

Solutions to Build a 21st Century Connected Credentialing System

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Takeaways

As automation, AI, and other technological advances continue to disrupt jobs, more Americans will need to upgrade their skills throughout their lives to stay competitive. Right now, however, the postsecondary credentialing system is fragmented. It doesn't acknowledge or connect the learning that happens through different sources of education—from school to work to the military. And the variety of credentialing options makes it difficult for workers to know which programs will help them reach their career goals.

In a [previous report](#), we attributed these problems to the following:

1. Lack of a 21st century credentialing infrastructure people can use to store, share, and display their learning experiences over time.

2. Lack of a common way to describe and understand the DNA of any given credential—that is, the skills it represents.

This report makes five policy recommendations state and federal policymakers should take to address these gaps. In doing so, policymakers can help create a connected credentialing system that truly meets the needs of workers, employers, and the economy.

Technological advances like automation and artificial intelligence are expected to radically disrupt the future of work. In many ways those changes are already happening. For example, the creation of software for administrative tasks has contributed to the loss of 2.1 million administrative positions since 2000.¹ The rise of automation in manufacturing means that factories need higher-skilled workers—so much so that within the next three years, American manufacturers will employ more college graduates than workers with a high-school education or less.²

In the face of this disruption, workers will have to learn new skills throughout their lives to keep up with labor market demands.³ Already, people learn new skills in a variety of ways. Institutions like universities, community colleges, and technical colleges remain dominant providers of postsecondary education, but a diverse array of learning options exists alongside them. These include online learning platforms, military training, on-the-job training, and programs offered in prisons. Yet our credentialing system is fragmented, so it often doesn't acknowledge or connect the various sources of learning people tap into after high school. Simply put, there's a mismatch between the way people learn and the way we capture, record, and acknowledge that learning.

The proliferation of learning options and credentials attainable through them also makes it harder for people to

know which credential is best for their career goals or whether the credentials they earn will have value in the labor market. Racial, ethnic, and socioeconomic disparities persist in educational attainment and labor market outcomes.⁴ This won't change unless we make it easier for people to navigate credential programs and convey the skills they have mastered.

We need a modern credentialing system capable of meeting these challenges. To build one, we must create 21st century credentialing infrastructure and ensure credential transparency. In this report, we propose five recommendations state and federal policymakers should take to achieve those goals, leading to a more connected credentialing system.

Create a 21st Century Credentialing Infrastructure

Currently, a person's learning records are fragmented across multiple institutions, and people don't have enough ownership of these records. A person's certificates, digital badges, military training records, and other credentials exist separately from one another. People can combine this information on a resume or LinkedIn profile, but that information is self-reported rather than externally verified. To share verified records with employers, people have to first obtain them from these institutions, which can be costly and require people to jump through bureaucratic hurdles.

Even after people secure their records, credentials still don't provide enough information to employers and educators who need to evaluate and compare them. Specifically, credentials don't provide information on the skills behind that credential or demonstrate that the learner has truly mastered those skills. The focus is on what credentials people have obtained and where, rather than what they have actually learned.

Modern, digital credentialing infrastructure can reduce this fragmentation. Verified information on people's learning experiences should exist in digital, next-generation learning

records that link to proof of learning—such as e-portfolios—and provide information on the skills each credential-holder has mastered. People should have a comprehensive picture of their learning experiences over time that they can easily share with prospective employers or training providers. People should own their records and be able to easily share and display them.

Work is currently underway to facilitate this vision, including the development of Comprehensive Learner Records and T3 Innovation Network Competency Data Infrastructure. Below are three recommendations for policymakers to help create 21st century credentialing infrastructure:

Solution 1: Develop a set of Connected Credentialing Principles and a new Credentialing Innovation Badge.

A number of stakeholders are developing and testing new technologies to make the credentialing ecosystem more interconnected. These stakeholders follow a set of best practices that ensure the benefits of their innovations accrue not just to some in the credentialing ecosystem, but to everyone. These practices include keeping innovations publicly available and up-to-date.

Federal policymakers should encourage newcomers to the credentialing innovation space to adopt these practices. The US Department of Education, US Department of Labor, US Department of Commerce, and US Department of Defense should convene organizations and networks working in this space—such as the T3 Innovation Network, Job Data Exchange, and Credential Engine—to develop a list of guiding principles that institutions, employers, standards organizations, and technology vendors should follow as they develop 21st century credentialing infrastructure. These guiding principles should include making technological products open, available, interoperable, and updated. Other principles could involve privacy and data protection.

The federal government should also work with stakeholders to develop a Credentialing Innovation Badge that organizations can apply for to certify that their products meet these guiding principles, similar to a Good Housekeeping Seal of Approval. Vendors with these badges could then be given priority in procurement processes. Both the Connected Credentialing Principles and the requirements needed to qualify for a Credentialing Innovation Badge should be updated as needed.

Solution 2: Establish a Credentialing Innovation Fund.

There are a number of innovations happening in the credentialing system, like the development of new ways to make competency data more accessible or give people more control over their data. The federal government or state governments should promote innovation without picking winners and losers. They can do this by providing a source of funding that innovators can draw from when they have built a prototype and are ready to test it. This can bring successful innovations closer to adoption throughout the credentialing system.

To do this, either the federal government or state governments could establish a Credentialing Innovation Fund—a source of funding that can be used to test credentialing innovations once they reach the prototype stage. Prototypes eligible for testing should adhere to the Connected Credentialing Principles described above and should meet the requirements needed to qualify for a Credentialing Innovation Badge. To ensure this, the application process could include a peer review component.

This aligns with a recommendation from the American Workforce Policy Advisory Board (AWPAB), a group of education and workforce stakeholders advising the Trump Administration's National Council for the American Worker. The AWPAB has recommended creating and maintaining a public inventory of ongoing pilot projects that are aimed at building a modern and interoperable credentialing

ecosystem.⁵ This inventory could help the federal government or state governments keep track of which pilot projects are ready for testing and eligible for funding.

Solution 3: Make next-generation learning records available to everyone.

Leading organizations in the higher education space are working to help institutions develop and implement Comprehensive Learner Records (CLRs).⁶ A CLR is a digital learning record that provides richer information than the traditional transcript by, for example, linking to e-portfolios, describing both hard and soft skills the learner has gained, and capturing learning that happens outside the classroom. Much of the work to develop CLRs is taking place at colleges and universities and in military branches. To be sure, these institutions play a key role in workforce training, but policymakers should ensure that all Americans have access to a next-generation learning record even if they never set foot on a college campus or enlist in the military.

During reauthorization of the Workforce Innovation and Opportunity Act (WIOA), federal policymakers should set aside funding for states to develop CLRs for people enrolled in WIOA-funded training programs. State workforce boards or state workforce agencies could administer these funds and steer the development of CLRs for trainees. Alternatively, individual states could set aside funding and develop these CLRs on their own.

Workers who learn new skills through employer-provided training should also have access to a CLR. Policymakers should provide tax credits to employers that 1) provide access to CLRs for workers who don't have them; 2) help their workers gain new skills; and 3) upload these learning experiences to workers' CLRs.

Finally, grant funding should be distributed to under-resourced institutions, such as community colleges, that

would otherwise struggle to adopt CLRs due to the technological demands of developing them.

All CLRs developed with this grant funding should use data standards adopted by T3 Innovation Network so they can be interoperable with CLRs that organizations in the higher education space have been developing. New CLRs should be developed in coordination with those organizations.

Ensure Credential Transparency

There is currently no common way for learners and credentialing institutions to describe a given credential. Put another way, there is no widely used language to describe the skills the credential-holder can be expected to have and, by extension, what tasks a worker can be expected to do.

Employers and postsecondary institutions may understand that a person has a particular credential, but may not fully understand what it *means* that the person has that credential, or how to evaluate and compare job applicants.

It should be easier for learners, employers, and training providers to understand the skills behind each credential. Employers should be able to tell whether credential-holders have the skills they need. Training providers should be able to tell whether their programming meets employer needs, or whether it needs to be adjusted. And learners should be able to tell whether the credentials they pursue will position them for in-demand careers. Below are two policy recommendations to promote greater credential transparency:

Solution 1: Make it easier to compare credentials earned through job training programs.

Credential Engine, a nonprofit working to improve credential transparency, has developed the Credential Transparency Description Language (CTDL). The CTDL provides a common way to describe credentials and credentialing organizations.

Using the CTDL allows a credential to be uploaded to Credential Engine's Credential Registry, which in turn makes it searchable and comparable to other available credentials. State officials should use the CTDL and the Credential Registry to modernize our job training system.

Under the federal Workforce Innovation and Opportunity Act (WIOA), a jobseeker who seeks assistance at an American Job Center may be deemed eligible for training services and given a federally-funded voucher they can use to pay for the training program of their choice. This training often results in a postsecondary credential. To make it easier for jobseekers and career counselors to navigate their options, state legislators and governors should encourage state workforce agencies and workforce development boards to use the CTDL to publish WIOA-funded credentials to the Credential Registry. States could provide funding and coordinate technical assistance to help training providers become familiar with using the CTDL and the Credential Registry. A number of states have already undertaken similar work, and state officials may be able to learn from these experiences.⁷ States could go a step further and publish *all* publicly-funded credentials to the Credential Registry—whether it's state or federal dollars paying for training.

For national-level credentials, such as industry certifications, the industry associations and certification bodies that administer them would need to publish them to the Credential Registry. In this case, federal policymakers could coordinate technical assistance to help them do so.

Solution 2: Incentivize training providers to identify the skills they teach and make this information accessible.

To evaluate and compare job applicants, employers need to understand the specific skills applicants have gained through postsecondary education or training. It's important, then, for training providers—like technical or community colleges and nonprofits—to identify the specific skills of students who

complete their programs and go on to earn particular credentials. For example, a person who graduates from a technical college with a Wind Turbine Technician certificate may graduate with occupational skills, like troubleshooting and repairing wind turbines, and soft skills, like communicating effectively with teammates and managers. The skills that credential-holders have can be compared to the skills that employers need. This would help training providers understand whether their graduates are good candidates for available jobs, or whether their programming needs to be adjusted. This means training providers need to identify the skills they teach and to publish that information so it can be compared to the skills employers need.

Right now, training providers publish the skills they teach in ways that silo this information across the credentialing system. For example, many training providers convey the skills they teach using competency frameworks. At a broad level, a competency framework is a way of breaking down a credential or an occupation into the specific skills, knowledge, and abilities that the credential-holder should have or that the occupation requires. Different frameworks can be compared to one another, but only if they are published on the internet in a certain format—the Linked Open Data format. Using this format means that the information can be accessed by the public and linked with other information, such as employer competency frameworks. Many training providers don't use this format, so their competency frameworks remain siloed.

State and federal policymakers should encourage training providers to identify the skills they teach and publish this information using the Linked Open Data format.

Policymakers could provide funding and coordinate technical assistance to help training providers do this. Eventually, states or the US Departments of Labor and Education could compile and distribute best practices for identifying skills and using the Linked Open Data format.

Conclusion

As automation, AI, and other technological advances continue to disrupt jobs, more Americans will need to upgrade their skills throughout their lives to stay competitive. Yet our credentialing system is fragmented, so it often doesn't acknowledge and connect different sources of learning or make it easy to navigate different credentialing options.

In this report we have proposed five recommendations to promote a more connected credentialing system by building 21st century credentialing infrastructure and ensuring greater credential transparency. With these solutions, federal and state policymakers can create a connected credentialing system that meets the needs of workers, employers, and the economy.

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ENDNOTES

1. Long, Heather. "Administrative Assistant Jobs Helped Propel Many Women Into the Middle Class. Now They're Disappearing." The Washington Post. 5 Dec 2019. https://www.washingtonpost.com/business/economy/administrative-assistant-jobs-helped-propel-many-women-into-the-middle-class-now-theyre-disappearing/2019/12/04/75686efe-f6a0-11e9-a285-882a8e386a96_story.html. Accessed 5 Dec 2019.
2. Hufford, Austen. "American Factories Demand White-Collar Education for Blue-Collar Work." 9 Dec 2019. <https://www.wsj.com/articles/american-factories-demand-white-collar-education-for-blue-collar-work-11575907185>. Accessed 9 Dec 2019.

- 3.** Rainie, Lee, and Janna Anderson. "The Future of Jobs and Jobs Training." Pew Research Center. 3 May 2017.
<https://www.pewresearch.org/internet/2017/05/03/the-future-of-jobs-and-jobs-training/>. Accessed 12 Dec 2019.
- 4.** "The Roadmap for Racial Equity: An Imperative for Workforce Development Advocates." National Skills Coalition. Sept 2019.
https://www.nationalskillscoalition.org/resources/publications/file/Racial-Equity-Report_6x9_web.pdf. Accessed 20 Nov 2019.
- 5.** "White Paper on Interoperable Learning Records." American Workforce Policy Board Data Transparency Working Group. Sept 2019.
https://www.commerce.gov/sites/default/files/2019-09/ILR_White_Paper_FINAL_EBOOK.pdf. Accessed 16 Oct 2019.
- 6.** This group includes the American Association of Collegiate Registrars and Admissions Officers (AACRAO) and NASPA: Student Affairs Administrators in Higher Education, with support from Lumina Foundation.
- 7.** "Guide to Key Initiatives for the Connected Learn and Work Ecosystem." Credential Engine. 22 Nov 2019.
<https://credentialengine.org/2019/11/22/guide-to-key-initiatives-for-the-connected-learn-and-work-ecosystem/>. Accessed 9 Jan 2020.