A woman in a business suit is seen from behind, looking out over a city skyline at sunset. The scene is bathed in a warm, golden light. In the foreground, a dark conference table and chairs are visible, suggesting a professional setting.

EMPLOYERS' POST-COVID BUSINESS STRATEGY AND THE RACE FOR TALENT: A VIEW FROM THE C-SUITE

December 2021



Project Team

This project is a collaboration between the Center for Higher Education & Talent Strategy—an applied research center focused on the relationship between postsecondary education institutions and employers—and the Office of External Affairs at Northeastern University. The report was written by CFHETS Executive Director Sean R. Gallagher, Ed.D., and Assistant Vice President for External Affairs Michael Ferrari, J.D.

Background

Over the course of the last half decade, a broad consensus has emerged that the world of work is undergoing a rapid technological transformation.¹ Prior to the COVID-19 pandemic, the proliferation of artificial intelligence (AI) was already a major business trend. But what seemed to be a steady technological churn has been significantly accelerated by the pandemic as entire business sectors raced to pivot to a digital business model.

Northeastern University has been analyzing and reporting on the impact of artificial intelligence and the future of work for a number of years through surveys of business executives and the general public, including [Facing the Future](#) (2019), [Optimism and Anxiety: Views on the Impact of Artificial Intelligence and Higher Education's Response](#) (2018), and [Innovation Imperative: Enhancing the Talent Pipeline](#) (2014). These unique, large-scale studies explored employers' and individuals' attitudes and understanding of artificial intelligence, as well as the perceived effectiveness of higher education in preparing learners to gain the skills necessary to succeed in the workforce of the future.

This study extends these prior analyses based on a new representative national survey of 1,014 U.S. C-suite executives conducted in April-May 2021.² It illuminates how unprecedented changes brought on by COVID-19 coupled with the accelerated digital transformation of the economy are impacting organizations' business strategies, with a particular focus on talent and learning. As one of the first post-pandemic national survey to put its finger on the pulse of employers' business and talent strategies, these results will inform the efforts of industry, policymakers, educational institutions, and job training providers to help workers gain the new knowledge and skills necessary to advance their careers.

¹ Mike Colagrassi, "Will Robots Steal Our Jobs?," World Economic Forum, August 20, 2019, <https://www.weforum.org/agenda/2019/08/the-robots-are-coming-but-take-a-breath>.

² Details on the survey sample and methodology are provided in the Appendix.



Key Findings

- **Post COVID-19, business investment in AI is accelerating.** Organizations are now more likely to invest in AI, and the deployment of technology to replace human work has accelerated significantly.
- **The race for talent remains white hot.** The competition among employers for skilled talent is expected to remain strong, while workers lacking the skills to compete are likely to struggle to find work in the wake of COVID-19.
- **Remote work is here to stay, but the long-term impact is unclear.** Remote and hybrid working arrangements will be central to many organizations' talent strategies going forward. But there is clear concern about the impact on creativity and innovation.
- **On balance, many employers report that they are growing their investments in employee learning and development.** This reverses years of low or no growth as business leaders prioritize preparing their organizations for AI and the future of work.
- **C-suite executives feel a responsibility to provide and pay for programs to help their employees to learn new skills.** Executives also report that employers (via on-the-job training) and community and technical colleges appear best positioned to meet this need.
- **Employer interest in and acceptance of online learning and online credentials has advanced positively since the pandemic.** Nearly two years of remote working and learning has prompted greater adoption of and receptivity to digital learning.

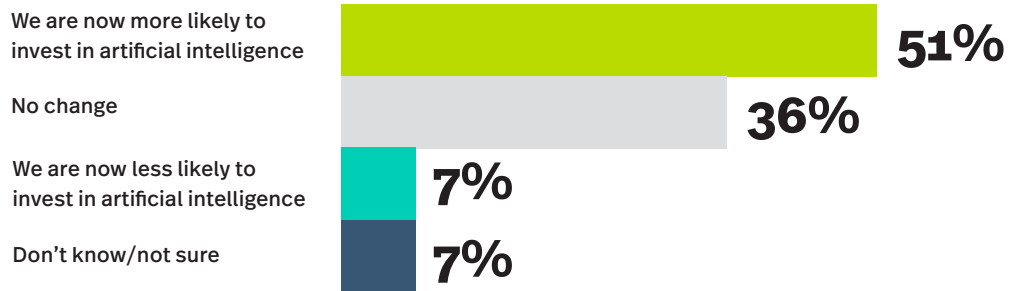
1

As a result of COVID-19, businesses are now more likely to invest in AI.



The COVID-19 pandemic led to a variety of sudden transformations across the economy—including accelerated technology adoption in various business functions as more work and consumer activity became digital.³ A majority of executives expect to continue that trend within their own organizations.

Figure 1. To what extent, if any, has COVID-19 impacted your organization’s planned adoption or use of artificial intelligence?⁴



When asked about which business functions their organization should prioritize for AI investment over the next year, the top priority was information technology (28 percent), followed by human resources (11 percent) and operations (9 percent). Yet it’s clear that executives are still feeling their way through what these technologies can do for their businesses. A majority either agreed (27 percent) or strongly agreed (32 percent) that “understanding how best to deploy AI and related technologies is a top C-suite priority over the next year for my organization.”

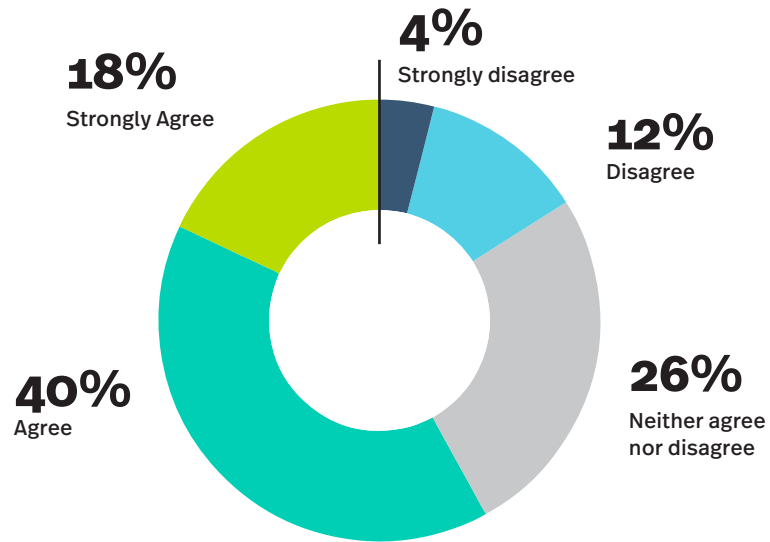
³ J. Yo-Jud Cheng, Cassandra Frangos, and Boris Groysberg, “Is Your C-Suite Equipped to Lead a Digital Transformation?” Harvard Business Review, March 12, 2021, <https://hbr.org/2021/03/is-your-c-suite-equipped-to-lead-a-digital-transformation>.

⁴ For the purposes of this survey, “artificial intelligence” means the use of computers, machine learning, algorithms, autonomous systems, robots or other technologies to accomplish tasks that humans can do, and to even learn and accomplish tasks that humans may not be able to do.



Notably, C-suite executives appear to be slightly less pessimistic than the general public that the increased adoption of AI throughout the economy will cost human jobs. Fifty-eight percent agree or strongly agree that *human jobs are now more likely to be replaced by technology* post-COVID. That is significantly less than the 71 percent of the general public who, in 2019, believed that the increased use of AI would eliminate more jobs than it creates.⁵ As the economic recovery and attendant job gains continue, changes in attitudes about the impact of AI adoption is a potential trend worth watching.

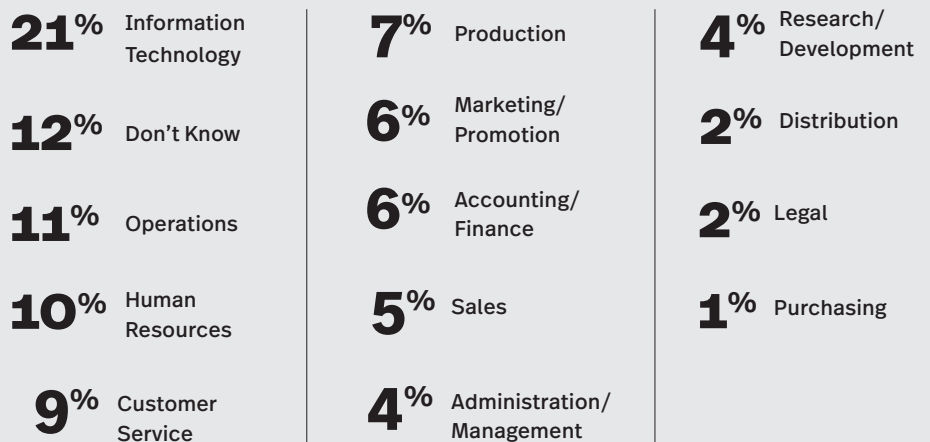
Figure 2. Human jobs are now more likely to be replaced by technology



Perhaps not surprisingly, C-suite executives believe that AI will have the greatest impact on their organization’s talent needs in information technology. But a significant number expressed uncertainty in this regard—perhaps reflecting that a majority of C-suite executives feel an imperative to understand how their organizations should deploy AI and related technologies.

⁵ https://www.northeastern.edu/gallup/pdf/Northeastern_Gallup_AI_2019.pdf

Figure 3. In which business function do you believe artificial intelligence and related technologies will have the greatest impact on shaping your organization’s talent needs over the next few years? (Select one)



2

Employers' Post-COVID competition for top talent will remain intense—but workers lacking the skills to compete are likely to struggle.

At the time of the survey's fielding, job openings in the U.S. reached an all-time high of 9.3 million and subsequently rose to 11 million in October 2021.⁶ Our survey indicates that the post-COVID competition for skilled talent is expected to remain intense for some time to come. In fact, nearly eight in ten C-suite executives surveyed agree (50 percent) or strongly agree (29 percent) that “the level of competition among employers for skilled talent will remain strong” in the future. Just 6 percent disagree. With so many job openings and the unemployment rate for holders of bachelor’s degrees and above at just 2.3 percent (less than half its pandemic high)⁷ highly-skilled job seekers can afford to be selective.

Yet 63 percent of C-suite executives believe that for workers, “it will be more difficult to find work [in the post-pandemic economy] than prior to the recession.” In addition, 58 percent agree that “COVID-19 is likely to lead to an escalation in qualifications for jobs, since so many more people are looking for work.” This rings true when you consider that there are 17.1 million Americans who are currently unemployed (6.9 million), working part-time but would prefer to work full-time (4.3 million), or are not actively looking for work but still want a job (5.9 million).⁸ Taken together, these responses reflect the high level of competition and skills shortages that C-suite executives expect in certain in-demand functions and roles, while also anticipating that certain other low-skill roles eliminated during the recession may not be coming back.

⁶ <https://www.bls.gov/news.release/jolts.nro.htm>

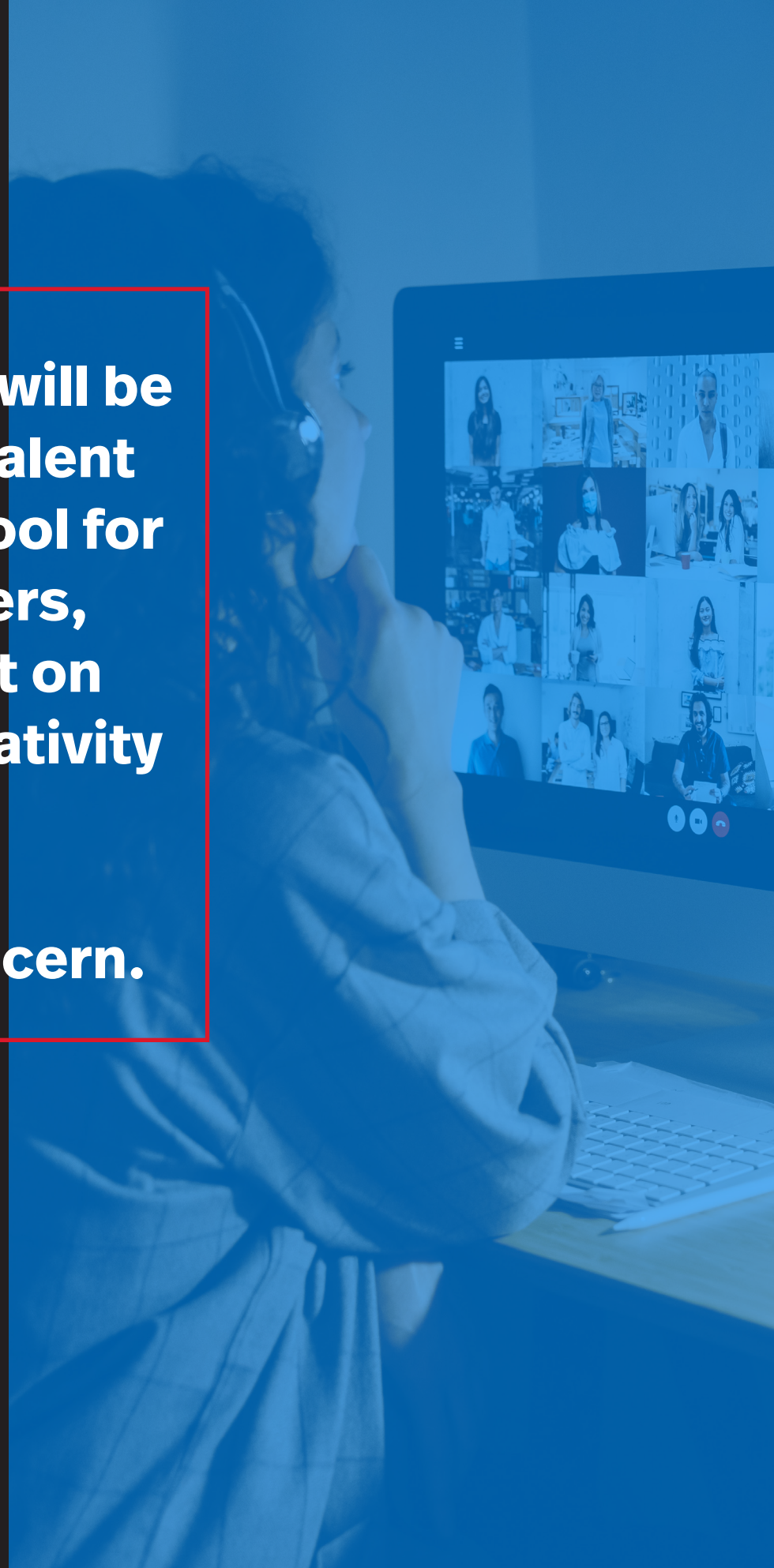
⁷ <https://www.bls.gov/news.release/empsit.nro.htm>

⁸ Ibid.



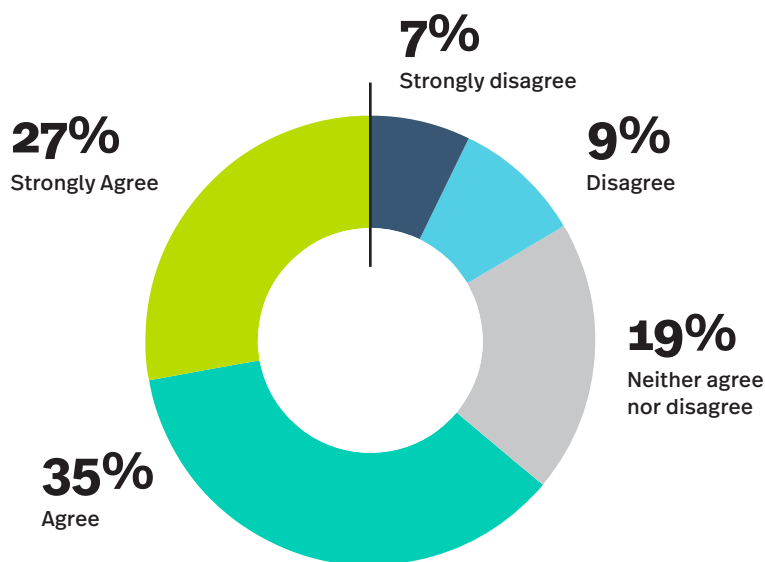
3

Remote work will be a continuing talent recruitment tool for many employers, but the impact on employee creativity and business productivity remains a concern.



COVID-19 forced most organizations to embrace remote working arrangements, which resulted in about half of American workers working at home during the pandemic.⁹ A strong majority of surveyed executives (62 percent) reported that after the experimentation brought on by COVID-19, they are “now more likely to leverage remote work arrangements to strategically expand our talent pool.”

Figure 4. We are now more likely to leverage remote work arrangements to strategically expand our talent pool



In a separate question, 52 percent of respondents said that hiring employees who primarily work remotely will be central to their organizations’ talent recruitment and strategy going forward. And half of all respondents (50 percent) agreed that “the shift to a more remote workforce for my organization is permanent” with only 27 percent disagreeing and 22 percent remaining neutral.

“COVID-19 allowed us to realize that work can be performed remotely without having employees physically present on site. This [led] our corporate office to increase investment in Information Technology and AI for the next 3 years.”

– C-level executive in the manufacturing industry

When asked to gauge whether their organization “has become more productive following the shift to primarily remote work” due to COVID-19, just 46 percent of respondents agreed. Some 31 percent were neutral and 23 percent disagreed. In fact, many C-suite executives have concerns about the impact of remote working on productivity and innovation: 51 percent are “concerned about my workforce’s ability to be creative and innovative in a primarily remote work environment.”

⁹ Erik Brynjolfsson, John J. Horton, Adam Ozimek, Daniel Rock, Garima Sharma, & Hong-Yi TuYe, “COVID-19 and Remote Work: An Early Look at US Data,” NBER Working Paper Series, 2020, https://www.nber.org/system/files/working_papers/w27344/w27344.pdf.

4

A new focus on upskilling: growing employer investments in employee learning and development programs as the talent pendulum swings toward “build” from “buy”.

The digital transformation of the economy is spurring employers to focus on the continuous upskilling of their workforce as a core element of organizations' talent strategies (hiring/ learning and development). More than seven in ten C-suite executives believe that employees in their organizations should be either "somewhat worried (47 percent)," "very worried (16 percent)," or "extremely worried (8 percent)" about their skills becoming outdated over the next few years. Given this imperative, a majority of employers surveyed (51 percent) note that their hiring and training strategies have already shifted to take into account preparing their organization for artificial intelligence and its impact on the future of work.



Future investments in employee education and training need to be more focused on how human employees can perform at a high level while using AI as an assistant to deal with minor and expected issues. Economic issues force people to adapt to ever changing technology and they need to be compensated for this training and time invested."

– President of an educational services organization

Robot-Proof Skills

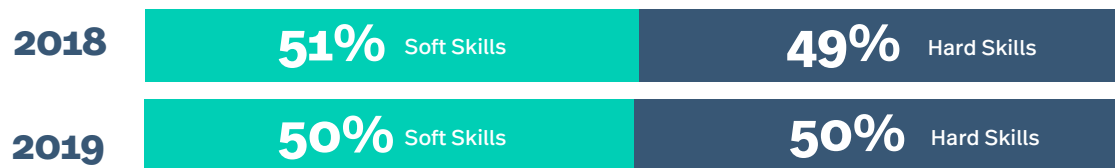
Similarly, much has been written about whether "hard skills" (such as an understanding of science, technology, engineering, and math disciplines) or "soft skills" (like teamwork, communication, and critical thinking) should be the priority for workers hoping to stave off obsolescence and succeed in the future of work. Some have even proposed new educational models that seek to bridge the hard skills-soft skills divide through the purposeful integration of data, technical, and human literacies.¹⁰

Interestingly, when asked which skills are most important for workers to protect themselves from losing their jobs to artificial intelligence, C-Suite leaders ranked the "soft" skills of critical thinking, leadership, and teamwork ahead of so-called "hard" or technical skills like artificial intelligence, data analytics, and coding. The premium business leaders place on soft skills is in stark contrast to earlier surveys that found the general public evenly divided on the in-demand skills most likely to prepare workers to succeed in the workplace of the future.

¹⁰. Joseph E. Aoun, *Robot-Proof: Higher Education in the Age of Artificial Intelligence*. MIT Press, 2017.

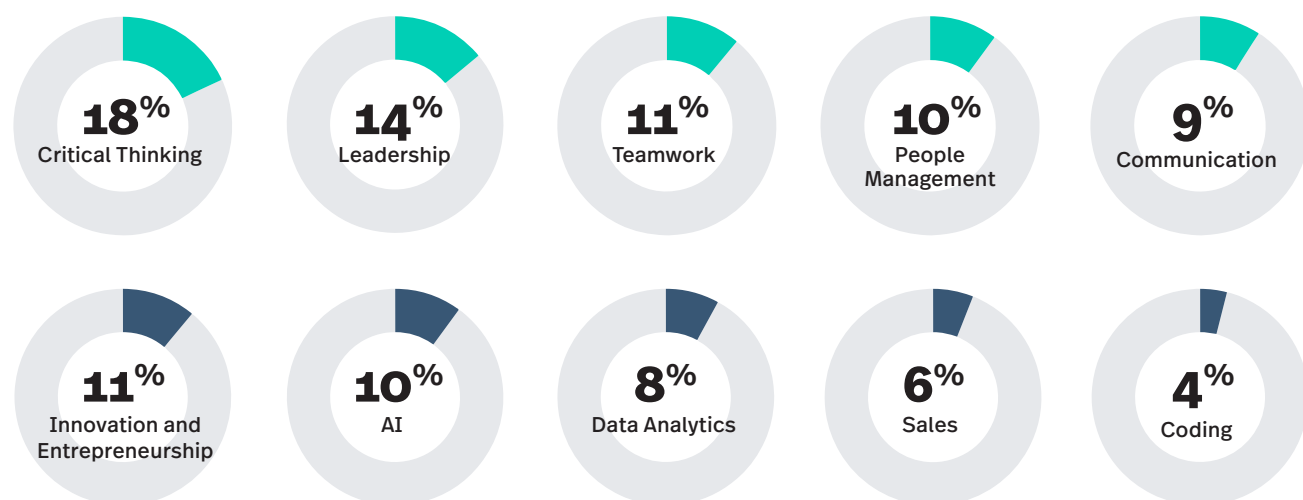
Figure 5. The ranking of “hard skills” and “soft skills” as the priority for workers hoping to stave off obsolescence and succeed in the future of work

The American general public rankings



2021 | C-suite rankings of which skills are most important

● Soft Skills ● Hard Skills



Employer Investment in Learning and Employee Development

Official measures of employer investment in training and employee development in the U.S. are surprisingly scarce. The federal government last regularly surveyed employer investments in training in 1995,¹¹ making this area starkly limited compared to other ongoing analyses of economic activity.

Human resources professional associations such as ATD¹² and SHRM¹³ annually provide high-level assessments of on-the-job learning trends and expenditures. Prior to the pandemic, these data sources illustrated a multi-year trend of declining employer investment in internal training when adjusted for inflation and in the share of employers providing tuition assistance benefits.¹⁴

¹¹ U.S. Department of Labor Bureau of Labor Statistics, “Survey of Employer Provided Training,” <https://www.bls.gov/ept/>.

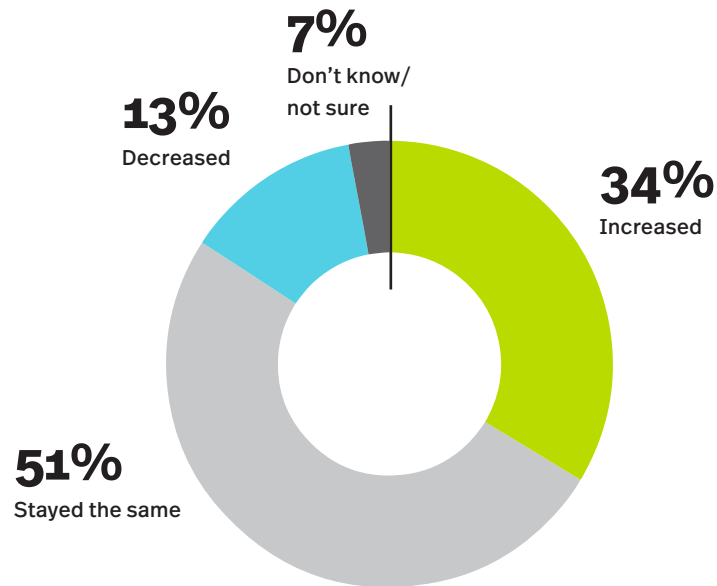
¹² Association for Talent Development, 2020 State of the Industry, 2020, <https://www.td.org/research-reports/2020-state-of-the-industry>.

¹³ Society for Human Resource Management, 2019 Employee Benefits, <https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/pages/benefits19.aspx>.

¹⁴ Sean R. Gallagher, “In a Changing Career Landscape Employers and Workers Need a New Social Contract for Retraining,” EdSurge, August 8, 2019, <https://www.edsurge.com/news/2019-08-22-in-a-changing-career-landscape-employers-and-workers-need-a-new-social-contract-for-retraining>.

Thus, it is particularly notable that despite the economic dislocations of the COVID-19 era, *investments in learning and development are holding steady or increasing* for the vast majority (85 percent) of organizations surveyed. Some 51 percent of C-suite executives surveyed report that investments in employee education and training or educational benefits have stayed the same since the onset of the pandemic, while an additional 34 percent report an increase in such investments. Only 13 percent report a decline in their organization's employee education and training investments.

Figure 6. Has your organization increased or decreased its investment in employee education and training or educational benefits since COVID-19?

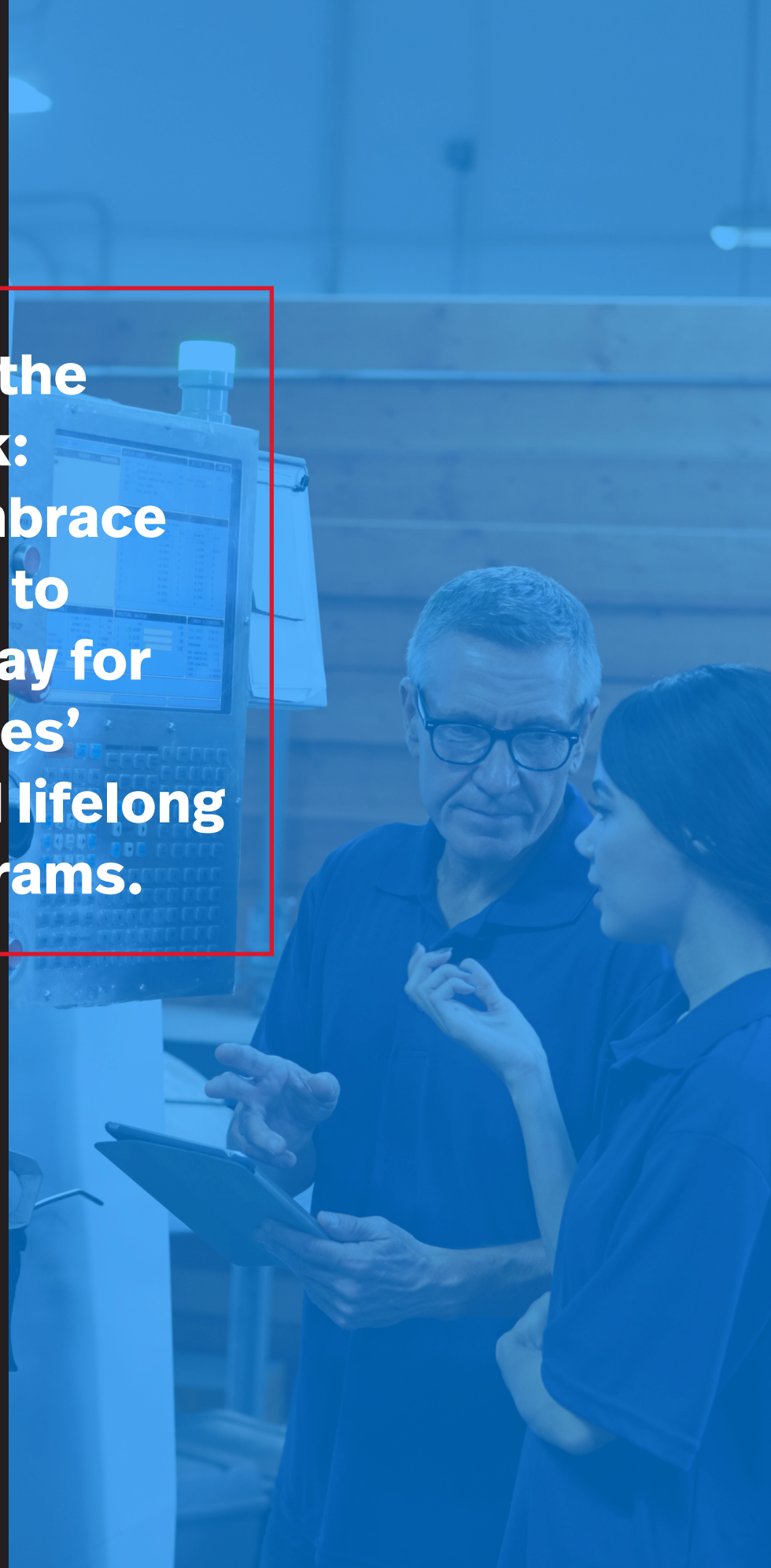


Our business will probably spend a bit more on education and training not really because of the COVID-19 but because technology is constantly being upgraded. We have an automotive shop as well that our technicians need education and training in order to stay on top of their field.”

– Retail industry CEO

5

Preparing for the future of work: employers embrace responsibility to provide and pay for their employees' upskilling and lifelong learning programs.



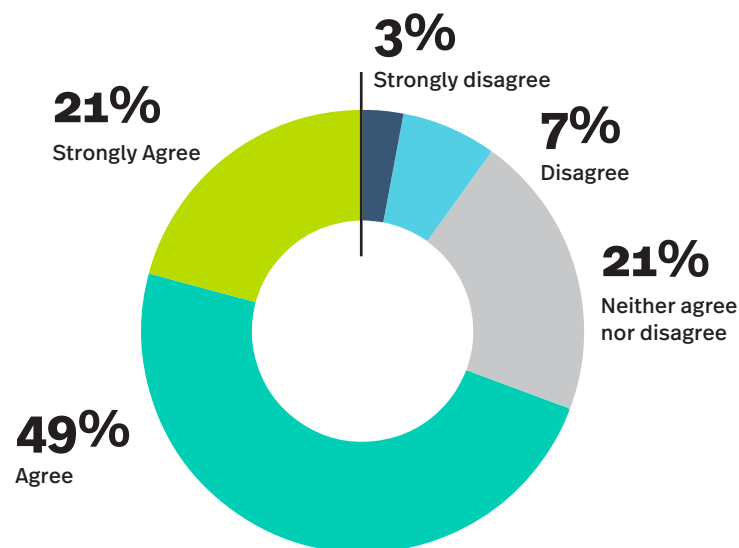
Northeastern’s research in the years prior to the pandemic found that most hiring managers—and the general public—envisioned a future with the need for continuous on-the-job lifelong learning to help employees keep up with technological developments.⁴⁵ Yet, who bears responsibility to provide and pay for this upskilling—employers, government, or workers themselves—is an open question.

In the U.S., this has long been a mix of individual worker investments, employer contributions, and government support.

Our research suggests that even though a majority of C-suite executives (60 percent) believe it is *primarily* “the employee’s own responsibility” to learn new skills to protect themselves from job loss, most employers are increasingly recognizing and embracing their responsibility to both provide—whether alone or in partnership with outside training providers—and pay for upskilling and reskilling opportunities for their workers.

Fully 70 percent of C-suite executives report that their organization believes it has an obligation to provide opportunities for employees to learn new skills (upskilling/reskilling) to protect them from losing their jobs to AI and new technologies.

Figure 7. My organization believes it has an obligation to provide opportunities for employees to learn new skills (upskilling/reskilling) to protect them from losing their jobs to artificial intelligence and new technologies.



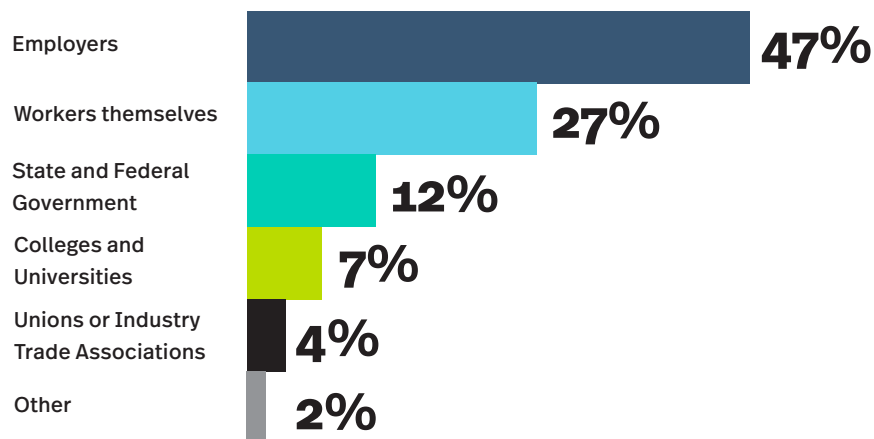
In order for our company to stay competitive and be profitable, we feel that we will need to invest in training our skilled employees to become best in class with new knowledge.”

– C-level executive in the manufacturing industry

⁴⁵ Sean R. Gallagher, Educational Credentials Come of Age: A Survey on the Use and Value of Educational Credentials in Hiring, 2018, https://cps.northeastern.edu/wp-content/uploads/2021/03/Educational_Credentials_Come_of_Age_2018.pdf; https://www.northeastern.edu/gallup/pdf/Northeastern_Gallup_AI_2019.pdf.

Similarly, when C-suite executives were asked to choose a single entity who bears the primary responsibility to pay for this type of upskilling, employers and workers themselves were the top two responses:

Figure 8. Who do you believe bears the primary responsibility to pay for upskilling, reskilling, and lifelong learning programs that help workers who are at risk of losing their jobs because of new technology, automation, robots or artificial intelligence? (Select one)



Regardless of who an employee or independent contractor works for, the person is responsible for their own growth and skills. If they rely on someone else to provide the growth opportunities, they may be left behind.”

– CFO of a private company in the Southern U.S.

Lastly, when asked which entities they view as “best equipped” to meet the growing demand for upskilling, reskilling, and lifelong learning, C-suite executives—consistent with prior responses—favored employers themselves via on-the-job training (30 percent), followed by community or technical colleges (24 percent). Interestingly, not far behind were nontraditional providers (such as bootcamps or private online training providers) at 15 percent. Nonprofit, four-year universities came in at 10 percent, followed by for-profit colleges (9 percent), government job training programs (7 percent), and liberal arts colleges (6 percent).

In addition, it is worth noting that a majority (55 percent) of respondents agreed that COVID-19 has increased their willingness to consider hiring candidates with nontraditional academic preparation (e.g. skills-based training, certificates, or degrees in unrelated fields).

“

Academic learning provides the basics. However, life-long learning requires just-in-time continuous upskilling. (It's) unreasonable to expect employees to return to school to gain these skills."

– C-level executive in the healthcare and social assistance industry

"I wanted to select community colleges, but SO many people are electing to get nontraditional schooling through these online boot camps. It is affordable, fast, and they get hired with these credentials. It's becoming a popular option in our field.

– CMO in the construction industry

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A woman with dark hair and glasses is shown in profile, looking towards the right. She is wearing a dark jacket. The background is a blurred blue-toned image of a computer screen displaying lines of code and data. The overall mood is professional and tech-oriented.

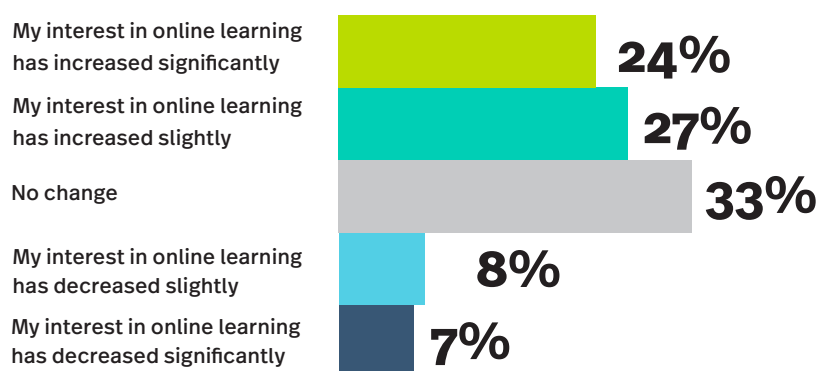
6

Learning's digital transformation: the pandemic has accelerated employers' embrace of online learning and online credentials.

The COVID-19 pandemic forced employers to embrace remote work and likewise accelerated the deployment of online learning, both in terms of in-house employee training programs and in partnership with educational institutions operating exclusively online.¹⁶

Given this context, the survey sought to gauge how (if at all) the experience of online work and learning during the pandemic influenced employer attitudes about online learning as a professional development option for employees. Here, a majority of C-suite executives reported that the pandemic had increased their interest in online learning, while 33 percent reported no change and only 15 percent reported a decrease in interest.

Figure 9. The COVID-19 pandemic has led to much more working and learning occurring remotely/online. How, if at all, has this experience influenced your opinion about online learning as a professional development option for your employees?



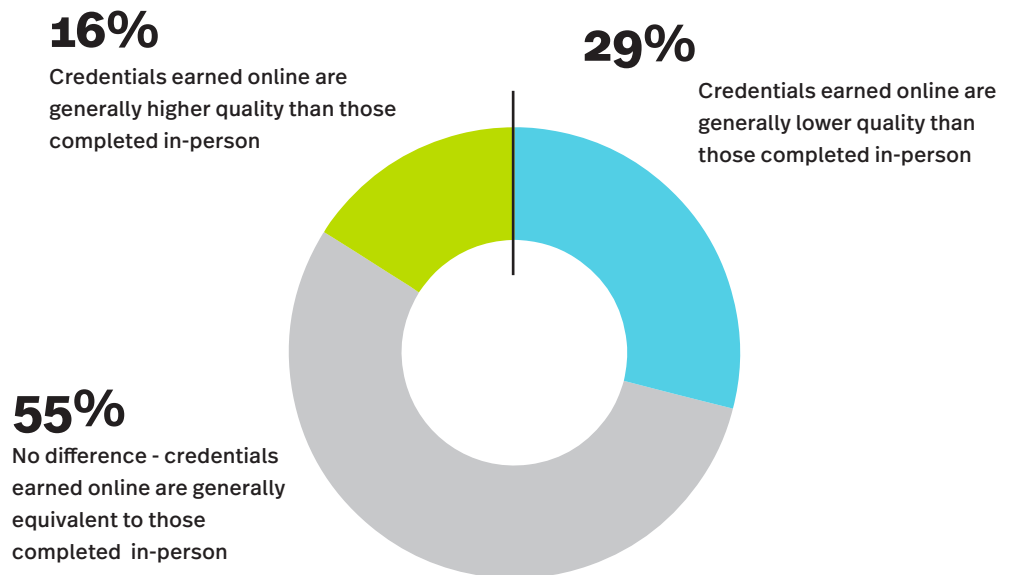
In light of this evolution, the survey also explored employers' perception of educational credentials earned online when making hiring decisions about job candidates. When asked specifically about how the experience of the COVID-19 pandemic has influenced their opinion about educational credentials that were earned online, 46 percent of executives said that their view of the quality of online credentials had been elevated by the experience of the pandemic; 40 percent reported no change; and only 14 percent said that their perception of quality had decreased. In other words, the remote working and learning experiences of the pandemic had a net positive influence on C-suite executives' perceptions of online credentials in hiring.

Employer perception of online credentials in hiring is a dynamic that Northeastern has been tracking regularly for the last decade. The acceptance of online degrees and credentials has grown slowly and steadily over the years, with the share of executives viewing online credentials favorably growing from 40 percent in 2013, to 48 percent in 2014, and to 61 percent in 2018.

¹⁶ Sean R. Gallagher and Jason Palmer, "The Pandemic Pushed Universities Online: The Change Was Long Overdue," Harvard Business Review, September 30, 2020, <https://hbsp.harvard.edu/inspiring-minds/the-pandemic-pushed-universities-online-the-change-was-long-overdue>.

Asked in 2021 how the fact that an educational credential was earned online influences their perception of its quality (if at all), 71% of C-suite executives said that an online credential is either generally equivalent or higher quality when compared to one completed in-person. Only 29% of respondents say that credentials earned online are generally lower quality than those completed in-person.

Figure 10. How does the fact that an educational credential was earned online influence your perception of its quality, if at all?



These findings confirm the growing acceptance of online degrees and other credentials. In addition, they suggest that the pandemic had a positive impact on employers' acceptance and adoption of online learning.

“ I believe that more employers will be willing to fully accept online degrees/certifications than previously. I think that this will open up many new individuals to industries previously locked by ‘requirements’ for in-person degrees/certifications.”

– CEO in the arts, entertainment, and recreation sector



Conclusion

Prior to 2020, the business, policy, and educational community was focused on developing theoretical predictions about the technology-influenced “future of work.” Over the course of 2020 and 2021, a new working reality rapidly arrived. While the full contours of this still-developing new normal are not yet completely in view, the results from this survey make clear that most C-suite executives believe that the COVID-19 pandemic has only accelerated changes that were already underway—including escalating and advancing the pace of digital transformation in both work and learning.

Employers across many industries are moving aggressively to win the global race for talent with a new multi-pronged approach that includes, among other things: increased business investment in artificial intelligence, making remote work a central part of their talent acquisition strategy, providing and paying for enhanced employee learning and development programs, and a greater acceptance of and reliance on online learning and online credentials to satisfy their talent needs.

In this period of rapid economic transition and continued uncertainty about the future, it will be vital to continue tracking these trends. We look forward to keeping our fingers on the pulse of employers’ talent strategies and building on these findings with further analyses to more deeply understand how the future of work and learning is evolving.

Appendix

METHODOLOGY AND PROFILE OF SURVEY RESPONDENTS

This survey of 1,014 U.S. C-suite executives was designed by Northeastern University researchers and administered online in partnership with market research firm Dynata in April-May 2021 to its nationally representative panel of business decision-makers. Respondents were qualified as C-level executives (e.g., CEO, president, CFO, CTO, etc.) across a representative range of industry sectors and organizational sizes.

As indicated in the profile data below, respondents spanned a wide range - and we believe the sample tracks closely against the U.S. economy as a whole in attempting to achieve a diversified, representative national sample. As detailed below, respondents represented both businesses (the majority) and non-profit organizations and government agencies - both large and small.

Job Title

CEO	28%
President	14%
CFO	8%
CIO or CTO	8%
COO or CMO	7%
CHRO, CSO, CRO	4%
CSO or CRO	1%
Other C-level executive	29%
Chairman	3%

of Employees

<50	27%
50-99	9%
100-499	19%
500-999	13%
1,000-4,999	19%
5,000-9,999	6%
10,000+	6%

Annual Revenue

Under \$1 Million	20%
\$1.0 - \$2.5 Million	9%
\$2.51 - \$10 Million	9%
\$10.01 - \$50 Million	19%
\$50.01 - \$200 Million	12%
More than \$200 Million	17%
Not sure/don't know	7%

U.S. Region

Northeast	25%
Midwest	20%
South	33%
West	22%

Preferred Gender Identity

Male	58%
Female	40%
Prefer not to say or other	1%

Organization Type

Private company	55%
Public company	17%
Non-profit organization	14%
Government agency	12%
Other	2%

Years in position at organization

Less than 3	8%
3 - 5	22%
6 - 10	33%
10+	37%

Industry Sector

Accommodation and Food Services	3%
Agriculture, Forestry, and Fishing	1%
Arts, Entertainment, and Recreation	4%
Construction	10%
Educational Services	7%
Finance and Insurance	5%
Health Care and Social Assistance	6%
Information/Technology	8%
Manufacturing	10%
Other Services (Except Public Administration)	4%
Professional, Scientific, and Technical Services	10%
Public Administration or Government	6%
Real Estate and Rental and Leasing	3%
Retail	7%
Transportation and Warehousing	2%
Utilities	1%
Other	12%

Headquarters Location

A large city	41%
A suburb near a large city	37%
A small city or town	14%
A rural area	8%

Organization's Operations

Local/regional	51%
National	32%
Global	17%

