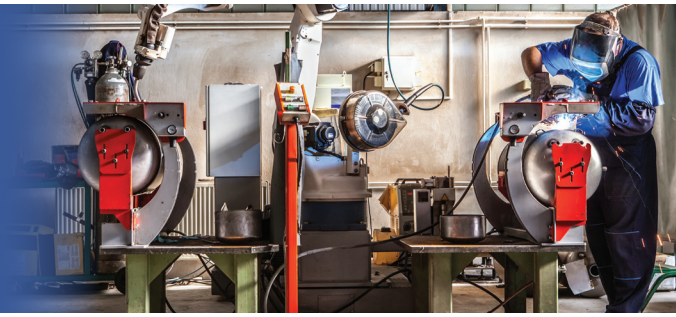
Manufacturing workers need investment in their digital skills



DIGITAL SKILLS SERIES

American jobs are undergoing massive technological transformation, with even entry-level workers now expected to use all manner of digital devices and equipment. Nowhere is this more true than in the manufacturing sector, which directly employs more than one in ten U.S. workers and indirectly supports millions more.

To succeed in this rapidly transforming environment, workers need broad-based digital problem-solving skills that equip them to learn a wide variety of today's technologies and navigate continued changes in the future. This digital literacy includes both the capacity to use technology and the cognitive skills necessary to navigate it successfully.

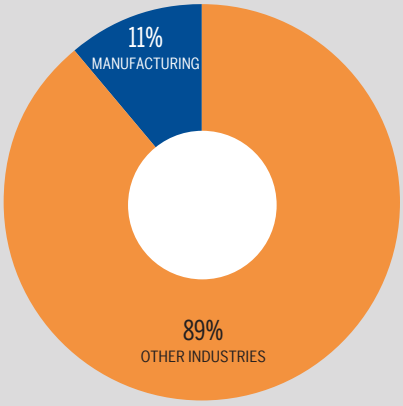
But a sizeable percentage of American manufacturing workers lack these vital digital skills. Data from a respected international assessment show that a full 16 percent of currently employed American manufacturing workers have no digital skills, and an additional 19 percent have very limited skills. Another one-third (36 percent) have a basic level of proficiency, while just 29 percent have the advanced skills necessary to be most adaptable to changing technology.

THE BIGGEST CHALLENGE: WORKERS WITH **NO** DIGITAL SKILLS

Nearly one in six manufacturing workers (16 percent) fall into in this category. These workers failed to meet one or more of the three baseline criteria to even take the full digital skills assessment: 1) prior computer use, 2) willingness to take the computer-based assessment, 3) ability to complete four out of six very basic tasks, such as using a mouse or highlighting text on screen.

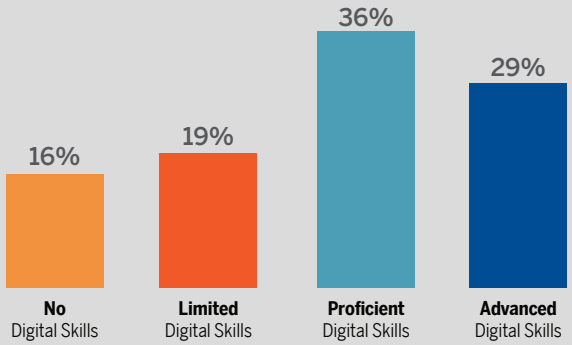
While additional demographic data is not available for manufacturing workers specifically, among overall US workers, individuals with no digital skills reflect a diverse range of backgrounds. Nearly half (45 percent) are between the ages of 16 and 44 – that is, in the first half of their working years. Men are over-represented among those with no digital skills, at 61 percent. The overwhelming majority of those with no digital skills (80 percent) have a high school credential or less. And as might be expected, their wages are low: 57 percent have earnings in either the bottom or the second-lowest quintile. A plurality (44 percent) are white, 15 percent are Black, 35 percent are Hispanic, and 4 percent are Asian/Pacific Islander.[1]

MORE THAN ONE IN TEN WORKERS AGES 16-64 IS EMPLOYED IN MANUFACTURING



Source: OECD Survey of Adult Skills, 2012-14.

ONE-THIRD OF MANUFACTURING WORKERS LACK KEY DIGITAL SKILLS



Source: OECD Survey of Adult Skills, 2012-14.

Have questions or want to learn about specific examples?
Contact National Skills Coalition for details at info@nationalskillscoalition.org.

www.nationalskillscoalition.org

NATIONAL SKILLS COALITION
Every worker. Every industry. A strong economy.

Manufacturing workers need investment in their digital skills

ONE FOOT ON THE LADDER:
WORKERS WITH **LIMITED** DIGITAL SKILLS

Another 1 in 5 manufacturing workers (19 percent) are in this category. People with limited digital skills can complete simple digital tasks that have a generic interface and just a few steps. An example would be a person who is presented with five e-mails in an inbox. The e-mails are responses to a party invitation. The task is simply to sort the e-mails into pre-existing folders to track who is and is not attending the party.

Again, while detailed demographic data is not available for manufacturing workers specifically, data on US workers overall paints a vivid picture of people at this skill level. Across industries, a full 50 percent of individuals with limited digital skills are between the ages of 16-44. These workers are evenly divided between men and women. Half (50 percent) are white, 21 percent are Black, 20 percent are Hispanic, and 7 percent Asian/Pacific Islander. [2] Two-thirds (66 percent) have a high school credential or less.

HOLDING STEADY:
WORKERS WITH **PROFICIENT** DIGITAL SKILLS

Just over one-third (36 percent) of manufacturing workers have achieved a basic level of proficiency in their digital skills. At this level, tasks typically require the use of both generic and specific technology applications. For example, a person might be presented with a new type of online form, and need to navigate across multiple pages and applications to answer the test question. The task may have multiple steps, and may require the use of tools (such as the "sort" function) to solve the problem. The person may have to identify the goal themselves, and engage in higher-level reasoning to solve the problem.

Among US workers at the proficient digital level, 61 percent are between the ages of 16 and 44. There are slightly more women (52 percent) in this category than men. Just under half (48 percent) have a high school credential or less. More than two-thirds (70 percent) are white, 12 percent are Black, 11 percent are Hispanic, and 5 percent are Asian/Pacific Islander.[3]

To succeed in this rapidly transforming environment, workers need broad-based digital problem-solving skills that equip them to learn a wide variety of today's technologies and navigate continued changes in the future

WHAT CONGRESS CAN DO

For advanced and precision manufacturing to continue to thrive in the United States, workers will need to equip themselves with in-demand digital skills – and businesses will need to invest in helping their employees build such skills. Congress can take action by investing in upskilling for individual workers and jobseekers, and supporting industry-led training partnerships.

Current federal investments in workforce development provide almost no dedicated support for digital skill-building; most notably, Title II of the Workforce Innovation and Opportunity Act lists digital literacy as one of numerous allowable activities for adult education programs.[4] The recently-introduced Digital Equity Act (HR 4486/S 1167) would make a more substantial, targeted investment in digital literacy through twin grant programs to the states: one structured as formula funding, and the other as a competitive funding. Digital literacy investments could also be bolstered through other key federal workforce and education policies, such as the Higher Education Act, Perkins Career and Technical Education Act, or Supplemental Nutrition Assistance Program Employment and Training (SNAP E&T).

[1] The remainder are Other/unclassified due to low sample size.
[2] The remainder are Other/unclassified due to low sample size.
[3] The remainder are Other/unclassified due to low sample size.
[4] See: https://www2.ed.gov/about/offices/list/ovae/pi/AdultEd/integrating-technology.pdf

Where this data comes from

Data in this publication comes from the Survey of Adult Skills, conducted under the auspices of the Organization for Economic Cooperation and Development. The survey, also known as the Program for the International Assessment of Adult Competencies or PIAAC, is administered by National Center for Education Statistics at the U.S. Department of Education. The survey gathered data from a representative sample of U.S. adults in 2012 and 2014. (Data used in this analysis combine information from both years for greater statistical precision.) The survey includes a background demographic questionnaire that is administered in English or Spanish, followed by a cognitive assessment in English measuring the three domains of literacy, numeracy, and the somewhat awkwardly named "problem-solving in technology-rich environments," or PS-TRE. The data included here come from the PS-TRE section of the study,

Note: An additional round of PIAAC data collection was completed in 2017. While 2017 data is not reflected here due to the timing of its release to the public, it is largely consistent with earlier years; there were few major changes in American workers' digital skill gaps from year to year. Learn more about the 2017 data here: https://nces.ed.gov/surveys/piaac/current_results.asp

Acknowledgments

National Skills Coalition sincerely appreciates the contributions of our research partner on this project, the American Institutes for Research — Katie Herz, Saida Mamedova, B. Jasmine Park, Emily Pawlowski, Jaleh Soroui, and the rest of the PIAAC team — and thanks them for their thoughtful collaboration and careful analysis. Any remaining errors, of course, are our own.

This research was made possible by generous support from Walmart. We thank them for their support but acknowledge that the findings, conclusions, and recommendations presented in this report are those of National Skills Coalition alone, and do not necessarily reflect the opinions of Walmart.

02/20/20

NATIONAL SKILLS COALITION
Every worker. Every industry. A strong economy.

nationalskillscoalition.org
1250 Connecticut Avenue NW, Suite 200, Washington DC 20036 | 202.223.8991