

## Why GAO Did This Study

Increasingly, technology is automating tasks previously performed by people. Automation has changed some jobs and eliminated others entirely. Thus some workers have had to retrain to learn the skills needed to keep their jobs or obtain new ones. Workers with lower levels of education who perform more routine tasks have tended to experience the greatest disruptions from automation, putting at risk jobs such as cashiers or clerical workers. House Report 116-450 included a provision for GAO to examine challenges and opportunities to provide training to workers at risk of losing their jobs to automation.

GAO examined (1) what available data indicate about which workers are at risk of automation and the skills needed for in-demand jobs; and (2) what insights stakeholders offer for workforce programs to better serve displaced workers and those affected by automation.

GAO analyzed DOL data to identify occupations projected to grow over the next decade, as well as the skills associated with those growing occupations. GAO also conducted case studies in four states, diverse across jobs and geography that were also recommended by national workforce organizations and others as having promising workforce responses to automation. In those states, GAO collected information related to both objectives. Additionally, GAO interviewed stakeholders from agencies and nine workforce, labor, business, and other organizations. GAO also reviewed relevant federal laws and regulations, prior GAO reports, and literature.

View [GAO-22-105159](#). For more information, contact Dawn G. Locke at (202) 512-7215 or [locked@gao.gov](mailto:locked@gao.gov).

# WORKFORCE AUTOMATION

## Insights into Skills and Training Programs for Impacted Workers

### What GAO Found

Although available data do not explicitly identify workers at risk of losing their jobs to automation, they provide insight into the skills needed for jobs projected to be in high demand over the next decade. For example, Department of Labor (DOL) data show that in-demand jobs require a mix of skills, including soft skills and process skills that help a person acquire knowledge quickly, such as active learning and critical thinking. Federal data also indicate that in-demand jobs having a higher number of skills deemed important also tend to require higher levels of education. Further, research indicates that certain jobs and skills are less likely to be automated, including those involving management and social skills. State and other data can also inform which skills are most important for in-demand jobs in a given geographic area. DOL and the Department of Commerce are seeking additional data on skills that the general worker population will need for in-demand jobs in light of automation.

Skills Deemed Important in the Top 20 In-Demand Occupations, by Education Level Required

Bachelor's and above	Some college, <i>bachelor's and above</i>	High school, <i>some college, bachelor's and above</i>
<ul style="list-style-type: none"> <li><input type="radio"/> Systems evaluation</li> <li><input type="radio"/> Systems analysis</li> <li><input type="radio"/> Learning strategies</li> <li><input type="radio"/> Persuasion</li> <li><input type="radio"/> Instructing</li> <li><input type="radio"/> Management of personnel resources</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="radio"/> Reading comprehension</li> <li><input checked="" type="radio"/> Writing</li> <li><input checked="" type="radio"/> Time management</li> <li><input checked="" type="radio"/> Active learning</li> <li><input checked="" type="radio"/> Complex problem solving</li> </ul>	<ul style="list-style-type: none"> <li><input type="radio"/> Active listening</li> <li><input type="radio"/> Social perceptiveness</li> <li><input type="radio"/> Service orientation</li> <li><input type="radio"/> Speaking</li> <li><input type="radio"/> Monitoring</li> <li><input type="radio"/> Critical thinking</li> <li><input type="radio"/> Coordination</li> <li><input type="radio"/> Judgment and decision making</li> </ul>

Source: GAO analysis of U.S. Bureau of Labor Statistics (BLS) Employment Projections program data and U.S. Department of Labor Occupational Information Network (O\*NET) data. | [GAO-22-105159](#)

Note: These skills reflect a score of at least 3 in O\*NET's 5-point scale of importance.

Officials in four case study states and other stakeholders GAO interviewed offered insights on how existing workforce programs could better serve displaced workers and those at risk of losing their jobs to automation who face challenges obtaining in-demand jobs. For example, several stakeholders suggested that training programs sometimes failed to focus on providing skills for in-demand jobs. Specifically, one state official said that some programs focus on interviewing and resume writing skills, rather than helping workers acquire the actual skills needed to perform the tasks for their next job. Other officials also noted that jobseekers faced barriers to accessing training, such as lack of childcare. Accordingly, stakeholders proposed strategies including (1) focusing training content on in-demand skills, (2) designing programs to maximize their accessibility, (3) increasing investment in training, and (4) collaborating with other workforce stakeholders to better serve workers displaced by automation.