

The Library's Educational Role in Bridging the Digital Divide

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Abstract

Society has steadily grown more technology-reliant and continues to shift toward digital landscapes for education, business, government, and personal tasks. Alongside these trends there increases a chasm between various privileged and disadvantaged social groups who do or do not have access and knowledge to participate in a digital society. School and public libraries have an integral role to play in providing both education and access tools to communities to enhance people's ability to participate in digital activities. Collaborating with each other to decrease the digital divide(s), libraries and social institutions can help create digitally ethical and responsible participants. This paper discusses specific examples of initiatives regarding the challenges and solutions for libraries aiming to bridge the digital divide(s), defines what digital literacy and digital citizenship are, and emphasizes that the role of educating communities is equally important as providing access to technology.

Keywords: digital divide, digital literacy, digital inclusion, digital exclusion, universal access, public libraries, school libraries, academic libraries

In the wake of a digital nation, that is, an ever-increasingly internet and technology reliant world, privileged groups of people have opportunities to become ethical and literate digital citizens, while underserved populations are rapidly being left behind. The digital divide, which can be described as “the gap between those who have affordable access, skills, and support to effectively engage online and those who do not” (Score, 2021), affects such socioeconomically disadvantaged groups as Indigenous, disabled, and rural communities at varying levels. There exists not one divide but many, when discussing digital divides, terms such as ‘digital equity’ and ‘digital use divide’

arise¹. To remain within the scope of this essay, the term ‘digital divide’ will serve as the overarching phrase that encompasses access to broadband infrastructure, adoption of internet subscriptions and ownership of devices, along with obtaining digital literacy skills resulting in ethical digital citizenship (Siefer, 2017; Feridooni et al., 2022). Youth, students, and educators in the education systems have been particularly affected by the divide’s long-reaching effects, with distance learning increasing steadily over the last decade, and dramatically more due to the COVID-19 pandemic (Rodriguez et al., 2021; Muñoz-Najar et al., 2021).

The pressure to educate youth about technology, using advancing forms of technology, is only increasing, yet assets (funding, programs, etc.) to provide professional development, updated technology tools, and new educational resources are decreasing (Johnston, 2018; Rodriguez et al., 2021; Muñoz-Najar et al., 2021). There remains one space that provides consistent service and advocacy to and for communities who need support, for the betterment of those communities as good in and of itself: the library. Public and school libraries have an integral role in bridging the digital divide by providing both education and access tools to their communities because one cannot come without the other. As the American Library Association aptly states, “providing tools is not enough. Helping people of all ages to be informed consumers of information is becoming an increasingly important part of what libraries and [library professionals] do” (2001, “Why Libraries” section). Providing literacy tools in all forms is at the heart of what libraries do. If they fail to provide digital literacy tools and education, they risk becoming obsolete in timely ways; after all, resources are only good to patrons if they can be found and properly used. If students and youth do not gain ethical digital literacy skills, they endure increased security risks when interacting with online environments and may lose opportunities to participate in society, like being unable to apply to post-secondary using online application systems.

Efforts to Provide Digital Literacy Resources

Socioeconomically disadvantaged populations cannot afford to access or participate in the advancement of technology (Rodriguez et al., 2021; Muñoz-Najar et

¹ For expanded definitions on these and similar terms, see [NDIA’s Definitions page](#). For a brief explanation of digital literacies, see Dr. Doug Belshaw’s talk “[The essential elements of digital literacies](#).”

al., 2021). School libraries are increasingly expected to provide technological devices and instruction on interacting with the digital world appropriately. However, while aiming to achieve this expectation, those libraries can experience many barriers (Connaughton, 2021). Schools in underprivileged areas lack foundational internet infrastructure to provide high-speed internet access, and installing such structures requires more funding than is typically awarded (Fox, n.d.-a; Feridooni et al., 2022; Hyunh & Malli, 2018; Rodriguez et al., 2021). School libraries must work with what they have and what they receive through persuasive advocacy, often dealing with unsupportive parent institutions, legacy systems, and dated devices (Connaughton, 2021; Ballew, 2014; Johnston, 2019). Public libraries sometimes receive more funding opportunities and can work to fill the gap in access outside of school hours, potentially offering higher quantities of devices and programs directed at educating youth on the best technological and online practices. Edmonton Public Library is a strong example of efforts to extend education outside of the classroom; they offer resources to educators, parents, and host online and in-person classes for various age groups at varying digital literacy levels (EPL, n.d.).

In other areas, where schools can afford sufficient access to high-speed internet and technology, and often where they come to expect that each student has the same at home, a number of students struggle to meet the demand of digital homework assignments (Fox, n.d.-b; Huynh & Malli, 2018; Johnston, 2019; Barron Rodriguez et al., 2021; Muñoz-Najar et al., 2021). Libraries and library systems often try to work with their stakeholders and develop partnerships with other not-for-profits to identify and serve students' digital needs. For instance, The Alberta Library's (TAL) work with Albertan schools displays efforts to provide students with high quality resources from licensing agreement assistance to compilations of free education resources (TAL, 2020). Similarly, an ongoing research collaboration (2021-2022) between the University of Ottawa Library and Library Archives Canada aims to report on COVID-19 responses from libraries, including the relationships between public libraries and schoolteachers that provide digital services (Intahchomphoo, 2022). They hope to inform future initiatives on reducing the digital divide. Currently, no results from their study have been published. Despite each library having barriers, the goal to reduce the gap in access

and education has reached the forefront of contemporary concerns, with a specific need for creating digitally literate and ethical citizens.

Digital Literacy and Citizenship

Digital literacy is the ability to critically understand, use (consume), and create digital technology (Huynh & Malli, 2018). This literacy can be as simple as using social media responsibly, where one can create an account on a platform and critically assess the media they witness, or as complex as someone learning the history of a coding program, like SQL (Structured Query Language), and then manipulating data in basic to advanced modes. Digital citizenship is a person's participation in the online or digital world, or one's online and digital identity and footprints (MediaSmarts, n.d.). For example, by using various social media accounts, a person leaves a digital footprint and is attached to a digital identity, and by reporting false information in online articles, they are participating in our digital society. North Americans have the ability to access the online world, and can easily participate in its multi-faceted arena. While many consider how to participate ethically as a digital citizen, many others, especially youth, do not until deliberately and repeatedly educated about the importance of safe online activity (Huynh & Malli, 2018; Muñoz-Najar et al., 2021). People typically want to use digital tools because of their widespread availability and convenience, and libraries have a shared mission to provide unrestricted and neutral access to resources in all formats. See, for example, the American Library Association's (ALA) [Literacy Key Action Area](#) and the [Literacy Clearinghouse](#), where their literacy efforts are compiled. As ALA suggests, it is critical for libraries to "Make literacy in all forms central to your library's mission" (2001, "What You Can Do" section). The vision and mission of libraries also invites opportunity and responsibility to provide education alongside resources.

Prepping Digital Citizens

Johnston, continuing work done in studies by Subramaniam et al. (2012) that focus on the role of school libraries in STEM [Science, Technology, Engineering,

Mathematics]² education deliverance, believes that “the school library program is the ideal place to connect young people, media, and technology to engage students in STEM” (2019, p. 1; p. 163). Hamilton Public Library believes the library’s role goes beyond providing STEM activities like using Raspberry Pi’s but should provide assistance with every aspect of digital citizenry to enhance full participation in the growing digital nation (Feridooni et al., 2022).

Other initiatives, such as Reynolds and Chiu’s game design study, show the need for creative solutions to engage K-12 students in multidisciplinary digital knowledge to better prepare them for post-secondary and workforce environments (2015, pp.1822, 1832). Their study (2015) followed 242 junior and senior high students who participated in a year-long credited course that used game design to develop higher levels of “inquiry, collaboration, and student use of information resources” (Reynolds & Chiu, 2016, p. 1822). All the schools in the study had technology resources available prior to the course commencing; Reynolds and Chiu (2016) found that access alone did not allow students to engage effectively with technology. Only after being exposed to well-rounded educational experiences did students’ “dispositions to engage in technology use emerge” (Reynolds & Chiu, 2016, p. 1830). A pattern can be seen that libraries have a developing role in the education of digital citizens.

A challenge associated with reducing the digital divide in youth-focused libraries is the lack of confidence that library staff have in providing digital education, especially in the STEM regions (Johnston, 2019). When confident, “Teacher librarians [and paraprofessionals] can engage students and support teachers by providing access to digital resources, encouraging students in authentic inquiry practices, and providing real-world collaborative learning opportunities to promote STEM learning” (Johnston, p. 1). However, the school library industry often lacks the resources to provide exceptional STEM and digital learning experiences (Barron Rodriguez et al., 2021). Johnston’s preliminary findings displayed an inherent need for school library professionals to have

² The author believes that STEM initiatives should be STEAM [Science, Technology, Engineering, Art, Mathematics] initiatives, however, this debate is out of the scope of the paper. See Aisling Kelliher’s “Technology and the Arts: Educational Encounters of the Third Kind” (<https://doi.org/10.1109/MMUL.2016.41>) for a perspective on technology and arts. See also: “[STEM vs. STEAM: Making Room for the Arts](#)” and “[Explainer: what’s the difference between STEM and STEAM?](#)”

regular STEM professional development (PD) (pp. 2-3). In many cases, there is a need for government and institution funded and supported PD, along with advocacy to both those systems stating what libraries need and the public reminding them how vital the pillar of libraries are and why libraries need continuous support in varied ways (Johnston, 2018; Burchill & Kenney, 2020). With such a mass of information that has developed so rapidly, it can feel like a hopeless goal to achieve digital literacy. However, it is important to note that achieving digital literacy and ethical digital citizenship, and in turn bridging the digital divide, is a spectrum, not a fixed or final destination. The world is moving too fast, making technologies obsolete too rapidly and there will never be a finish line to cross or a “We bridged the digital divide!” celebration. But every time we educate a library professional, and in turn educate a patron, from submitting an online resume or learning the basics of a smartphone to hosting a children’s coding program; and every time we are a part of installing broadband infrastructure in rural and underfunded schools; we celebrate a win, an achievement, a betterment of our communities and peoples’ ability to participate in society.

Conclusion

Despite the fact that “Digital publishers are doing us (and themselves) no favors with the speedy abandonment of wonderful materials as platforms mutate” (Mackey, 2019), the fast-paced development, adoption, and obsolescence of technology cannot realistically be avoided. It has become the library’s responsibility to bridge the gaps between privileged and disadvantaged communities. Full participation in digital citizenry, including ethical behaviour and literacy, comes down to the prudent digital education and upbringing of students. Too often we see what Plato identified as having two nations in one – the divide between the wealthy and the impoverished, two groups who grow to resent each other because of socioeconomic differences (n.d., 421D-432B). In this case, there is the group who has plentiful opportunities to participate fully in the digital nation and the disparate groups who cannot afford to participate and are thus left behind as lives become heavily digitized. Two challenging areas arise in youth-focused libraries specifically. First, school and or student access to adequate internet infrastructure, ownership of technical devices, and educated use of and participation in digital technologies. To combat access barriers, school and youth libraries require

continuous advocacy from staff and financial support from their institutional parents and stakeholders, along with capturing and enhancing the voices of their community. Second, in the face of an ever-expanding divide, library staff often feel insufficiently prepared to educate patrons on becoming full digital citizens, and thus, require better and more consistent forms of felicitous professional development. Additionally, just as Mackey (2019) emphasizes the intrinsic value of reading while discussing the impact of digitization of resources on youth reading skills, so should the intrinsic benefit of being a digitally literate and ethical citizen be stressed. Each library must remember their institutional belief in lifelong learning and use their value system to work to their strengths, rather than focusing on countless impossibilities. Between advocating for and achieving access endeavours and education initiatives, libraries play an indispensable role in the cultivation of literate and ethical digital citizens.

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