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CLOSING THE DIGITAL *SKILL* DIVIDE

EXECUTIVE SUMMARY

THE PAYOFF FOR WORKERS, BUSINESS, AND THE ECONOMY

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NATIONAL SKILLS COALITION
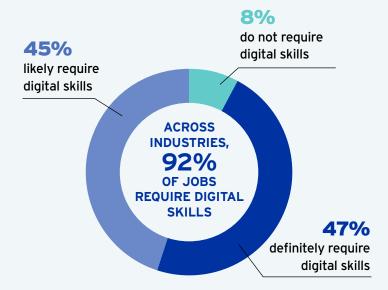
Federal Reserve Bank *of* Atlanta

Even before the coronavirus pandemic began, policy-makers, businesses, and workforce advocates were already recognizing that workers were not being replaced by robots, but rather, being called upon to work hand-in-glove with rapidly evolving technology.

When the pandemic struck, millions of U.S. companies hustled to change how they did business. Nearly every worker suddenly had to contend with new digital demands – even those in frontline, essential roles. The impact of the digital skill divide became more acute, weighing disproportionately on workers of color and smaller businesses struggling to survive a tumultuous economy.

Now – as leaders design labor market policies to drive a thriving and inclusive economy – it is imperative to understand this digital transformation. This report takes a first-ever look at the demand for digital skills in the U.S. economy, as measured by a dataset of 43 million "Help Wanted" ads posted during 2021.[1]

The findings in this analysis are unequivocal:

- ***There is overwhelming demand for digital skills in the labor market,*** with 92 percent of all job ads requiring *definitely digital* or *likely digital*[2] skills. This demand is robust across all industries, and small businesses are just as likely as their larger peers to seek workers with technology skills.

- Yet ***many workers have not had sufficient opportunity to build such skills;*** earlier research found that nearly one-third of U.S. workers do not have foundational digital skills, and workers of color fall disproportionately into this category due to structural inequities.[3]

45%
likely require digital skills

8%
do not require digital skills

ACROSS INDUSTRIES,
92%
OF JOBS REQUIRE DIGITAL SKILLS

47%
definitely require digital skills

WHAT IS A DIGITAL SKILL?

Some digital skills are *foundational* skills such as email, simple spreadsheets, data entry, or timecard software. Others are *industry-specific* skills, such as bookkeepers using QuickBooks, manufacturing workers using AutoCAD, or home health aides using electronic medical records.

WHAT IS THE DIGITAL SKILL DIVIDE?

The digital *skill* divide is the space between those who have the robust access and support needed to engage in skill-building opportunities and those who do not. As technology evolves, the digital *skill* divide prevents equal participation and opportunity in all parts of life – including people's ability to get good jobs and advance in a career.[4]

- Equipping workers with necessary skills requires action by both private employers and public policymakers. Notably, ***public investments in workforce development and education are especially vital*** given the unevenness of private investments and the prevalence of digital skill demands among smaller businesses, which depend on publicly funded workforce and education partners to upskill employees.

- Closing the digital skill divide has ***major payoffs for businesses***. Prior research has shown that workers value upskilling opportunities and prefer working for employers who offer clear, well-defined pathways to advancement.[5] Because turnover has heavy costs for businesses – with estimates ranging from $25,000 for workers who leave within the first year to over $78,000 for workers who leave after five years,[6] averting or delaying turnover by ensuring that workers have upskilling opportunities can be economically significant.

- Public investments in closing the digital skill divide can also generate ***economic benefits for individual workers and the broader economy***. People who qualify for jobs that require even *one* digital skill can earn an average of 23 percent more than those working in jobs requiring no digital skills – an increase of $8,000 per year for an individual worker.[7] These increased earnings could result in more state and federal tax revenue generated by each worker. Depending on the household size and composition, this could range from $1,363 to $2,879 per year.[8]

NOW — AS LEADERS DESIGN LABOR MARKET POLICIES TO DRIVE A THRIVING AND INCLUSIVE ECONOMY — IT IS IMPERATIVE TO UNDERSTAND THIS ACCELERATION OF DIGITAL TRANSFORMATION.

SKILLS HAVE BEEN MISSING FROM THE DIGITAL DIVIDE CONVERSATION

Vivid news stories of the "homework gap" have helped drive public awareness and urgency around access to broadband and high-quality devices. But, while the digital *access* divide has gotten high-profile coverage, the digital *skill* divide has not.

Awareness of the digital skill divide began to grow with passage of the $2.75 billion Digital Equity Act[9] as part of the 2021 federal infrastructure law. This funding will help people build digital *skills* as well as obtain access to broadband and devices, and will help states to close equity gaps among key populations, including people of color, low-income individuals, veterans, and rural residents.

RECOMMENDATIONS

Ensuring that public investments are intentionally focused to remedy the digital skill divide and related inequities is vital to U.S. economic success.[10] As the federal Digital Equity Act is implemented in states, policymakers will have a powerful opportunity to close gaps in racial, gender, age and geographic equity. Similarly, as officials work to update landmark policies such as the Workforce Innovation and Opportunity Act (WIOA), it is crucial to incorporate the latest findings on how to close the digital skill divide.

Building on the findings laid out in this report, there are three overarching principles to guide leaders' decisionmaking:

1. A digital skill foundation for all.

All workers need the opportunity to develop broad-based, flexible digital problem-solving skills for current technologies and ongoing technological shifts.

- *Policymakers* can support this goal by investing in free or low-cost digital skills training for workers, and ensuring that workforce development and education providers are equipped to provide high-quality upskilling programs.

- *Workforce and education advocates and providers* can support this goal by speaking up for digital equity investments that support workers' goals and aspirations and respond to local businesses' skill needs.

- *Corporate decisionmakers and influencers* can use their platforms to ensure that *skills* are central to digital divide discussions in the public and policymaking spheres.

2. Ongoing upskilling for every worker in every workplace.

Workers in every industry need the opportunity to develop industry- and occupation-specific digital skills to adapt and advance in their careers.

- **Policymakers** can support this goal by investing in industry sector partnerships[11] that can collaborate with community colleges and other training providers to ensure that the talent development process is connected to industry-specific skill needs and jobs.

- **Workforce and education advocates and providers** can encourage policymakers to embed digital problem-solving skills as allowable or required activities under existing workforce development, adult education, and higher education policies, as well as digital equity policies.[12]

- **Corporate decisionmakers and influencers** can implement policies and practices that support digital upskilling for workers at every level of their organizations. Smaller businesses can participate in regional industry partnerships that support these efforts across small businesses at scale.

3. Rapid reskilling for rapid re-employment.

We need to be ready for sudden disruptions to the labor market or specific industries. Policies should support rapid reskilling so workers can move from one industry to another.

- **Policymakers** can support this goal by supporting access to skills for workers who have lost their jobs, including those transitioning to a new industry. This includes ensuring that student financial aid policies match the reality of how digital skills are acquired.

- **Workforce and education advocates and providers** can support this goal by sharing their expertise with policymakers on topics such as best practices in closing racial equity gaps in digital skill-building opportunities.

- **Influencers and corporate decisionmakers** can educate state and federal policymakers about the skills mismatches they are experiencing and the kinds of technology skills their companies need to be successful.

CONCLUSION

Despite the high demand for digital skills and the desire for skill building opportunities among workers, many have not had the opportunity to fully develop such skills.[13] These burdens fall unequally on workers and entrepreneurs of color. **Investing in digital skill-building can help individual workers increase their incomes, allow businesses to thrive, and create positive economic spillover effects for local, state, and national economies.**

This report puts actionable data into the hands of elected officials, education and training providers, and corporate decisionmakers, allowing them to fully tackle the *skills* aspect of the digital divide.

ENDNOTES

1   The research team for this report analyzed 43 million online job postings published in 2021 and collected by Lightcast (formerly known as Emsi Burning Glass). Across all ads, there were 15,000 distinct skills. The research team manually coded the top 50 percent of these skills – that is, the 7,500 skills that were most often requested in job ads. (Notably, however, this top 50 percent accounted for 99.99% of job ads.) The team coded each skill according to whether it was *definitely digital, likely digital,* or *not digital.* This coding formed the basis for the original analysis and findings in this report.

2   The team coded each skill according to whether it was *definitely digital, likely digital,* or *not digital*. Knowledge of Salesforce software or the Python programming language were coded as *definitely digital*. An example of a *likely digital* skill would be survey design or bookkeeping – tasks that today are frequently accomplished with the use of a computer or other digital device, but could still be carried out in an old-fashioned analog fashion. An example of a *not digital skill* is changing diapers.

3   *The New Landscape of Digital Literacy* (National Skills Coalition, 2020.)

4   This definition builds on the definition of the digital divide used by the nonprofit National Digital Inclusion Alliance, viewable at: https://www. digitalinclusion.org/definitions/

5   "How to improve the engagement and retention of young hourly workers," Kimberly Gilsdorf et al. (*Harvard Business Review*, December 6, 2017.)

6   Roberts, Pasha. "The CFO and CHRO Guide to Employee Attrition." *Workforce Solutions Review* 6, no. 1 (January 2015): 8–10.

7   As detailed in the full report, in the Lightcast dataset used for this analysis, jobs that require *no digital* skills had an average median hourly wage of $17.62, compared to $21.64 for jobs that require one definitely digital skill.

8   Feenberg, Daniel Richard, and Elizabeth Coutts, An Introduction to the TAXSIM Model, Journal of Policy Analysis and Management vol 12 no 1, Winter 1993, pages 189-194. Shane Orr (2022). usincometaxes: Calculate Federal and State Income Taxes in the United States. R package version 0.5.4. https://cran.r-project.org/package=usincometaxes

9   Learn more about the Digital Equity Act's covered populations via the U.S. Commerce Department's official InternetForAll.gov site, and NSC's fact sheet.

10 *The Roadmap to Racial Equity: An Imperative for Workforce Development Advocates.* (National Skills Coalition, 2019.)

11 Learn more about industry sector partnerships in the *Sector Partnerships Policy Toolkit* (National Skills Coalition, 2015) and on the NSC website.

12 For example, see *Expanding Digital Inclusion via the Bipartisan Infrastructure Law* (National Skills Coalition, 2022.)

13 *Applying a Racial Equity Lens to Digital Literacy* (National Skills Coalition, 2020.)