

# Health Systems and Adult Basic Education: A Critical Partnership in Supporting Digital Health Literacy

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Technological innovation often is presented as a way for health systems to deliver services to more patients at a lower cost. However, this increase in technology usage has changed what patients are expected to know and do without any additional commensurate support being provided for patients. A reliance on technology to accomplish things such as disseminating health information and monitoring conditions, as well as communicating with and engaging patients in their health care has the potential to add to current health disparities for patients without access to or the skills to use these technologies. The potential benefit of using technology to increase patients' engagement in their health care rests on the assumption that patients have access to the Internet and devices, and also possess the skills to use both. Yet, like health literacy, Internet access and the associated skills to use the Internet track closely with "longstanding inequalities in income, education, race and ethnicity, age, immigration status, and geography" (Office of Policy Development and Research, 2016) indicating disparities in the ability to benefit from technological innovations.

Building literacy skills has long been considered a tool for addressing health disparities (Feinberg, Tighe, Greenberg, & Mavreles, 2018); so too is building digital health literacy. These skills can be defined as those needed to access digitized health care resources such as information online, electronic health records, e-prescriptions, personal health tools and fitness trackers, and online support communities (Sadiku, Tembely, Musa, & Momoh, 2017). This article describes how an increasing reliance on technology may have a negative impact on vulnerable populations who are already at risk for low health literacy and health disparities, arguing that health literacy needs to include digital health literacy. Just as health systems are fostering innovative partnerships to address concerns such as social determinants of health, collaborating with adult basic education programs is one way to simultaneously meet the goals of adult basic education programs to provide relevant instruction while offering adult learners the chance to increase their health outcomes by building their digital health literacy.

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## DIGITAL HEALTH LITERACY

Digital health literacy occurs at the intersections of literacy, digital literacy, and health literacy. The definition of literacy changes as new technologies emerge (Leu, Kinzer, Coiro, Castek, & Henry, 2013); however, regardless of the technology used, whether ink and paper or pixels and screens, being literate involves decoding and comprehending words as well as understanding and interpreting the world (Friere & Macedo, 1987). Thus, to be literate requires individuals to be able to make sense of texts across a variety of media and then apply that to their daily lives. Littlejohn, Beetham, and McGill (2012, p. 547) usefully define digital literacy as “the capabilities required to thrive in and beyond education, in an age when digital forms of information and communication predominate.” Digital literacy requires the ability to use a computer and online software and platforms as well as the ability to make sense of what is found online. Health literacy is the degree to which individuals have the ability to obtain and understand basic health information and services that they need to make appropriate health decisions (Kindig, Panzer, & Nielsen-Bohlman, 2004).

Drawing on these three definitions, and similar to Norman and Skinner’s (2006) broader concept of eHealth literacy, digital health literacy requires: (1) basic reading and writing skills, (2) working knowledge of using computers, and (3) an understanding of how, why, and when online health information is created, shared, and received. Digital health literacy skills are applied when participating in the health care system using tools such as online portals. Norman and Skinner’s concept of eHealth literacy includes traditional literacy and numeracy, computer literacy, media literacy, science literacy, information literacy, and health literacy. Portals require actions such as opening and closing browsers, navigating pages and tabs, communicating online with providers, and reading and understanding curated digital information (Tieu et al., 2016). Whereas online portals contain information approved by a trusted medical authority, individuals also need to be able to navigate online health information that is freely available on the Internet, determine the credibility of sources, interpret and synthesize health information from multiple sources, comprehend large amounts of text, understand the meaning of specialized vocabulary, interpret graphics and images, and understand how online texts are organized (Mein, Fuentes, Soto Más, & Muro, 2012).

To go online to find health information, join a virtual support group, or use some other online-based technological innovation, it is necessary to access the Internet.

Access to broadband Internet service is so critical that the American Medical Informatics Association (2017) urged the Federal Communications Commission to “consider access to broadband among the social determinants of health when developing future policies and programs” (para 1). A common assumption is that the high use of mobile devices, such as smartphones, addresses the need to access the Internet; however, a closer look at data reveals that mobile-only access may not provide the “always on” Internet called for by the American Medical Informatics Association. For low-income adults, a smartphone may be their primary access to the Internet; 20% of Americans with an annual household income of less than \$30,000 depend on their smartphones for Internet access (Anderson, 2017). Individuals who primarily rely on their smartphone for Internet access frequently experience financial barriers to that access. These barriers include low data-cap plans and the need to suspend or cancel services because of restricted finances (Horrigan & Duggan, 2015). Thus, the increased dependence on technology in the realm of health creates a barrier to care for those who have limited Internet access or low digital literacy skills, which threatens to add another layer of disparity.

Despite the ubiquity in the use of technological innovations such as electronic health records, e-prescriptions, personal health tools and fitness trackers, and online support communities, little attention has been given to the skills and access needed to benefit from those innovations in the fields of health and health literacy. Populations who are more likely to have low rates of health literacy (Center for Health Care Strategies, 2013) and who experience health disparities (Center for Surveillance, Epidemiology, & Laboratory Services, 2013) are similar to populations likely to have limited or unaffordable access to the Internet, digital devices, and low digital literacy. This includes individuals with low socioeconomic status and lower levels of education as well as individuals who belong to ethnic and racial minority groups, who have low levels of English proficiency, who live in rural areas, or who are elderly (Anderson, 2017, 2018; Horrigan, 2016; Horrigan & Duggan, 2015; Perzynski et al., 2017; Sadiku et al., 2017). In addition to access to high-speed broadband and devices that allow navigation of online resources with minimal barriers, individuals need support in using those devices and making sense of the many health resources that are available on the Internet. These skills are among the many skills that are taught in adult basic education, making adult education the perfect partner for health systems seeking to assist vulnerable patients to benefit equally from technological innovation.

## ADULT BASIC EDUCATION AND DIGITAL LITERACY

Adult educators work with individuals who are developing their basic skills, which include reading and writing, digital literacy, and English language skills. These educators use their training and expertise to leverage the strengths and experiences that adults bring to the classroom. For adults, the odds of having poor health are four times higher for low-skilled U.S. adults than for those with the highest skills. For example, three of 10 low-skilled adults report having only “fair” to “poor” health (Organisation for Economic Co-Operation & Development, 2013). Skill level relates to health literacy and health, as well as to digital literacy; according to Mackert, Mabry-Flynn, Champlin, Donovan, and Pounders (2016), patients with low levels of health literacy were less likely to use health information tools than those with higher levels of health literacy. These tools included patient portals and apps such as nutrition, fitness, and activity trackers.

Adult basic education (ABE) learners “identify health information, communication with healthcare providers, and healthcare navigation skills as high priority topics in their learning” (Hohn et al., 2017, para. 6). For example, surveys conducted in South Texas indicated most adult literacy programs provided health-related information (Mackert & Poag, 2011). Santos, Handley, Omark, and Schillinger (2014) found that adult English as a second language (ESL) teachers in California were able to support the development of health literacy practices among their learners. In response to the strong interest in health literacy, the Open Door Collective has created a list of resources for health literacy in ABE programs, demonstrating the work that many states put into their health literacy curricula (<http://www.opendoorcollective.org/health-literacy-in-abe-resources.html>).

Building digital skills into programs through digital health literacy is also possible; many digital literacy competencies are being incorporated into ABE program curricula as a result of the College and Career Readiness Standards (CCRS), which guide federally funded ABE programs. For example, digital health literacy includes the ability to understand and evaluate health information obtained online. Activities to teach this aspect of digital health literacy align well with CCRS Anchor 7 to “integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words” (Pimental, 2013, p. 19). Steps to achieve this goal are evident in Ohio, where health centers have partnered with adult-serving community education organizations and community health workers use a screening tool to determine whether patients

have broadband access and digital literacy. The community health workers refer those who need support to a local community partner that offers help obtaining broadband services as well as digital literacy training (Sheon, Bolen, Callahan, Shick, & Perzynski, 2017).

## AN EXAMPLE OF LOOKING FOR HEALTH INFORMATION ONLINE

Adult learners need a reason to go online (Castek et al., 2015), and health information seeking is relevant to adults. Cotten and Gupta (2004) define health information seeking behavior as the search for and use of information to reduce uncertainty about health status and to build a sense of health. The Internet has become one of the first places where individuals look for information (Stellefson et al., 2013), and although educational attainment correlates with reports of good to excellent health, use of the Internet for health information correlates with health status regardless of education level; the health benefit of using the Internet as an information source is greater for adults who did not complete high school than for those who did (Feinberg et al., 2016). Using the Internet to find health information involves searching and reading online, as well as evaluating the quality of information. These and other digital skills are closely related to skills already taught in ABE programs and could be applied to the context of health.

## A CALL TO ACTION

Digital health literacy, which occurs at the intersection of literacy, digital literacy, and health literacy, is a promising area for collaboration and research with colleagues in adult basic education. Leveraging the knowledge and expertise of ABE researchers and practitioners can aid health systems in purchasing or creating health technologies that consider the needs of vulnerable populations as well as in developing the needed support for that patient population. In addition, research that includes the voices of adults with limited access and skills is needed. Working with adult education programs is one way to bring these underrepresented voices to the table to fulfill the potential of technology in addressing health disparities.

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