



Building Common Language: Review of Digital Skills Frameworks

By EdTech Center staff

October 2021

Executive Summary & Background: This white paper provides a compilation of frameworks for defining the skills and competencies that make up foundational digital skills and digital resilience for adults. Since 2019, the EdTech Center @ World Education has researched diverse local, national, and international efforts to develop digital skill and competency frameworks. Our findings have informed our work developing and coordinating the [Digital US](#) digital equity coalition and its [Employer Network Advancing Digital Skills & Equity](#), the [IDEAL Consortium](#) on digital skills development and technology integration in adult education, and more. Shared common frameworks and skill definitions provide a venue for the community and private sectors to reach agreement on digital skills needs and to ensure training, assessment, and related micro-credentials or badges provide the in-demand skills to maximize opportunities for adult learners and workers ([Digital US, 2020](#)).

Introduction

As World Education planned the [Digital US](#) coalition in 2019 to advance digital skills and digital equity, we asked the question, “What digital skills are needed by our nation’s adults to succeed in their personal, civic, educational, and career pursuits?”

Federal WIOA legislation behind adult education and workforce funding adopts the Museum and Library Services Act’s definition of digital literacy skills: “the skills associated with (A) using technology to enable users to find, evaluate, organize, create, and communicate information; and (B) developing digital citizenship and the responsible use of technology” ([20 U.S.C 9101](#)). This is the main, broad definition adopted by education, workforce, and digital inclusion efforts.

Concerned that this definition did not sufficiently highlight the importance of adapting to ever changing technologies, Digital US its mission as fostering digital resilience. The coalition collaborated to develop a shared definition of digital resilience and shared it in Digital US' [2020 report](#): “Digital resilience is having the awareness, skills, agility, and confidence to be empowered users of new technologies and adapt to changing digital skill demands. Digital resilience improves capacity to problem-solve and upskill, navigate digital transformations, and be active participants in society and the economy.”

This aspirational definition of digital resilience has helped guide diverse digital inclusion and digital skills development efforts, helping ensure that interventions don't just focus on helping learners develop the digital skills they need now, but instead the confidence and abilities to adapt to ever changing digital skills demands. At the same time, diverse stakeholders --- service providers, employers, policymakers, funders, technology developers and more -- also need more detailed, granular definitions of digital skills and competencies.

Common frameworks and skill definitions provide a venue for the community and private sectors to reach agreement on digital skills needs and to ensure training, assessment, and related micro-credentials or badges teach the in-demand skills to maximize opportunities for adult learners and workers ([Digital US, 2020](#)). And with increased investment and momentum in skills-based hiring practices that remove degree requirements by screening individuals in by demonstrated skills, now more than ever there is a need for shared common language to define in-demand digital skills.

Though we are far from one commonly-adopted digital skills framework for enabling communication and fostering partnerships between diverse stakeholders and systems, what follows is a compilation of the ones most salient to the context of adult basic skills instruction and digital inclusion efforts in the US.

What Are Digital Skills?

Markle Foundation's "Employability Digital Skills" Framework

Digital US partner Markle Foundation's [Rework America Business Network](#)—examined the issue of defining digital literacy from the employer side. RABN's mission is “to increase the number of American workers with pathways to career success by driving the adoption of skills-based practices among employers.” Recognizing the struggles employers have in clearly identifying and “signaling” what digital skills are needed for incumbent and future employees, their study sought to answer the following questions:

- How can employers credibly define and assess digital literacy?
- What do we mean by **digital resilience**, and how can employers develop it?

- What are the roles or occupations that will be most impacted in the future workforce by digitization?
- How can we prioritize these investments accordingly?
- How can employers and educators work together to equip workers and future workers with the requisite digital skills?

To answer these questions, they conducted an analysis of historic and future job “digitization” trends using labor market data, along with the evaluation and mapping of a range of assessments and skills frameworks most relevant to careers anticipated to experience varying degrees of such digitalization. The resulting October 2019 report—[Digital Blindspot: How Digital Literacy Can Create a More Resilient American Workforce](#)—offers a framework to support employers in establishing a shared understanding of the skills needed for employment, including distinctions for “Digital Information Literacy” and “Employability Digital Skills.” This in turn can be used by employers to embed these skills into their talent strategies for hiring and training.

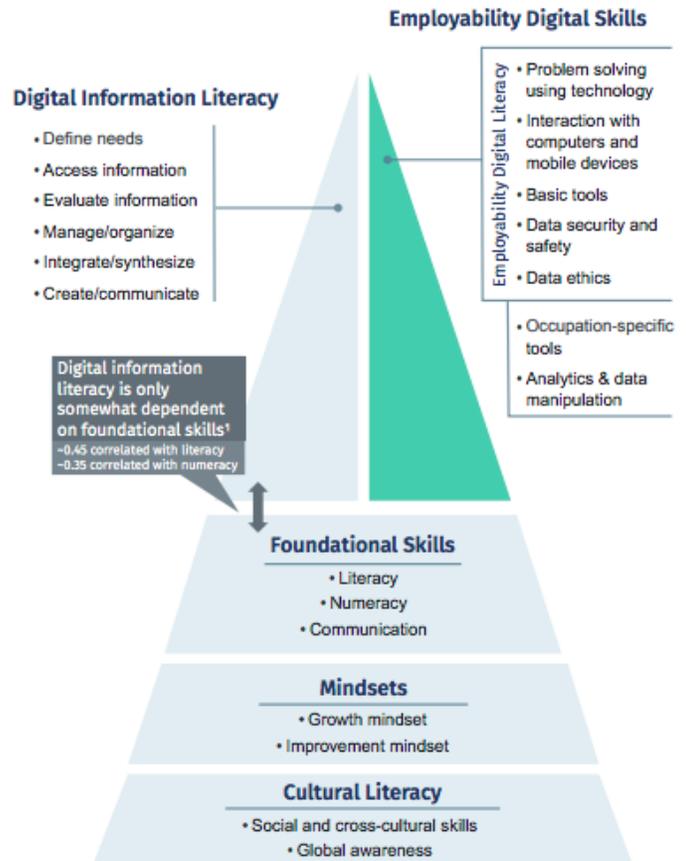
One important acknowledgement of this report is its focus on the notion of “digital resilience”—the foundational skill underpinnings that allow learner-workers to adapt in the face of breakneck evolution of technology.

The report emphasizes:

*“...the importance of digital literacy in enabling **digital resilience** by providing workers with the foundational skills and confidence to tackle new technologies.”*

In forming the Digital US Coalition, of which RABN is a partner, the EdTech Center recognized the importance of this term and went on to define it. We cannot necessarily predict what new technologies will impact the future of work; however, if learner-workers are digitally resilient, they arrive with those foundational skills needed to be able to adapt and learn as needed.

While the RABN report provides guidance to employers on assessments that might be used to evaluate these foundational skills—such as the [Northstar Digital Literacy Assessment](#)—the



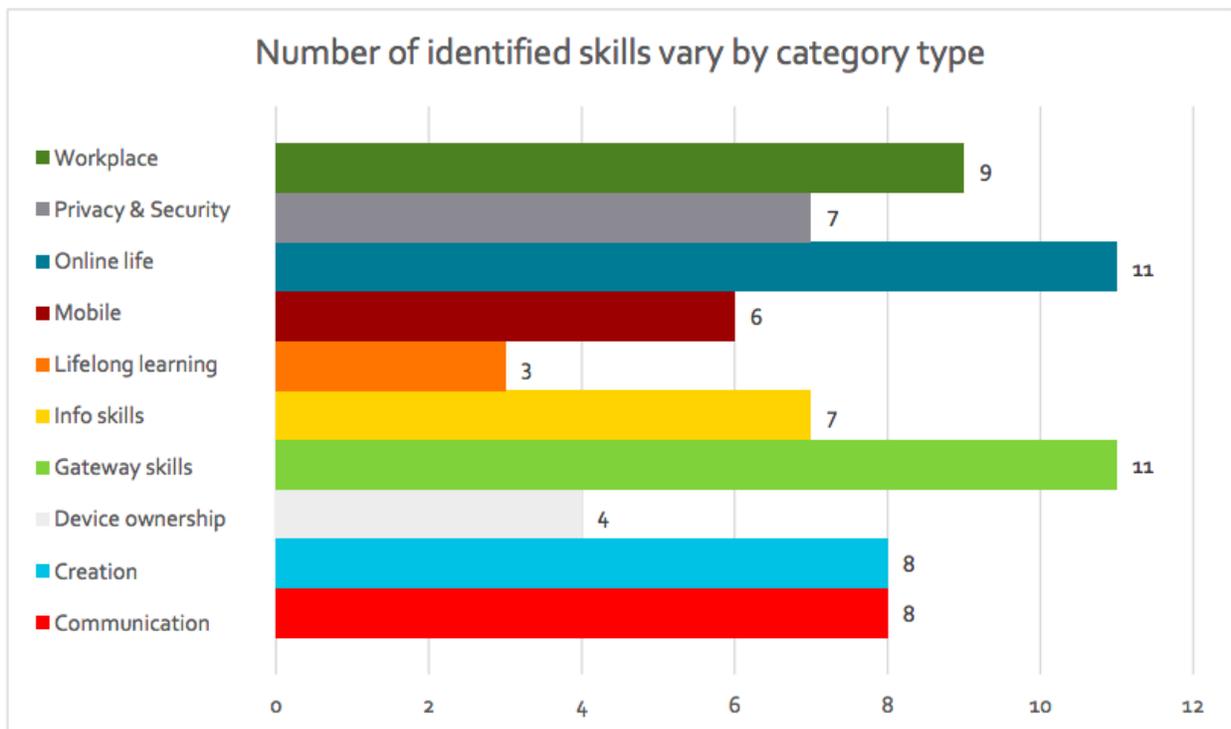
initiatives that follow dive deeper into defining these foundational skills, along with their situational application for leveraging technology in work, school, and life.

Seattle Digital Equity Framework

A similar scan of assessments and curricula we became aware of was conducted by the [Seattle Digital Equity Initiative](#). SDEI’s approach was from that of an equity lens, aligned to their mission of becoming a city “where technology’s opportunities equitably empower all residents and communities – especially those who are historically underserved or underrepresented.”

SDEI examined six widely used digital literacy frameworks and nine digital literacy curricula to elucidate a holistic range of digital literacy competencies that can be used to inform the City’s digital literacy policy and investments, as well as guide training providers in designing their program delivery. Some of the frameworks SDEI reviewed and was informed by include these important sources: • The UK’s Essential Digital Skills Framework • The European Union’s DigComp 2.1 • International Computer Driving License • International Society for Technology in Education (ISTE) Digital Literacy Standards • Mozilla Web Literacy Competency Framework • Northstar Digital Literacy Assessment and Standards (featured next in this report).

Released in March 2019, the resultant framework includes 10 categories across which are a total of 74 skills, illustrated in the graphic below. [Here is a link to the full skill list.](#)



The report clarifies that they did not distinguish between competencies (i.e., the combination of knowledge, skills, and attitudes) and “how-to” skills needed to use a specific application; rather, they referred to both as “skills” and attempted to provide clarity as to what a person ultimately needs to be able to do without getting too granular.

Because of this, we believe SDEI’s framework provides solid guidance related to the general tasks learner-workers should be able perform when using technology, without diving too deeply into the procedural “how-tos.” In addition, their report provides guidance as to which of the 10 categories within the framework are most relevant to diverse sets of users, organized into the following groupings (page 20 of the report):

- Gateway (Beginner users)
- Life skills (Post-Gateway)
- Job skills (Skills for employment)
- Education (Skills for high-school students to prepare for college and career)
- Parents

In doing this, the SDEI framework helps inform some level of prioritization of relevance for their 74 skills for various users. This is critical for informing training delivery as it clarifies the segmentation and progression of skills a novice tech user may need without overwhelming both the learner and the training provider.

For this reason, the EdTech Center @ World Education decided to use this framework to organize open source educational resources on digital skills for its CrowdED Learning initiative. Instructional resources are searchable by the following 10 SDEI framework categories at digitalskillslibrary.org

- **Communication:** Exchanging information with others on digital platforms using various strategies to collaborate, share, and communicate.
- **Creation:** Engaging in digital spaces to design, create, and revise content online.
- **Device ownership:** Practices that support device longevity, including physical care, protective software, and use of technical support.
- **Gateway skills:** Foundational skills required to use a device and participate online.
- **Information skills:** Skills to apply, evaluate, and manage information across digital and physical environments.
- **Lifelong learning:** Engagement in self-assessment of digital skills, using self-reflection to tailor accessible digital environments and continue digital skills learning.
- **Mobile:** Understanding basic functions of a mobile device to communicate and access goods and services.
- **Online life:** Access to online resources that support the digitalization of daily tasks and socialization within a broader digital community.

- **Privacy and security:** Maintenance of practices to secure digital identity, recognize threats, and understand the broader safety implications of working in a digital environment.
- **Workplace:** Advancing workplace success and professionalism through engagement with an organization's online tools and other supportive digital systems.

Maryland’s Digital Literacy Framework for Adult Learners

One effort that we learned about specifically designed to support adult education was by the State of Maryland. Their framework, the [Digital Literacy Framework for Adult Learners](#), works “to further define, for adult learners at different levels, the elements required to navigate and fully participate in the constantly-evolving digital landscape.”

The Maryland framework was developed through extensive research on digital literacy, along with guidance from both academic and English language proficiency standards; adult education teacher competencies; and federal policy. The result is a set of seven interconnected “essential elements” of a digitally literate learner.

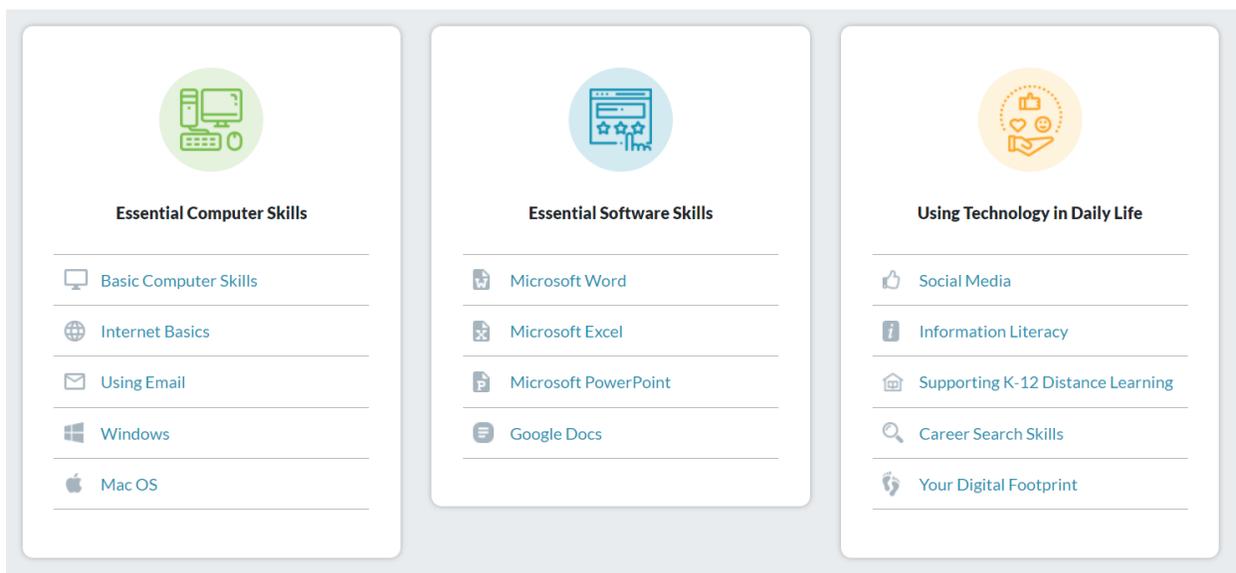


Each element within this framework includes guiding questions that define the element, descriptions of skills and behaviors one exhibits to demonstrate competence, and situational examples of the skills within that element in the areas of life, education, and employment. We believe this last component—guidance related to the situational applications of these elements—is a critical missing piece to helping training providers truly integrate technology by providing meaningful, relevant examples to learners as to why, when, and how they might leverage the technology elsewhere. Making these connections is a key strategy both for engaging learners in digital skills training as well as developing digital resilience.

Northstar Digital Literacy Framework

One of the most detailed frameworks in terms of articulating digital skills is the Northstar Digital Literacy initiative developed by Literacy Minnesota. The “Northstar Digital Literacy Standards” serve as the foundation of their assessments and offer a definition of the skills one needs “to perform tasks on computers and online” (Literacy Minnesota, 2022).

The standards are organized into three categories: Essential Computer Skills, Essential Software Skills, and Using Technology in Daily Life. Each category lists several lists of skills.



The standards within each category represent specific skills. For example, the “Basic Computer Skills” list includes the following skills: “distinguish between different types of devices,” “identify specific Digital Skills Frameworks and Assessments,” “log on to and shut down a computer,” and “identify mouse pointer shapes and the functions they represent.” The items listed within the “Using Technology in Daily Life” are a mix of skills and competencies that involve application of a set of discrete skills and knowledge. For example, “Career Search Skills” lists “demonstrate the ability to use search and filter functions in job search sites” (a skill), and “demonstrate understanding of hiring processes (including recruitment, screening, and selecting (a competency).

Regardless of how they are framed, the items in the Northstar Standards include concrete descriptions of the skills and knowledge a learner requires to engage in tasks using digital technologies.

ISTE Profile of Lifelong Learner

An important contribution to shaping our understanding of how to help learners develop digital resilience is ISTE’s [Profile of a Lifelong Learner](#), which ISTE developed to fill a previously missing description of digital literacy - one that can link digital skills to behavior, mindset, and action.

The Profile consists of 5 learner features: Lifelong Learner, Empowered Worker, Digital Citizen, Solution Seeker, and Mindful Colleague (ISTE SkillRise, 2020).

The profile builds from ISTE's work developing the [ISTE Standards for Students](#) and [ISTE Standards for Educators](#). Both sets of standards were developed for K-12 audiences but have been successfully adopted and used in adult education, including in state efforts to certify adult educators, such in California.

The 5 learner features are further detailed into 3 bullets each in [the profile](#). The higher level description of each feature:

Lifelong Learner: Lifelong Learners access, analyze, and apply digital resources in order to build knowledge, advance their careers, and experience the best life possible.

Empowered Worker: Empowered Workers persevere through challenges, shape career paths in alignment with personal interests and goals, and upskill to be successful in a digital-age workforce.

Digital Citizen: Digital Citizens are inclusive, equitable, and culturally aware as they live, learn, and work in an interconnected world.

Solution Seeker: Solution Seekers use technology to explore independent perspectives, amplify creative thinking, and develop smart solutions to practical problems in work and life.

Mindful Colleague: Mindful Colleagues employ situational awareness and a collaborative team approach to effectively communicate, learn from, and work with diverse colleagues in digital and face-to-face environments.

Applying the Frameworks

There are clear benefits of each of the aforementioned efforts that can be applied to our current context and used to inform and support both current and future digital literacy efforts. A closing example to demonstrate how to leverage each framework: in two early 2020 webinars organized by the EdTech Center on distance learning, we conducted a poll at the start asking participants what tools (all of which were to be used during the webinar) they currently are



using with learners. In both, over 80% of instructors indicated they are using Zoom— which was not the case prior to COVID-19.

Adoption of Zoom was more of a survival strategy for most instructors than a teachable moment. However, if we apply components of the three frameworks outlined above, we can provide clear guidance as to what tech tool(s) instructors and learners might consider using, situational examples that describe why and when they might use that tool, and definitions of the digital skills being developed—and explicitly defined for learners—as they are learning to use these tools. Having clear frameworks that define these skills and situational applications helps both learners **and instructors** better understand the skills they are developing and the applications of those skills beyond the current situation, which in turn fosters our ultimate goal of digital resilience.

What is the <i>task</i> and the <i>tool</i>?	What are the skills needed/being developed?	What are the applications? (“I can...” statements)
<p><i>Task</i> I need to provide real-time, face-to-face learning from a distance.</p> <p><i>Tool</i> I will use Zoom.</p>	<p>SDEI Framework <i>Communication</i></p> <ul style="list-style-type: none"> ● Make Internet-based voice and video calls (using Skype, FaceTime etc.) ● Digital collaboration ● Awareness and adaptation of communication strategies to meet behavioral norms and respect user diversity (Netiquette) <p>RABN Framework <i>Digital Information Literacy</i> Create/communicate</p> <p><i>Employability Digital Skills</i> Problem solving using technology</p>	<p>Maryland Framework (<i>Using their Situational Examples as a model</i>):</p> <ul style="list-style-type: none"> ● <i>Education</i>: Use video conferencing tools to access real-time learning. ● <i>Life</i>: Use video conferencing tools to connect with loved ones who live far away. ● <i>Employment</i>: Use video conferencing tools to more effectively collaborate with others.

Towards Common Language

Moving forward, Digital US will be examining how best to leverage and amplify this work to ensure we are providing greater clarity around what foundational skills define digital literacy and are needed for all Americans to be digitally resilient, regardless of their pursuits.

A new federal initiative [Digital Resilience in the American Workforce](#) to provide professional development to adult educators who teach digital skills will also be releasing a landscape survey in June 2022 that includes a review of common frameworks. It is our hope that these efforts will move our field closer to having common digital skills language to enable deeper partnerships between diverse stakeholders on creating valuable education and employment opportunities for adults in the U.S.