

BOOSTING DIGITAL LITERACY IN THE WORKPLACE



HOW RAPID PROTOTYPING IS HELPING BUSINESSES TO UPSKILL WORKERS AND WHAT POLICYMAKERS CAN DO TO HELP

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It's a truism that virtually every worker today needs digital skills. But how do we know what *kind* of skills they need for the workplace, how they can best acquire them, and what competencies or credentials can help them signal their preparedness to employers? And how can public policy help (or hinder) this process of developing **occupational digital literacy**?

A handful of workforce and education leaders scattered across the United States have begun to answer these questions through iterative program and policy development that is closely aligned with business needs on the ground. This "rapid prototyping" process, underway for the past several years, has accelerated dramatically with the onset of the Covid-19 pandemic and the associated increase in the demand for digital skills. But these bright spots are relatively isolated from each other and suffer from a lack of dedicated public investment.

Notably, leaders distinguish between **foundational** digital literacy – a baseline skillset that workers need to have regardless of industry – and **occupational** digital literacy, which entails developing specific technology-related skills needed for a particular occupation or industry. Acquiring occupational digital literacy skills is best done in the context of technical skills training for that occupation, rather than as a stand-alone class or program.

This brief outlines emerging lessons from this work, culled from recent interviews with business leaders, workforce and education practitioners, and public officials. In addition, the brief identifies timely opportunities for policymakers and advocates to foster the development of effective approaches and speed up the adoption of innovative strategies.

This brief builds on previous research from National Skills Coalition that described the extent of **digital skill gaps** among U.S. workers, which found that nearly one in three U.S. workers (31 percent, or more than 48 million people) had few or no digital skills, and that between 38 and 43 percent of those workers nevertheless were employed in jobs that required moderate or complex computer usage. NSC found that workers spent considerable time and energy covering or compensating for their skill gaps, and that this served as an invisible drag on productivity for workers and the businesses that employ them. NSC's prior research also explored variations in digital skill gaps by **industry**, implications for **workers of color**, and potential areas for **federal action**.

A KEY IMPLICATION OF THIS FINDING FOR POLICYMAKERS IS THAT **INVESTING IN OCCUPATIONAL DIGITAL LITERACY SHOULD FOCUS MORE ON OPPORTUNITIES FOR WORKERS TO BUILD INDUSTRY-SPECIFIC BUT TRANSFERRABLE SKILLS**, AND FOCUS LESS ON SINGLE, PROPRIETARY SYSTEMS.



MANY BUSINESSES VALUE WORKERS WHO HAVE A BROAD, FLEXIBLE BASE OF DIGITAL SKILLS

While some companies focus on hiring workers with specific digital credentials, a larger number are focused instead on finding workers who are comfortable with a broad range of digital technologies. The ability to confidently download, install, navigate, and use novel software programs or mobile apps is highly valued across industries ranging from construction to logistics to healthcare.

Numerous leaders emphasized that the fast pace of change in industry-specific technologies means that it is often much more important for workers to be capable of adapting to a **variety** of tools than it is for them to memorize one specific tool. This is especially important for workers in industries that have a far-flung footprint or a largely remote workforce; when employees are spread across a wide range of job sites, the ability to engage in independent learning becomes even more urgent.

A key implication of this finding for policymakers is that investing in occupational digital literacy should focus more on opportunities for workers to build **industry-specific but transferrable skills**, and focus less on single, proprietary systems.¹

SOME BUSINESSES ARE SUCCESSFULLY TACKLING DIGITAL LITERACY, BUT OTHERS FACE BARRIERS

Lack of public investment is exacerbating the challenges faced by small businesses

Many of the firms that are leading the way in occupational digital literacy are large entities. For example, Cleveland-based KeyBank (Key) has locations in 15 states and \$171 billion in assets. Over the past few years, Key has implemented a **Future-Ready Workforce** initiative that reaches 4,000 employees. Employees are given the option to voluntarily participate in training for in-demand digital skills ranging from robotics automation to data analytics. The program is offered through an in-house learning management system and awards badges to employees who complete specific portions of the curricula.

Global accounting giant Pricewaterhouse Coopers (PwC) has made substantial investments in worker upskilling through its \$3 billion *New World, New Skills* program. The company provides opportunities for its 276,000 workers to earn digital badges. PwC has also been an enthusiastic adopter of *gamification*, using trivia and other online games as recruitment, onboarding, and educational tools for its workforce.

Another leader is L’Oreal, the international cosmetics titan. Having defined itself as a *“digital-first” company*, the firm has embarked on a number of initiatives to boost digital skills among its workforce. These have included new training and credentials to help workers demonstrate their growing knowledge: for example, in 2016 L’Oreal partnered with General Assembly to implement a new assessment, the Certified Marketer Level 1, to measure essential marketing skills in the digital economy. Since that time, the company has continued to build its in-house digital expertise, equipping it to rapidly develop and implement new digital skill-building modules for the company’s occupationally diverse workforce.

In contrast to these large firms, smaller companies often scramble to assemble the training partners and resources they need to ensure a steady supply of workers with the necessary skills. While large companies can afford to launch elaborate in-house

training programs, small and mid-sized enterprises often rely on partnerships with community colleges and other training providers to create their talent pipelines.

But a lack of public investment dedicated to digital skill building makes it hard for smaller employers to use the workforce development programs they would otherwise typically rely on. For example, the \$3 billion federal Workforce Innovation and Opportunity Act only briefly mentions digital literacy as an “allowable activity” under Title II adult education programs, and does virtually nothing to encourage the incorporation of digital skill building as part of its Title I occupational training programs. Meanwhile, the Higher Education Act provides a robust \$30 billion in Pell Grant assistance each year, but that funding cannot be used for high quality shorter-term programs, which leaves out many technology-focused programs.

These policy limitations are hampering economic vitality among the very small and mid-sized businesses that we need to thrive as our economy recovers from the Covid-19 pandemic and recession. In addition, because workers with digital skill gaps are more likely to be employed by *small businesses*, these policy gaps are undermining broader attempts to upskill and reskill the incumbent workforce.



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**PROVEN STRATEGIES
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THE REAL LEADERS IN DIGITAL LITERACY HAVE FIGURED OUT HOW TO ADAPT BEST PRACTICES TO THIS NEW SETTING

Proven strategies like sector partnerships effectively meet the demand for digital skills

Many of the businesses and workforce development providers that are leading the way on occupational digital literacy are following a time-tested approach used previously for other types of workforce development. It relies on close coordination between employers and training providers. This demand-driven approach has been used successfully for decades, often through the mechanism of industry sector partnerships.² These partnerships convene multiple employers within a single industry – along with education, training, labor, and community-based organization partners – to identify shared talent needs and then upskill workers into those occupations.

Sector partnerships are an effective, proven strategy for helping workers prepare for jobs that require skills training, and for helping employers find skilled workers.³ They help to reduce speculative guessing about employers' skill needs (sometimes referred to as "train and pray"), and instead ensure that people are developing the skills and earning the credentials that local businesses in their community are actually seeking to hire.

One example of this close coordination comes from the South Bend-Elkhart Regional Partnership and its *Labs for Industry Futures and Transformation (LIFT) Network*. This project tackles digital skill needs in the advanced manufacturing industry by working closely with local employers to identify skill demands and competencies needed for occupations such as Programmable Logic Controller Technicians, Computer Numeric Control (CNC) Operators, and Robotics Technicians.

Then, the partnership and its educational partners design upskilling programs that meet businesses' talent needs. In addition to the industry sector partnership, LIFT is also developing a federal Registered Apprenticeship program that will allow workers to earn while they learn.

Both interventions are designed to tackle a key business challenge: Manufacturing companies that are rapidly upgrading their operations with new automated equipment, but currently lack the technicians to effectively operate and maintain it. Leaders explained that talent pipeline issues have serious ripple effects for business economic vitality: A lack of a skilled technician can shut down the manufacturing line, which lowers productivity, throws off the supply chain, and ultimately causes a hit to revenue.

Unfortunately, limited public investment in sector partnerships means that the powerful model at work in South Bend is not available in many geographic regions or for many industries. This absence has immediate consequences for small and mid-sized employers that would otherwise be able to rely on these partnerships to help them build a strong talent pipeline of digitally skilled workers.



CONTEXTUALIZED OR INTEGRATED MODELS ARE EFFECTIVE IN BUILDING OCCUPATIONAL DIGITAL LITERACY

Contextualized models⁴ teach technical skills by using the real-world materials and context in which the worker is likely to use them. For example, a class might help construction workers practice using a blueprint technology application that is widely used by general contractors.

Integrated models⁵ combine instruction in foundational skills (literacy, numeracy, spoken English, or digital skills) with simultaneous training for a specific occupation or industry. For example, a class might help workers learn digital skills as part of the process for becoming a telehealth coordinator or medical assistant.

Workforce leaders emphasized two reasons that these models are particularly valuable for workers trying to build digital skills. First, the models reflect a best practice stemming from adult learning theory, which states that adults are most motivated to learn when the learning is connected to their daily lives.

Second, the models lend themselves to the use of realia, or real-life documents and tools used in the workplace. When employers supply realia to be used in a class, it gives workers confidence that they are training with materials that reflect the real situations they are likely to encounter, while also giving businesses the confidence that training programs are aligned to their specific talent needs.

Developing contextualized or integrated models can be slightly more time-consuming and complex, given that they rely on educators' back-and-forth collaboration with employer partners rather than simply purchasing an off-the-shelf curriculum. For this reason, it is especially important that policymakers invest in the technical assistance and support that education and workforce providers need to develop these well-rounded models.



Investing in professional development helps instructors be well-versed in approaches to prepare workers for changing technology Building a baseline of foundational skills and a strong sense of self-efficacy⁶ can prepare people to adapt to new skill demands on the job or in educational settings. This entails not only “learning how to learn,” but also gaining a sense of mastery and a belief in one’s ability **to** master new tools and technologies.

Many leaders emphasized that the landscape of in-demand software and mobile apps changes so quickly that it is not realistic to imagine that they can train workers for every tool they may encounter on the job. Instead, leaders explained that by equipping workers with a sense of self-efficacy, they can ensure that workers feel more confident in familiarizing themselves with **any** new technology that they encounter.

Developing self-efficacy is a general pedagogical best practice that applies across a wide range of subject areas. Policymakers can help to ensure that instructional staff for digital skill-building programs are well-versed in this practice by investing in professional development and technical assistance as a component of any digital literacy policy.

UNEVEN ACCESS TO BROADBAND AND DIGITAL DEVICES HINDERS PROGRESS AND ECONOMIC VITALITY

Numerous leaders identified a lack of broadband internet access as a major barrier preventing digital skill building. They reported that broadband access and affordability problems had significant economic consequences for businesses that spilled over to affect workers as well. In particular, lack of broadband made it difficult or impossible for workers to participate in video- or data-heavy online training, prevented instructional staff from being able to teach online, and created problems for employees trying to apply their new technological skills at the worksite. These threshold issues thus undermined efforts to build workers' digital skills, and jeopardized companies' efforts to use cost-saving technology on the job.

One leader explained that a lack of wifi at construction job sites across her sprawling state cost her specialty contracting business time and money: Employees trying to communicate work-order changes often found themselves without internet access out in the field, leading to expensive delays as they scrambled to find the wifi needed to use mandatory mobile apps.

Another leader explained that spotty broadband access in his rural community was causing problems for workers who needed to be able to access videos and training guides on the fly, as they were educating customers about how to use complex farm equipment such as combine harvesters with robust digital components.

Some leaders, particularly at community college Career and Technical Education programs and other training providers, also pointed to difficulties in finding funding for up-to-date digital devices and proprietary technology commonly used by employers. They noted that without modern computer technology, instructional staff struggled to help adult students familiarize themselves with the digital tools they would be called upon to use in the workforce.

To date, federal broadband internet legislation has not yet achieved the scale and scope of investment necessary to address these concerns. Perhaps even more importantly, it has focused primarily on access, without investing sufficiently in digital devices and

digital skill building. To ensure business vitality and address workers' needs, policymakers should advance holistic policies that invest appropriately in all aspects of digital inclusion.

DIGITAL SKILLS ADVOCATES HAVE AN IMPORTANT STAKE IN THE DEBATE OVER COMPETENCY-BASED MODELS

In the digital literacy arena, as in other educational realms, there are two primary approaches to gauging skill attainment: A competency-based model, which is typically measured through an exam or other assessment process; and a time-based model, which may include exams and other assessments but is more explicitly linked to "seat time" or hours in the classroom. Both models often result in a credential, such as a degree, certificate, or certification.

A particular challenge for digital literacy is that while digital skills often lend themselves well to a competency-based model, the overwhelming majority of public investment in postsecondary education and workforce development is instead focused on the time-based model. For example, the federal Higher Education Act, which provides tens of billions in Pell Grant funding annually, is oriented around a higher education system built on accreditation and the credit hour. A small handful of higher education institutions, such as Western Governors University and Southern New Hampshire University, have experimented with competency-based models in recent years, but these remain in the minority.

Leaders indicated that, the primary concern for businesses and workers alike is less about how digital literacy is taught and measured, and more about how it can be shown to have *value* in the workplace. Competency-based credentials, though much newer on the scene, can certainly have value in the labor market if rigorously designed. To this end, policymakers should explore opportunities to increase investment in high-quality competency-based programs.

RECOMMENDATIONS FOR ACTION

Leaders overwhelmingly agree that policymakers should take immediate action to increase resources and improve support for the types of partnerships proven to be effective in helping workers develop in-demand digital skills. While many of these recommendations are focused on federal policymakers, there is ample room for governors and state legislatures to take action as well.

IN PARTICULAR, POLICYMAKERS SHOULD:

- ✓ **Invest in industry sector partnerships that can collaborate with community colleges and other training providers to bring a business voice to the talent development process.** These partnerships can be specifically designed to help close racial, gender, and other equity gaps that have served to limit some workers' access to jobs that require technological skills. In particular, Congress can invest in community college-business partnerships as part of the upcoming Higher Education Act reauthorization. Congress used to provide dedicated funding for these partnerships under the Trade Adjustment Assistance Community College and Career Training (TAACCT) program, which has now lapsed. As Congress takes up HEA reauthorization, renewing and expanding investments in community college-industry partnerships - at a scale equal to or greater than the investments under TAACCT - should be a top priority.
- ✓ **Modernize federal student financial aid to recognize the reality of how digital skills are acquired.** Today's financial aid policies don't match the realities of today's students, particularly working adults. Congress should expand the Pell Grant program to support enrollment in high quality short-term programs that lead to employment and articulate to further educational pathways, creating meaningful on ramps for individuals who might otherwise never pursue postsecondary credentials. Policymakers should also explore ways to increase financial aid for competency-based programs.
- ✓ **Invest in high-quality professional development and technical assistance to aid workforce and education providers** in designing demand-driven digital skill-building programs. Policymakers should go beyond service delivery funding to invest in the infrastructure needed for providers to collaborate with employers in developing occupational digital literacy that is embedded in overall technical or industry-specific training, rather than seen as a stand-alone activity.
- ✓ **Expand digital inclusion investments to tackle all three "legs of the stool" - broadband internet access, digital device access, and digital skills.** By investing simultaneously in these inter-related variables, policymakers can ensure that potential progress on occupational digital literacy is not undermined by lack of equipment or broadband access.

ENDNOTES

- ¹ It should be noted that for some occupations, employers do value a specific credential tied to digital skills. Not surprisingly, many of these are for technology-focused jobs. A future NSC publication will explore this issue in more depth.
- ² Another effective mechanism for gathering employer input is employer advisory committees, which are used widely in the Career and Technical Education (CTE) system because of requirements under the federal Perkins Act.
- ³ Learn more about sector partnerships in NSC's Sector Partnership Policy Toolkit, viewable at: <https://www.nationalskills-coalition.org/state-policy/body/Sector-Partnership-Policy-Toolkit-Summary.pdf>
- ⁴ Learn more: https://www.proliteracy.org/Portals/0/pdf/Research/Briefs/ProLiteracy-Research-Brief-04_Contextualizing-2020-10.pdf
- ⁵ Learn more: <https://www.sbctc.edu/colleges-staff/programs-services/i-best/>
- ⁶ Learn more about why self-efficacy is important for adult students: https://opencommons.uconn.edu/cgi/viewcontent.cgi?article=1016&context=nera_2013

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ABOUT NATIONAL SKILLS COALITION

JOBS THAT REQUIRE SKILLS TRAINING ARE THE BACKBONE OF OUR ECONOMY. National Skills Coalition fights for a national commitment to inclusive, high-quality skills training so that more people have access to a better life, and more local businesses see sustained growth. Since 2000, through expert analysis and technical assistance, broadbased organizing, targeted advocacy, and cutting-edge communications, NSC has changed hundreds of state and federal skills policies that have changed thousands of lives and grown local businesses and economies.

We build networks representing businesses, workers, colleges, community organizations, public officials, and advocates. We engage these networks to craft policy proposals and mobilize them to win concrete policy change.

Our networks include SkillSPAN (20 affiliate state coalitions), Business Leaders United for Workforce Partnerships (thousands of small and medium-sized business owners and 7 state affiliates), and Voices for Skills (tens of thousands of workers and grassroots skills advocates).

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