowledge building opportunities inherent in digital learning that takes place in public institutions like libraries.

To address this omission from my own perspective as a digital marketer for the past 4 years, I have created a companion piece to this paper, a guidebook for professionals in public libraries to adapt their already considerable efforts in building digital literacy skills to take full advantage of the opportunities a digital community presents. Libraries are already providing the basics and have been incredibly adaptable: my guidebook supports them as they take their practice further. The guidebook combines feedback from industry professionals along with my own experience in digital marketing to provide libraries with tools to engage people of all skill levels in a communal online environment. Once this communal environment is built, it could be used to provide knowledge sharing opportunities to work on digital literacy skills, translate programming the library already offers into the digital and measure community engagement like one might a digital marketing campaign.

Literature Review

Types of Digital Literacy

There is some confusion around what exactly is meant by "Digital Literacy". Equating digital literacy to more traditional forms of literacy is too simplistic. Digital literacy is a multi-layered concept that holds within it many different types of literacies. Gapski (2007),

Eshet-Alkalai (2004), and Koltay (2011) all attempt to break down the types of literacies under the "digital literacy" umbrella: Media, Visual, Reproduction, ICT, and Network Literacy, to name a few. Koltay writes that "a media literate person … can decode, evaluate, analyse and produce both print and electronic media," (2011) whereas Eshet-Alkalai defines a reproduction literate person in a similar fashion - someone who can create unique creative pieces through integrating existing independent pieces of media together (2004) - suggesting there is some overlap of definitions even within the types of literacies that make up digital literacy. Eshet-Alkalai expands their definition of "reproduction literacy" to include "integrating existing independent pieces of information" along with the ability to create media (2004). This is an important distinction as it includes the ability of a person to find existing digital elements and manipulate them into a new creation whereas Koltay's explanation does not include this aspect. Gapski suggests that Digital Literacy "should be positioned in a network of related terms and concepts" as we discuss topics within digital literacy (2007).

Part of what makes digital literacy (DL) so tricky to define clearly is that in addition to the elements discussed above, DL seems to include the ability to adapt to new technologies as they become available. For example, as Meyers et al. points out, author Paul Glister "wrote about digital literacy before Google, before Facebook, before YouTube; yet, these online tools and their associated practices … are integral to the way we think about living, learning and working in our digital society," (2013) suggesting that the competencies required to use new technologies go beyond the scope required by the technologies themselves. The Brookfield Institute-sponsored *The State of Digital Literacy: A Literature Review* i brings this element into their definition of digital literacy as "the capacity to navigate and adapt to a changing world digital environment" (Hadziristic 2017). However, it is MediaSmarts that captures the many facets of digital literacy, as condensed into this graphic representation:

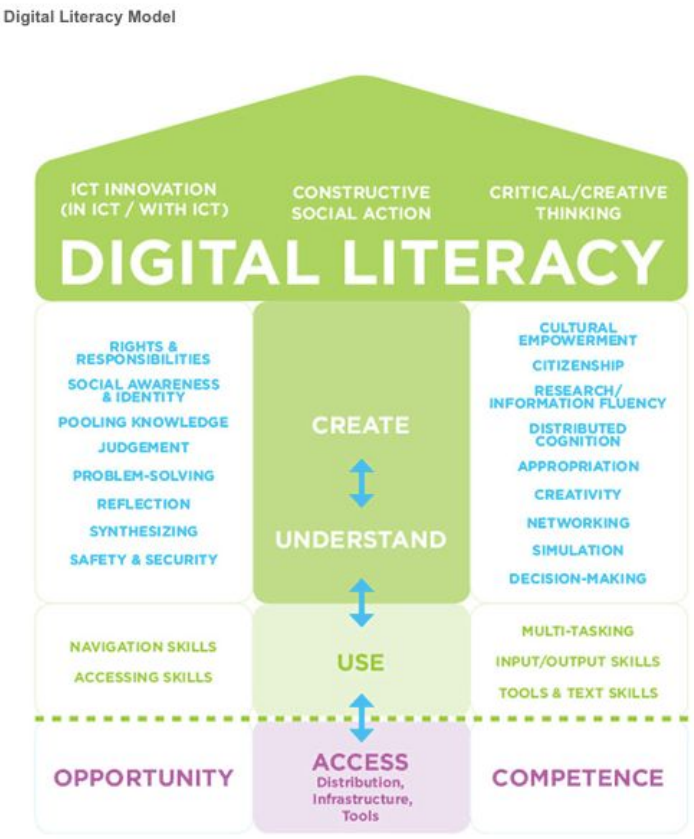

Fig.1 - An example of the aspects encapsulated in the term digital literacy. Reprinted from MediaSmarts 2019. Retrieved July 29, 2020, from https://mediasmarts.ca/digital-media-literacy/general-information/digital-media-literacy-fundamentals/digital-literacy-fundamentals. Copyright 2019.

As they rightly point out, "[t]he specific skills that are needed will vary from person to person depending on their needs and circumstances – which can range from basic awareness and training to more sophisticated and complex applications," making DL difficult to define and identify. However, this is perhaps one of the most comprehensive and useful definitions as we go on to explore its practical application. MediaSmarts also uses the framework presented by the International Society for Technology in Education (ISTE) to determine digital literacy levels that includes "six standards: creativity and innovation; communication and collaboration; research and information fluency; critical thinking, problem solving and decision making; digital citizenship; and technology operations and concepts" (Digital Literacy Fundamentals, 2012). I would apply these standards more as aspects of digital

literacy that can be navigated through the framework built by MediaSmarts in the figure above. For example, a person with a high degree of the "communication and collaboration" aspect of DL could demonstrate their proficiency moving through the Create - Understand - Use steps in MediaSmarts' definition by creating a *Whatsapp* group chat to tackle a group project and increase digital collaboration, understanding that that's the best tool based on the need, and then use that chat to communicate with a group of their peers. MediaSmarts breaks down the concept into what is required from a person at different stages in a digital interaction - the spine of which is the ability to Create - Understand - Use. If we understand what might be required of a person to complete a digital task, what skills and competencies might be needed for that task, and the degree to which the person executing the task can create opportunities, understand what they need to access, and then deftly use the resources available to them, then we can begin to determine the level of a person's digital literacy. The next step from this definition would be determining how each of those six standards might be evaluated in a reliable way. Reliable evaluation could help determine which of the standards might need more attention or what types of vehicles (online classes, public libraries, in-person training, etc) might be most effective and for whom.

The Importance of Digital Literacy

Everyday life is becoming increasingly digital. Government services are moving increasingly online. The job search and application process has moved almost exclusively online. Communities. Education. Health resources. Banking. Communication. The COVID-19 global pandemic has only accelerated this process. While there still are some physical aspects to areas of life like these, they are becoming increasingly more difficult to access. A lack of participation in the digital realm can lead to a loss in opportunities across all areas of life and inequalities that already exist could become much deeper and more expansive (Robinson et al., 2015). As Cook and Light state, "e-learning is an important precursor for e-government and e-democracy" (2016), and getting people accustomed to using digital technologies safely is imperative for societies in which civic and other forms of participation have largely digital components. Out of sheer necessity, the COVID-19 pandemic has forced more people into online, digital spaces in which they may not be proficient. Businesses had to adapt to a fully remote workforce or risk bankruptcy. Seniors in long term care homes had to scramble to find

ways to connect with their loved ones and support networks as in-person visitation was completely shut down to control the spread of the virus.

With more and more Canadians getting online, more people are being exposed to the good and the bad that comes with digital interactions. According to the most recent Canadian Internet Use Survey (CIUS), over 90% of Canadians use the internet with almost 80% of those reporting spending up to 20 hours per week online (Government of Canada, 2019). In the same study, almost 75% of respondents reported using the internet to access government services. However, increased use does not directly mean better, more mature or more skillful use (MediaSmarts 2012). The CIUS reports that 84% of Canadians over the age of 15 used the internet for online shopping. The report also states that almost 60% of Canadians over 15 experienced some kind of cyber security incident. While this data is important, it does not reflect how people felt when faced with these challenges or how adeptly they dealt with that incident. Were they able to protect their personal information? How could we assess an individual's ability to handle a cyber security incident to determine if they could successfully manage such an incident? A person with a high degree of digital problem solving and critical thinking capabilities as well as some information fluency based on ISTE's six standards of DL might feel more equipped to deal with a cyber security incident while performing a task like online shopping than someone with fewer skills or different skills. Eshet-Alkalai compares the internet to a jungle with "its own unwritten rules" (2004) and those who do not understand those rules are left to its mercy. Despite the age of that statement and a relative calming of the "wild west" of the early internet, unwritten rules and hidden traps are still common. For example, email phishing scams are common hidden traps faced by private individuals and organizations alike: 48% of Canadians report receiving a phishing email scam (Government of Canada, 2019). But how many people know how to detect a phishing email? Risks could include things like online identity theft and other privacy issues, and the spread of misinformation. The literature is unanimous on this point: cultivating digital literacy skills in all populations is integral to ensuring access to services and opportunities, and contributing to healthy democracies and civic engagement (Robinson et al 2015, Eshet-Alkalai 2004, Eynon and Helsper 2011, DiMaggio et al, van Dijk 2012).

There is also a need to address the barriers as quickly as possible because, as Robinson et al. highlight, "as the internet matures, forms of digital exclusion proliferate" (2015). This means a person will need to have increasingly high levels of comfort navigating digital spaces as technology becomes more sophisticated. As digital technologies advance and the digital landscape becomes more and more complex and multifaceted, those with low levels of digital literacy skills will find it increasingly more difficult to develop them, leading to a digital divide and a gap in the kind of active participation healthy democracies need to function. I explore this aspect more in depth in the next section.

Barriers to Developing Digital Literacy Skills

We have determined the scope of what is included when talking about DL and the importance of DL skills for future success and engagement, but what impedes people from cultivating these skills? Who experiences these barriers? What are the commonalities? Since we lack a clear way to fully assess the entirety of individuals' DL skills, we cannot accurately pinpoint what exactly would impede someone from building digital literacy. For now, we can look at online participation and basic access even though participation does not necessarily indicate the level of skill used in a digital interaction or that person's level of comprehension of what they are doing online, just like having internet access does not automatically mean that a person is digitally literate. As we saw in MediaSmart's definition, while access is certainly required for digital literacy, it does not determine how competently a person is able to interact with the digital space to which they have access.

In regards to developing DL, there are various socio-economic barriers like basic access to an internet connection, early exposure to computers, user choice, and complexity of technology (DiMaggio et al., 2001; Eynon & Helsper, 2011; Haight et al., 2014; Huynh & Malli, 2018; Lazar et al., 2005; van Dijk, 2012; Yu et al., 2017). Not all barriers are experienced equally. Some barriers are more daunting and exclusive than others. A previous negative experience with technology and the resulting stress could cause feelings of technophobia, affect a user's motivation and act as a barrier to developing their digital literacy skills further. (Yu, et al 2017). DiMaggio et al. found that although disparities in internet use between genders and age groups were starting to lessen, the racial disparities in rates of access with "Asian-Americans and Euro-Americans on one side, and African-Americans and Native

Americans on the other" were increasing (2001). They also found that the "[m]ost absolute differences [were] based on educational attainment and income fanned out in the early years of rapid penetration" (2001), highlighting the necessity of focusing efforts on widely accessible resources that penetrate across all economic classes. A limitation of the CIUS is that the publicly available data is not broken down by racial identity, so it is difficult to say with certainty that the pattern observed by DiMaggio et al persists in the same way 20 years later. (I am also using US-based data and applying it to a Canadian context and, while the countries share many similarities, it would be more accurate to compare only Canadian data.) By examining the barriers faced by people from all demographics we can find commonalities and begin to build solutions to those barriers. Until there is a clear understanding of how to better measure the complexities of digital literacy, it will be difficult to properly assess the barriers people may face when building those skills. We can begin by examining how technological complexity affects participation and experience though and when that may itself act as a barrier.

Types of Users

Not all people will approach technology in the same manner or have had the same types of experiences with technology. Most studies examined for this paper pointed to how different users experience the barriers discussed above as well as their needs and choices as they use digital technology. A person's previous experience with technology also informs whether or not they continue to pursue its use and continued efforts of digital literacy by extension. Eynon and Helsper's user typology is helpful here: , "[e]x-users are most likely to point to a lack of interest and access [when questioned about why they do not use the internet]. Non-users are most likely to point to a lack of skill and access" (2011). Authors like Haight et al. point to whether or not a person had early exposure to technology as indicative of the ease with which they immerse themselves later in life (2014). These users may not need the same type of education to build their digital literacy skills. A non-user may need more support with building basic skills and vocabulary where an ex-user may be familiar with elements such as a cursor or a browser but as in a previous version.

These different user types - non-user, ex-user, etc. - could play a role in determining what type of digital literacy programming to offer at public libraries. CIUS data states that 91% of

Canadians over the age of 15 use the internet with half of those reporting using the internet for 10 hours or less a week. While we cannot assume that less frequent use directly correlates to a lower level of digital literacy, this data can tell us what percentage of the population would fall in the non-user category and where there may be differences across age groups. The limitation is that the study does not give a clear indication of whether or not those people are digitally literate. We cannot assume that use or time spent online equates to the ability to create, understand, and use the appropriate tools for a task. A person may know they can use a pen to write a story but if they are trying to write on a chalkboard, that is not the proper tool for the job or the environment.

While most "people prefer user-friendly technologies" (Yu et al., 2017), taking into account different types of learners should also be a consideration. There may be many who choose to pursue online learning opportunities and those who do not (Eynon and Helsper 2011) or those who may be overwhelmed by the sheer number of options available to them and the resulting overload (Yu et al., 2017). Within the realm of online learning, the user types discussed may come into play. A non-user may not have the basic technical skills or understanding to find those online learning opportunities or pursue them. An ex-user may choose not to pursue online resources available to them as their previous experience was too frustrating. A user who is "socio-emotionally-literate [is]... willing to share data and knowledge with others, capable of information evaluation and abstract thinking, and able to collaboratively construct knowledge" (Eshet-Alkalai 2004). Tapping into different types of users and different types of learners could assist their peers and fill the gaps in their own experiences or strengths. Different types of learners and users with different levels of experience should be taken into consideration and considered potential assets to a group-learning environment.

Vehicles for Teaching DL Skills

We have explored what is meant by digital literacy skills, such as the ability to Create - Understand - Use across six main aspects within a digital space, but how do people learn these skills? When focusing on the why and the who of building digital literacy skills, it's important to address the how as well. The "how" of digital literacy education takes a couple of forms - some formal and institutional, like classes integrated into the Canadian educational system, some informal such as e-courses taught on platforms like Lynda.com, Udemy or

Coursera. Community centres and public libraries can also be places for informal learning by providing computer basics courses.

There is a trend towards asking more from public libraries in leading the charge towards higher rates of DL. Cook and Light (2017), Malyarov (2019), and Rainie (2017) all suggest that the general public is looking for their public libraries to provide further opportunities to build digital literacy skills. Considering that one of the most consistent barriers is based on education and economic outcomes, the push to more widely accessible methods of developing these crucial skills makes perfect sense. Malyarov puts it best when he says that "the librarian is a natural leader for the age of knowledge that is now unfolding" (2019). Expanding on this point, Malyarov argues that"[p]ublic libraries are uniquely democratic institutions (free for all) that could provide access to information, technology, physical resources and all the things we traditionally associate with libraries." (2019). It is not just the physical resources that are required;it is the digital resources as well. The challenge with this approach is that"public libraries [already] contend with a lack of financial and material resources while attempting to fulfill a range of community functions" (Julien & Hoffman 2008), and so being asked to take on more functions could cause further strain on already strapped resources.

Gaps

There are gaps in how all of these elements intersect with each other. As Tea Hadziristic highlights in her excellent review of the state of digital literacy in Canada, "the prohibitive costs of private courses and lack of on-the-job training continue to pose structural barriers to workers who must learn digital skills to survive in the labour market" (2017), although her review focuses exclusively on the employed and not the unemployed or underemployed. How does a person's employment status interact with their user type? Or their life experiences? The literature examined has explored these elements impacting DL levels but not how they interact. For example, user type (ex-, non-, etc.) has not been included in discussions on demographics or economic situations. We are unsure if an ex-user from a wealthier economic background is more or less likely to try using technology again. We are unsure if or how socio-economic barriers come into play with engagement around different vehicles for DL. Further study and an intersectional approach is required to better understand these elements.

Until we do fully understand how those elements interact with each other, it makes sense to focus digital literacy building efforts on the most widely accessible avenues Canadians currently have access to - public libraries.

As pointed out previously, there is still no consensus on what exactly being digitally literate means or many reliable measurements to help create an assessment rubric for determining levels of digital literacy as we have come to expect with more traditional skills. It will be difficult to understand when or how DL in the Canadian population has reached the levels we expect from traditional literacy without a reliable measurement. Studies on basic internet use or access, while important, miss the nuances required for DL as we have explored it here. Ontario public libraries are addressing issues like basic access to devices and training through their device lending programs, in-library computers, and tech support style programming. They offer classes on how to code in Javascript and how to use Microsoft Excel for work but there is a practical mismatch in what programs are offered through public libraries and the demand for particular DL building opportunities. There is a "strong emphasis among CTCs [community technology centres] on education and job preparedness" (Servon 2002), and, while this is indeed useful, where are other types of demand? Where, for example, is the digital art component? Learning how to work an Excel spreadsheet is useful, but that only addresses one aspect of digital literacy. If the focus of adult digital programming offered by public libraries remains only on employment skills, this will limit people to engaging fully only in employment-related spaces. Also, as discussed previously, not all users are equal or inclined to the same kinds of learning. Private industry focuses on hyper-personalization to adapt their products to a generalized individual's needs and finding that to be successful. Perhaps it would be useful to employ a more personalized approach to cultivating digital literacy skills.

Methods:

Since we lack the data to point to a more specific place where a concentrated effort to build digital literacy skills might be most effective for those outside of the public school system, I chose to focus on public libraries. My reasoning for this is that public libraries are already embedded into communities across Ontario and they already provide access to many informational resources free of many economic or educational or racial barriers discussed

above. I approached exploring my research questions like one would when exploring a new entrepreneurial venture: informational interviews with people working directly in the industry.[1] I attempted to reach out to libraries in different regions of Ontario - metropolitan (Toronto), city (Kitchener), and rural (Bruce County) - to better understand how approaches may differ based on the population served. I compiled a list of 11 Ontario libraries to contact and defined the 3 region qualifiers based on the population they served. A rural library serves an area of about up to 250,000 people, a city serves a population of about 250,000 to one million people, with a metropolitan library serving at least one million people. I theorized that due to the different levels of basic internet access a rural library would face different challenges than a metropolitan library when it comes to promoting digital literacy skills.

The COVID-19 global pandemic hit just as I was preparing to begin my research and required that I rethink my plans. The pre-pandemic plan was to visit as many public libraries as possible, meet in-person with library staff, discuss their library's goals around digital literacy and how they were going about achieving those goals. I suspected that often the execution of these goals would take the form of programming (like Microsoft Excel classes) and access to devices like computers. The reasoning behind going into the actual space was to see what kind of facilities were available to patrons, what kind of technology, and to see how the space might influence that library's programming focus. The pandemic and subsequent shutdown of libraries made visiting the spaces impossible and all interviews had to be conducted either over the phone or via video conference. Most interviewees chose the video conferencing option with only one choosing to connect via phone call.

I conducted several phone interviews with program coordinators and information professionals actively working in libraries to discuss their roles and responsibilities. I spoke with them about what their roles entailed, the programs they held to cultivate digital literacy skills, and how the global pandemic affected their duties and their methods. My exact questions can be found in Appendix A. I also read through each library's most recent Strategic Plan to identify organizational priorities and reporting structures.

[1] Informational interviews do not require ethics approval.

Additionally, I volunteered with an organization called TechServeTO, started at the beginning of the pandemic shut-down in March 2020, to work directly with seniors experiencing tech related challenges and connect them with support for free. This volunteer work allowed me to understand firsthand what types of issues Ontario seniors were experiencing with technology, how some would go about resolving those issues, and what that resolution experience was like from their perspective. I did not intentionally pursue this avenue for the sake of this study but found the experience to be valuable for this exploration.

Results/Reflection:

When asked about digital literacy and what the library was doing to support the cultivation of digital literacy skills, almost all interviewees initially began talking about device workshops and teaching people how to use their personal digital devices. This is a notable departure from most academic interpretations of digital literacy (which take device literacy as a given), other than Huynh & Malli who did include the ability to use a digital tool in their definition (2018). Although the definition of the term is still a bit amorphous, few of the academic interpretations I came across focused on the ability to use the physical device - to find the settings on a smartphone, to know how to turn it on or off, etc. In the same way we take for granted the physical ability to turn a page, the academic exploration of digital literacy has left out the primary step to building those skills: the ability to access the digital aspects of a device through their physical conduits. As librarians are at the forefront of implementing the tools to teach digital literacy skills, their experience has exposed this gap. It is imperative that as digital literacy is explored further, access and usability of devices be also taken into account. Each user will have a level of comfort with different devices.

All interviewees self-reported that the demographic served by the focus on device workshops was older/senior adults. This suggests that what is meant by "digital literacy" is still unfocused enough to cause a wide interpretation even amongst practicing professionals. So while an academic study of the term may include a user's ability to recreate media (reproduction literacy) or to understand how to crowdsource information (network literacy) or critically engage with social media posts (media literacy), the practical implementation of focusing on building digital literacy in Ontarian populations still focuses on user familiarity with physical devices. In order for a person to interact confidently in a digital space, they

need to be able to use the physical conduit to that space and as a first step to building digital literacy, this focus makes sense. However, this could mean that some more technically proficient users are being left with no avenues to further their learning and/or it could mean that the population most likely to use the library's services skews to older/senior adults. Alternatively, or additionally, libraries have found this to be an unaddressed need within their communities. At the same time, this immediate response from the interviewees could also indicate a disconnect between what is meant academically by digital literacy and what it means in practice. When I asked about digital literacy, I used the term to ask about resources to teach people how to use the internet to answer questions, connect with others, to use a computer to complete a work-related task or create digital art. When I expanded on my use of "digital literacy" often interviewees would talk about their digital resources like ebooks or audiobooks. Despite all libraries studied offering access to online course platforms like Lynda.com, the library professionals surveyed did not bring that up in the discussion without being asked directly. This suggests that practitioners do not consider those resources to be included in discussions around building digital literacy, perhaps because services like Lynda.com are offered by a third-party. It is interesting that those platforms are not included in discussions around e-resources. The library pays for patrons' ability to access e-books, what makes the library paying to access online e-learning platforms different when considering what resources are available?

Traditionally, the focus of a public library has been on cultivating their physical spaces - the stacks, the technology, the layout of the building itself. Over the past couple years and in response to community demand, Ontario libraries have increased their digital resources like ebooks and expanded their online social media presences, encouraging patrons to engage that way as well as in person. The pandemic forced libraries to quickly pivot. Those digital elements were still in place during quarantine but now library management and staff were forced to rethink and rebuild how they were going to provide their patrons with services from basic device access to physical books. All professionals interviewed reported the desire to keep up service to their patrons during quarantine but elements such as personnel and patrons' basic internet accessibility affected what programs were rolled out and how.

The focus of the COVID-period library has been on ensuring people have access to digital e-resources like ebooks and audiobooks with programming such as educational classes taking second place. Some libraries are more concerned with user data and privacy while others - generally smaller ones - focused on expediency and ease of use. The decisions around what software or technology to use to deliver service were made either in a top down approach or implemented almost immediately at the individual employee level. Generally, rural libraries with fewer staff tended to employ the bottom up approach where city and metropolitan libraries employed the top down approach. Some interviewees expressed frustrations and hesitations with each approach. For those who were expected to implement a top down approach, they felt that their needs were not taken into consideration. These people struggled with the chosen technology not meeting actual needs and with learning unfamiliar technology quickly. For those who were expected to implement solutions they found themselves, they struggled with feeling confident that their choices were the best available for the needs of their patrons as their choices were influenced by what was most expedient.

Overall, almost all of the people I spoke with were eager to discuss what they were working on and to hear more about what other libraries were doing. Many found it easy to transition some programs, like children's reading clubs through private industry sponsored programs, but more people-centric programming like crafting classes were more complex depending on the level of connection that already existed between participants. For example, a knitting circle group composed of single women generally over 60 years of age transitioned into a weekly meeting over Zoom quite easily because the participants already had personal connections and used that meeting for continued social connection during quarantine protocols. While a knitting circle itself will not build digital literacy skills, the need to meet only virtually has pushed these women into the digital space and they have had to learn how to get themselves set up on Zoom and troubleshoot connectivity, microphone, and video issues. In my discussions with the program coordinator of that program, she said that often the women would help each other in troubleshooting issues and this triggered further thoughts around the importance of peer-to-peer connection while developing digital skills. Having a support network to work with as a person navigates new digital environments could ease the path to developing deeper digital literacy. Skills such as understanding when a Zoom call might be useful to resolve an issue taps into 3 out of the 6 ISTE aspects of digital

literacy; communication and collaboration, problem solving and decision making, and technology operations and concepts. The guidebook project that arose out of this study is intended to support libraries in creating this kind of support network in the form of a digital community.

Discussion:

All interviewees reported that having access to a non-judgmental space with free support was essential to their patrons. All interviewees also reported that being able to interact with their patrons on a regular basis helped them to build their libraries into these kinds of spaces and they were all feeling the gap left post-COVID lockdown. As a result of my discussions with these library professionals, I created a guidebook to attempt to address the lack of connection for library patrons in the digital space through building an online knowledge sharing community. A digital community could serve many functions but for this purpose, the guidebook is intended to help library staff and management build a healthy online space where people can engage with others in their physical communities as they explore different ways to build digital literacy. The guidebook is included as Appendix B.

This discussion around the importance of human connection within the library space taps into J. Goldie's 2016 publication explaining his theory of connectivism. Connectivism posits that "there is no real concept of transferring knowledge, making knowledge, or building knowledge. Instead it emerges from the connections that are formed during network activity." (Goldie 2016). In this context, I would slightly alter Goldie's theory in its application to this project by saying that there is additional knowledge created during network activity rather than this type of knowledge being the only type. Almost all Ontario libraries have access to online learning platforms like Lynda.com. There is an incredible wealth of information readily available to anyone with a device and an internet connection. Yet, the type of knowledge generated from "network activity" or group sharing and troubleshooting is not being cultivated when it comes to building digital literacy skills. The need for this type of learning has been highlighted by the current lockdown environment and while there are a plethora of in-person classes around everything from knitting groups to learning how to code with Javascript, there are no options for those looking to expand their knowledge of digital literacy with these online courses to compare notes with others learning as well. There are

group classes yet none are holding group classes using the content of these platforms. All patrons have access to them yet it is on them to learn how to find, use, and troubleshoot these platforms on their own. There is an opportunity here to increase user retention and completion of these programs through creating ways in which users can connect with others facing the same challenges and create that connectivist knowledge.

The first step to creating an online space where connectivist knowledge can flourish is to create a strong, healthy online community space to mirror the physical space. This step can be influenced by private enterprise as these entities have been using the development of online communities for marketing purposes and have cultivated a series of best practices that can be adapted for public sector use. For this, I relied heavily on my digital marketing experience with measuring and understanding the different levels and indicators of engagement, and on authors like Richard Millington and his piece on building digital communities published on Moz.com in 2014. Millington's 2014 writings inspired the focus on emotional safety that I expanded upon to include physical, mental, and psychological safety. While I am sure most libraries already have policies around those aspects for their physical spaces, I included a discussion around safety specifically in the guide. Based on my lived experience of being a woman who is and has been active on the internet for about 20 years, safety of all kinds is imperative for people to feel comfortable enough to engage fully in an online community. For example, with an online community like Reddit, I actively hide my gender and reduce my engagement in specific discussions because of the backlash that could and has happened that has threatened my safety. To deepen my understanding of practical community building and sustainable community development, I looked to organizations like Asset-Based Community Development (ABCD) out of the UK and their Managing Director, Cormac Russell's 2016 TEDx talk and adapted their best practices to the digital. For the guidebook, I collected insights from these private enterprises and boiled them down to the most relevant for a library audience: the sense of belonging, emotional safety, and community identity. This assumption would need to be tested but based on my conversations with library staff and my professional experience, these are the elements that keep a person engaged in their community, digital or physical, and so they made it into the first iteration. With further industry feedback, those elements may change.

Additional benefits of creating this kind of space are that it could truly take on elements of a participatory culture (Jenkins 2009) and attract different types of users with different skill sets and address some of the issues discussed in the literature around ex-users and non-users. Users with different strengths, different backgrounds, and levels of familiarity with technology could all be given the chance to fill in their own gaps in knowledge, seek encouragement, ask questions and solve challenges together through an online community (Jenkins 2009). Not only does this benefit the "learner" in the interaction, it could also help the "teacher" feel that their contributions are valuable and necessary, tapping into one of the lessons taken from Millington's building blocks for a healthy online community: competence and being recognized as one of competence (2014).

Part of the struggle that library leadership seemed to be facing, as illustrated through the interviews I conducted, was around the seemingly endless options and factors to take into consideration when figuring out how to deliver their services. The lack of employee input or user-friendliness of a piece of software or technology was flagged in the interviews. To address these concerns, I included elements in the guidebook to help in the decision making process by breaking down particular considerations the leadership might make, including who might be using the technology, who needs to implement the technology, and the skill levels of both.

When it comes to sustainability of these efforts, one question that should be explored is how much data the libraries are able to glean from platforms like Lynda.com. For example, depending on what a private platform like Lynda.com would be willing to share, a library could see how many people accessed the courses, what courses exactly, how long people engaged with those courses and when they abandoned those courses. A library could theoretically see a rise in patrons beginning courses in something like Adobe Photoshop and then see the retention of learners involved in that course. Depending on the behaviour shown by the data, this could help inform libraries around the types of programming their communities need and what level of support might be required to continue digital literacy skill building work done through platforms like Lynda.com, if that is where a library's focus is going to remain. Ontario libraries are funded largely based on their ability to demonstrate how well they fill a community need. Currently, libraries measure the success of a program

through metrics like attendance and sign ups yet the funding they receive from both the municipality and the provincial government relies on illustrating how many people access and benefit from their services. This led me to include the section on measuring success, including lessons from tech sector marketing best practices. Ideally, this section will assist libraries in illustrating the results and advocate for more funding to support their work.

Finally, I want to use this guidebook to widen the conversation around what is meant by digital literacy skills on a practical level. Other elements such as art (Chulu 2018), as well as "[p]rivacy issues, informational self- determination and data protection" (Gapski 2007) should be included in programming aimed at increasing digital literacy. The "focus on coding as a crucial skill for the economy of the future has arguably obscured the necessity for a broader emphasis on digital literacy" (Hadziristic 2017) and the current classes available reflect that. Taking inspiration from Chulu's 2018 *Medium* article discussing task-based learning focusing on art projects as a way to build digital literacy skills, in its next iteration my guidebook will translate arts focused programming the library may already offer or offered in the past into a primarily digital equivalent. For example, a creative writing course translates digitally into a creative blogging course where participants can learn the basics of creating a website with the intent to publish their pieces (addressing a reproduction literacy aspect of DL) or a way to build familiarity with cloud-based technologies like Google Drive and Google Docs by sharing their works with others in their class for editing and constructive criticism. The guidebook has taken the feedback from the interviews into account and will help libraries identify what they already have at their disposal and translate it into a digital format with a peer to peer/community focused learning approach to ideally increasing effectiveness of their digital literacy expansion efforts.

Conclusions:

When I started, I wanted to explore what was happening at a grassroots level to cultivate digital literacy skills in Canadians. Much to my chagrin, digital literacy cannot be summed up quickly or succinctly. It is a multi-layered, complex, dynamic term that holds within it many different types of literacies. Colloquially, when a person speaks about "digital literacy", they could mean a wide variety of sub-literacies including reproduction literacy, network literacy, media literacy, and visual literacy. There are different types of users that should also be

considered when it comes to identifying and evaluating digital literacy skills - current users, non-users, and ex-users being some general categories. More work needs to be done in agreeing on what digital literacy consists of and studying the barriers impede people from developing those skills. My professional background informed my proposed solution but this solution will not address those major gaps.

Public libraries are institutions where people of all ages, economic circumstances, and abilities go to learn. From the interviews I conducted, it also became clear that not all libraries were equipped with the knowledge or comfort to evaluate technological solutions they needed to adopt quickly post-lockdown and user-friendliness took a backseat to something the coordinator was personally familiar with or the perceived protection of user privacy, based on several factors including staffing models, staff abilities and comfort, and management comfort and familiarity. Based on my personal and professional experience I knew I could help address some of the opportunities I heard around building online community spaces. I created a document around what I thought could generate the most impact and to help guide libraries to build online communities to encourage learning and sharing across demographics. This version of the guide includes suggestions around exploring the roots of what makes their library community unique and how to translate those elements to a digital space. Included in the guide, I want to have best practices outlined to building healthy, respectful, non-judgemental online spaces where patrons and program participants could exchange information and ask questions to support their learning. While the guide is complete in its current form, this is just the first version. The next steps will be collecting feedback on this first iteration and integrating that feedback into the next.

Appendix A

Questions Asked To Interviewees:

1. In your words, what is your role at the library?
2. What programs do you run/are you involved with?
3. What is included in those programs? Is there an assessment aspect?
4. Who is the program geared towards?
5. Generally, who attends these programs?
6. What has the feedback been like?
7. Is there a follow up? If so, what does that look like?
8. What challenges do you face as a coordinator?
9. What gaps do you see?
10. What would make your job easier?
11. What technology does your library use that you are familiar with?
12. What technology are you aware of that you wish your library would employ?

Appendix B

THE AUTHOR

Rebecca Petricevic - Ryerson University

THE PURPOSE

Guiding Public Libraries to Creating Digital Community Spaces

THE PURPOSE + INTENT

The COVID-19 pandemic and subsequent global lockdown have forced everyone, regardless of industry, to rethink and revamp how they continue doing business. Public libraries have felt this strain. Deprived of their central community building space - their physical buildings - public libraries adapted and continued providing critical services to their communities.

This document is a resource to help libraries build their digital communities to be as strong as their physical ones, and help them achieve their goals to build digital literacy skills. This document walks decision makers and staff through important considerations, and provide useful templates for them to use.

THE AUTHOR

REBECCA PETRICEVIC

Rebecca is a Masters of Digital Media student at Ryerson University. She is a digital literacy advocate and specializes in grassroots mobilization, digital inclusion, and digital marketing.

WITH THANKS

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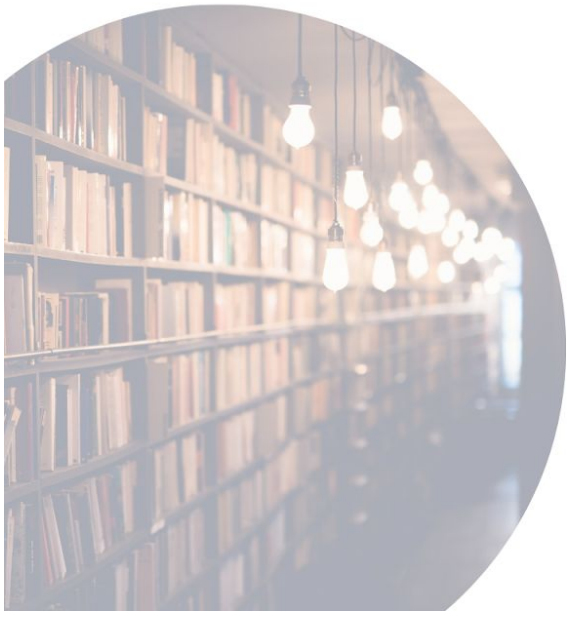


THE SECTIONS

01 **DEFINING YOUR COMMUNITY**
What makes your library unique?

02 **DIGITAL INTERACTION**
How do you bring this online?

03 **IMPLEMENTATION**
Tips, tricks, and considerations

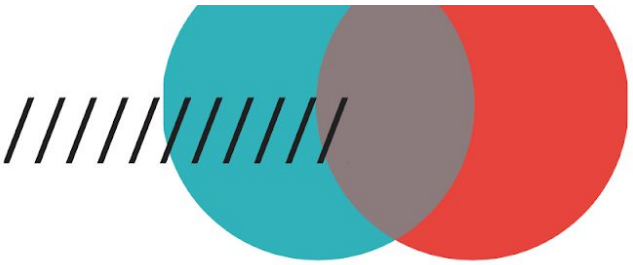
04 **MEASURING IMPACT**
Engagement beyond attendance

YOUR DIGITAL
COMMUNITY

01

DEFINING YOUR COMMUNITY

What makes your library unique?



IDENTIFYING WHAT MAKES YOUR LIBRARY SPECIAL

It's no secret that a library is more than the books contained within it. It's a community gathering space. A place of connection, knowledge sharing, and engagement. It is an open source place where people, regardless of economic or educational circumstance, can meet, exchange ideas, and get to know the people in their communities.

Contained within your library, there are micro points of connection where these integral interactions occur. This section will help you in identifying and exploring what those are and some ways to translate those into a digital space.

CONTACT + CONNECTION

Often the highlight of any library professional's day is being able to say hi to the regulars and this is integral to the whole library experience. Those interpersonal interactions are integral to the library experience, as are the many other points of connection present throughout your physical space that might be harder to identify. While those interpersonal interactions are integral, they are not the only points of connection present throughout your physical space. You also display local art and local books. There are community notice boards where people can post about upcoming events or request help. You may have an auditorium space or workshop rooms for community use. All of these can be translated into a digital space in addition to the physical.

PEOPLE MAKE THE COMMUNITY

Any experienced marketing industry Community Manager will tell you that building a vibrant online community requires letting the community members contribute as much as possible to the discussions and decisions that effect how the community evolves. A very common mistake many make as they transition to the digital is reducing the impact their community members can make.

If people don't feel heard, they are less likely to engage. You can build a digital community where your patrons can feel heard, leading to an increase in their engagement. This could be something as simple as asking people to participate in a public poll about what author should be your next Writer in Residence. The point is to let your community contribute to the space in which you are asking them to participate.

YOUR DIGITAL COMMUNITY

EXAMPLES OF DIGITAL TRANSLATION

An Art Display Case	→	A Slack channel or online forum with community art submissions or a Webpage with dedicated local art
A Community Board	→	A Youtube or Twitch video channel dedicated to promoting local happenings or a digital community calendar.
A Workshop or Class	→	An Online Workshop with a dedicated Facebook page for participants to interact with each others, ask for feedback, give feedback, and present their projects.

ASK STAFF

- What draws patron attention?
- How does your library communicate with your community?
- How does your community communicate with you?
- Where are the points of verbal connection in your library? Non-verbal connection?

ASK YOURSELF

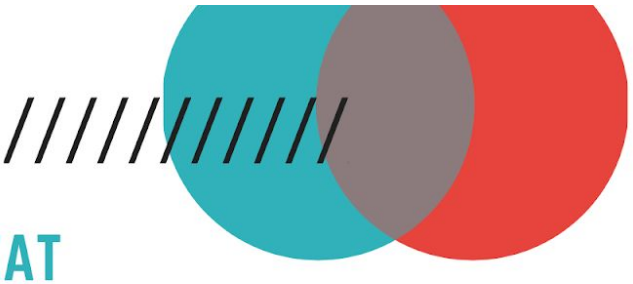
- How does the community impact what the library does?
- What other decisions can I bring the community into?
- How will I show the community the positive impact of their feedback?
- What unique elements are in my community that I can highlight?

YOUR DIGITAL
COMMUNITY

02

DIGITAL INTERACTION

Building your online community



ELEMENTS OF GREAT ONLINE COMMUNITIES

01 A SENSE OF BELONGING

Do people feel engaged in the community's success?

WHAT IT IS

A sense of belonging is where people within an area or network can and want to help meet each other's needs, and where they feel a sense of personal responsibility to make the community better (KWCF 2016). Your community is defined by where you will actively go out of your way to pick up litter to make it better.

WHY IT IS INTEGRAL

As with physical communities, digital ones thrive when people feel like they have agency over how the community develops, that their contribution has value, and that they are supported in sharing their opinions. If the people involved in your community don't feel a strong sense of belonging then your community will go silent and wither or become toxic.

02 HIGHLIGHT YOUR COMMUNITY'S STRENGTHS

Celebrate the victories and skills already present

WHAT IT IS

It is recognizing that your writers in residence have a large, committed following and asking that following to engage in your digital space.

It looks like sharing a video of one of your patron's juggling.

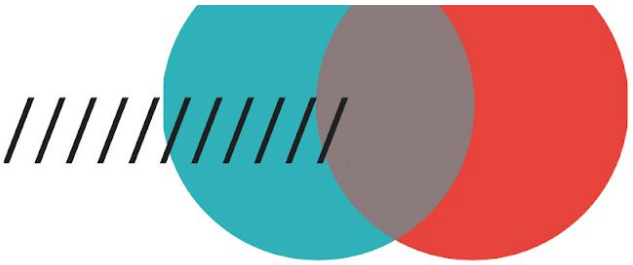
It looks like highlighting artists in your community and the work they're doing.

It's asking your community about what they would like to celebrate.

WHY IT IS INTEGRAL

If you want sustainability, get the community involved in building itself. Cormac Russell of Nurture Development makes the point in his 2016 TedTalk that instead of trying to shore up the weak points in your community, you can make more of an impact by focusing on its strengths.

Give people a reason to celebrate and brag about the community you're creating together. Create a sense of ownership over that positive impact.



03 NURTURE COMMUNITY IDENTITY

What it was, what it is, and how it evolves.

WHAT IT IS

By nurturing your community's unique strengths, you will help lay a healthy groundwork for a unique digital community identity. It might look like seeing your patrons joking together about a piece of local art and making that a symbol in the community. Or picking up on a common phrase and integrating it into creative copy or even making an event around it.

WHY IT IS INTEGRAL

The community - its structure, its language, its conversations - have to be a collective construction instead of something enforced from the top down. If there's not enough community buy-in into what you have made, then it feels inauthentic and people disengage. However, too much freedom and you risk the community morphing in a place that is unsafe for some participants. This can be a tricky balance to strike while protecting the safety of your community.

04 SAFETY OF ALL KINDS

Emotional. Physical. Intellectual.

WHAT IT IS

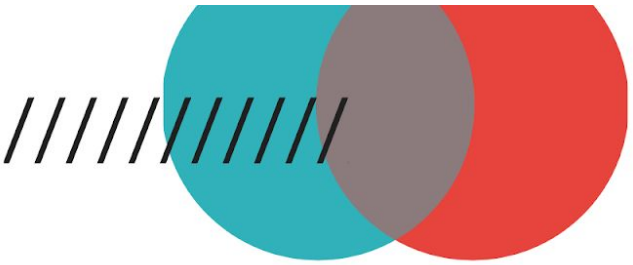
Emotional. Physical. Intellectual.

It means the psychological and emotional safety to fail, to be wrong, and not to know. It means feeling confident that you won't be tracked down in the physical world for sharing your thoughts and feelings. It means knowing you can engage actively in the community without fear of harm or ridicule.

WHY IT IS INTEGRAL

When users don't feel safe, they don't contribute. When they don't contribute, the community suffers.

If the community isn't engaged, it becomes a one-way communication tool from the library with no engagement from the population you're serving. Ensuring the safety of your community members is essential to making sure your community thrives.



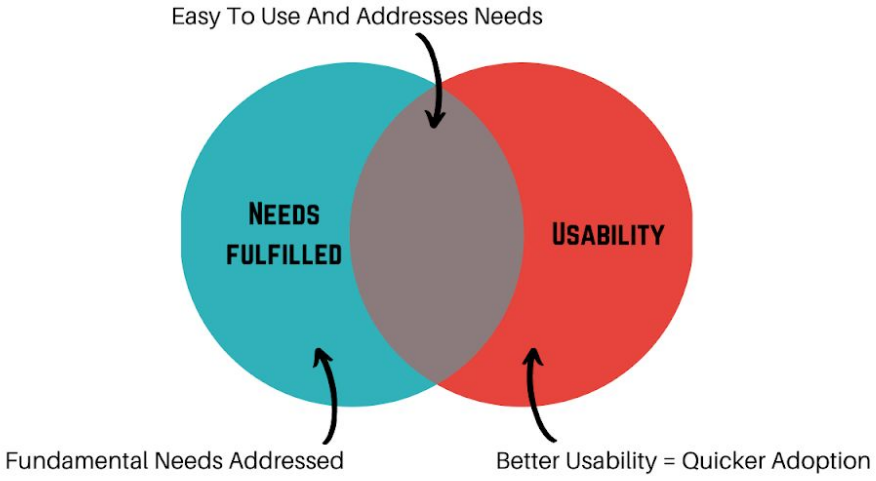
ASSESSING YOUR NEEDS

You probably already have a process for assessing what your library needs to invest in, in terms of new physical assets such as furniture or new devices like computers. But how do you decide on what technology you need? A single software program can potentially meet a wide variety of needs, but there may be many similar options that can make it overwhelming to choose what's best. It can be difficult to balance your needs around accessibility, safety, privacy, and cost. Before you get wrapped up, here are some considerations for you.

QUESTION TO ASK:

- What do you use already?
- What role does that piece of technology play?
- What gaps do you see?
- What is going to be easiest for your patrons (users)?
- Who is implementing this software? Who is going to be using it the most?
- What is the end goal you are hoping this technology will help you achieve?
- How can it be used to promote engagement in your online community?

THE MAIN ELEMENTS OF NEW TECHNOLOGY



CONSIDERING YOUR USER'S EXPERIENCE

Your users' (patrons') levels of ability will affect what technology they're comfortable with and what they can/are willing to acquire. As much as someone might want to learn how to edit photos, they may not be willing or able to pay for a yearly subscription to Adobe Photoshop. They could watch the tutorial videos available to them through online platforms like Lynda.com but if they don't have access to the tools needed or the supports they might need then it is likely they will abandon that endeavour.

Tap into your community's strengths. Everyone in the community will have different levels of digital literacy as well as different strengths within different areas of digital literacy. Some may be Photoshop wizards willing to answer questions from those looking to learn those skills. These same wizards may know of low-cost to no-cost options that are good for entry-level learning.

This is where your online community comes in.

Whether staff, volunteers, or other community members, there needs to be individuals and opportunities for patrons to build their digital literacy skills as they engage.

YOUR DIGITAL
COMMUNITY

03

IMPLEMENTATION

Tips, tricks, and best practices

HOW TO BRING THIS TO LIFE

You will know best how to incorporate these considerations into your library space. Here are some ideas and examples to help get your creative juices flowing.

In your implementation, look for opportunities to bring your community in and celebrate their accomplishments.

A DIGITAL CREATIVE WRITING CIRCLE

What It Includes:

- Participants learning about creative writing
- Sharing drafts of work via Cloud technology like Google Docs for a collaborative editing process.
- Participants developing their digital literacy and learning about self-publishing through online means like blogs or personal websites.

How It Could Strengthen Your Community:

- Completed works could be celebrated and share on public channels.
- Participants could reach out to the community for support and inspiration.

You Could Use: Google Suite, Google Drive, Evernote, Wordpress, Wattpad, Medium, Facebook

A DIGITAL PHOTO EDITING CLASS

What It Includes:

- Participants exploring creative expression through digital means.
- Using course material from existing online sources like Lynda.com.
- Participants developing critical thinking skills around the creation and manipulation of images online.

How It Could Strengthen Your Community:

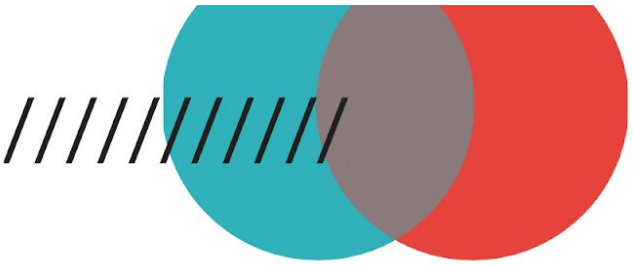
- Completed works could be celebrated and share on public channels.
- Participants could reach out to the community for support and inspiration.
- Contests and showcases could be run for the participants.

You Could Use: Pixlr, Adobe Photoshop, Adobe Spark, Photopea

04

MEASURING IMPACT

Engagement beyond attendance



ENGAGEMENT BEYOND ATTENDANCE

Now that we've defined the why and the how of your online community, we can touch on what indicators you can measure that will help you monitor the health and effectiveness of your community. Not only that, they can also help you provide context as you build your case during budget revision season. As municipal budgets become tighter and tighter, it will be more difficult to justify spending. Your online community can help you measure and then quantify the incredible impact your library has locally.

Traditionally, things like program attendance and number of checkouts or library card sign ups have been used as the main indicators of success and impact. By expanding to a digital community, libraries have the opportunity to measure more and different metics. Even when circumstances reduce staff ability to interact with patrons in person, your library can still get a good sense of what is going on in your community and what is resonating. Taking a lesson from private sector marketing, here's what you need to measure:

METRICS THAT ACTUALLY MATTER

Views

Comments

Impressions

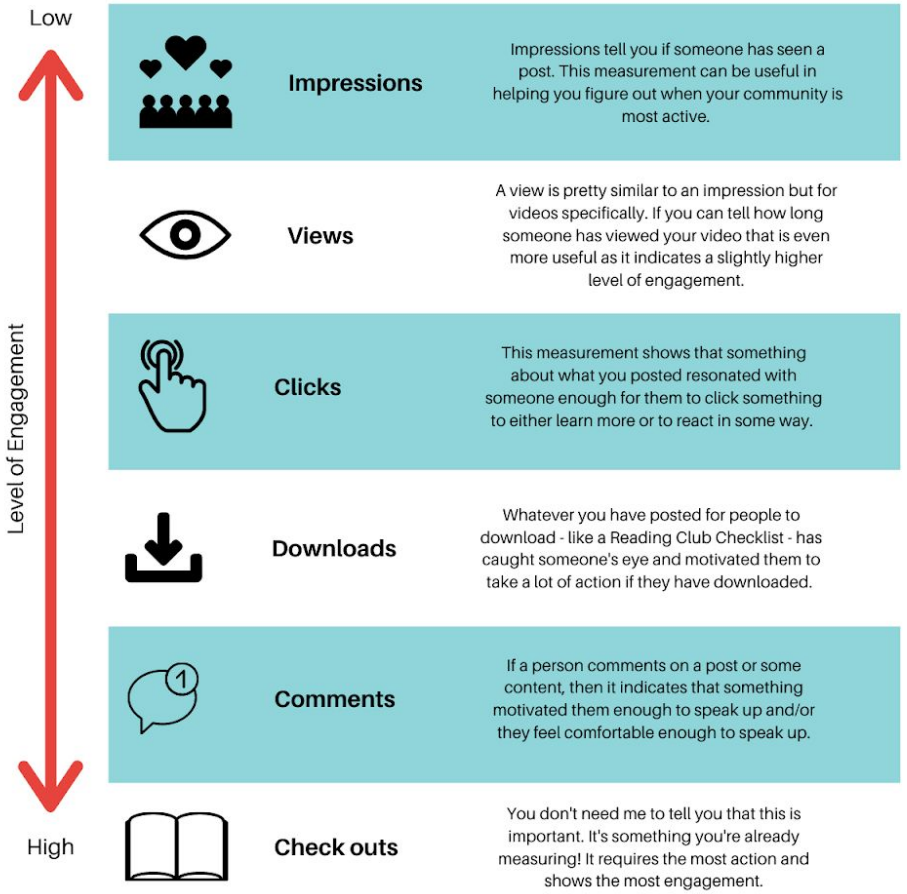
Downloads

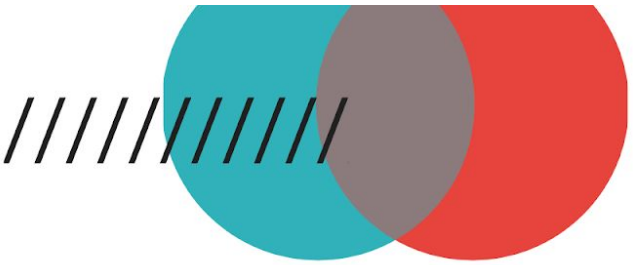
Clicks

Check outs

YOUR DIGITAL COMMUNITY

METRICS THAT ACTUALLY MATTER





ADDITIONAL RESOURCES

Things You Might Find Helpful

- Tools for Building Digital Skills with Your Patrons and Staff Webinar
  http://www.ala.org/pla/education/onlinelearning/webinars/ondemand/digitalskills

- Google Applied Digital Skills—Teach & Learn Practical Digital Skills.
  https://applieddigitalskills.withgoogle.com/s/en/home

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