Digital Literacy

This Brief

What Does It Mean to Have Digital Literacy Skills?

Digital literacy skills *means "the skills associated with using technology to enable users to find, evaluate, organize, create, and communicate information; and developing digital citizenship and the responsible use of technology" (Museum and Library Services Act of 2010, Pub. L. 111-340, 22 Dec. 2010).*

Digital literacy is much more than proficiency with discrete computer skills. Certainly, these foundational skills are critical; however, the crux of what is meant by digital literacy is the recognition of these skills' relevance in specific contexts and one's ability to creatively apply them (International Society for Technology in Education, 2016; Jacobs & Castek, 2018; Vanek, 2017). Also important to note, digital literacy is often referred to as one monolithic construct, but it is really one that encompasses several groups of competencies. In their foundational work on the topic, Lankshear and Knobel (2008) suggested that successful functioning in digital spaces and with digital media requires a plurality of proficiencies, starting with text literacy and technical skills and extending to include the cognitive and sociocultural strengths. Drawing on both foundational

Issue Brief
A project of the American Institutes for Research
Acknowledgements:
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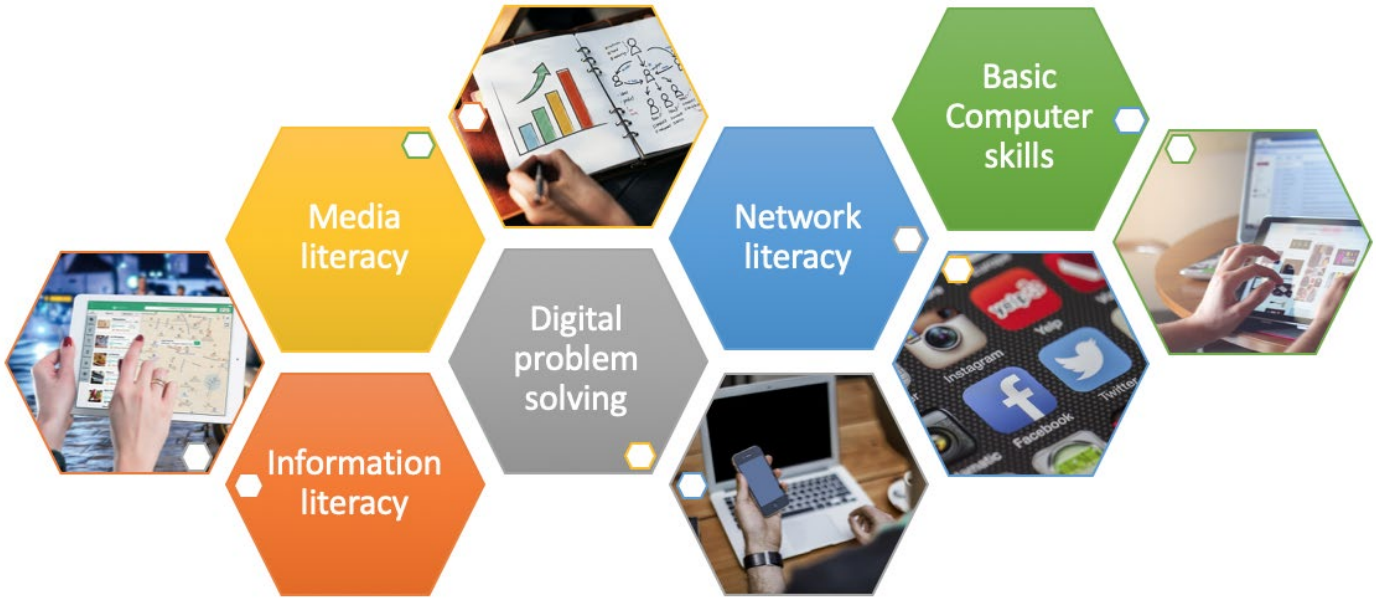
Editors: Mariann Fedele-McLeod, Cherise Moore, and Marcela Movit

and more current research literature addressing digital literacy (Eshet-Alkalai, 2004; Harris, 2015; Pegrum, 2010; Siemans, 2004) highlights a multitude of proficiencies that can be illustrated as below.



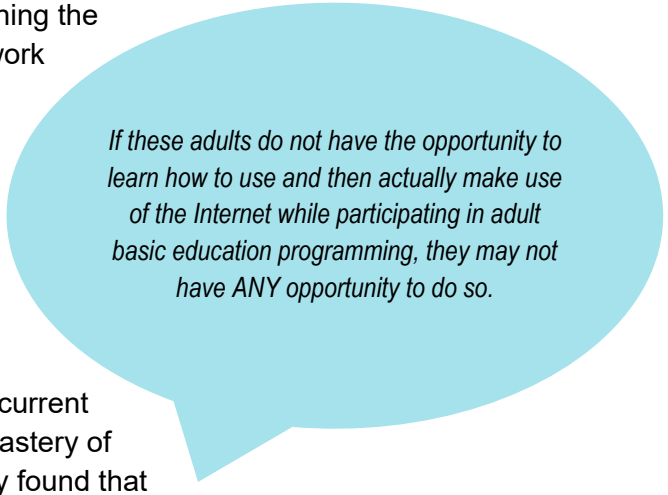
- **Basic Computer Skills**: These are the skills needed to control digital devices and use them to accomplish simple tasks. Harris (2015) identified them as “turning [digital devices] on and off; keyboarding; using a mouse; using a touchpad; right- and left-clicking; double-clicking; and long-pressing ... knowing how to create, save, locate, and edit computer files as well as how to open, use, and close a variety of computer applications” (p. 13). Basic applications include e mail, Internet browsers, search sites (e.g., Google.com), maps, and calendars. Harris noted that use of these applications requires some proficiency with language and literacy.
- **Network Literacy**: Network literacy emerged from the concepts of search literacy and information literacy, focusing on the skills required to access and curate information as required by social networks (Pegrum, 2010). It is based on the concept of connectivism, which views knowledge as social and distributed across networks. Access to and participation in the construction of knowledge requires this new skill, as Siemens (2004) contends in his online blog by noting that “The capacity to form connections between sources of information, and thereby create useful information patterns, is required to learn in our knowledge economy.” Social media including Facebook, LinkedIN, SnapChat, and other social websites, has lent weight to one’s knowledge of online social networks, how to learn from them and through them, and how to use them to access and disseminate information.
- **Digital Problem Solving**: Jacobs and Castek (2018) define this as one's "ability to navigate and use multiple digital resources to accomplish goals across domains, including work, personal interests, educational pursuits, social and professional networking, civic participation, and for future uses not yet conceptualized " (p. 681). The definition expands on the well-known Problem Solving in Technology-Rich Environments, defined as " ... using digital technology, communication tools and networks to acquire and evaluate information, communicate with others and perform practical tasks (Organisation for Economic Co-operation and Development, 2009, p. 9). An important distinction in the former is that it recognizes proficiency employing what they call "everyday literacies" like asking questions, making meaning, and drawing on an experience using technology to support future encounters in other contexts.

- **Information Literacy**: The American Library Association (1989) defines information literacy as "a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information." We expand this definition in digital literacy as using technology to enhance information. Information literacy has become more complex as the technologies that are used to organize and disseminate information (e.g., library websites, databases, Internet search applications) have become more sophisticated and as more information is available online.
- **Media Literacy**: Much like information literacy, media literacy focuses on finding, evaluating, using, and communicating information; however, it emphasizes the range of media found online "from print to video to the Internet," (n.d.) according to the Center for Media Literacy. Media literacy also takes into account production skills, including production of original content and remix, through which learners contribute to the body of information found online (Bigelow, Vanek, King, & Abdi, 2017; Knobel & Lankshear, 2008).

Why Is Digital Literacy Important?

Digital literacy development is a critical component of adult basic education instruction. ABE classrooms are filled with adults who may have had interrupted formal education, who might be developing literacy for the first time, or who may be struggling with numeracy or English language proficiency. For these learners, digital literacy can support or accelerate the acquisition of knowledge and the development of proficiency in a range of academic contexts (Harris, 2015). This means that the role of an ABE teacher is two-fold with respect to digital literacy: (1) to ensure that learners have foundational computer skills, and (2) to leverage those skills and provide ample scaffolded opportunities to use them in learning. In this way, teachers can not only support the achievement of academic content goals but also can support students' resilience, better preparing learners to nimbly and fluently use technologies as they move through their day.

The need is great. A National Skills Coalition study concerning the foundational skills required to perform entry-level service work reported that 73% of workers in these positions lacked digital problem-solving skills (Bergson-Shilcock, 2017, p. 9) and "... two out of three workers who struggle to use computers are using them on the job anyway" (Bergson-Shilcock, 2017, p. 16). The picture becomes more concerning when expanding this employability lens to middle skills jobs, jobs that require less than a bachelor's degree and yet generally pay a living wage. According to Burning Glass Technologies, these jobs represent 46% of current labor demand, and 82% of them require digital skills like mastery of spreadsheets and word processing. Furthermore, the study found that middle skills jobs that require use of digital technologies pay more and provide a career pathway into middle- and high-skill jobs (Burning Glass Technologies, 2017, p. 3).



A recent Pew Center for Research study hints at the importance of digital literacy outside of the workplace. Although all but 10% of Americans use the Internet, those who do not have Internet access at home tend to have less than a secondary education and live in households earning less than $30,000 a year (Anderson, Perrin, Jiang, & Kumar, 2019). These demographic facts about Internet holdouts align with the demographic data of adults with basic skills and learning needs; because they lack a secondary credential, many adult learners are unemployed or underemployed and do not earn family-sustaining wages. If these adults do not have the opportunity to learn how to use and then actually make use of the Internet while participating in adult basic

education programming, they may not have *ANY* opportunity to do so. In addition, lack of digital literacy skills will hamper adult learners at the workforce entry level and may impede or prevent their advance to the middle-skill work so critical to an upwardly mobile career pathway.

Finally, digital literacy is a focus in the College and Career Readiness Standards (CCRS), used in adult education programming. Learners need 21st century skills in key areas such as critical thinking, problem solving, communication, and collaboration supported by the creative application of digital technologies to succeed at school and work. These skills are articulated throughout the anchor standards and benchmarks of the CCRS (U.S. Department of Education, 2013).

How Do You Implement the Skills That Matter for Digital Literacy?

Digital literacy proficiency is needed to fully participate in economic, civic, work, and daily life in the United States. ABE programs are well-situated to support the development of digital literacy by ensuring that learners have basic digital literacy skills and know how to nimbly leverage them to accomplish real-world work and academic tasks. In addition, the skills that matter across the range of content areas covered in ABE programs will serve to support digital literacy development if they are integrated into the goals of classroom instruction. These skills and an interpretation of how they are represented in the context of digital literacy are described here:

- **Critical thinking**—Students must have the skills and knowledge necessary to draw on inductive and deductive reasoning, systems thinking, and analysis so that one can evaluate evidence, opinions, and information and synthesize, critique, evaluate, and interpret information to draw conclusions, communicate information, or complete a task, employing relevant technologies in support of each step (Partnership for 21st Century Learning, 2019). These skills can be developed in classrooms that weave digital literacy into research projects that scaffold information literacy skills as learners build confidence finding and evaluating information they find online. When handing out directions for an assignment, a teacher may include a list of questions that students should ask themselves about the reliability and validity of various websites they visit as they do their work to remind students to think critically about the information they find online.
- **Communication**— Students must have the skills and knowledge necessary to express oneself creatively for a variety of purposes in diverse contexts using the appropriate platforms, tools, styles, formats, and digital media necessary to reach different communication goals. In the classroom, teachers can teach essential computer skills like using word processing and presentation software (among other technologies) and then help learners discern what technology to use for what purpose, the conventions and expectations for use, and how to share with others. For example, if teaching Microsoft word, it would be important to not only teach basic formatting, but also how to search for and select templates for different communication purposes (e.g., résumé cover letter, general business letter, brochure).
- **Processing and analyzing information**— This is a 'big tent' skill in the area of digital literacy because information online abounds. Students must have the skills and knowledge necessary to understand how and why digital media and information are constructed, for what purposes, and how individuals interpret messages differently depending on their values and points of view. They also must have the skills and knowledge necessary to recognize how media can influence beliefs and behaviors, how to consciously make decisions about ethical and legal issues surrounding the access and use of technology, and how to synthesize to make connections and draw conclusions based on analysis of information found online (Partnership for 21st Century Learning, 2019). In the classroom, media literacy activities that provide support on identifying bias should be woven into any lessons about internet search. Also important are classroom activities that help learners use software like Excel to organize and analyze numerical data.

- **Self-awareness**—Students must have the skills and knowledge necessary to sense one's own competency in choosing and leveraging technology best suited for demonstrating the achievement of learning goals, problem solving or in working with a new technology; to draw on knowledge of one's own skills; to seek support when needed (International Society for Technology in Education, 2019); and to monitor one's progress toward goal completion and alter course when a new approach or technology is required (OECD, 2009; Vanek, 2017). Each student in a class might have a folder that contains a checklist of skills and knowledge; the teacher can provide students time to review and update the checklist on a monthly basis, checking off the skills that they gained over the previous month.
- **Problem-solving**— Students must have the skills and knowledge necessary to complete non-routine tasks by drawing on familiar technologies, complete routine tasks by drawing on new technologies or, if needed, new tasks requiring use of new technologies (OECD, 2009; Vanek, 2017). The classroom should provide opportunities to practice digital problem-solving, to "navigate and use multiple digital resources in order to accomplish goals across domains including work, personal interests, educational pursuits, social or professional networking, civic participation, and for future uses not yet conceptualized" (Jacobs & Castek, 2018, p. 681). Open-ended problem-based learning activities that support students' use of a broad range of technologies can help them develop problem-solving in the comfort of a classroom. Learners can be asked to identify a problem in their community, guided to use survey technologies to better understand a range of opinions on the issue, and then instructed to collaborate using technology to craft a presentation on the issue and possible solutions. In this example, not only is the goal of activity focused on a problem, but the integration of each technology employed likely requires untangling minor problems caused by use of the technology.
- **Navigating systems**—Students must have the skills and knowledge necessary to understand where to find information and how to use it to accomplish a predetermined goal or solve a problem using digital media and text, online learning tools, and social media resources (Partnership for 21st Century Learning, 2019; Wyatt, 2018). As is possible, classroom activities should include authentic internet-based resources. For example, if you are working with an English Language Arts class on social media, have the learners examine their own networks to better understand audience and purpose of each. If you are helping students learn how to use mapping technologies, ask them to identify actual destination and modes of transport they are likely to use, then create worked examples to get them to practice finding places. A teacher might create an activity that requires students to use technology to map public transit routes from their home or school to relevant locations (e.g., doctor's office, American One Stop, library) for arrival at a specific time, for example, "Find the dentist nearest your home; figure out how to get there for an appointment on [date] at [time]."

What Are Some Tips for Teaching Digital Literacy Skills in Your Classroom?

- **Support foundational skills.** Although the goal is to integrate digital literacy work into academic activities, it is important not to ignore the reality that some learners will have little or no foundational skill. To help these learners develop self-awareness about their competencies and to determine how to support discrete skill building, assess students to find baseline skills. Foundational computer skills are the basis for all digital literacy. Provide support—including direct instruction of foundational skills—as needed; then move quickly to put these newly learned skills into use in relevant tasks using "worked examples" in activities that emphasize focused digital technologies. Eventually, the instructor can shift from worked examples to the use of authentic skills learners need to complete tasks of their own choosing.
- **Teach the vocabulary of computer skills.** Learners need to understand and use the language of computer skills if they are to apply those skills in settings where the primary mode of instruction is in English (Vanek, in press).

- **Integrate technology.** Provide ample opportunities for use of technology both in class and out of class. Blended learning programs in any academic content area make this possible; providing low-stakes reasons for using new digital literacy skills (Rosen & Stewart, 2015; Vanek, Simpson, Johnston, & Petty, 2018).
- **Emphasize access.** Make use of the devices that learners own so that they can develop comfort using them in new ways. Teachers must attend to issues of Internet access. Although more than 95% of adults in the United States have access to mobile devices, not all have smartphones and even fewer adults have data plans (Pew Research Center, 2018). Provide computer labs; offer location information for area libraries or community-based organizations that have computer labs; establish Wi-Fi hotspot lending programs.
- **Use relevant technologies.** Determine what learning management system or other workforce or educational technology is used in targeted postsecondary programs or sites of apprenticeship or employment. Teachers should use these technologies in their instructional programming so that learners can become comfortable with them and to support learners' transition to college and careers.

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This project is funded under U.S. Department of Education Task Order No. ED-ESE-15-A-0006/91990018F0371 with the American Institutes for Research.