Digital Literacy in Public Libraries

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INTRODUCTION
Why Digital Literacy?

Digital literacy, or the ability to effectively use digital tools for information, is part of the family of literacies that public libraries have historically supported in their communities. One could argue that digital literacy was a tradition in libraries even before the invention of the internet or personal computer. Although we currently associate digital literacy with using the internet, a type of digital literacy was needed to work with technology that is now obsolete, such as the telegraph, microforms, television, radio, the phonograph, or the movie camera and projector. As long as information has been created and disseminated digitally, consumers of this information have had to rely on their own skills and knowledge to use these tools to access information.

Whether this result is intentional or not, libraries are both *literate* environments and *digital* environments. As literate environments, libraries are essential to literacy acquisition and lifelong use of written information. As digital environments, libraries not only store and preserve this written information electronically but also emphasize digital access to information as a means of equitably educating the community on issues of health, employment, education, or local history. As an extension of the literacy discipline, digital literacy is a natural fit for libraries, falling within other literacy traditions in libraries, such as information literacy and media literacy.

This book has six goals:

1. Engage readers in the many strategies and services through which libraries support digital literacy in their communities.
2. Move the work of digital literacy from answering tech questions on the fly to integrating full-scale digital literacy programs throughout the library.
3. Provide readers ways to increase digital literacy opportunities within the scope of what is already available.
4. Answer questions about librarians' role in or potential for improving the digital skills of patrons.
5. Provide readers a background and foundation in digital literacy.
6. Provide actionable ideas for developing and improving digital literacy across the spectrum of library departments.

DIGITAL LITERACY IN THE LIBRARY

The concept of digital literacy in the library may seem obvious. Libraries have computers, and people need digital literacy to use the computers. Beyond that, digital literacy is needed to make the information and resources provided by public libraries available to all people served by public libraries. In addition, the public service mission of the library aligns well with the vision of an educated and democratic society. In a digital world, digital literacy is a core building block, making it possible for people to self-educate and participate as citizens. Without any level of digital literacy, a person is unable to access the wealth of resources and opportunities made possible by the internet and computing.

Digital literacy is one of many skills that can enable a person to improve their quality of life. In public schools, students now learn digital literacy during computer time, in electives, in their school libraries, or integrated into classroom curriculum. Digital literacy is often lumped in with media literacy, information literacy, or computer science, with some states, including California, Delaware, and New Jersey, requiring instruction in media literacy (which often integrates digital citizenship and digital literacy).[1] However, people who are not part of the K–12 school system are left on their own to develop digital literacy skills. The public library is one community space that provides free passive and active programming related to digital literacy, as well as the resources for which to improve digital literacy.

Digital literacy resources, services, and programming in the public library promise to create opportunity and level the playing field for communities that are often varied in income, geographic location, and access to resources. Moreover, at a time when libraries are interested in fostering inclusion, digital literacy is a perfect (almost necessary) supplement to digital inclusion initiatives. Intentional efforts to integrate digital literacy throughout library programming are inherently inclusive and equitable because of their accessibility, often being provided free of charge. They offer a platform to address the needs of marginalized communities and not only help users from underrepresented backgrounds connect with relevant tools and information but also expose all patrons to a wider range of digital content.

DIGITAL LITERACY AND SELF

Who is digital literacy for? Individuals rarely seek to specifically improve their digital literacy, nor do they even use the term *digital literacy*. Rather, that term is more often used by educators and policymakers to describe the acquisition of digital skills needed to be successful online. However, most people do want to learn to use technology and digital media. Although it would be rare to hear someone say, "I want to improve my digital literacy," we might hear, "I would like to learn more about using a 3D printer." Or, "How do I know if this image is AI-generated or if it's a real photo?" Or, "How can I set up an account so I can drive for ride-sharing company?" We also can't truly assess our own digital literacy—there is no test or assessment that can identify whether we have expert digital literacy skills or are developing digital literacy skills. We may not even realize that the trouble we are having on the computer is a digital literacy issue. In fact, someone might have strong digital literacy in word processing but still be developing their abilities to use library databases to find specific articles. Just as traditional literacy encompasses a wide skill set, digital literacy includes a range of skills and knowledge.

Because the term *digital literacy* is not one that people use to describe their technology skills or gaps, librarians may be better off framing digital literacy as something that can be *created*, *built*, or *developed* for people who wish to improve their digital competency (i.e., digital literacy). Therefore, digital literacy can be described as a support service in public libraries. Digital literacy can also be described as a core service because of how necessary the skills are in today's information environment.

A CALL TO READERS

As a librarian, you may already realize the critical relevance of digital literacy within your community. Though you may not be able to implement all your ideas without financial support or additional resources (time, staff, equipment), we hope that you will be able to find ways to increase digital literacy opportunities within the scope of what you have available.

Have you noticed that some patrons are hesitant to use technology? Or have you felt that your own programming or services could be improved if patrons had more digital literacy? Perhaps you have seen ways in which increased digital literacy skills could benefit a particular patron but are unsure of your

own role in or potential for improving those skills. This book offers guidance for answering these common questions.

This book also is a testament to the power of partnerships, to alert affiliates and partners about the potential of the library as a resource for digital literacy. Although libraries are often known for their book collections or spaces, the public is less likely to understand the other, more subtle work the public library does to empower communities. This book highlights the efforts that librarians are already making in their communities as leaders of digital literacy.

HOW TO READ THIS BOOK

This book contains four sections. Part I provides a background and foundation in digital literacy, as well as actionable ideas for developing and improving digital literacy across the spectrum of public library departments. Part II looks at digital literacy services and programs and the integration of digital literacy across existing library functions. Part III explains how to measure the impact of digital literacy initiatives and identify gaps within the community where the library can make an impact. The appendixes include practical tools that librarians can use to plan for integrating digital literacy throughout the library.

Throughout the different parts, there are also Ask the Expert text boxes. These are stories written by practicing public librarians who describe their experiences with digital literacy in their communities. Although this book has been written by two former librarians who are now professors, the contributions from the experts provide some authentic context as they share their real-life stories of digital literacy in public libraries.

Finally, this book has been written for public librarians, public library board members, or those affiliated with the public library who want to understand more about the digital literacy imperative within public libraries. Readers will develop their own understanding of digital literacy and the ways in which integration of digital literacy services and programming can enhance the library.

NOTE

1. In October 2023 Governor Gavin Newsom signed Assembly Bill 873 (leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202320240AB873), making California one of several states to require that media literacy be taught to all students. This bill included digital citizenship (the skills needed for using media appropriately) as a foundation for media literacy (the ability to assess, evaluate, and use digital media).

PART I
Making Connections

CHAPTER 1

Digital Literacy: An Overview

Have you ever wondered about something but didn't know where to start learning more about it? Maybe you have a certain place—such as ChatGPT, Google, or YouTube—where you always start your search to learn something new. This sense of wonderment is often the beginning of developing a new skill. Sometimes this new adventure is due to simple curiosity ("I would like to learn more about what it's like to live in Switzerland"), or sometimes it's due to a need to learn more ("My tire is flat; list the steps with pictures to fix it"). If you use your mobile device, laptop, or smart TV to find this information, then you are using your own digital literacy skills to find answers to your questions. Knowing how to search an internet-connected device can empower you, save you money, and create new opportunities. This is the ultimate goal of digital literacy: to empower individuals in accessing digital systems of information.

This chapter will describe the concept of digital literacy and define its various dimensions. It will not only establish how this book defines digital literacy but also provides context to understand more about the depth of digital literacy and how it differs from other types of literacies.

WHAT IS DIGITAL LITERACY?

Before technology, the term *literacy* meant to be able to read and write, with a focus on word and letter recognition. James Gee described literacy as "control of the secondary use of language," suggesting that literacy also includes the ability to functionally use language for self-expression and learning.[1] Today, the term *literacy* is still used to describe the ability to read and write, but contemporary scholars also consider literacy to be *a social practice* that requires *multiliteracies* and *critical literacy*.[2]

The ability to read and write in a medium other than paper and pencil falls within the paradigm of multiliteracy. Specifically, multiliteracy suggests that literacy extends beyond print literacies and includes the ability to use a variety of modes, including audio, visual, spatial, or even gestural, to communicate and learn.[3] This is where *digital literacy* falls within the broader field of literacy. The term *digital literacy* was adopted to specifically describe the competencies needed to read and write on the internet. Paul Gilster was the first to define digital literacy as "the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers."[4]

Digital literacy is the same as print literacy but with the additional ability to work within technological environments. As society has changed its reliance on technology (i.e., we now use technology for work, school, and many daily functions such as banking, shopping, and socializing), the way we think about digital literacy has also changed. Modern digital literacy scholars now explain that to be digitally literate, one must not only possess the technical abilities to use technology but also have the mental skills needed to use it successfully. For the purposes of this book, the definition of digital literacy used to guide the way in which digital literacy is approached in public libraries was developed by the American Library Association (ALA):[5]

> Digital literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills.

The ALA definition of digital literacy is widely accepted and used in school, academic, and public libraries. This definition is also commonly used in policies, by organizations, and among scholars (e.g., the Workforce Innovation and Opportunity Act uses this definition or an adapted version of it to describe digital literacy skills).[6] One reason for the definition's popularity is that it broadly addresses the basic function of using technology for informational purposes while specifically including the areas which concern information seeking and use. However, every discipline has its own variation of the definition of digital literacy.

Digital Literacy Across the Disciplines

Digital literacy is required in many fields. However, the focus can differ slightly, depending on the field (table 1.1). For example, in education, digital literacy

involves teaching youth to use computers and successfully navigate the internet, computer systems, and information resources. In the health fields, digital literacy aligns with the need to identify accurate information and to use health-related technologies to do so. In areas of economics, such as workforce studies, digital literacy focuses on the skills needed to be able to do well in one's career, find a job, or build a business.

Table 1.1: The value of digital literacy across various disciplines

Discipline	Value of Digital Literacy
Education	Digital literacy is considered one of the competencies that K–12 students must develop, often integrated into content areas.
Entrepreneurship	New ventures require digital literacy to create online businesses, market products and services, and engage in commerce.
Health	Patients need digital literacy to communicate with others about their health, as well as evaluate and apply health-related information effectively.
The Workforce	Digital literacy is critical for career advancement, upskilling, and workplace success.

Source: Adapted from Lauren Hays and Jenna Kammer, *Integrating Digital Literacy in the Disciplines* (Routledge, 2021).

Public librarians need an understanding of the breadth of digital literacy. Digital literacy takes different forms across various fields, making it essential for public librarians to develop their own versatile skills. Librarians helping with job searches require different digital competencies than those assisting patrons with health research. By understanding these distinctions, public librarians can better serve their communities' diverse information needs. Public librarians should therefore invest time in learning about digital literacy and how it applies specifically to the various information needs of their patrons.

UNPACKING DIGITAL LITERACY

The phrase "unpacking digital literacy" means breaking down or explaining what it really takes to be digitally literate. In 2018 Katharine Reedy and Jo Parker edited a book called *Digital Literacy Unpacked*, which described the importance of digital literacy and how librarians can lead in this area. In simple terms, the process is like opening a box of tools and taking a closer look at what each tool

does. It is critical to unpack the definition of digital literacy so that it can be positioned within the context of the library profession. For librarians, terms such as *find* and *create* are often grounded in ways of thinking that those in other disciplines may not recognize. For example, librarians know that *finding* is related to search, retrieval, and other concepts such as browsing. As a reminder, here is the definition of digital literacy with the words italicized that need unpacking:

> Digital literacy is the ability to use information and communication technologies to *find*, *evaluate*, *create*, and *communicate* information, requiring both *cognitive* and *technical* skills.

Unpacking "Find"

If you are asked to find something in your home, you can physically look for it by digging through drawers or closets or looking around. Finding something online can be like looking for a needle in a haystack. First, you must know what you are looking for. Sometimes we do know what we need to find (e.g., a property tax bill or a job posting); however, sometimes the need for information is not as clear (e.g., what is available to help a dog with hotspots). The act of finding online information involves knowing what information types are available (e.g., news stories, government documents, different types of journal articles, books, podcasts, blogs, tweets) as well as understanding how to use search tools (e.g., Google, federated search engines, databases). Now, with the availability of open artificial intelligence (AI), people can also use a large language model like ChatGPT to find and summarize information for quick answers to questions—for example, you can write a prompt in ChatGPT to request information about a historic event instead of searching Google, or you can use a generative pretrained transformer (GPT) designed for research, such as SciSpace. AI research tools such as Deep Research from OpenAI also create new opportunities for in-depth research and analysis. The pace at which technology is advancing means that the digital literacy skill of finding information is rapidly evolving and that librarians must stay current.

Technical Skills Needed to Find Information

- Ability to select a search engine, large language model, or database
- Ability to apply prompts, keywords, subject headings, search operators, and search filters to broaden or narrow searches
- Ability to use functions of digital interfaces

Cognitive Skills Needed to Find Information

- Ability to recognize the information need
- Ability to make decisions related to the search
- Problem-solving ability to refine and redirect searches until successful
- Ability to organize information and resources

Unpacking "Evaluate"

A Google search, or even a library database search, will yield millions of results, most of which are not relevant or of sufficient quality. In addition, some results may not even be legitimate, factual, or honest. Some results will lead to partial information, with full-text information available only behind a paywall. A search in generative AI may also yield false results (once referred to as *hallucinations*) or lack citations to the original source. Having the skills to *evaluate* found information is an important part of being digitally literate. Historically, librarians have used tools like the CRAAP test to teach patrons how to review information for currency (when was it published?), relevance (what is the coverage?), authority (who wrote it?), accuracy (where are its sources?), and purpose (what is the goal of the item?). However, given the complex nature of online information, more recent recommendations encourage the teaching of lateral reading, which is a strategy for evaluating the credibility of a source by comparing it with other sources. Finding secondary sources of information can help with evaluation because sources can then be compared and supplemented.

With the growth of images created by AI, information evaluation has expanded to include visual analysis skills, requiring us to identify potential markers of fake content. This critical ability relies heavily on subject-specific knowledge—the more familiar we are with what's depicted, the better equipped we are to recognize inconsistencies or implausibility.

Public libraries often provide curated lists of library resources that include more reliable information to help patrons with information overload and to inform the public about the resources available. Libraries may also publish blog posts, newsletter articles, or other informative pieces explaining resources and the quality of information that can be found in them.

Technical Skills Needed to Evaluate Information

- Awareness of the available search tools
- Ability to select the most relevant and appropriate source for the information need
- Ability to determine credibility of sources
- Ability to seek varied perspectives

Cognitive Skills Needed to Evaluate Information

- Ability to use reasoning to identify the different types of information (fact, opinion, fiction, peer review, news, etc.)
- Ability to critically evaluate the information found in a search
- Awareness of how digital information circulates as culture
- Ability to compare and contrast different types of information
- Ability to understand bias

Unpacking "Create"

Public libraries develop innovative opportunities for patrons to *create* in the library. As a digital literacy skill, creating information is part of contributing to the cycle of knowledge. Knowledge creation includes writing, publishing, podcasting, videography, photography, 3D printing, web design, social media, and more. In addition to having the technical digital literacy skills needed to create knowledge in these mediums, patrons need to understand the ethical and legal implications of intellectual property, plagiarism, and Creative Commons licensing when using, sharing, and attributing others' work in their creations.

Many libraries provide makerspaces, studios, or specialty technology (such as a 3D printer or an espresso machine) to support patrons who wish to *create*. Although *creating* in new mediums is certainly a digital literacy skill, the acts of word processing and producing spreadsheets and slide presentations also involve creation and are often taught as part of a library's computer basics workshops.

Technical Skills Needed to Create Information

- Knowledge of HTML, CSS, or other programming language to create digital content
- Graphic design skills for creating visuals
- Word processing or spreadsheet skills
- Video or photo editing skills
- Recording and uploading skills

Cognitive Skills Needed to Create Information

- Ability to plan a project, including time management and prioritization
- Ability to use creativity and imagination
- Ability to use structured problem-solving or design thinking

Unpacking "Communicate"

The nature of the internet as a communication tool has led to the need for digital literacy skills related to communication. Online communication involves reading and writing for a digital audience, which has different features than a print audience. Online communication is often concise and descriptive. Tone must be considered in online communication because it replaces the verbal cues and gestures that occur in face-to-face communication.

As remote work and remote learning have increased, communication in digital formats has become even more important. Digital literacy skills related to communication might include typing, writing emails, and developing social media abilities (such as understanding digital footprints, privacy, and security) as well as using technologies such as web conferencing or mobile devices to communicate with others. Digital literacy skills related to communication also include cultural awareness, digital citizenship, and collaboration. For example, Google Workspace offers many features that allow for digital collaboration, and public libraries with computer basics programs may offer information about this suite of tools as one of their events. Families and friends often communicate digitally, whether through texting, using social media, or videoconferencing.

Technical Skills Needed to Communicate

- Technical writing skills to communicate in a clear format for online audiences

- Knowledge of grammar, spelling, and punctuation tools
- Ability to cite sources and clarify where ideas come from
- Application of netiquette rules to avoid discrimination or personal attacks
- Use of digital collaboration tools
- Typing skills
- Knowledge of video and audio tools for communicating

Cognitive Skills Needed to Communicate

- Empathy to understand the human experience of communicating online
- Critical thinking skills to identify misinformation or bias
- Social responsibility skills, including fairness, accountability, transparency, and safety

DIGITAL RESILIENCE

Digital literacy is required to build digital resilience. Digital resilience is defined by DigitalUS.org as "having the awareness, skills, agility, and confidence to be empowered users of new technologies and adapt to changing digital skill demands."[7] People who have digital resilience coupled with digital literacy are able to adapt more easily to changing technologies, as well as use technology to participate more fully in their community, economy, and personal life. One way to operationalize digital resilience is to consider integrating the habits of mind, which are thinking habits and dispositions that allow one to push past problems.

Incorporating the Habits of Mind to Build Resilience

Although the ALA definition encompasses the essence of digital literacy, some authors have suggested that there are social-emotional factors, or habits of mind, which should be considered when thinking about digital literacy because finding, evaluating, creating, and communicating information can be stressful as people expand their skills. People might experience information overload or be afraid that they will break the computer (technophobia). They may also experience joy, inspiration, and excitement as they discover new uses for the computer or build their own self-efficacy as their skills develop.

Becoming digitally literate also includes good thinking about technology. To *think good* about technology, one must develop the habits of mind needed to be willing to learn, or the dispositions that are needed to be willing to learn and apply new behaviors. Sixteen habits of mind (or dispositions) are needed to be able to learn.[8] In *Digital Literacy Made Simple*, a book for teachers about integrating digital literacy in their classroom, the authors identified four habits of mind that most related to digital literacy: evaluation, problem-solving, lifelong learning, and situational understanding.[9]

- Evaluation: As a habit of mind, evaluation refers to the dispositions needed to assess information, including the ability to consider what technical equipment is needed to complete an information task, as well as to critique digital information. For example, the Newton Public Library in Newton, Kansas, offered a tech talk called "What computer best suits your needs?" to help patrons learn how to choose the best computer.
- Problem-solving: As a habit of mind, problem-solving refers to the ability to work through difficulties or take risks to try new things when using computers. One librarian described this disposition as encouraging patrons to realize that they will not break the computer if they click on something new to them.
- Lifelong learning: As a habit of mind, lifelong learning refers to the growth mindset needed to keep learning digital skills. We like to describe digital literacy as a continuum—though you may be digitally literate in one area, another area may be new to you. For example, the authors are digitally literate in many technologies and evaluation skills and are developing digital literacy in generative AI. Some patrons may be learning a technology for the first time or have previous experiences of using a computer that make them afraid of breaking it or of trying new things. Remembering lifelong learning can help librarians patiently teach skills that will help patrons grow into a mindset in which they are comfortable exploring or using technology throughout their lifetime.
- Situational understanding: As a habit of mind, situational understanding involves the ability to comprehend within various contexts. For digital literacy, this disposition involves the ability to realize how a technology can be used in different situations, such as using databases to read the most current issue of *Consumer Reports* or to find research articles for a homework assignment.

Digital literacy is the ability to actively find, evaluate, create, and communicate information in the digital world. The habits of mind provide the dispositions necessary to develop these skills for personal use or for use in the professions. For librarians, this means remembering that patrons have existing habits of mind that make them resistant or eager to use digital tools and resources. Some patrons may need to develop the habit of mind necessary to use technology, in addition to developing the skills for using it.

ASK THE EXPERT

Supporting Digital Resilience in Library Computer Classes

Stephanie Singleton, PhD, Oakland Public Library

Computer classes can have a profound impact, extending far beyond the acquisition of digital skills. They can empower students by helping them recognize their learning abilities and past triumphs. Computer classes can also provide the framework and opportunity for students to embrace a learning mindset. Many learners enter these classes with anxiety, self-doubt, and concerns about possible learning disabilities. They may be questioning their ability to succeed. How we respond to these learners and their concerns can either uplift and empower or unintentionally diminish and dismiss them and their concerns.

It's important that we remember what it is like to be a beginner in anything. Too often, instructors respond to learners' worries with phrases such as, "Oh, you'll be fine," or "You can do anything you put your mind to; it's easier than you think." These statements are often followed by the advice to "just keep showing up." Although such statements are meant to be encouraging, they can appear insensitive to the real challenges learners face and lead to them feeling invalidated, unseen, and unheard. Telling someone to "just keep showing up" oversimplifies a process that, for many, is anything but easy. Showing up is not the same for everyone.

Consider what "just showing up" means for someone who has expressed fear about their ability to learn. Such an admission reveals the individual's vulnerability. They have shared their internal struggles—the doubts and demons that tell them that they're not smart enough or that they are too old or too slow to learn. They may carry memories of past humiliations in learning environments. For them, showing up means sitting in a classroom for two hours, twice a week, confronting every negative thought, experience, and fear that undermines their confidence.

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