



# Digital Literacy—Digital Citizenship

By Robin Ward Stout

Today's students were practically born with technology in their hands. Their digital footprints were often created while in utero by well-meaning parents posting sonogram images on social media. These students are adept at personal communication via the Internet, yet they typically are not proficient in the application of digital skills and literacies in an academic setting.

According to the 2016 World Economic Forum's Future of Jobs report (<http://reports.weforum.org/future-of-jobs-2016/>), 65% of today's elementary school students will work in job types that do not yet exist. Fortunately, we, as librarians, are in a position to address this problem. Librarians, to this point, have led the charge in teaching students about digital citizenship, "the norms of appropriate, responsible behavior with regard to technology use" (Ribble and Bailey, 2004). We have been doing so for decades through source evaluation, citation, and copyright.

More recently, we have incorporated teaching the nine components of digital citizenship, as identified by Mike Ribble and Gerald Bailey (2004): digital access, digital commerce, digital communication, digital literacy, digital etiquette, digital law, digital rights and responsibilities, digital health and wellness, and digital security.

## Why is this not enough?

The primary *raison d'être* of the American education system is to prepare students to be productive members of a democratic society. We now need to prepare students to be productive members of a global online community as well.

Accomplishing this presents several challenges. The school librarian on campus is often the primary—sometimes the only—conduit for digital citizenship instruction and modeling for students.

Much of the current digital citizenship instruction offered to students emphasizes safety and security rules such as creating strong passwords and cyberbullying avoidance. Students need daily, guided practice in applying these rules in an online academic environment. They also need instruction on how to meaningfully integrate digital skills into their daily life.

Digital literacy is defined by the American Library Association as "the ability to use information and communication technologies to find, understand, evaluate, create, and communicate digital information, an ability that requires both cognitive and technical skills" (2013). Digital literacy encompasses not just the consump-

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tion of information, but also information creation via methods such as video and Web content tools. Students develop skills that bridge traditional print, mass media, and digital communications to actively utilize a variety of media and information and create unique products. It is, so to speak, a leveling up of digital citizenship.

### How can we transition into the wider skillset of digital literacy?

There is a discrete difference between digital skills and digital literacy. Digital skills are the specific abilities required to manipulate a digital tool; for example, how to create, work in, and save a word processing document. Digital literacies are the critical thinking and problem-solving components required to select and effectively use a digital tool. These are the questions of when to use a particular digital resource and how it might best be used. Both digital skills and digital literacies are cross-disciplinary and best integrated meaningfully into content. They should not be taught in isolation.

### Digital literacy tips by age level

As you will likely experience students who come to you without these skills and literacies, this is a general guideline of when it is developmentally appropriate to begin embedding these topics into instruction. It is entirely appropriate to re-teach, refresh, and to “back teach” skills to students who have not been previously exposed.

#### Elementary

Elementary librarians teach Internet search techniques and beginning Boolean operators in addition to their regular digital citizenship instruction. Source attribution is also a vital concept at this age as students learn who owns information and how to use it respectfully. These are skills that can serve as a bridge from digital citizenship instruction to digital literacy skills acquisition and are applicable in any core content area.

Elementary students can also be introduced to the ins and outs of collaborative work in a closed online environment. A digital literacy emphasis would include providing and responding to thoughtful feedback in addition to idea generation and collaborative writing practices.

Students also benefit from learning production software basics such as those offered by Apple, Microsoft, and Google as they create digital products. Students particularly can benefit from instruction on shortcuts, tips and tricks, and graphic image creation and manipulation in addition to learning how to choose which productivity application best suits a particular task. Students’ using production software provides librarians with the perfect opening



to address copyright. As students invest time in creating their digital products, they can better appreciate the time, research, and creativity that goes into developing an original work.

Coding instruction is another crucial digital literacy. It is logical to begin coding instruction as students learn to identify print words and symbols, as coding fosters skills valuable to print literacy development such as cause and effect, sequencing, and sentence structure. Librarians can teach computer coding via online programs such as [code.org](http://code.org) or [scratch.MIT.edu](http://scratch.mit.edu) and apps such as The Fools and Lightbox.

#### Middle school

Middle school librarians teach how to ascertain from a URL the source of a site and determine which other sites link to that webpage. Students use this information to judge veracity of content posted on that site. URL deconstruction is a valuable critical thinking activity that “fake news” allegations have made especially timely. The November Learning website offers tutorials on how to read a Web address and how to find the publisher of a website as information literacy resources. Learn the Net also offers a lesson plan online for teaching about Web addresses.

Middle school students are also beginning to explore social media and assume responsibility for their online identities. Moving beyond scare tactics and including tips for cultivating a productive network of friends and followers in order to create a “personal brand” is especially timely for students at this age. Likewise, students can benefit from instruction on account settings.

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Librarians also teach students how to determine the origin and geolocation of images found online and how to conduct a reverse image search that will be valuable for both schoolwork and personal social media usage. Google Images offers a reverse image search feature where students drag and drop an image into the Google search bar using the Chrome or Firefox browsers. TinEye is also an example of a reverse image search engine where students can upload an image or URL and determine where the image originated.

Students in middle school tend to consider themselves expert Googlers; yet they typically have no idea how to make use of advanced Google search techniques. A tutorial on techniques to take advantage of added features, commands, and limiters is especially useful to add to traditional research instruction and allows students to augment online database searches with their preferred source of information.

HTML and CSS basics are also developmentally appropriate coding skills for students as they begin building webpages to showcase portfolios and digital work. Helping students decide how to best graphically communicate information is where librarians can augment existing online tutorials with digital literacy-related challenges. What is even better is that the librarian does not need to know HTML to aid a student in deciding how to best organize and present a website design! Codecademy has an interactive tutorial on HTML and CSS that is written in clear, student-friendly language.

As students become more socially aware and concerned with peer interactions, global collaboration possibilities abound via online tools. For example, take a look at the opportunities offered through Skype in the Classroom. This interdisciplinary tool connects educators and students globally to experts and other classes seeking to connect and learn.

### High school

High school librarians demonstrate advanced research techniques such as “devil’s advocate” searching. They instruct students to use online databases and the Internet to examine all sides of a research topic. For example, what does a news article in another country report about current events? What are scientists in other nations contributing to their field of study? NASA provides an exhaustive list of country codes used on the Internet. Applying

previous URL instruction to searches for websites originating outside the United States leads students to discover resources from other viewpoints that provide depth and balance to the standard Internet search.

Librarians also model and encourage savvy social media practices such as connecting globally to experts as primary sources. They help students curate quality social media networks that foster student/expert connections for research and personal interests.

Instruction on social media curation can also be a valuable segue to an introduction to data analytics—how followers are calculated and datamined by marketing firms. A site such as Followerwonk allows students to analyze their Twitter follower locations, times active, biographies, and number of tweets. Likemeter is an example of an app students can use to analyze their likes and leverage the information to better target followers.

High school students are also often media-savvy enough to explore digital media manipulation/remixing to demonstrate learning. Librarians strengthen copyright instruction with an introduction to the types of licensing and resources available from Creative Commons that students can use as they create and remix digital media.

### College

Collegiate librarians are experts in information literacy and help students build online professional learning networks related to their fields of study. Students can learn how to leverage .edu accounts to receive primary source documentation for their research via personal communication with experts. College students would also benefit from instruction in methods to avoid data mining and opt out of data analytics in addition to learning the basics of how to interpret “big data” generated by sites. In addition, exposure to the world of MOOCs (Massive Open Online Courses) can be an invaluable study tool for college students.



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