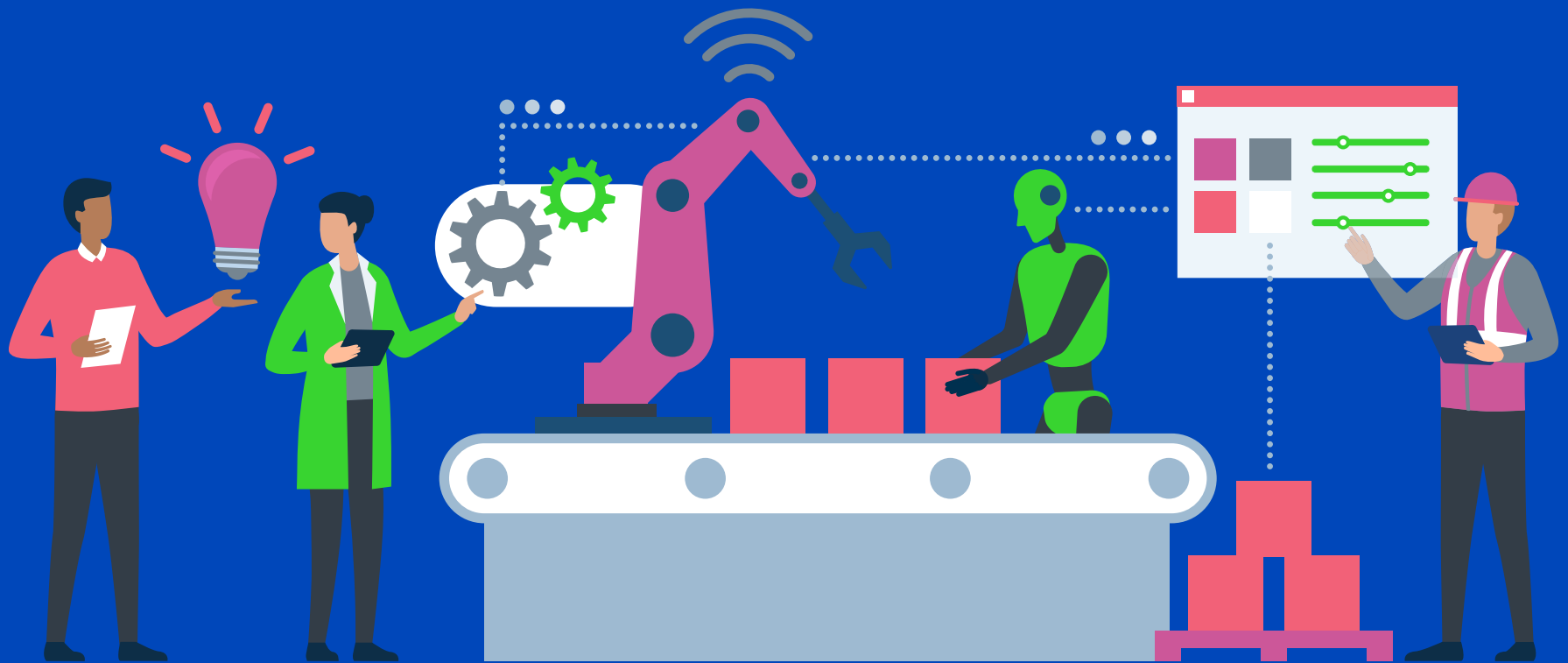


Upskilling and Reskilling the Workforce for the Future



Executive Summary

One day in 1960, a machine the size of a room was installed at NASA.

A Black mathematician supervising the West Area Computing unit named Dorothy Vaughan noted the installation. She learned that the machine's computing powers would nullify her and her team's skills as "human computers," performing calculations for NASA's research. So she decided to teach herself the skills that both she and the agency would need in the future. At the time, Jim Crow laws excluded her from the knowledge she needed — the only book on the programming language that ran the machine, FORTRAN, was in the whites-only section at her library. But she taught herself FORTRAN anyway, and then she taught her team.

When NASA announced its need for programmers, the West Area "computers" were already skilled to fill that need.

Vaughan faced a world not unlike today. Technology is evolving at historic speeds and is on track to displace the most vulnerable groups in the job market if they are not retrained. Upskilling and reskilling the workforce for the future is the only way that organizations, especially in government, can retain their valuable human talent and fill their skills gaps.

The COVID-19 pandemic has forced these skill-building opportunities to become virtual. For the time being, in-person classroom settings are not viable with social distancing protocols. And like many changes caused by the pandemic, the prevalence of virtual learning will likely stay in place. According to a GovLoop survey in June, 86% of respondents said they expect their agency will provide more virtual courses in the future. The question is: Can agencies deliver?

Like Vaughan, exceptional leaders are those who invest in their employees' development. In this e-book, we examine the current state of government upskilling and reskilling and how agencies can support their workforces for the future through online learning.



Dorothy Vaughan at NASA Langley Research Center in 1960. (NASA)

Contents

In the News:

Federal Government 4

State & Local Government 5

Nationwide & Worldwide 6

Need to Know 7

The (Non-Exhaustive) Catalog for Skills Development 8

Building Blocks: How to Keep Online Learners Engaged 10

How Agencies Can Support Employee Learning Now and Later 11

Thought Leadership:

From 'Google, Foogle!' to Digitally Skilled Employees 13

The Library of Congress' Friendship-Based Model for Growth 15

Conclusion 17



In the News: Federal Government

GSA Launches New Learning Portal for IT Acquisition

- In July, the General Services Administration (GSA) launched [IT Acquisition University](#), an online training platform for federal IT professionals to learn about emerging technologies and other developments that impact federal modernization and acquisition projects.

Army's Quantum Leap Project Aims to Reskill 1,000 Employees by 2023

- The Army's [latest reskilling and upskilling initiative](#) aims to retrain about 1,000 employees in the cyber and IT management workforce in the next three years.
- One of the project's first steps is to get a better view of the underused or unknown skills that employees already possess.

Federal Emerging Skills Pilot Program Launch Pushed Back

- In July, the latest update to the 21st Century Workforce Cross-Agency Priority (CAP) Goal [pushed back the launch of the emerging skills pilot program](#) to later this year. CAP Goals coordinate and publicly track the implementation of the President's Management Agenda, which aims to modernize and improve federal government.
- According to Performance.gov, the program intends to expose employees whose work is changing due to automation to different career path options.

Federal Cyber Reskilling Academy Turns to Temporary Details

- Launched in April 2019, the Federal Cyber Reskilling Academy aimed to train non-IT employees to fill open cybersecurity positions in the federal government. Two cohorts have now graduated, but there has been some difficulty for the graduates to secure full-time positions without receiving a pay cut from their original roles.

- The Office of Management and Budget (OMB), the Office of Personnel Management (OPM) and the Federal Chief Information Officers (CIO) Council have [turned to temporary details](#) as a solution for now. In March, the first wave was posted on the Open Opportunities job board.

Reskilling in the White House 2021 Budget

- **RPA Reskilling Academy:** Introduced in [the president's 2021 budget proposal](#) released in February, the White House intends to develop a Federal Robotic Process Automation (RPA) Reskilling Academy that will train employees on how to develop and deploy RPA bots. It's the next federal focus to ensure that personnel whose jobs will be affected by automation will have future-ready skills.
- **CISA Cyber Workforce Programs:** The president's budget proposal includes additional funding for the Cybersecurity and Infrastructure Security Agency (CISA) to lead a governmentwide cybersecurity workforce program for all federal cyber professionals. The program includes an interagency cyber rotational program, a cybersecurity training program for federal cyber professionals and a cyber reskilling academy.
- Generally, the budget has pledged workforce training opportunities for 400,000 federal employees in fields such as data.

Executive Order: More Skills, Fewer College Degrees

- In an effort to improve federal hiring processes, the [president's executive order in June](#) prioritizes skills over college degrees when it comes to hiring for certain jobs.
- According to [OPM data](#), 52% of the approximately 2.1 million federal civilian employees in 2017 had a bachelor's degree or higher.

In the News: State & Local Government

The National Governors Association Urges States to Be Model Employers

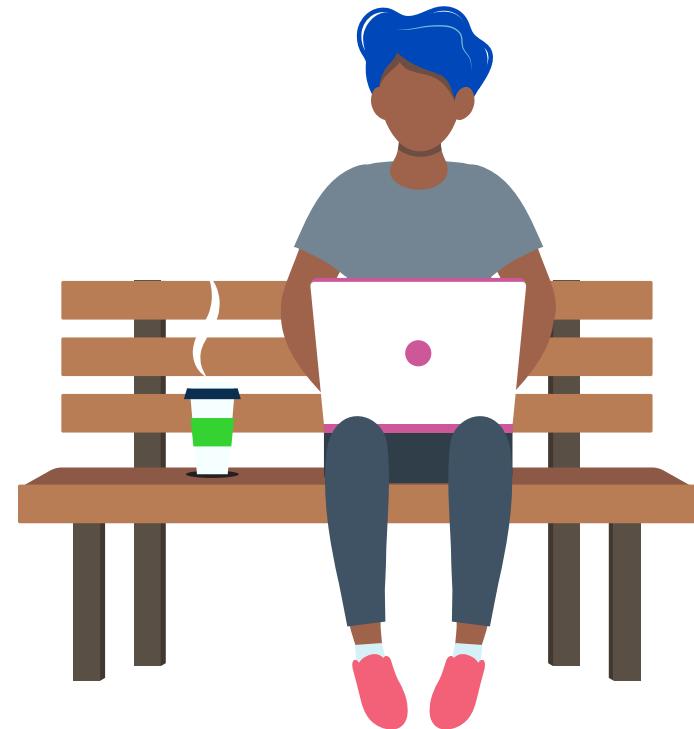
- The National Governors Association released [a guide in July](#) to help reimagine workforce policy through state examples.
- Part of its recommendations to state governments was to be model employers. It urged them to invest in a technologically resilient state workforce by collecting data for a workforce preparedness plan, modeling equity by removing barriers for people of color, expanding work-based learning and more.

State and Local Governments Have Most Difficulty Hiring Engineers

- [The Center for State and Local Government Excellence's \(SLGE\) 2020 survey](#) on the state and local workforce shows that the highest percentage of respondents — 28% — said they found it most difficult to fill engineering positions in their organization.
- Second, 26% identified skilled trades of all types as most difficult, and third, 25% said maintenance work and policing.
- Additionally, over 60% said their organization uses in-house employee development training to encourage retention and development. Fifty-nine percent said it uses reimbursement for training and tuition.

Oregon Department of Transportation Takes Inspector Training Virtual

- The Oregon Department of Transportation (ODOT) [moved its accessibility training from the classroom to online](#). It developed a webinar through which students can get certified. So far, over 200 have been certified through the webinar training.
- Other ODOT units are exploring virtual training options for topics such as surveying and quality assurance.



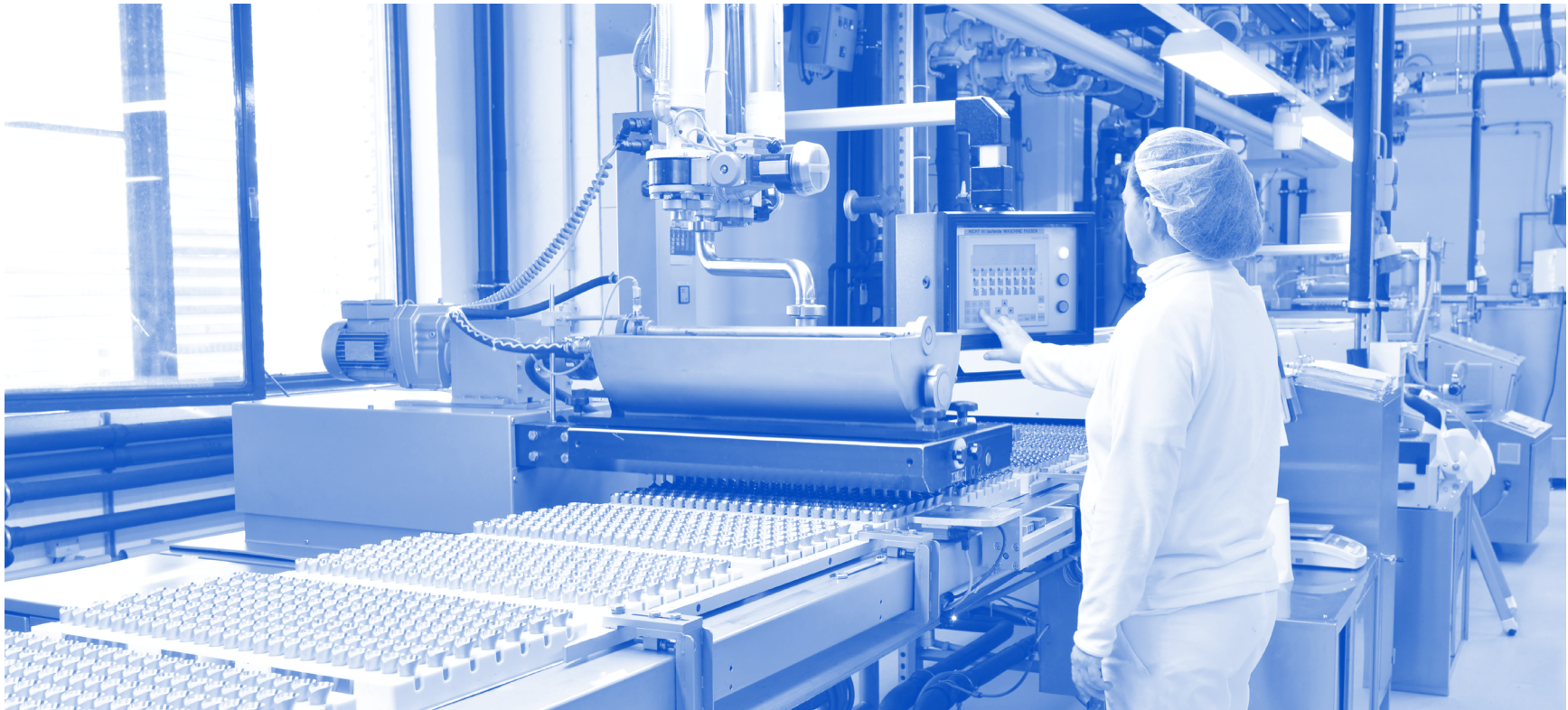
In the News: Nationwide & Worldwide

In U.S., Reskilling Costs \$34B

- According to the World Economic Forum (WEF), 1.4 million workers in the U.S. may lose their jobs to automation. It will cost \$34 billion to reskill those workers, and the federal government will most likely foot the majority of the bill, [the report said](#).

More Jobs Can Be Created Than Lost

- Another [2018 WEF report](#) said that while 75 million jobs will be displaced worldwide through automation between 2018 and 2022, as many as 133 million new roles could be created. This best-case scenario would only be possible if people have the skills to fill the new roles, which emphasizes the need for reskilling and upskilling workers.



Need to Know

Terms

upskill verb (/ˈʌpˌskɪl/)

to refine and update someone's skills in the same occupation

- **Example:** Kelly from GovLoop Academy upskilled her animation abilities by learning new special effects online.

reskill verb (/rēˈskɪl/)

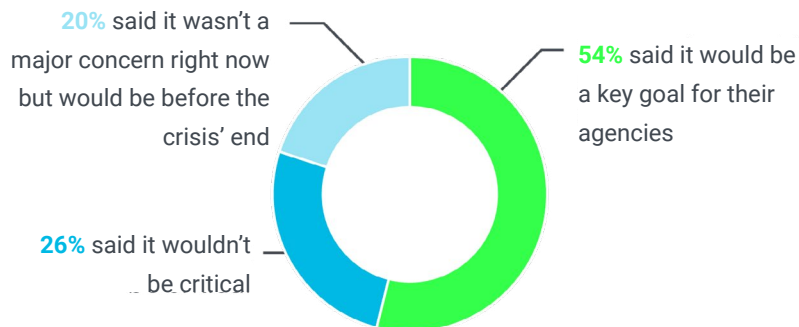
to teach someone new skills for a different occupation

- **Example:** Dorothy Vaughan and her team of mathematicians at NASA reskilled themselves to be programmers by learning FORTRAN.

How Telework Impacts Training

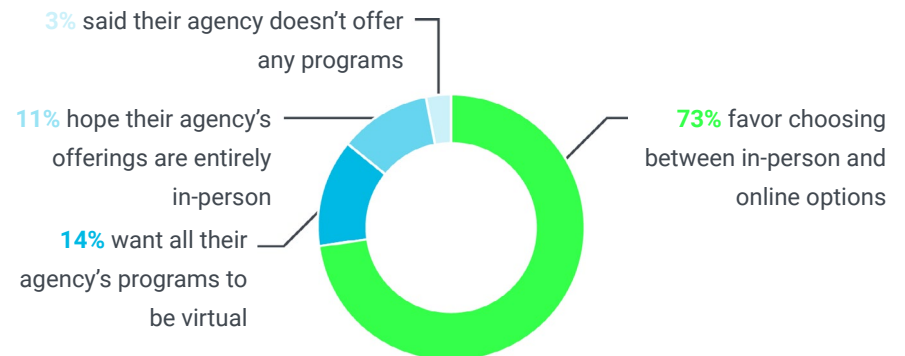
To better understand how agencies are training their employees during the COVID-19 pandemic, GovLoop and Cornerstone surveyed 280 federal, state and local government employees and contractors to understand how remote work has impacted their training. The survey was conducted in April.

Is virtual training a priority at your agency during the COVID-19 pandemic?



13% of respondents said their agencies **hadn't changed their virtual offerings since before the COVID-19 pandemic.**

Respondents prefer a combination of in-person and online programs.



86% of respondents expect their agency will provide more virtual courses in the future.

In March 2020, Cornerstone found a 164% uptick in the use of its mobile learning courses across the U.S.

[Check out the full infographic.](#)

The (Non-Exhaustive) Catalog for Skills Development

Government Programs

GOV-01 | OPM Reskilling Toolkit

A guide on how to reskill and upskill employees impacted by workforce changes such as automation.

GOV-02 | Energy Department's (DOE) Blended Learning Approach

A 2010 guide that identifies learning and development activities for employee development

GOV-03 | National Initiative for Cybersecurity Careers and Studies' (NICCS) Education and Training Catalog

An online catalog of available cybersecurity courses that are virtual instructor-led, self-paced or in-person

GOV-04 | Federal Virtual Training Environment (FedVTE)

Self-paced courses on cybersecurity-related topics that are free to government employees, federal contractors, military, veterans and the public

GOV-05 | DigitalGov University

The General Services Administration's (GSA) free online and in-person trainings of digital media and citizen engagement efforts

GOV-06 | OPM Federal Training and Development Wiki

A Wiki page created by OPM in 2011 for users to learn, share relevant information and collaborate across government on matters related to federal training and development

GOV-07 | GSA's IT Acquisition University

An online training platform for federal and non-federal IT professionals to learn about emerging technologies and other IT developments, such as cloud migration and cybersecurity.

Industry Programs

IND-01 | MITRE Corporation's Systems Engineering Fellowship

A year-long program where participants gain technical and hands-on experience working on federal government projects while earning a master's degree

IND-02 | ACT-IAC Voyagers Program

A leadership development program from the American Council for Technology and Industry Advisory Council (ACT-IAC) to prepare mid-level managers for future roles in government and industry

IND-03 | ACT-IAC Partners Program

A leadership development program for senior leaders in government and industry to help prepare them for executive leadership opportunities, such as Senior Executive Service or C-suite positions

IND-04 | ACT-IAC Associates Program

A leadership development program for entry-level professionals in federal IT

IND-05 | ACT-IAC Academy Courses

Trainings on management and application of technology in government; upcoming courses include "Introduction to Data Science, Machine Learning & AI using Python" and "CISSP Training and Certification Exam Preparation" in August 2020

IND-06 | New York University's (NYU) GovLab's Solving Public Problems With Data Course

An online lecture series using real-world examples and case studies on how to use data to improve decision-making

IND-07 | Civic Halls' Digital Learning Center (DLC)

An online center that offers digital skills workshops for government and nonprofit professionals on a number of tech topics; upcoming courses include: "Artificial Intelligence 101 for Nonprofits and Government" and "Ethical Data Collection 102: Data Storage and Security Best Practice"

Building Blocks: How to Keep Online Learners Engaged

Engaging people online presents different challenges than maintaining interest in the classroom. Here are some tips to consider to make sure learners are truly learning in front of a screen. Some are wholly relevant to online learning, but others you'll find are just as practicable for any learning environment.

- **Communicate connected learning.** According to [a Gartner report](#), it isn't enough to communicate organizational skill needs and expect employees to take on learning opportunities. It's more effective to connect mission needs to how employees can personally grow in their careers. That will help them have a personal stake in developing themselves, both for the good of the agency and for their own needs.
- **Establish clear goals.** For a training program to be effective, it has to have a statement of purpose. In the world of learning design, that statement is called a learning objective. Make sure you clearly describe the type of training and what kind of knowledge or skill area it's focused on, with a specific objective about what the learner should be able to do at the end.
- **Don't be afraid of humor.** Add jokes to a presentation or an online course to perk up people's ears. The good thing about a virtual environment is that even if it isn't funny, you likely won't know.
- **Be brief and essential.** Government employees are busy. So when it comes to learning something that is information-heavy, being brief and essential will help learners digest information practically and usefully.
- **Set expectations.** No one wants to be lectured to for hours, and especially not in front of a screen. So set an expectation for how long a webinar or a course will last and make it easy for employees to block off time in their busy schedules.
- **Check engagement — even online.** Once you have a student in an online learning environment, you need to check in. This is where polls, Q&As and chat rooms can make a difference. It's a misconception that you can't check engagement in an online training. You can actually see engagement through "online body language" — how long it takes people to take a poll or answer a question in a chat box. You can tell the level of engagement based on the speed at which people respond.
- **Tell stories.** It's one of the best ways for anything to stick in someone's brain. While studies have shown that our attention spans have shrunk over the years, our proclivity to binge-watch streaming sagas has gone up. What keeps our minds enraptured for hours on end? Stories.
- **Ask questions.** This is the same advice you'll find in a classroom setting. Questions invite someone to actively participate in the content rather than passively absorb information. It moves people to reflect on what they're learning and come up with their own questions. Ask questions through chat functions or breakout rooms when learning is online.

How Agencies Can Support Employee Learning Now and Later

An interview with Steve Dobberowsky, Senior Principal Consultant, Cornerstone

If pandemic-induced telework has proven anything, it's that civil servants can up their digital skills when they need to. They just need the right incentive and the right kind of agency support.

Organizations can't force their employees to want to learn, nor can they control external circumstances that make them learn. But they can provide strong training content and support that makes learning and development less burdensome and more engaging.

"People want to be developed. They want to be developed in a way that means something to them, at the time of need. It's important to the organization," said Steve Dobberowsky, Senior Principal Consultant at Cornerstone, a talent management software provider.

In an interview with GovLoop, Dobberowsky spoke about how agencies can best provide learning opportunities and meet learning needs in a virtual environment.

Now: Virtual Training Fatigue

Virtual meeting fatigue is by now a working professional phenomenon, but the same phenomenon applies to online learning and development.

Some may assume that whatever training was done in the classroom, it can be converted online through a video conferencing platform and – voilà – it's virtual instructor-led training. But that's not the case, Dobberowsky said.

One problem is sensory deprivation. In a virtual environment, instructors can't catch visual and nonverbal cues like they could in a classroom. That lack of interaction can be taxing, leading to the kind of fatigue that many people have experienced doing virtual meetings during remote work. Instructors need to find creative ways to engage participants and ensure that learning takes place.

When training content is haphazardly dumped online, people won't learn. They just get lost in the heaps of content, which is both a poor user experience and a lost learning opportunity.

To ensure engagement, agencies can use chat functions or breakout rooms for discussion. When possible, it's best to take a blended approach, using both virtual and in-person training.

Later: An Agile and Comprehensive Strategy

In the long term, agencies need a better holistic and targeted talent management strategy. They should assess their learning needs as a whole to deliver modern, relevant and curated training content at the time of need. From there, agencies can figure out more specific solutions to engage and fill their learning needs.

In general, agencies need to become more **agile** in managing talent. To keep up with technology and find a balance between talent management initiatives, security and performance capabilities, agencies have to be able to adapt to the situation as needed, Dobberowsky said.

They also need to take a more **comprehensive** approach. Oftentimes, agencies deal with one need in talent management – for example, learning. But they then overlook other performance components or don't pay attention to recruiting and onboarding. "All the pieces of talent management need to be dealt with collectively, holistically and in an agile manner," Dobberowsky said.

You've got the people. We've got the skills.

With Cornerstone, you can accelerate the development, innovation, and evolution of the people at your agency, while staying 508 compliant.

When your people have the skills they need to stay agile and adaptable, you strengthen their flexibility to disruption.

Start developing your people, skills today.

state & local

federal



A photograph of a man with glasses and a baby sitting on a couch, overlaid with a blue tint. The man is looking down at a laptop screen, and the baby is looking towards the camera. The background shows a window with curtains.

Thought Leadership

From 'Google, Foogle!' to Digitally Skilled Employees

In early March, the Director of Human Resources at Anne Arundel County, Maryland's Department of Health, Grace Jibril, joined GovLoop online to speak about reskilling and upskilling. Days after the webinar, the World Health Organization deemed the coronavirus outbreak a pandemic and swaths of government employees moved to telework. Since early March, a lot has changed.

To get Jibril's updated perspective on reskilling and upskilling in government, GovLoop circled back and interviewed her in July. She shared her stories around retraining employees and the pivots that the agency made while teleworking.

The interview was in written form and slightly edited for brevity and clarity.

GOVLOOP: In the GovLoop webinar in March, you mentioned you had to upskill employees who were accustomed to paper-based processes to do electronic ones. How did you approach training them?

JIBRIL: In my previous position with the Department of Labor as a federal contractor, we had a largely unskilled workforce whose educational experience did not go beyond high school. They had limited to no experience in computer-based programs. As the senior human resources manager and trainer at the site, I had to adjust my expectations and training material while understanding the insecurity and fear of learning new things.

I was forced to check myself and not get frustrated when an employee retorted that they “did not know Google from foogle!” It was important that I adjust my training to accommodate these workers without appearing to minimize the critical role they played in the success of the organization. It was important to approach them with the utmost respect by not degrading the quality of the training content and not assume an aloof or patronizing posture.

On the other hand, there were challenges when it came to the more highly skilled employees in the academic, administrative and management departments. On many occasions, they acted as if they knew it all and were not in the mood to enhance their capacities as directors, managers or supervisors.

When confronted with situations such as these, it was important to be understanding and develop a rapport that eventually led to a high level of professional respect. This allowed me to offer a clear picture of why the information being provided in the training would result in the enhancement of their skills and support them in managing their employees.

What are the challenges you’ve faced in providing reskilling and upskilling opportunities for employees?

Very often, the upskilling and reskilling of employees is concentrated at the top and among those at the management level. When looking at upskilling and reskilling your workforce, it is crucial to ensure you take a top-down approach that touches all staff members without having the unintended consequence of only providing mid- to upper-level managers the ability to advance or upskill. We strive to provide trainings and opportunities for all staff members.

How has the pandemic impacted your workforce training?

For our organization, circumstances brought on by COVID-19 has forced us to rethink how we utilize our workforce. Since we have a large number of medical staff members, reassignment of roles has been a major factor to our success so far in managing and implementing policies that provide vital services to the public.

Many employees have had to adjust to new work environments through reassignment. They may acquire new skills that are unrelated to the work they were previously doing.

The positive results of these reassignments have been that many employees have exhibited previously unknown strengths in areas outside of their typical roles. These employees are poised to advance to junior and mid-level management positions as a result of the leadership they have displayed in the oversight of our COVID-19-related programs.

What does training look like for your agency in remote times?

We have adjusted our training methods to virtual and distance learning modules using online tools and video conferencing. Trainings such as “Using Emotional Intelligence for Conflict Resolution” occur via video, and that course provides managers with more intimate knowledge of how to identify their management styles.



QUESTION:

What insights did you learn from Jibril?



Thought Leadership

The Library of Congress' Friendship-Based Model for Growth

At the Library of Congress (LOC), the digital learning options are vast and varied. As a library, of course, it may have that advantage. While it offers resources for learners around the country, it has also been maintaining and creating new efforts to keep its workforce building their skills.

LOC's Director of Digital Strategy Kate Zwaard spoke to GovLoop about what that looks like. Zwaard spoke about the increased training participation, a new staff innovator program and her advice for other agencies to keep their employees learning.

The interview was slightly edited for brevity and clarity.

GOVLOOP: How has the pandemic and telework shed light on the opportunities for digital training?

ZWAARD: One of the things that's been really neat for us [is that] we created a number of workshops for staff [around] digital tools and digital ways of thinking. After teleworking due to the pandemic, we had to move them from in-person events to online events. The online participation exceeded the room for capacity that we reserved. We're seeing how even inside the agency the wider option of digital tools can improve our ability to work together.

What has been the biggest change in employee training while remote?

We've been thinking about how to use this opportunity to increase literacy for library staff. This is one of the most digitally literate organizations I've ever worked for. But there are always things you can learn and can lead you to expand your practice.

We've been hosting a few learning groups, workshops and staff innovator programs. They're driven by interest and knowledge. We've been putting out calls for new talks and workshops from staff throughout the library to talk about their area of practice and things that they've learned that they can share with other people.

It's the first time we've held something like this, and we found that because we're only asking for 15 minutes of people's time, we can do lightning talk participation and times, as opposed to if we did it on campus. Before, the amount of time invested to go somewhere presented a disincentive.

Can you speak more about the staff innovator program?

The library has held an Innovators in Residence project for a few years now. Somebody exciting from the public comes to the library and spends a couple of months to half a year doing high-profile projects, reimagining what's possible with our collections and services.

We just launched a parallel project called the Staff Innovator, where we are making space for some of our innovative staff members to take a step back from their ordinary work and try to work on what they can imagine – more innovative projects. And the innovators we selected for this round are working on a way to improve access to born digital manuscript collections.

What's your advice for other agencies with limited budgets to encourage internal learning efforts?

One of the nice things about working in libraries, in technology in libraries specifically, is that there's a robust open source community. People are very willing to share best practices and standards.

So one of the ways that we can build capacity in limited funding environments is to partner and work out loud as much as we can. We try to publish as much of our findings as we can on our website. Our machine learning and libraries report is about to be launched, where we commissioned a report studying the state of machine learning in the library. That sort of friendship-based model for growth is one that has really worked well.

LIBRARY OF CONGRESS
Digital Collections

Library of Congress • Digital Collections

Digital Collections

Featured Content

Historic American Buildings Survey/Historic American Engineering...
Chronicling America: Historic American Newspapers
Farm Security Administration/Office of War Information...
Cities and Towns
Civil War Maps

Results: 1-40 of 434 | Refined by: Part of: Digital Collections | Available Online

Refine your results

Subject

- American History 151
- Government, Law & Politics 132
- World Cultures & History 99
- Performing Arts 94
- War & Military 79
- Local History & Folklife 58
- Web Sites 48
- Art & Architecture 45
- Social & Business History 36
- History 32

More Subjects >

Part of

- Digital Collections 104
- Manuscript Division 76
- Prints and Photographs Division 59
- Music Division 38
- American Folklife Center 23
- Asian Division 21
- Rare Book and Special Collections Division 20
- Motion Picture, Broadcasting and Recorded Sound Division 20
- Geography and Map Division 18
- African and Middle Eastern Division 18

More Part of's >

Original Format

- Manuscripts/Mixed Material 154
- Photo, Print, Drawing 128
- Archived Web Site 73
- Audio Recording 56
- Notated Music 42
- Books/Printed Material 27
- Film, Video 21
- Map 8
- Newspaper 8

Digital Collections

View Gallery Go Sort By Select Go

COLLECTION 18th-19th Century Liturgical Chants
Collection Items: View 55 Items

COLLECTION Aaron Copland Collection
The Aaron Copland collection consists of published and unpublished music by Copland and other composers, correspondence, writings, biographical material, datebooks, journals, professional papers, including legal and financial material, photographs, awards, art work...
Collection Items: View 982 Items

COLLECTION Abdul-Hamid II Collection
These photographic albums portray the Ottoman Empire during the reign of one of its last sultans, Abdul-Hamid II. They highlight the modernization of numerous aspects of the Ottoman Empire. Most of the...
Collection Items: View 1,819 Items

COLLECTION Abdul-Hamid II Collection of Books and Serials Gifted to the Library of Congress
Collection Items: View 523 Items

COLLECTION Afghanistan Web Archive
The Afghanistan Web Archive is comprised primarily of websites produced by the Afghan government, specifically the executive branch. Also included are a selection of sites from statistical reporting agencies, banking institutions, universities...
Collection Items: View 22 Items

COLLECTION Afghanistan, Iran, Pakistan, and Tajikistan Government Web Archive
This collection consists of official government websites for Afghanistan, Iran, Pakistan and Tajikistan and provides an overview of the political, economic, administrative and social situation in these three countries. Several of these...
Collection Items: View 284 Items

COLLECTION Afghanistan, Iran, Pakistan, and Tajikistan Elections Web Archive
The Afghanistan, Iran, Pakistan and Tajikistan Elections Web Archive includes campaign sites archived during these countries' election seasons since 2014. This archive collection includes websites for government bodies, political parties, presidential candidates...
Collection Items: View 125 Items



QUESTION:

What insights did you learn from Zwaard?

Conclusion

Like Dorothy Vaughan, remarkable leaders dedicate themselves to their team members' growth.

As the job market becomes more specialized and automation more widespread, agencies have to invest in reskilling and upskilling their employees to retain them. They can't recruit their way out of skills gaps. That means in this increasingly digital workplace, shifting learning strategies to fit the online environment is paramount.

Many of the key tenets to successful virtual learning are the same for classroom learning. But online learning can be unsuccessful when those rules are haphazardly regarded. With the intentional and thoughtful application of best practices, agencies can provide impactful online learning experiences and retrain their workforces for the future.





Thank you to Cornerstone for their support of this valuable resource for public sector professionals. To learn more, please visit www.cornerstoneondemand.com/state-local/



About GovLoop

GovLoop's mission is to inspire public sector professionals by serving as the knowledge network for government. GovLoop connects more than 300,000 members, fostering cross-government collaboration, solving common problems and advancing government careers. GovLoop is headquartered in Washington, D.C., with a team of dedicated professionals who share a commitment to the public sector.

For more information about this report, please reach out to info@govloop.com.

govloop.com | @govloop