

Bridging the Skills Gap

Workforce Development and the Future of Work



Bridging the Skills Gap:

*Workforce Development
and the Future of Work*

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Welcome

ATD's Public Policy Advisory Group comprises talent development professionals from different industries who are committed to helping peers and colleagues discover the value of partnering with the public workforce system to help solve talent development challenges. Part of the group's ongoing commitment to the field is the update of ATD's skills gap whitepaper.

This report focuses on what talent development professionals say about skills gaps in their organizations and supplements that research with additional information pulled from news articles, reports, and other sources. The goal is to help talent development professionals understand where critical gaps are and provide a road map for closing the gaps strategically.

Our hope is that this whitepaper will serve as a useful resource for you.

Thank you for the critically important work you do every day.

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Introduction

ATD defines a skills gap as a significant gap between an organization's current capabilities and the skills it needs to achieve its goals and meet customer demand. An organization with significant skills gaps risks not meeting customer demand. Because critical skills are missing, it may not be able to grow or compete, and may not be able to prepare for the future of work.

This marks the sixth skills gap report produced by the Association for Talent Development (formerly the American Society for Training & Development) since 2003. In addition to reviewing well-regarded research from outside ATD, this whitepaper will discuss findings from a 19-question survey of 304 talent development professionals—team leaders, managers, directors, leaders, and executives—whose companies are headquartered in the United States. The survey opened in April of 2018 and closed in early June. Insights from that analysis, as well as quotes from respondents, are shared throughout this report. We also have included case studies and examples from companies that are addressing their skills gaps creatively and effectively, and we provide an action plan for talent development professionals to identify and close the skills gaps within their organizations.

ATD Survey: Key Findings

Companies are faced with more change, disruptors, and market competition; in general, the workforce needs complex skills to survive and thrive, but many employees lack needed skills. Key takeaways from the 2018 ATD Skills Gap Survey show where the biggest concerns lie:

- Eighty-three percent of respondents report a skills gap in their organization and 78 percent expect their organizations will have a skills gap in the future. Almost three-quarters say that the skills gap affects their organization's service delivery, customers, or future growth.
- Survey results show reason to be concerned about a succession planning crisis. It appears that organizations aren't effective at preparing people for senior leader positions. Half of respondents said their companies had insufficient leadership bench strength, and 47 percent said they expect a gap of leadership or executive-level skills in the future.
- The biggest current and future gaps noted are in communication, critical thinking, and managerial and supervisory skills, showing that organizations need to focus on soft skills development programs.
- Compared with data from our last survey in 2015, there has been a decrease in the percentage of companies offering internal training to help close the skills gap (59 percent in

2018 versus 65 percent in 2015). The same is true of the percentage with internal certification programs (15 percent in 2018 versus 25 percent in 2015). The percentage of companies offering offsite, vendor-provided training to employees and supporting enrollment in open, online courses has also dropped. This points to a disconnect—organizations say they want to shrink the skills gap but seem unwilling to dedicate the time and resources necessary to do so.

- The talent development function has seen an increased role in addressing skills gaps since 2015, and there is now more accountability for individual managers. However, success in identifying and closing skills gaps depends on the involvement of key stakeholders across the organization.
- Though government leaders have pushed for growth in apprenticeships, few of our respondents offer them (78 percent do not offer registered apprenticeships). Most companies that do are in the skilled trades.

Differing Perspectives on the Skills Gap

According to the Bureau of Labor Statistics, in June 2018, the U.S. unemployment rate was 4.0 percent and there were 6.6 million open jobs—more than the number of job seekers (Bureau of Labor Statistics 2018). (In June 2015, when the previous skills gap report was compiled, unemployment stood at 5.3 percent, with 5.2 million open jobs.) Why can't employers fill these positions? Does the number of open jobs point to a skills gap or to something else? There's no one answer, but debate around the skills gap has increased over the last decade and there now appears to be two distinct camps—one that argues indeed the skills gap is real and one that claims other forces are at play.

You don't have to search far to find naysayers who call the skills gap a myth. Some thought leaders argue companies are looking to hire people with high-end skills for low-end wages or that job postings contain long lists of requirements that no one person could hold. Writing in *HR Magazine*, Peter Cappelli (2017) from University of Pennsylvania's Wharton School stated, "While employers say they can't afford to train new workers, they also say they can't pay higher wages or find the money for sophisticated recruiting. That alone may be enough to explain why hiring is difficult for U.S. businesses."

Andrew Weaver from the School of Labor and Employment Relations at the University of Illinois at Urbana-Champaign conducted a survey to investigate lacking skills as a cause for job vacancies and wrote about his results in *MIT Technology Review* (2017): "Only 15 percent of IT help desks report extended vacancies in technician positions. While the results do show higher levels of long-term lab-tech openings, it turns out that many of these are concentrated in the overnight shift and thus reflect inadequate compensation for difficult working conditions, not a structural skill deficiency."

Bias may also play a role. A 2018 article in *HR Dive* suggested that a “company may cry ‘skills gap’ when, in reality, they aren’t actively tapping or retaining all sources of talent available to them—and unconscious bias may be one of the first roadblocks to truly opening up the recruiting process” (Moody and Tornone 2018).

While unrealistic expectations, blind spots, or salary limitations likely do affect whether companies can attract talent or fill positions, these are not the only considerations and a skills gap indeed exists. In fact, some ATD survey respondents believe that salary is part of the skills gap issue, not separate from it. “The industry is moving toward the use of technology, but the pay is not commensurate to the types of employees the industry hopes to attract,” one respondent wrote. Another said, “Our salaries don’t always match the level of the position, necessitating hiring people who may not have the right set of skills for our needs.”

The Skills Gap Is Top of Mind

Eighty-three percent of ATD survey respondents believe a skills gap exists within their company, down 1 percentage point from 2015, and 78 percent anticipate a future skills gap, up 4 percentage points from 2015.

In his 2017 CEO Letter, Larry Fink, CEO of Black Rock, the largest money management firm in the world, wrote, “America’s largest companies, many of whom are struggling with a skills gap in filling technical positions, must improve their capacity for internal training and education to compete for talent in today’s economy and fulfill their responsibilities to their employees.”

The Urban Institute’s Robert I. Lerman (2015), writing in a report about building robust apprenticeship systems, noted, “One striking indication of a skills gap or mismatch is that German companies operating in the United States identify job skills as a key challenge to their success in the U.S. and encouraged the German Embassy to start a ‘Skills Initiative’ to identify and share information about best practices in sustainable workforce development.”

In fact, some experts believe the skills gap will get worse before it gets better. Speaking to *HR Dive*, Gad Levanon, chief economist, North America for The Conference Board, said, “The lack of growth in the working age population coupled with the massive exodus of Baby Boomers over the next 12 years will spell trouble for businesses for at least the next decade” (DeLoatch 2018).

A large, stylized graphic of the number 83 followed by a percentage sign, rendered in a light blue, thin-lined font.

of ATD survey respondents believe a skills gap exists within their company, down 1 percentage point from 2015, and 78 percent anticipate a future skills gap, up 4 percentage points from 2015.

What Contributes to the Skills Gap?

A number of factors contribute to the nation's skills gap, including education, opioid and other drug use, an aging workforce, and the Fourth Industrial Revolution's impact on the future of work.

Education and Work Preparation

Some experts argue that the problem begins early within our public school system and continues through post-secondary learning, leading young people to be unprepared for the workplace. For instance, Pew Research reported that U.S. 15-year-olds lag behind their peers from other countries in science, math, and reading (DeSilver 2017). And a 2017 Strada-Gallup survey of 30,000 college students showed that only one third thought they have the skills and knowledge to be successful in the workplace.

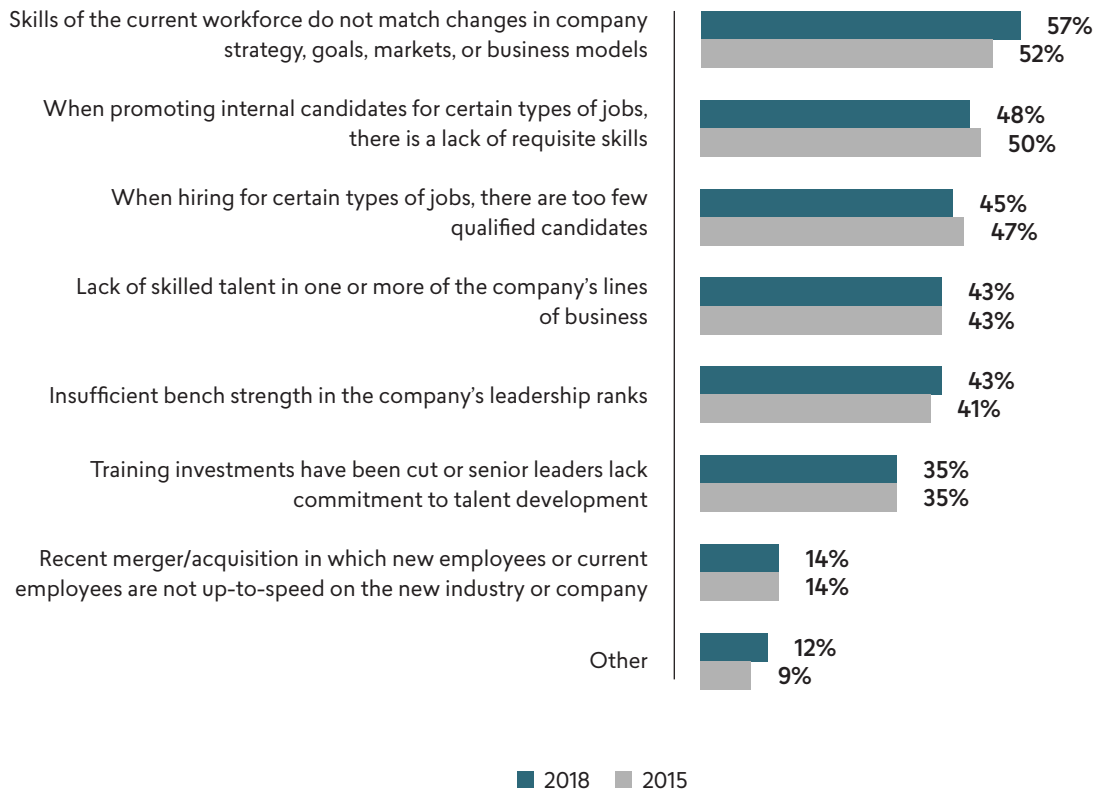
Fifty-two percent of respondents to the ATD survey believed their skills gap exists because the abilities of the current workforce do not match changes in company strategy, goals, markets, or business models. Another 47 percent believed that their current workforce lacks requisite skills necessary for promotion within the company, and 50 percent believed their company had insufficient leadership bench strength. Thirty-five percent also stated their company faced a lack of training investment or had senior leaders who lacked commitment to talent development. These and other questions discussed later in this paper were asked of the 219 survey participants whose organizations faced skills gaps and could answer questions about those specific skills gaps.

ATD Study participants came from a broad spectrum of industries, including healthcare, finance, higher education, management consulting, manufacturing, and retail trade.

Respondents perceived challenges in specific fields. "There is a national shortage of skilled labor in the technical trades," one wrote, and another agreed that not enough post-high school students are entering the skilled trades.

Drivers of the Skills Gap

WHY is there (or will there be) a skills gap in your organization? (Choose all that apply).



Effects of the Opioid Epidemic

HR Dive noted that a number of forces remove people from job consideration, including drug use, thus lowering the number of available candidates. “Between the opioid crisis and relaxed marijuana laws, employers are reporting that they’re having trouble finding candidates who can pass a drug test” (Moody and Tornone 2018).

In “Opioids on the Job Are Overwhelming American Employers,” *Bloomberg* stated, “While the economy has steadily added jobs since the financial crisis ended, the available pool of workers hasn’t expanded to match. The share of working-age Americans in the labor market is stuck at about 63 [percent], down more than four percentage points since 2000—the same period in which the opioid epidemic took off” (Saraiva, Laya, and Smialek 2017). And an *Epoch Times* article said, “increases in drug addiction worsens [the] workforce shortage and skills gap problem” (Akan 2018).

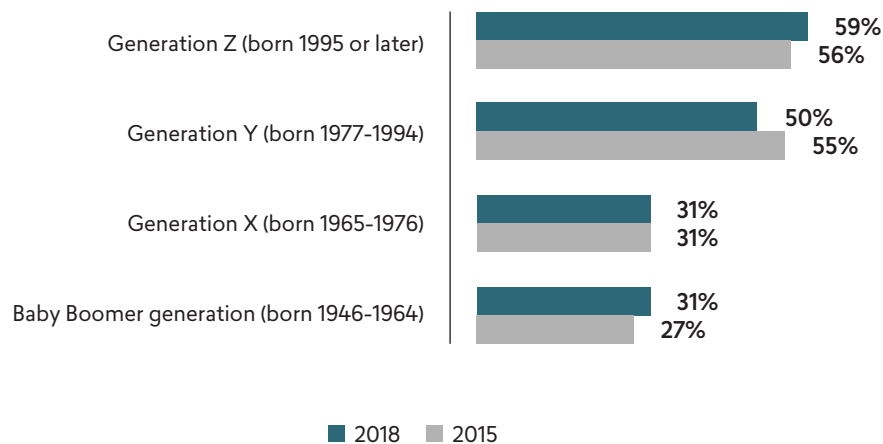
An Aging Workforce

In addition, though many Baby Boomers remain in their jobs longer than expected (causing the “gray ceiling” that keeps Generation Xers from moving into senior leader positions), around 10,000 Boomers retire each day. That’s a loss of 4 million employees each year who often have deep knowledge in their field and company-specific skills and abilities needed by their employers.

“We are experiencing a large number of retirements, and there is a learning curve for the new employees.”

The Skills Gap by Generation

To what extent do skills gaps exist for each of the following generational groups in your organization’s workforce?



Percent of respondents indicating high or very high extent.

ATD survey respondents noted the lowest skills gap for Baby Boomers and Generation X, at 31 percent each (compared with 50 percent for Generation Y and 59 percent for Generation Z). This may explain the increased concern among participants for a future skills gap.

The Future of Work

As technology evolves at a rapid pace, many people struggle to keep up. Artificial intelligence and virtual reality remain nebulous concepts for most Americans, as do blockchain and cryptocurrencies, such as bitcoin. But these technologies aren’t going away, and new advances are on the horizon. Klaus Schwab of the World Economic Forum explained (2015), “We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything

humankind has experienced before.” Experts can only guess at what life will look like deep into this Fourth Industrial Revolution, but Schwab said it’s “evolving at an exponential rather than a linear pace. Moreover, it is disrupting almost every industry in every country. And the breadth and depth of these changes herald the transformation of entire systems of production, management, and governance.”

James Manyika, chairman and director of the McKinsey Global Institute, said in a company podcast (2017) that the rapid pace of change is only one consideration in the future of work. Unlike prior industrial revolutions, machines now do more than simply assist people. For instance, machines are better at pattern matching than humans and are “able to discover novel solutions to things.” The result is that “people start to worry about what’s left for human beings to do.”

And Deloitte’s video on the future of work, subtitled “Disruption lies ahead,” (n.d.) said companies must “reconsider how jobs are designed and work to adapt and learn for future growth.” It went on to state that 57 percent of jobs are highly vulnerable to automation within the next seven years.

Innosight, an innovation consulting firm based in Massachusetts, studies the S&P 500 to see how long companies stay on the list and predicts that nearly 50 percent of the current S&P 500 will be replaced over the next 10 years. “Our study shows that lifespans of companies tend to fluctuate in cycles that often mirror the state of the economy and reflect disruption from technologies, ranging from biotech breakthroughs to social media to cloud computing. . . . Looking to the future, we expect turbulence to accelerate given factors such as the ‘unicorn’ phenomenon of highly valued disruptive startups such as Uber and Airbnb, as well as intense M&A and private equity activity” (Anthony et al. 2018).

ATD CEO Tony Bingham noted in the foreword to *ATD’s Action Guide to Talent Development* that “[f]orces of disruption and innovation will require new thinking about jobs, how we train for them, and how we upskill workers to be able to meet the demands of tomorrow’s workplace. . . . [A]s a profession, we need to be paying attention to the unique value proposition that humans bring to work and help organizational leaders create environments that are agile and changeable.”

The Current State

Which industries are facing the most critical skills gaps and what skills are largely missing? A review of the research and the input of ATD's survey respondents answers these questions.

Focus on Key Industries and Middle-Skills Jobs

According to Burning Glass Technologies (2018a), a software company that provides real-time data on the labor market, demand exceeds supply by 44 percent for occupations such as nurse practitioners and physical and occupational therapists. In addition, cybersecurity analysts and data scientists are in high demand, and companies have a particularly difficult time filling those jobs. Managers are also hard to find, and the Burning Glass report noted that the skills gap for managers is larger than for those they oversee. A summary of the report added that not all job shortages represent skills gaps, however. "Roles like Personal Care Aides and Customer Service Representatives all have high ratios of openings to available workers. The skills involved also don't require lengthy training. The problem is that these jobs aren't that attractive, with relatively low pay and challenging working conditions" (Burning Glass Technologies 2018b).

In the article, "Top 20 Facts About Manufacturing," the National Association of Manufacturers (NAM) estimates that over the next decade 3.5 million manufacturing jobs will be needed, but the association projects 2 million are expected to go unfilled. Deloitte and the Manufacturing Institute report that 80 percent of manufacturers say they have a moderate or serious shortage of qualified applicants for skilled and highly skilled production positions. NAM estimates that manufacturers contributed \$2.25 trillion to the U.S. economy in 2016. A skills shortage in this sector has potentially crippling implications.

According to the National Skills Coalition (2017), middle-skills jobs represent 53 percent of the U.S. labor force, and it's estimated they'll make up 48 percent of job openings through 2024. The National Skills Coalition defines middle-skills jobs as those needing more skills and training than a high school diploma but less than a four-year degree. A 2016 article announcing Harvard University's Middle Skills Gap Initiative said that the lack of "well-trained, highly-skilled, middle-level workers weakens the ability of American businesses to compete on a global level." The Middle Skills Gap Initiative is a joint program between the Harvard Graduate School of Education and the Harvard Business School. The goal is to "help employers with educators build career pathways that prepare young people with the skills and credentials necessary to fill the projected millions of middle skills jobs over the next decade."

What Skills Are Missing?

While much research on the skills gap seeks input from executives and academics, ATD's survey seeks input from talent development professionals. These individuals are uniquely positioned to see skill gaps across organizations and are frequently the ones tasked with bridging those gaps.

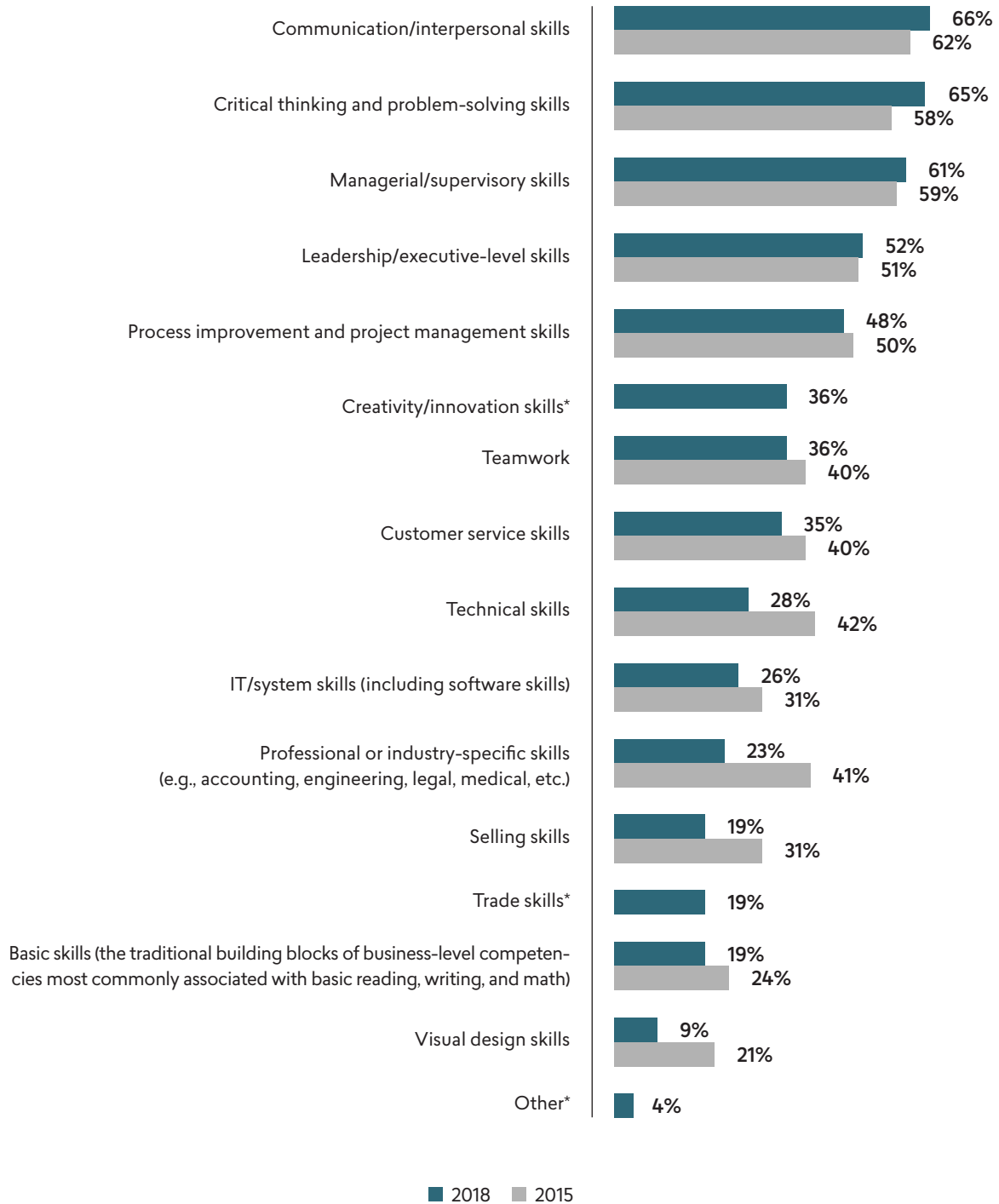
Soft Skills

Soft skills, by far, are the main concern across industries, which tracks with responses from the ATD survey. Communication and interpersonal skills were identified by 66 percent of respondents (compared with 62 percent in 2015) and remain the top missing skill set. Critical thinking and problem-solving skills (65 percent) came in second this year, taking over managerial and supervisory skills (61 percent), which had claimed the number two spot in our last survey.

Lack of soft skills is noted most often in younger-generation applicants and employees. *Training Industry* noted “a growing gap between the expectations of employers and the reality of how young talent is showing up in the workplace” (Tulgan 2018). Although Millennials and Generation Z have grown up with computers, apps, and the Internet—making them “digital natives” who are unafraid of new technologies and thus able to learn software and systems quickly—they tend not to possess important soft skills, such as communication and teamwork, which are not stressed in classroom learning. Kevin Howell in *Dice Insights* (2017) said, “The younger generation’s strength is partly to blame for its weakness. Because Millennials are so proficient and reliant on technology, many of them haven’t properly developed other skills apart from working on digital devices.” This lack of soft skills could prevent younger workers from moving up in the organization and presents a challenge for building a strong leadership pipeline. MIT professor John Van Maanen put it another way. Speaking to the 2017 MIT Sloan CFO Summit, he noted that while Millennials’ technical skills are superior, they “are often lacking in soft skills, like communication and problem solving” (MIT Sloan School of Management 2018).

Current Skills Gaps

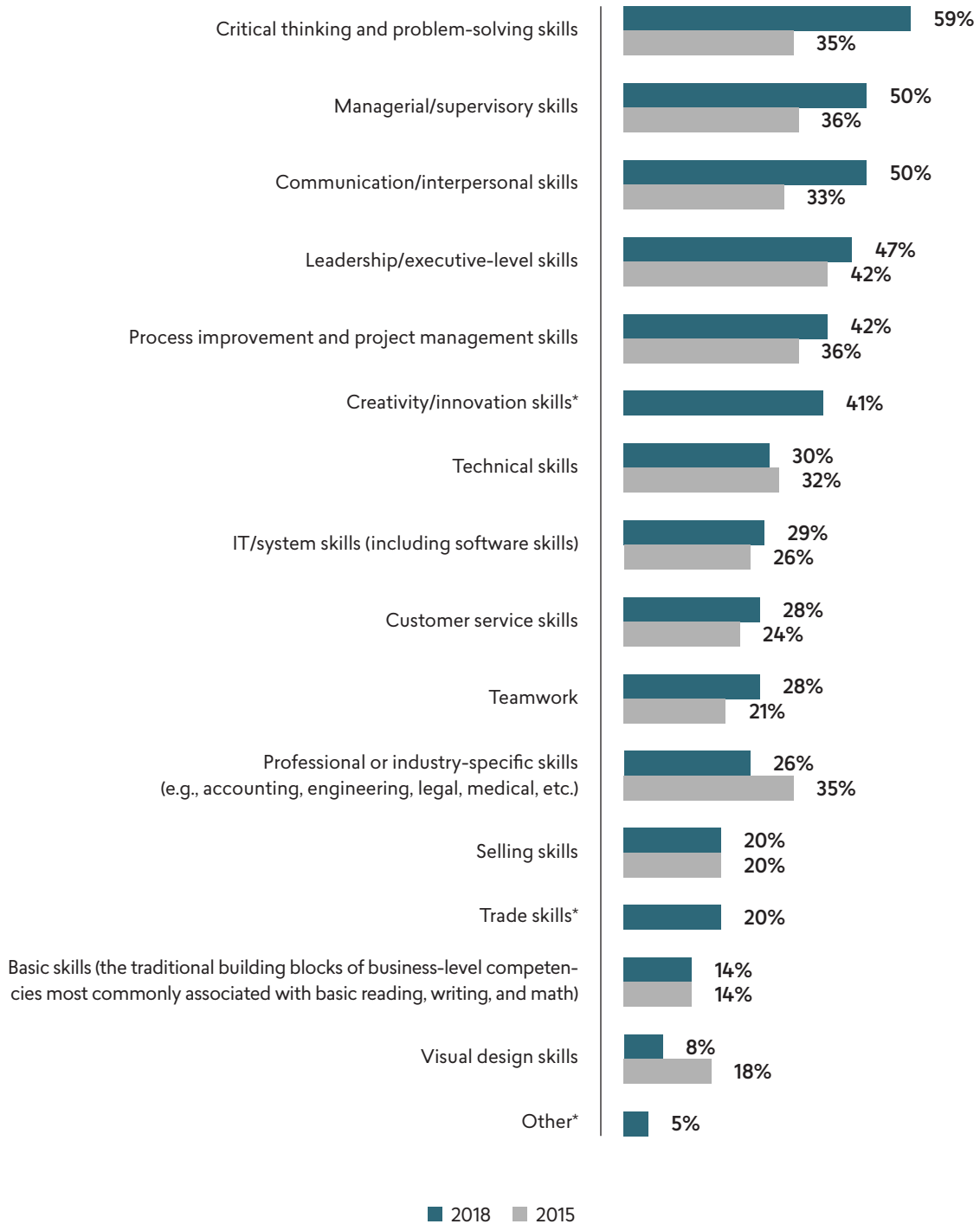
What are the specific types of skills gaps that your organization is experiencing now?
(Choose all that apply.)



*Answer choice not offered in 2015

Anticipated Future Skill Gaps

What are the specific types of skills gaps that your organization is expected to experience in the FUTURE? (Choose all that apply.)



*Answer choice not offered in 2015

Leadership Skills

Slightly more than half of ATD survey respondents (52 percent) said their company faced a current leadership skills gap, and 47 percent expect one in the future. Numerous other studies show a dearth of leadership skills across industries. In addition to excelling in soft skills, such as communication and creativity, good leaders must also demonstrate business aptitude. Development Dimensions International (DDI) identified five “money” skills crucial to a company’s bottom line—entrepreneurship, business savvy, driving execution, decision making, and leading change. An article in *Chief Learning Officer* said the DDI study illustrated leaders possess some strong skills and lack others. “The data show that executives are best equipped to focus on ‘here and now’ challenges, such as improving quality, building relationships, and focusing on customers and efficiency. Navigating the ambiguity that comes with more strategic challenges, however, like building or reinventing brands, markets, organizations, and cultures, represent the most serious, context-driven skill gaps” (Sinar 2017).

Technical Skills

In 2015 the lack of technical skills and profession-specific or industry-specific skills was recognized by 42 percent and 41 percent of ATD survey respondents, respectively. In 2018 these numbers dropped to 26 percent and 23 percent. Recall that MIT professor John Van Maanen pointed out that, despite lacking soft skills, Millennials have strong technical skills (MIT Sloan School of Management 2018).

That doesn’t mean these skills aren’t important, however. A lack of even basic digital competencies can cost a company money through wasted time. For example, “[m]ore than one in five workers (21 percent) in our Dropbox age say they still prefer sharing large files on a flash drive or CD. Only 13 percent say they prefer cloud-based storage like Dropbox. What’s more, nearly one in three workers who use these tools don’t feel they are proficient in their skill (29 percent),” wrote Jeff Fernandez in *Entrepreneur* magazine (2014).

LinkedIn reported on a number of hard skills that companies seek, including Python and Java development, but noted the equal importance of “basic digital literacy skills, which are also facing widespread shortages in some of the United States’ largest tech hubs including San Francisco, Seattle, Boston, and New York City” (Barrett 2018).

Despite increased automation, some jobs that previously required little digital or science knowledge now ask more of employees. Writing about pharmaceutical technicians, *The Hill* reported that, “Today, a technician operates computers that mix and analyze new batches of medicine instantly. The technician who once just needed to follow a recipe now needs to know a little bit about chemistry, biology, data analysis, and lab work” (Wilson 2018).

Data analysis is a specialty that will continue to be in demand in every industry. Scientist Anna Powers, writing in *Forbes* about STEM-related jobs said (2017), “when companies try to understand how to better their sales or expand in different product spheres, they use digital data available that allows them to understand consumer behavior. They analyze this data looking for various trends and points of interest to make an appropriate decision. Another example is in the financial world, where many algorithms are tested for trading stocks or predicting the behavior of the markets. Thus, from small-scale projects within a company to large-scale implementations to model various behavior ranging from consumer preferences to predicting market moves, data analysis is a skill set that is in demand and will continue to be so in 2018 and beyond.”

What Are the Effects of the Skills Gap?

A 2016–2017 CareerBuilder survey reported that “[t]he average cost HR managers say they incur for having extended job vacancies is more than \$800,000 annually.” Seventy-four percent of ATD survey respondents believed the skills gap affects their service delivery, customers, or future growth.

Some ways in which respondents believed the skills gap affects their business include increased complaints, lowered morale, and an inability to staff current projects quickly, which inhibits business growth. Many thought that the skills gap diminishes good customer service and the ability to compete for contracts or new clients. And some said that employees with superior abilities grew overburdened from picking up the slack for less-skilled colleagues.

One respondent noted that lack of skills affected the “ability to communicate between teams, causing costly redundancies and delays in projects.” Another wrote, “The lack of technology literacy created bottlenecks of manual work.” When employees are “just trying to keep up,” as one respondent put it, companies lack innovation and speed-to-market. And if the skills gap resides within the sales and marketing departments, sales themselves can be low. Ultimately, a lack of growth means a company might need to reduce its workforce or, in extreme cases, close its doors.

Who Is Responsible for Closing the Skills Gap?

No single entity can be responsible for closing the skills gap. It will take efforts on multiple fronts to bridge the skills gaps effectively and efficiently. Individuals and organizations across all sectors and industries have a role, with opportunities for more collaboration between education and business.

ATD supports lifelong learning, which is the self-motivated and ongoing pursuit of knowledge. Certainly, all workers must reflect upon their own skill level and take responsibility to improve and grow knowledge and skills. However, some unemployed or underemployed workers don't know what resources are available to them. ProLiteracy—whose vision is for every adult to have the ability to fulfill their life through literacy—wrote that “[l]ittle awareness of basic education and skills training programs may be what leaves 10 percent of the labor market without good paying jobs that would help them support their families” (Vecchiarelli 2017). In addition, opportunities for learning and growth must come from somewhere. The push for apprenticeships and other learning programs at the U.S. federal and state levels is a step in the right direction, as is the similarly expanding focus from the private sector and foundations.

Career and workplace expert Dan Schawbel, writing at Payscale.com, said (2016) students come out of college with irrelevant skills and that “companies and colleges need to work together more closely. School presidents need to meet with heads of HR to discuss the skills required in the modern workplace and then create a curriculum that produces students who possess those skills.” A Brookings Institution opinion piece titled, “To Close the Skills Gap, Start With the Learning Gap,” stated that “it is urgent and critical that efforts to reform and innovate education are linked to and aligned with workforce gaps and employer needs” (Grob-Zakhary and Hjarrand 2017).

In a *Harvard Business Review* article, “Stop Waiting for Governments to Close the Skills Gap,” John Streur and George Serafeim wrote (2017) that “it will be hard to stop growing levels of inequality and economic anxiety without companies playing a more active role and assuming more responsibility for training, skilling, and reskilling employees. Our analysis has shown that private sector enterprises now have both the financial and the human capital to achieve much more than any government could.”

Maureen Conway from The Aspen Group's Economic Opportunity Program wrote (2018) in *Fast Company*, “The fact is that there is no single, simple solution to the challenge of widening

economic opportunity for all. And rather than designing job-training programs in isolation, we need to develop them alongside other important decisions like technical assistance strategies, labor market regulations, tax incentives, business leadership, and access to credit and business financing strategies.”

Within companies, 69 percent of ATD survey respondents placed the sole or shared duty for resolving the skills gap on talent development departments, up from 59 percent in 2015, and 55 percent believe the onus is on human resources (the same percentage as before). Fewer believed responsibility lies with senior leaders (38 percent; down from 49 percent) or the president/CEO (16 percent, down from 28 percent in 2015); however, as the Action Plan in this paper points out, it is critical that talent development obtains support and gathers input from leaders in designing programs to address skills gaps. One respondent wrote, “Supervisors and employees should be responsible for addressing skills gaps and identifying methods to bridge the gap. However, that tends to get put on my unit (leadership development) as an issue we need to fix, even if it’s not in our wheelhouse.” Another said, “Each department is responsible for their own. There is no cohesive effort to address skills gaps across the company.”

69%

of ATD survey respondents placed the sole or shared duty for resolving the skills gap on talent development departments

Government, nonprofits, and the private sector all have roles to play, as well.

Public Sector

From legislation to task forces to incentivizing investment and participation in the public workforce system, there are several ways the public sector influences efforts to address skills gaps.

Workforce Innovation and Opportunity Act

In 2014, President Barack Obama signed into law the Workforce Innovation and Opportunity Act (WIOA), which superseded the Workforce Investment Act of 1998 and amended the Adult Education and Family Literacy Act, the Wagner-Peyser Act, and the Rehabilitation Act of 1973. WIOA received nearly unanimous bipartisan support and contains four core programs: federally funded employment services, workforce development (including employment and training for youth, adults, and dislocated workers), basic education for adults, and vocational rehabilitation for people with disabilities. Originally, it was funded through 2020 at \$10 billion annually and is estimated to help 20 million Americans through more than a dozen programs. Current budget proposals, however, include a 40 percent cut to the funding.

WIOA supports one-stop career centers, which provide services for both individuals looking for training and employers seeking to fill their workforce gaps and meet training needs. These centers are managed by regional workforce development boards (WDBs) composed of business representatives, education providers, labor organization members, and community-based organization members, among others. WDBs and one-stop career centers are the heart of local workforce development systems, the pass-through for federal training dollars, and a key resource for closing the skills gap locally and regionally. The goal, according to a Department of Labor fact sheet (2014), is to “deliver a more job-driven approach to training and skills development.”

In addition, WIOA calls for state WDBs to design career pathways “to reflect the needs of employers in a specific region so that students will train for occupations in sectors where there are jobs,” according to Erik Jacobson in *New Directions for Adult and Continuing Education*.

It has taken time for the implementation of WIOA to begin to benefit employers. In Michigan, Consumers Energy, an ATD BEST Award-winning organization, is working aggressively with WDBs to leverage funds to address skills gaps in vital trade roles. Likewise, in Virginia, Newport News Shipbuilding, a division of Huntington Ingalls Industries, is tapping WIOA funds to strengthen the pipeline of qualified employees and to reskill and retrain incumbent workers to meet changing business requirements. For example, in 2016, Huntington Ingalls Industries used WIOA funding to support the retraining of 17 laid-off employees, who were offered training in the very high-demand job of welding, according to Jackie Rondeau, Business Services Coordinator for Opportunity, Inc.

Some employers report little change in services or funding available to them, however. A challenge in using this resource is that many organizations do not partner with the local public workforce system to address particular skill gaps. This is a missed opportunity and worth exploring for organizations of all sizes and in all industries.

National Council for the American Worker

On July 1, 2018, President Donald J. Trump issued an executive order establishing the National Council for the American Worker aimed at confronting America’s skills crisis: “For too long, our country’s education and job training programs have prepared Americans for the economy of the past. The rapidly changing digital economy requires the United States to view education and training as encompassing more than a single period of time in a traditional classroom. We need to prepare Americans for the 21st century economy and the emerging industries of the future.” The council, co-chaired by the Secretary of Commerce, the Secretary of Labor, the Assistant to the President for Domestic Policy, and the Advisor to the President overseeing the Office of Economic Initiatives, will develop recommendations on policies and strategies related to the American workforce, particularly regarding “affordable education and skills-based training for youth and adults to prepare them for the jobs of today and of the future.”

During the council's first six months, it is tasked with creating an awareness campaign, developing a plan to recognize companies that excel at workplace learning, and investigating how Congress and the executive branch can work with employers, educational institutions, and state, local, and tribal governments to implement the Task Force on Apprenticeship recommendations. The president estimates that the council's work will help fill 3.7 million jobs, and many large employers signed pledges to create jobs and training opportunities. For example, Walmart pledged to train 1 million people, while the National Retail Federation committed to "create enhanced career opportunities" for 250,000 people over five years.

Task Force on Apprenticeship

President Obama dedicated \$200 million to expanding apprenticeships, as did President Trump, who also created an apprenticeship task force early into his White House tenure. The task force report, submitted in May 2018, presented 26 recommendations, many of which focus on industry-driven strategies, including the creation of the Industry Recognized Apprenticeship Program (IRAP) that will function separately from the Department of Labor's Registered Apprenticeship program. Jobs for the Future's Eric M. Seleznow noted (2018), "industry associations will be tasked with 'certifying' new apprenticeship programs. But there are few specifics about the role of the certifiers or the rigor, quality, and standards of the new model," and added that "while Registered Apprenticeships require minimum hours of on-the-job learning, related classroom instruction, supervision, quality control, and equal access, these issues are not addressed in the IRAP proposal. The DOL will need to resolve them in subsequent guidance."

Finding apprenticeships can be a challenge, however. Students or adults must know that apprenticeships exist and then know where to look or who to ask for more information. The Department of Labor already maintains a website, but the apprenticeship task force recommended the creation of Apprenticeship.gov as a one-stop resource center. Scheduled to come online in fall 2018, the website will provide a comprehensive list of resources for apprenticeship applicants and companies looking for information on how to start or register a program. It's unclear whether or when the task force's other recommendations will be instituted.

Carl D. Perkins Career and Technical Education Act

On July 31, 2018, President Trump signed bipartisan legislation that strengthens support of career and technical education. The legislation reauthorizes the Carl D. Perkins Career and Technical Education Act, and is titled Strengthening Career and Technical Education for the 21st Century Act. It will help more people get the skills they need for good-paying, in-demand industry jobs, according to a press release from the Committee on Education and the Workforce.

ATD was one of more than 500 organizations that supported passage of the legislation. It should help align career and technical education programs to the needs of the regional, state, and local labor market; support effective and meaningful collaboration between secondary

and postsecondary institutions and employers; increase student participation in work-based learning opportunities; and promote the use of industry-recognized credentials and other recognized postsecondary credentials.

Private Sector, Education, and Partnerships

There are several examples of how efforts in the private sector can help address skills gaps.

Career Pathway

A career pathway outlines the education necessary to advance in a particular career. Georgetown University's Center on Education and the Workforce believes that "integrating education and workforce data will go a long way in removing the guesswork for individuals navigating the college and career maze" (Carnevale, Garcia, and Gulish 2017). Its report on career pathways suggested four reasons why connecting education and work is important: More education yields more pay; earning potential depends upon a person's course of study; sometimes less education is worth more; and similar programs of study benefit learners differently depending upon the regional job market. Guidance on career pathways in middle and high schools, as well as college, can help students make informed decisions and potentially decrease their higher education expenses. As noted in our 2015 skills gap report, a four-year degree is not always necessary; rather, a two-year degree plus an industry credential can provide the necessary qualifications for a successful career.

Career pathways can also be created within organizations. In these scenarios, the talent management function creates career architecture maps or other defined structures that provide employees an actionable way to progress in roles and responsibilities within their career track or that show what is required if someone wants to switch careers but stay with the same employer.

Credentials

In the broadest sense, a credential is anything a person can use to demonstrate their level of learning or ability, such as a college degree, certification, or professional license. Most jobs require some sort of postsecondary learning; however, rising college costs have heightened interest in alternate credentials, particularly for those jobs that don't require a bachelor's degree. Unfortunately, the "learn and work ecosystem," as Lumina Foundation Senior Advisor for Credentialing and Workforce Development Holly Zanville calls it, can be confusing and complex for students, employees, and employers, even at the level of basic definitions. ConnectingCredentials.org, a website created by the Corporation for a Skilled Workforce and Lumina Foundation, includes an online glossary but some terms remain in flux. For example, what is meant by "certificate"? Earlier definitions described a certificate as a credential awarded by an education institution, but more

Thinking Outside the Box: Changing Ecosystems to Create the Right Skill Sets for the Future

Newport News Shipbuilding: Addressing the Skills Gap With a Supply Chain Approach

In July 2018 a kick-off workshop was held to create a conceptual model for a regional partnership to address industry-wide workforce development needs in support of a 355-ship Navy. The effort, titled America Builds & Repairs Great Ships, was supported by the Naval Sea Systems Command (NAVSEA), a department of the U. S. Navy, hosted by Newport News Shipbuilding (NNS), and attended by representatives of the shipbuilding and ship repair industry, supply base employers, and business leaders.

The goal is to create a collaborative partnership model that aligns workforce development efforts through knowledge sharing, exchange of best practices, and training resources across the industry. Beyond just focusing on its own skills gaps, NNS is actively engaging its partners up and down the supply chain to address the entirety of skills needed to effectively build and repair ships.

Three tenets guide development of this:

- Help NNS first by optimizing its talent acquisition and retention systems, strengthening formal business systems, and right-sizing future labor resource demands.
- Help each other by sharing, collaborating, and systematically working together to maximize collective workforce development investments and address the region's economic challenges.
- Help government and workforce development associations more strategically align external resources to effectively address the skilled workforce development needs.

The partnership will:

- Foster collaboration, communication, and alignment of businesses, suppliers, educational resources, and government relationships to develop and codify a regional workforce development model dedicated to improving Virginia's economic performance and profile of the region.
- Serve as a collective voice to state and local government programs and represent the workforce development needs of the shipbuilding industry, the U.S. Navy, and supporting academic programs to facilitate critical actions needed to close the skills gaps and ensure the region has the required capacity to meet the Navy shipbuilding and supply base needs.
- Provide timely and relative economic and demographic information affecting Virginia's workforce development efforts.
- Serve as a one-stop regional resource for optimizing utilization of workforce development programs that seek to benefit small businesses, critical suppliers, and employees entering and navigating the skilled workforce.

The regional solution proposed by America Builds & Repairs Great Ships is indeed a national opportunity. The effort will begin by addressing industry-wide workforce demand in the region and evolve to address competing workforce demands from other regional industries. Once codified, the workforce development model can be replicated and applied to extend into other regions and, ultimately, across the nation.

Phase I of the effort was the initiation of a conceptual model. The July workshop was successful, and participants unanimously

expressed buy-in for the concept of a regional workforce development partnership. Phase II will establish actions to make a measurable difference for the industry and region.

Bermuda Upskilling Project: Training a Nation

Bermuda (population 65,000) has a problem that also faces many American cities: The country and its workforce are aging. Young people often move off the island to attend college, either in the United States or the United Kingdom, and then do not return home to live. In addition, tourism has declined over the past two decades. The country's new premier, Edward David Burt, wants to entice the younger generation to stay—and improve older residents' earning potential—by providing citizens training and jobs beyond the hospitality industry.

Burt sees promise in blockchain technologies and fintech and has offered tax breaks to companies that set up operations on the island, hire a certain percentage of Bermudans, and pay for their training. Cognizant, a multinational corporation that provides a wide range of IT services, has been hired to upskill citizens of all ages on digital skills ranging from basic (Microsoft Office and how to best use a smartphone) to more complex (AI, robots, STEM skills). Notably, Cognizant has initiated a multiyear effort of digital skills development for its entire workforce. The company won ATD's Excellence in Practice Award for its efforts.

Katherine Brown, Cognizant senior manager for digital strategy and workforce transformation, heads the digital skilling project in Bermuda, which is offered to K-12 students, unemployed workers, and most any Bermuda citizen who seeks upskilling. In addition to developing

IT-related curriculum enhancements for younger learners, Cognizant provides professional development for teachers, including concepts around digital thinking. It has also created an innovation center for digital skills at Bermuda College, the island's only higher education institution.

"We're focused on more than just digital," Brown said. "We're creating a twenty-first century worker, and that includes teaching soft skills like critical thinking."

Brown noted that Bermuda is enacting strong regulations around cryptocurrency, which should attract companies to their country to invest in blockchain. A subset of Bermudans who show interest and aptitude will learn how to code in blockchain and develop blockchain apps.

Brown sees this model of widespread digital skilling as transferrable to U.S. cities and even states, particularly as technology moves forward. To compete for all jobs—not just those in high-tech industries—workers will need basic digital knowledge at the very least, as well as the ability to learn new technologies quickly.

certificates now are awarded by non-educational institutions. How can employers tell if a certificate or other credential has merit, and how do learners choose a credential that will benefit them, particularly with the more than 350,000 credentials available in the United States?

Lumina Foundation's Zanville says, "All credentials need to be understandable to students, employers, and policymakers. That requires us to use a common language for credentials, and the common language we think is competency. We also need to know who gets them, where do people learn them, who's going to verify them, who's going to trust them? Are they interoperable? Do they move with you from place to place, or do you have to start over when you move? We're going to be in churn for quite a while figuring out how to redesign our systems for a more effective credentialing marketplace."

She adds that different industries demand different requirements. Because healthcare is highly regulated, for instance, providers must possess specific credentials to meet licensure requirements, and that's unlikely to change in the near future. Manufacturing often requires industry certifications, but IT, Zanville notes, is "more Bonanza land," and many companies will hire individuals without a college degree if they can demonstrate technical skills, either with a certificate or through a performance interview.

In 2018, Workcred—an affiliate of the American National Standards Institute—partnered with the Hollings Manufacturing Extension Partnership, an operating unit of the National Institute of Standards and Technology, to examine how the manufacturing industry viewed credentials. Some of the reported findings included that "credentials have uneven use in the manufacturing industry and are not routinely required or used as a major factor in hiring or promotion decisions"; "[m]any manufacturers do not know what credentials are available or how they are relevant to their workplace"; and "[m]anufacturers often feel they need to train new employees regardless of whether or not they held a credential."

Certifications

Certifications seem to offer a straightforward way to demonstrate knowledge and skills. However, a report by the Center for Law and Social Policy stated (2014) that "[m]ore than 4,000 personnel certification bodies are at work in the United States and less than 10 [percent] are accredited or reviewed by a third party." Workers must try to determine which certification will move them forward in their careers, and employers need to understand whether a particular certification is necessary for a particular job and why.

External certifications provide a way for people to differentiate their expertise. According to ATD's survey, about one third of respondents address their skills gaps by encouraging employees to pursue outside education (courses, college, certifications).

Some companies choose to create in-house certification programs instead of relying on external providers. This can help employers identify exceptional employees and in turn help workers differentiate themselves internally. If the company and its talent development programs have a strong reputation, internal certifications can help the employee stand out to customers, as well as help make the employee a more attractive candidate to other employers.

Apprenticeships and Other Earn-and-Learn Programs

Across the United States, apprenticeships have become a hot topic for states, educational institutions, nonprofits, and philanthropists. New America, a Washington, D.C.-based think tank, promotes the expansion of apprenticeships into new industries, not only to bridge the skills gap but to provide greater opportunities, especially to young people. “It is certainly an economic competitiveness strategy and a way for employers to address skills gaps,” said Mary Alice McCarthy, director of New America’s Center on Education and Skills with the Education Policy program. “Fundamentally, though, we see it as an equity strategy, a way to combat some of the corrosive effects of the rising cost of higher education and how that’s exacerbating inequality in our economy today. We see apprenticeship as a missing strategy that spreads the cost of education and training a little bit more into the private sector.”

Apprenticeships vary in length and structure but generally offer work experience, on-the-job training, and additional training at a community college or university. Most apprentices pay nothing for their schooling, though they usually earn a lower wage during the apprenticeship period. In addition, upon completion, most apprentices earn an industry credential, as well as a Completion of Registered Apprenticeship certificate for Department of Labor–registered programs.

Increasingly, states and companies are looking abroad for program models, especially Germany, Switzerland, and the United Kingdom, which have a long tradition of apprenticeship. Career-Wise Colorado, for example, has modeled their youth apprenticeship program after Switzerland’s. Most participants begin in their junior year of high school and spend three to four years in the program. While still in high school, apprentices work on-site with an employer two days

each week, attend high school on the other days, and take additional college credit courses either online or in person. After they graduate high school, apprentices spend most of their time at the employer and remaining time on college coursework. By the end of the program, apprentices have taken about a year of college credits for no cost, gained on-the-job experience while receiving a salary, and earned at least one high-value industry certification.

Most ATD survey respondents do not offer registered apprenticeships (78 percent) or other earn-and-learn programs (73 percent). Of those that do offer apprenticeships, 5 percent are registered with the Department of Labor; 5 percent are registered with the state; 1 percent are registered with other countries; 2 percent are registered or recognized by a union or guild; and 16 percent are not registered or recognized outside of the organization.

As for certifications, credentialing, or career planning tools, 41 percent of participants said their companies offer none, while the remaining 59 percent offered some assistance, from internally provided certifications to stackable credentials to career pathways.

Best Practices for Creating an Internal Certification Program

Members of ATD's Public Policy Advisory Group recommend these steps to create an internal certification program.

Assess the need and know your goals: Before you spend time building something new, figure out if you really need to build an internal certification program. Perhaps an external certification will meet your needs. Determine what you want to accomplish with your program and then look to outside sources to see what already exists. If you decide to move forward with your own program, create firmly established goals. Ensure you have market demand for the program and identify benefits for both the organization and the candidates. Do you want your certification recognized internally only or do you wish external recognition as well? Make sure you have program governance in place before proceeding and a realistic timeline for development and implementation.

Conduct a job analysis: Conduct a detailed job analysis tying knowledge, skills, and abilities (KSAs) to the buildout of the curriculum and content for the certification. Ensure you have defensible eligibility requirements and valid assessment based on work-related standards.

Conduct a needs analysis: While the program goals will identify overall business needs for the certification program, a detailed needs analysis to assess gaps between the required KSAs and current workforce capabilities will be required. The outcome of the needs analysis will help drive any exam development activities around testing out and post-testing.

Analyze your audience: Conduct an audience analysis to make sure program (and credential) expectations are properly set and communicated. Know your audience depth and breadth for the program. Ensure you have adequate pipeline candidates.

Develop a budget: Establish a program budget up front. Identify costs for building, marketing, and running the program.

Brand and market your program: An important aspect of all internal programs is the marketing and branding of the program. Develop a program name. Determine if badging will be employed, how certifications will be conveyed or tracked, and what your naming conventions are.

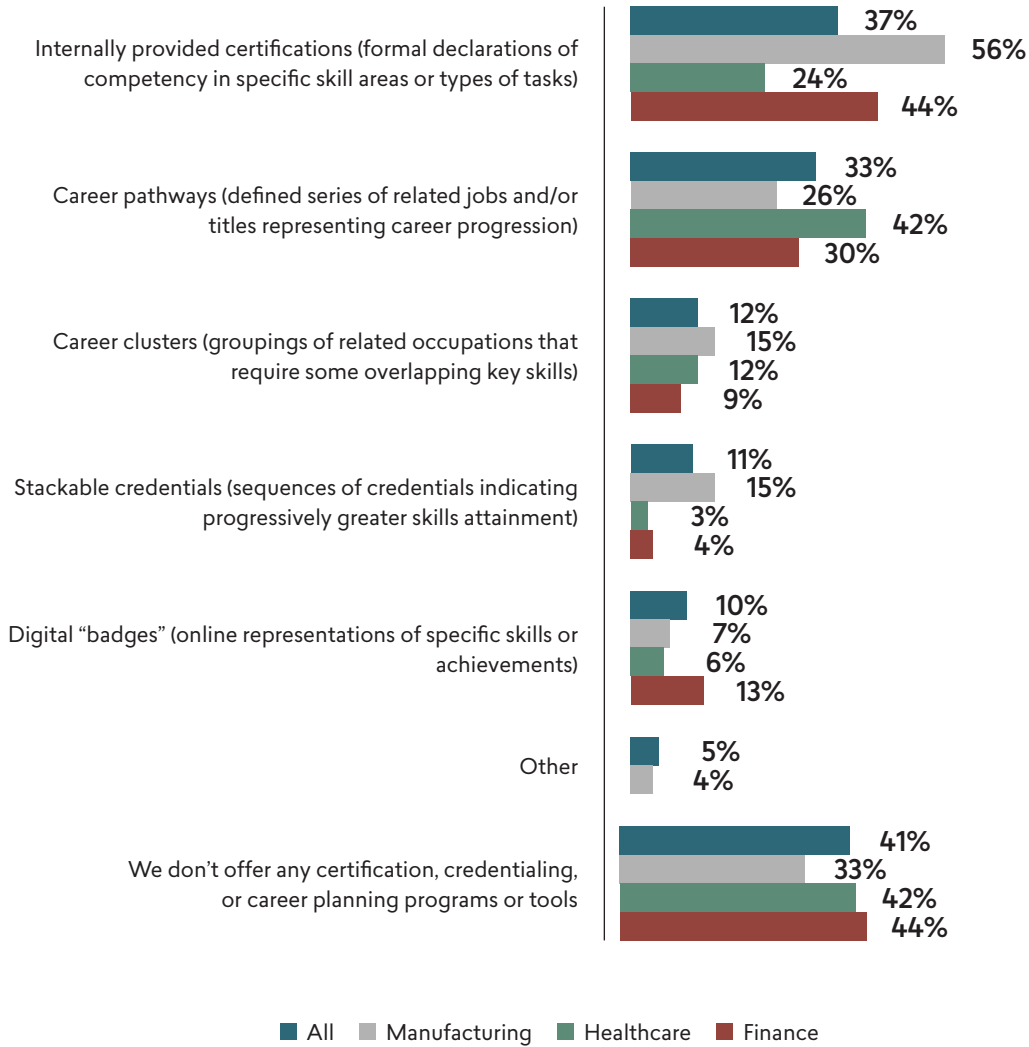
Create metrics: Your overall program metrics should be established before implementing the program. Identify all components of your metrics and any analytics you will use to show program success. Identify which systems will be used to track enrollment, progress, and success. Identify a timeframe for tracking post-program success.

Develop curriculum and content: Using the KSAs, metrics, and assessment data, create detailed course design documents that spell out the courses and curriculum that will satisfy the needs of the certification program. The curriculum and content may employ instructor-led training, e-learning, and blended courses. It may also involve demonstrations, simulations, apprenticeships, job rotations, presentations, and work experience. Determine, too, if any continuing education courses are necessary to maintain the certification.

Develop and deliver exams: For the purpose of certification, exam development and delivery are critical. Exams must not only be efficient; they must also be valid and tied to actual job outcomes. Use of a psychometrician (industrial and organizational psychologist) is key to making sure that you have a valid assessment instrument and it does not have adverse impact. Consider using off-the-shelf industry exams when possible. They should be based on the job analysis and KSA outcomes. Also consider any "grievance" recourse, especially if working in a unionized environment. Consider allowing participants to test out as a

Certification and Career Planning by Industry

Does your organization offer the following types of certification, credentialing, or career planning programs or tools to employees? (Choose all that apply).



means of certification—if they pass the test, thereby demonstrating KSAs, they don't need to complete the training.

Develop program operations: You'll need to keep accurate and updated records beginning with a participant's first touchpoint into certification and continuing throughout their entire career. Your human resources information or

learning management system is a good tool for this task. Successful certification programs employ a number of metrics and analytics to prove their worth and success. Managing both student demographics and assessment scores helps validate testing and learning. Follow-on metrics include retention, promotions, performance metrics, and other long-term goals related to completion of a certification program.

Partnerships With Higher Education

Reimagining the education–work pipeline is a critical part of solving skills gaps. This goes beyond traditional tuition reimbursement programs. Businesses, industry groups, public sector agencies, public and private educational institutions, think tanks, nonprofit organizations, and more must be involved in creating sustainable solutions.

Fresh approaches at the national, regional, and state levels are required. One example is the Rowan Work & Learn Consortium in New Jersey, touted as the state’s “first bundled consortium.” The New Jersey Department of Labor and Workforce Development and Gloucester County’s Chamber of Commerce, Workforce Development Board, and Department of Economic Development are partnering with Rowan University and the Rowan College at Gloucester County. The Rowan Consortium will create degree programs designed to address the highest areas of labor demand in the state. Skill needs being addressed are advanced manufacturing, biopharmaceutical life sciences, construction management, financial services, healthcare, hospitality (retail and tourism), and transportation (logistics and distribution).

Steps to Success In Partnerships

- Be alert to opportunities for funding partnerships by actively participating in community networks or workforce events.
- Express your interest in participating in partnerships that could be mutually beneficial to your workforce and the sponsoring entity.
- Dedicate a staff member to coordinate any partnerships.
- Build strong relationships within the community, including community colleges, your local workforce board, or faith-based organizations.
- Work closely with human resources to ensure partnership opportunities and your organization’s career paths are aligned.
- Keep leadership informed of progress and challenges that occur during the partnership.
- Develop a messaging plan in conjunction with your communications department that gets the word out about the opportunities available through the partnership.
- Keep metrics on the effectiveness of the partnership and track individuals’ progress.
- Celebrate successes with graduations, publicity, testimonials, and the like.

Challenges Facing Talent Development Professionals

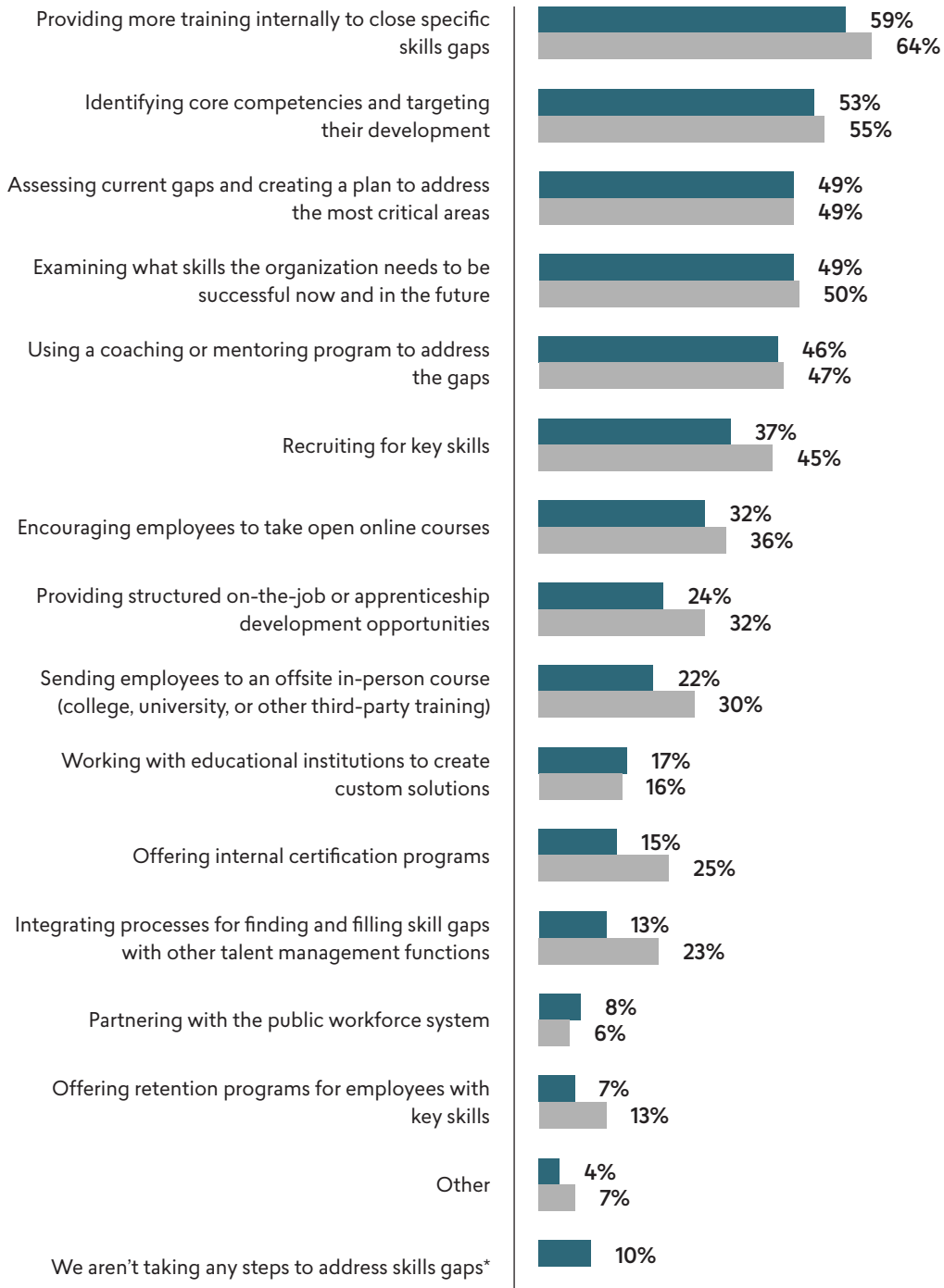
Talent development professionals have a tough but important job when facing the skills gap. With a multigenerational workplace, talent development professionals must educate themselves on generational differences to ensure solutions work for each group. Employees want to move up but might complain about training. Executives want a capable workforce but might not put money toward programs to help upskill workers. LinkedIn Learning's *2018 Workplace Learning Report* stated that "81 [percent] of executives say talent is the number one priority at the company [and] 90 [percent] of executives say that learning and development is a necessary benefit to the employees at the company." The report went on to say that "[a]s the shelf life of skills shrinks, business leaders worry that talent developers are focused on training for today's skill demands, at the expense of preventing tomorrow's skill gaps."

In some areas, the ATD survey hinted that using learning solutions to fix the skills gap has decreased since 2015, which is concerning. One respondent wrote, "Although we are offering some specific training, there is not a concerted commitment to formalizing necessary skill sets and job descriptions and setting or managing performance expectations." Fifty-nine percent of ATD survey respondents said their organization addresses the skills gap through more internal training (down from 64 percent in 2015); 32 percent encourage employees to take open online courses (down from 36 percent); and 22 percent send employees to an offsite, in-person course provided by a third party such as a vendor or university (down from 30 percent). In addition, 24 percent offer structured on-the-job or apprenticeship development opportunities (down from 32 percent); 15 percent offer internal certification programs (down from 25 percent); and 7 percent offer retention programs for employees with key skills (down from 13 percent). However, 10 percent said their companies are doing nothing to address the skills gap. (This choice was not offered in 2015.)

Forty-nine percent of respondents said their organizations are assessing current gaps and creating a plan to address the most critical areas and 49 percent also said they're examining what skills the organization needs to be successful now and in the future—nearly the same percentage as 2015. Coaching or mentoring was selected by 46 percent (down 1 percentage point from 2015) and 8 percent of respondents noted that they partner with the public workforce system (up from 6 percent).

Addressing the Skills Gap

How is your organization addressing these skills gaps? (Choose all that apply).



■ 2018 ■ 2015

*Answer choice not offered in 2015

Organizational Success Through Upskilling and Reskilling

The research report, *Upskilling and Reskilling: Turning Disruption and Change Into New Capabilities*, authored by ATD and the Institute for Corporate Productivity, looked at the importance of reskilling or upskilling the current workforce. The report defines upskilling as training designed to augment existing skills with new or significantly enhanced knowledge or skills to enable individuals to continue and succeed in the same profession or field of work. Upskilling does not refer to normal, ongoing development offered to upgrade knowledge or skills in the course of business. Reskilling describes training designed to help individuals gain new knowledge or skills to enable them to perform new jobs or enter new professions. The main takeaways from the report are:

Unaddressed skills issues could put a third of organizations at risk. More than half (56 percent) of surveyed learning leaders say their companies are providing upskilling, reskilling, or both—and doing so is strongly tied to better market performance and learning outcomes. However, 33 percent acknowledged that they have identified the need to upskill or reskill employees yet have taken no action, effectively gambling with potential talent and business risks.

Talent risk—from skills gaps, critical role pipeline deficits, aging workforces, and the like—is the top driver of both upskilling and reskilling programs. Workers' needs to learn new technologies, along with shifts in organizational focus and customer demands, were leading motivators, too.

Learning leaders in high-performance organizations report greater success in upskilling and reskilling. Among all organizations, only 25 percent claim high levels of success for upskilling and 18 percent for reskilling. In market-leading companies, the figures are 37 percent and 34 percent, respectively. Effectiveness in upskilling

or reskilling is strongly linked to better market performance and organizational learning.

When assessing skills needs, teamwork matters. Talent development functions are most likely to align with human resources, business or strategic planning teams, or business function leaders to identify needs for upskilling or reskilling. However, partnerships with senior executives or talent acquisition teams are alliances more often found in market-leading organizations, and both are linked to better performance.

Whether upskilling or reskilling, employees in critical roles are priority one for organizations. Supervisors and managers in need of skills upgrades and technical employees rounded out the top-three audiences. For both upskilling and reskilling, targeting any or all three groups is strongly tied to better market and learning performance.

Although upskilling and reskilling are more likely to occur informally, leveraging internal mobility programs to provide structure for upskilling is a high-performance practice correlated to market performance and better organizational learning. Only 17 percent of companies overall use this strategy, but more than one in four respondents from high-performance organizations make internal mobility a design factor in upskilling. For reskilling, use of career paths to provide structure is linked to better market performance.

Using rewards programs to support reskilling is a high-performance practice applied by only 15 percent of surveyed learning leaders. Strong ties to market performance and learning effectiveness make the strategy a differentiator. Tuition assistance programs, available in about one in five surveyed organizations, showed similar links to better learning and market outcomes when used for reskilling.

The LinkedIn Learning report noted that the top challenge facing talent development is getting employees to make time for learning. “This makes sense. If employees are not taking the time to learn, then L&D programs cannot be successful.” The report also showed, however, that 94 percent of employees stated they didn’t have the time to learn, even if they wanted to. “Our data shows that the number 2 challenge facing talent development, ‘getting managers to take an active role in employee learning,’ is a viable solution to overcoming the number 1 challenge.”

The report went on to say that upskilling an organization’s workforce requires cultivation of a growth mindset. According to the report, leaders believed they could get employees to take the time for learning if their company encouraged such a mindset. In contrast, “56 [percent] of employees say they would spend time learning if their manager told them to complete a specific course to improve on or gain a new skill.” Clearly, there is an opportunity for managers to be partners in learning, something talent development practitioners should foster.

The following Action Plan shares best practices and ideas talent development practitioners and leaders can use to identify and address gaps in skills needed to keep their organizations competitive.

Action Plan

Among organizations, 69 percent put either sole or shared responsibility for closing the skills gap on talent development functions. Talent development professionals are the experts to whom organizational leaders should look when identifying the skills and competencies needed now and in the future. These skills and competencies should align to key drivers for the organization's goals and strategies, which means talent development professionals must understand the company and industry in which they work. The following action plan identifies six steps for talent development professionals to take when it comes to assessing and closing skills gaps.



STEP 1 CLARIFY AND UNDERSTAND THE ORGANIZATION'S PERFORMANCE METRICS

Identify the key stakeholders to support closing the skills gap (overall, regionally, per business function, or per unit).

Be sure you know the answers to the following questions and can articulate the connection between organizational and individual performance goals and employee capability.

- What are all the factors in the economy, culture, or market that most influence your organization? How might these be an opportunity?
- What are the organization's key strategies and goals and their performance metrics?
- What business functions have the most impact on the success of the organization in terms of revenue or growth?
- Which roles have the most impact on the current and future success of the organization?
- Does the organization have a workforce plan and is it aligned to roles and competencies?
- What competencies must employees at all levels demonstrate to be able to meet current and future performance metrics?
- How robust are the talent and human resources systems and reporting capabilities for monitoring performance, business results, and employee capabilities?
- How engaged and committed are the organization's leaders to tackling this challenge through an investment of people, processes, and systems?
- Will gaps be satisfied through succession or career plans, lateral moves, or outside sourcing?
- How are the demographics of the organization's workforce changing, and what impact will they have on knowledge, skills, and behaviors?
- What is the state of the supply chain of talent for the business or industry locally, regionally, and nationally?
- How does innovation and the Fourth Industrial Revolution affect skill needs?

STEP 2

IDENTIFY COMPETENCIES AND SKILLS THAT MAP TO STRATEGIES AND PERFORMANCE METRICS

- Identify the core competencies and skills for the organization's overall workforce and the business units most critical to the organization's success.
- Identify current needs, as well as those for the next one to three years.
- Investigate any disruption or new technological advances that will affect work competencies.
- Working with leaders of core business functions, determine which skills and competencies their employees need to meet key goals and be effective at implementing key strategies.
- Map current and future competencies to current and future business needs, strategies, and goals.
- Identify the priority skills needed to develop functional competencies required for job success.
- Identify which skills and competencies are required for meeting desired performance standards, in what timeframe, and how they will be measured.

STEP 3

ASSESS THE SKILLS GAP

- Define the scope of how the organization will address the gap (organization, division, unit, or individual), and consider starting with one function or business unit as a pilot.
- Use analytical tools, such as impact mapping, to identify performance behaviors required to meet specific goals.
- Conduct a capability audit to determine where gaps exist in employees' knowledge, skill, or behavior.
- Identify the consequences of not closing the skills gap.

STEP 4

SET GOALS AND PRIORITIZE THE PATH TO FILLING GAPS

- Establish baseline measures of employees' current skills and competencies.
- Set goals for closing gaps between existing skill sets and those needed to support current and future goals.
- Determine which paths to take to fill particular gaps: apprenticeships, reskilling, outsourcing, hiring, training and development, coaching and mentoring, and so on.
- Implement a method for tracking demonstrated skill competencies.
- Create an internal communication plan to educate and involve managers and employees in programs to close skills gaps.

STEP 5 IMPLEMENT SOLUTIONS AND MONITOR SUSTAINABILITY

- With key leaders in the organization, prioritize solutions and secure funding and resources needed to do the work.
- Connect with your state or local workforce development board to identify opportunities to partner and to access training funding that can assist your organization in addressing skills gaps.
- Led by the organization's talent development function, create an organization-wide plan to address skills gaps.
- Build relationships among industry, government, agencies, and educational institutions to bridge skills gaps with aligned programs.
- Meet with government representatives to actively support legislation for increased funding opportunities for training programs needed to develop a pipeline of qualified personnel that will support your industry now and in the future.
- Build business consortia with local employers from various industries to understand and address regional skills deficiencies.
- Prioritize what the organization can implement and sustain, even if there are disruptions, changes, and challenges to the organization.
- Ensure there is senior leadership buy-in and engagement during every step of implementation and communication and that they participate as teachers.
- For identified knowledge or skills gaps, create learning and development opportunities using appropriate delivery options and leverage all learning modalities: online, formal, informal, experiential, social, mobile, and partnerships with educational institutions.
- Create individual learning plans and paths for employees. Have systems in place to measure and document skills and competencies before, during, and after training.
- Link all talent development goals to the organization's skill needs and business priorities.
- Have a balance of quick wins, medium-term successes, and longer-term development so that measurement of success can begin immediately. Look for both leading and lagging indicators.
- Establish an accountability structure to ensure progress is maintained.

STEP 6 COMMUNICATE THE IMPACT

- Establish formal communications channels that will share relevant news related to learning impact and progress toward closing skills gaps.
- Be prepared to demonstrate how closing the skills gap has increased organizational performance, while improving productivity and reducing costs.
- Ensure the measures are truly aligned with the organization's measures of success.
- Use assessment tools to measure progress before and after learning and development takes place.
- Identify a successful stakeholder—work with that person to communicate the results.
- Communicate progress and results regularly to all stakeholders and create a means by which progress in achieving skills gap goals will be acknowledged and celebrated.
- Consider these questions:
 - » In what ways did the solutions implemented have a measurable effect on narrowing the skills gap in the organization and making it more effective?
 - » How did the results meet expectations and demonstrate progress?
 - » In what ways is the organization's workforce better equipped to meet key goals and implement strategies?
 - » What business results can be attributed to improvements in skill, knowledge, or desired behavior?
 - » How can the process of closing the skills gap be refreshed to increase the likelihood of continued success?

Conclusion

For nearly a decade, talent development professionals surveyed by ATD about the skills gap have overwhelmingly noted, at rates of 80 percent or higher, that their organizations have a skills gap. This year's survey shows an overall decline in actions or resources being dedicated to addressing it. The percentages of organizations that offer internally provided training, externally provided training, structured on-the-job learning opportunities or apprenticeships, internal certification programs, and retention programs for key employees all dropped since 2015. This is a concerning disconnect with potentially big risks for organizations.

The shelf life of many skills in today's ever-changing, fast-paced global business environment is shrinking. Advances in technology are reshaping the work we do and how we do it. From automation to artificial intelligence, many job roles have disappeared, while many new careers are being created. All of this means organizations are facing a scenario of near-constant upskilling and reskilling of employees to stay current.

Complicating the scenario in 2018 is a tight job market. Organizations must get serious and commit the necessary resources to bridging skills gaps if they hope to remain relevant and competitive in the future.

The Action Plan for talent development professionals, a key component of this whitepaper, is a guide to prioritizing the resources and steps necessary to enable organizations to make meaningful progress when it comes to having the right skills, knowledge, and abilities now and for the future.

Key to the success of this effort is for the talent development function to partner with business owners and executives. This survey shows that the talent development function owns the work of finding a solution to the skills gap problem. It's time for the talent development function to embrace and drive change.

Case Studies

Case Study 1:

Bridging the Skills Gap in Texas: A Regional Approach to High-Demand Jobs and Careers for Adult Learners

The Texas Workforce Commission (TWC), as part of its Strategic Plan for Adult Education and Literacy 2015-2020, engages business and industry and empowers its 28 workforce development boards to establish a better match between what adult learners are taught and the skills required by the 21st century workplace.

In 2016, TWC worked to document the knowledge and skills needed for college transition and career readiness and published the Texas Adult Education and Literacy (AEL) Content Standards. In addition, the Texas Center for the Advancement of Learning and Literacy (TCALL) at Texas A&M University ran a year-long training program for adult educators and literacy providers to give them the skills and information they need to help adult learners better prepare for higher education and rewarding work.

Based on stakeholder feedback from around the state, TWC next established a partnership between the business community and adult educators to align the AEL Content Standards with the requirements to succeed in jobs and careers. TCALL representatives on the AEL subject matter expert (SME) team helped the group better align its work. The resulting Standards Alignment to Industry Clusters (SAIC) initiative was designed to articulate the Texas AEL Content Standards in terms that can be used by both educators and industry. It defined in real-world terms the literacy, numeracy, and communication skills needed across four industry sectors key to the Texas economy: advanced manufacturing; construction and extraction; healthcare sciences; and transportation, distribution, and logistics.

The SAIC partnership comprised four organizations: Literacy Texas, a statewide literacy coalition; Educational Testing Service (ETS); National Center for Construction, Education, and Research (NCCER); and Haigler Enterprises International. All four organizations have extensive experience working with national, state, and local education and industry standards; identifying the knowledge, skills, and occupational requirements that lead to meaningful employment; researching and assessing pathways within industry clusters; and working with public-private partnerships with a focus on employers. The SAIC initiative leveraged the strengths of research and in-depth knowledge of occupational requirements to establish links between academic skills mastery and labor market success for adult learners.

The partnership's process for selecting high-demand occupations in the four target industry sectors involved ETS research using the U.S. Department of Labor's O*NET and Texas labor market information, such as the Texas Workforce Commission's Texas Growth Occupations Annual Reports.

Key to the SAIC initiative were teams of industry cluster, adult education, and literacy SMEs that:

- identified high-demand jobs within the four key industry clusters in the U.S. Department of Labor's O*NET Program
- collected information, including job descriptions, from industry cluster working groups
- analyzed related occupations to find the best match between O*NET and industry data (including knowledge, skills, and other relevant occupational requirements) for high-demand entry- and intermediate-level occupations in Texas
- aligned industry information and the results of the O*NET analysis to create detailed descriptions of skills required in entry- and intermediate-level jobs by industry cluster
- used the synthesis of the O*NET and Texas industry information to create a set of overlays
- in English language arts, mathematics, and English language learning as a basis for alignment between high-demand jobs and the Texas AEL Content Standards.

With the results of the research described above as a starting point, the SAIC partnership convened teams of industry cluster and adult education and literacy SMEs from October 2017 through May 2018. Through experience and job-specific documentation, SMEs validated the knowledge and skills requirements for entry- and intermediate-level jobs in the four key industry sectors.

By evaluating the links between skills defined in the Texas AEL Content Standards and those articulated through the industry cluster analysis, the SAIC partnership provides instructors, career counselors, and program developers information they can put to immediate use. Now these groups can focus adult learning on what is required for success in meaningful careers as well as higher education, build bridges of communication, and develop action plans for additional public-private partnerships around the state.

Case Study 2:

Special Olympics International Builds a Leadership Pipeline

The Special Olympics Leadership Academy serves Special Olympics' emerging leaders, or leaders in place, who have had little exposure to formal leadership development opportunities. This organization is a global nonprofit providing a range of sports, health, education, and leadership opportunities aimed at promoting the inclusion of people with intellectual disabilities in the communities where they live and more broadly in society.

The Leadership Academy is a multimodal program that includes a face-to-face workshop, occupational personality survey, coaching, e-learning, action planning, and implementation of new skills and knowledge over the course of one year. With two well-established modules, Leader I and Leader II, a third module, Leader III, was piloted in January 2018 to introduce blended experiential learning through self-directed, on-the-job, and peer learning opportunities. Overall benefits to date include raised self-awareness, improved confidence and ability to take on new responsibilities, better team performance, new members served, new strategic partnerships, and new revenue.

The Leadership Academy addresses the need for an emerging talent pipeline in expanding Special Olympics' reach, improving quality, and achieving long-term sustainability of programs globally. In an initial survey, 94 percent of 794 respondents said that leadership training was essential to the mission of Special Olympics. Through strategic planning in 2015 and two rounds of consulting with more than 300 regional and state-level staff, board members, and volunteer leaders, the Leadership Academy came to fruition. Since its establishment, 16 modules have been conducted in all regions where the organization operates with 351 participants from 100 countries, including 28 leaders with an intellectual disability.

The Leadership Academy framework and approach offers leaders an opportunity to think about their role in an inclusive environment and provides them with tools for performance improvement. The academy is based on adult learning principles and emphasizes interactivity, reflection, and previous experience of the participating leaders.

The results of investing in leadership development have been tremendous. Ten of the academy participants received promotions. Most important of all, participating leaders raised more than \$2 million in new revenue, built 74 new strategic partnerships, and recruited thousands of new athletes, family members, and coaches.

Case Study 3:

Using Grant Money for Employee Education at University Health System

University Health System (UHS) is a nationally recognized teaching hospital and network of outpatient healthcare centers, owned by the people of Bexar County, Texas. In 2017, UHS celebrated a century of service to the community, as well as a long and proud history of partnering with organizations, locally and across the United States, to secure grants that provide additional resources for employee development.

Faced with a tight budget for talent development and stiff competition for talent, UHS works creatively and strategically to ensure it has a steady supply of skilled professionals by establishing relationships with colleges and universities, the local workforce board (Workforce Solutions Alamo), and intermediary providers, such as local nonprofit Project QUEST. These powerful relationships have become the health system's greatest antidote to scarce resources, allowing it to extend learning opportunities while promoting recruitment and retention and developing an internal pipeline.

Project QUEST collaborates with employers, training providers, workforce development organizations, and other community-based partners to address the employment and career advancement needs of residents of Greater San Antonio. Project QUEST also incorporates intensive support services to help participants overcome financial and personal barriers to skills acquisition.

UHS's 2017 partnership with Project QUEST gave staff access to debt-free funding (in most cases) toward higher education and career advancement learning opportunities. Project QUEST's statistics indicate that the average annual income for full- and part-time employees at enrollment in Project QUEST is \$13,822; at job placement, it rises to \$43,425.

Through an \$800,000 Kellogg Foundation grant, qualifying frontline staff (specifically low wage, low income, with at least one child eight years or younger, and of minority status) could apply for a two-year healthcare-related degree. Qualifying employees received up to \$6,000 for tuition, books, uniforms, licensing, and licensing preparation and could receive additional funds for mortgage or rent, utilities, childcare, and transportation.

Working with its human resources, the UHS Center for Learning Excellence identified 246 eligible employees making less than \$14.50 an hour. To reach these individuals, the center implemented an intensive promotion campaign, with information sessions, conducted in collaboration with Project QUEST, advertised on the UHS intranet and in targeted departments' staff meetings. Ninety-five employees attended one of 10 information sessions, and 21 employees received funding from Project QUEST. Of these, three have completed degrees, and one received a Registered Nurse license. Eighteen enrolled in community college, including registered nurse, licensed vocational nurse, sonography, respiratory tech, and radiography tech programs.

This win-win partnership, at no cost to UHS, gave staff a pathway to the middle class, built a pipeline for hard-to-fill jobs, and reduced turnover and the resulting costs to the organization. By developing this internal pipeline, UHS also reduced the need for external recruiting, resulting in savings of \$249,963. Although UHS has an education reimbursement fund that employees can use, which includes tuition, continuing education, and certification reimbursement, the amount is limited. In addition, some education programs cost more than the UHS fund per-person limit, so Project QUEST funding meant more employees could pursue programs that interested them.

By developing its own, UHS invests in staff who are already committed to the organization's culture. Staff turnover at UHS was 14.9 percent, compared to 19.1 percent statewide for healthcare organizations. In addition to preparing current employees at UHS, Project QUEST provided access to a pipeline of talent from the community. In 2017, UHS hired 12 nurses, three radiology technologists, two ultrasound technologists, and two LVNs from the community who had received training through Project QUEST, all at a living family wage of \$16.00 to \$25.50 an hour.

Case Study 4:

McDonald's: Building Skills While Building Burgers

As a major U.S. employer, McDonald's believes it can have an impact on large groups of young people and shows that commitment through its education programs. In 2015 the company launched Archways to Opportunity to expand offerings to restaurant employees and their families. The program has four components:

- English Under the Arches, an English as a second language program
- an online competency-based, accredited high school completion program
- college tuition assistance
- academic and career advising services through the Council for Adult and Experiential Learning.

"I think the beauty of Archways is that it's really about meeting people at their point of need, wherever they are along that educational spectrum," says Lisa Schumacher, McDonald's director of education strategies. The initial goal was to have one participant per restaurant enter one of these programs. Franchise owners then upped that, and they are trying to get two people per restaurant involved annually—or 28,000 people. McDonald's has already seen many franchisees surpass that goal.

McDonald's is keen to partner with academic institutions that focus on nontraditional learners, with a focus on accessibility and affordability. College for America out of Southern New Hampshire University, for example, offers a competency-based program. "We have general managers that run million-dollar businesses," explains Schumacher. "These are smart people with a lot of skills and experience. The CFA program allows them to potentially move through the curriculum quickly, if they already have and can demonstrate the knowledge."

The way a company presents itself can affect how it's perceived in the community and society at large, as well as who it attracts to work there. McDonald's and its independent franchisees want to be America's best first job and believe the skills restaurant employees gain can help them succeed

going forward. Indeed, research shows that much of future career success comes from building well-developed skills at a first job. When McDonald's surveyed restaurant employees and alumni, it found that almost half believed they were more prepared for future work because of the job they had at McDonald's.

Through on-the-job training and education opportunities like Archways to Opportunity, McDonald's is focused on training today's workforce and giving people the tools they need to build a pathway to a career, whether at McDonald's or elsewhere. "Restaurant employees now have access to formal education that will provide them with a portable credential," says Schumacher. "If they decide they want a career at McDonald's, our goal is really helping them figure out what that career looks like. Many will move on, though, so our goal is to set them on a path and help them move on to a career."

Case Study 5:

Creating a Shorter Pathway for New Project Managers at The Waldinger Corporation

In February 2018, Iowa state leaders touted the state's low unemployment rate of 2.9 percent, but this number accentuated the already existing skills gap faced by employers such as The Waldinger Corporation, a mechanical, electrical, sheet metal, and service contractor. Low unemployment meant a shortage of skilled workers to fill crucial job functions, creating a serious constraint on business growth. Waldinger identified the key role of project managers (PM) as being in short supply. The company's limited number of highly experienced and knowledgeable PMs, in fact, limited the quantity and scale of projects it could pursue.

Further complicating Waldinger's situation was the fact that those seeking to become a project manager had traditionally been trained through an immersion approach that lasted five to seven years but that lacked guidance or uniformity. Two problems presented themselves: The training timeline was too long, and there was no consistency in the knowledge or skills individual learners possessed afterward.

Structured On-the-Job Training

Waldinger recognized this problem and hired a corporate training manager to fix it. The best way for newer employees to learn how to be a project manager was to do exactly what was already being done—working on a jobsite under an experienced project manager's supervision. But that process needed to be defined, monitored, and conducted in a competency-based approach that was both consistent and trackable.

For six months, the corporate training manager worked throughout the company to document every demonstrable skill or area of knowledge that a project manager needed to work at Waldinger, which allowed for much inquiry and consideration of processes and standards. In the end, more than 400 measurable skills were documented, and these became the foundation of a focused experiential learning program that took learners through the development process at their own pace and that could be completed in three or fewer years. Learners and their assigned mentors agree upon which measurable skills to target during any specific project, and the mentor provides learning experiences and practice opportunities in those skills. When learners feel they can consistently demonstrate competency in specific measurable items, they seek their mentor's signoff.

Reactions to this competency-based learning approach were swift and positive. Participants valued the level of control they now had over their own learning. Structured on-the-job training (SOJT) mentors valued the à la carte list of possible topics to address with each learner. Leadership appreciated that promotion and job assignment decisions could be based on objective tracking of demonstrated skills rather than more subjective methods.

Waldinger's SOJT focus is helping the company shrink their skills gap for the project manager role in tangible ways. Of the program graduates to date, each has finished in under three years what traditionally had taken up to seven years. Additionally, each graduate is already leading large-scale work projects directly out of the SOJT program. And the 30 learners currently in the SOJT program are already running small projects after just one year in the program—something that traditionally would not have happened until at least a learner's third year.

Prior to the implementation of the SOJT approach, it was not uncommon for learners to become frustrated over perceived job stagnation due to the five to seven years of required training and instead seek advancement through another company. But to date, no one who has enrolled in an SOJT-based development plan has left the company. In their regular 45-day meetings with the development coordinator, participants have reported 100 percent satisfaction with the program.

Pre-Boarding Through Internships

Waldinger's summer internship program for college students aims to attract skilled talent as early as possible. Because the project manager SOJT effort was so well received, the company determined the same model could be used with summer interns, many of whom have interest in one day becoming a project manager. The SOJT model was scaled back and adapted to work within the internship program's parameters.

Waldinger's recruiters have found that 75 percent of internship prospects interviewed ask for information about how dedicated the learning program is. Almost all ask about which tasks they will be doing and whether they will do mock up or "real" work. The reactions have been positive when

recruiters discuss the company's SOJT-based internship experience. Success can be seen in the internship program growth (17 in 2017; 24 in 2018) and the fact that 67 percent of those eligible to return for multiple internship years at Waldinger have chosen to do so.

As a direct result of linking the internship program seamlessly to the project manager SOJT program, Waldinger has created a pre-boarding pipeline. Of the six intern program participants who were eligible for employment in 2017, four were offered and accepted full-time positions, citing the SOJT program as a reason for their choice. With the competencies achieved during their SOJT internship experiences, these new hires were able to enter the SOJT program with up to a year already completed. For those who have completed multiyear internships with the company, their time in the SOJT program is reduced from three years to two.

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