

Hurdles to Connected Credentials



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Takeaways

Over the course of their careers, workers will need to continually upgrade their skills as jobs change. Right now, however, the postsecondary credentialing system is completely fragmented, making it difficult for workers to gain new skills and credentials. In this report, we examine two central hurdles to a connected credentialing system and their root causes:

1. Credentials don't provide the right information for people who need to evaluate and compare them. That's because there is no common way to describe and understand the DNA of any given credential.
2. Credentialing records are fragmented and students don't own enough of their data. That's because there is no widely-used digital infrastructure to easily store, share, and display credentials.

These hurdles affect people trying to apply for jobs, enroll in job training programs, and upgrade their skills

throughout their lives. They make it difficult for employers to understand what skills job applicants actually have. Ultimately, they make it harder for people to access economic opportunity in the face of job disruption.

Ten years. Because of how fast our economy is evolving, a person's skills stay relevant for just a decade.¹ That means high school graduates who plan to work until 65 will have to learn new skills and earn new credentials at least four times throughout their lives as workplaces and job duties change. As workers change jobs, enter new industries, and seek new opportunities, they will need access to different education and training programs and will need to have learning experiences build on one another throughout their lives.

If that wasn't challenging enough, workers have to navigate a postsecondary credentialing system that is completely fragmented. There is not enough linking the various sources of education people tap into after high school, such as military training, courses at schools or online, on-the-job training, and skills learned in prison, among others. This makes it difficult for people to share their credentials with prospective employers, have confidence in the value of those credentials, and connect credentials earned throughout life as they pursue further education or move up a career ladder. In this report, we unpack what this fragmentation looks like, why it exists, and how it impacts credential attainment, lifelong learning, and economic opportunity.

Problem #1: Credentials don't provide the right information for people who need to evaluate and compare them.

There are over 300,000 credentials available in the United States, ranging from digital badges to bachelor's degrees and

advanced degrees.² Yet, the proliferation of credentials has caused widespread confusion about their quality. Employers, training institutions, and learners currently don't get enough information on the DNA of a credential—that is, the competencies the credential-holder can be expected to have. For example, when employers and postsecondary institutions look at an individual's resume, they may understand that a person has a particular credential but may not fully understand *what it means* that the person has that credential. They may not know what skills the credential-holder is supposed to have, whether the person has actually learned those skills, and how different credentials compare to one another.

Learners who want to get new skills may not know which credential is best for their career goals or how to assess the value of a particular credential. For example, many institutions offer one-year certificates in dental hygiene, but there are also programs that offer two-year associate's degrees in dental hygiene, and it can be difficult to understand the difference between these credentials.³

This opacity has very real-world consequences. It makes it difficult for employers to compare different job applicants. It makes it tougher for adult learners to get credit for prior learning when they pursue further education and training. And it makes it difficult for people to decide which education and training program is best for them to upgrade their skills or learn new ones, or determine which programs provide a return on investment and which ones don't.

Ultimately, when credentials don't provide enough information, it makes it difficult to shift to an education and training system that is based on a person's skills. This, in turn, has massive implications for economic opportunity. For example, employers have in recent years requested bachelor's degrees for jobs that previously required less time-intensive credentials. In some cases this is because job duties have changed, but in other cases, employers use bachelor attainment as an indicator of skill attainment.⁴ This degree

inflation has become widespread, with 6 million jobs currently at risk.⁵ Degree inflation shuts out the 2/3 of Americans who don't have bachelor's degrees, including those with relevant skills and sub-bachelor or non-degree credentials. Sixty percent of employers reject qualified candidates with relevant skills and experience in favor of recent college graduates—even though many employers find middle-skill workers to be just as productive as college graduates.⁶

If employers could screen job candidates based on credentials that provided more information on skills and proof of learning, they may be more comfortable hiring people with a broader array of credentials, including but not limited to bachelor's degrees. Make no mistake—bachelor's degrees have value, and degree-holders tend to have higher earnings growth over their lifetimes. But not all jobs call for a bachelor's degree, and too many workers with other types of credentials and relevant skills are being shut out of job opportunities simply because they don't have one.

Why don't credentials provide this needed information?

Currently, there is no common way to describe and understand the DNA of a credential. That is, there is no standard language to describe any given credential based on what competencies the credential-holder can be expected to have and, by extension, what job tasks a worker can be expected to do. This makes it difficult to compare and evaluate different credentials and the people holding them, such as a certificate in dental hygiene versus an associate's degree in dental hygiene.

However, there are nascent efforts to change this, with many organizations developing “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. For example, Lumina Foundation's Connecting Credentials Framework can be used to describe, understand, and compare any given credential

based on the knowledge and skills that the credential-holder should have—that is, what the person should know and what the person should be able to do in applying that knowledge.⁷

There are over 1,000 competency frameworks, including frameworks for specific industries like manufacturing. Each framework can be thought of as its own language. This is just one example of how credential data is expressed differently throughout the credentialing ecosystem depending on which language an organization uses. The T3 Innovation Network, launched in 2018 by the US Chamber of Commerce and Lumina Foundation, is working to harmonize data standards so different competency languages can be interoperable. The goal is to produce a common way of describing credential data so it can be easily shared, understood, and compared throughout the credentialing ecosystem. These efforts are currently in pilot project stages.⁸

The T3 Innovation Network brings together employers, training providers, technical standards organizations, technology vendors, and other stakeholders in the credentialing ecosystem. The Network aims to explore how emerging technologies like blockchain and artificial intelligence can be used to create a public-private data and technology infrastructure. This infrastructure will, in turn, facilitate a more transparent and connected credentialing ecosystem in which employers can signal their skill needs, learners can signal the skills they have, and training providers can signal the skills they teach. In 2018, the T3 Network identified specific areas of the credentialing ecosystem where stakeholders could bring emerging technologies to bear on existing challenges. In 2019, the T3 Network began implementing pilot projects in those areas.⁹

Problem #2: Credentialing records are fragmented and students don't own enough of their data.

Many people use a financial institution that links a checking account, savings account, and credit card together—all seamlessly accessible through online banking. This helps consumers get a full picture of their financial situation in one easy-to-read snapshot. If only a person's learning records were that connected. Instead, records of a person's learning experiences reside separately at multiple institutions. A person's digital badges exist separately from his or her college diploma, which is separate from online classes, co-curricular activities, employer-sponsored training, or courses taken in other venues—from the military to prison. This means there isn't one comprehensive picture of a person's learning experiences that the person can easily share with prospective employers or education and training institutions. Instead, the burden is on learners to gather their records, compile them, and share them with prospective employers or institutions. Obtaining those records can be costly and require people to jump through bureaucratic hurdles, like finding a transcript request form, filling it out, and sending it to a college registrar.

It doesn't help that credentials are stuck in the era of fax machines. Upon completing a postsecondary program, a graduate receives a paper credential instead of a digital one that could be easily shared online and provide richer information (such as links to e-portfolios that show proof of learning). The traditional resume and transcript provide information on the postsecondary programs a person has enrolled in and the credentials they have earned, but they provide limited information on the competencies those programs are supposed to teach and limited evidence that a person has actually mastered those competencies, because they often don't link to things like e-portfolios.

An e-portfolio, or an electronic portfolio, is a way for students to compile and showcase evidence of their learning experiences, both inside and outside the classroom. An e-portfolio can include things like writing samples, graphics, and pictures or videos of a project.¹⁰ For example, students in a coding bootcamp could have e-portfolios that include samples of code they've written and links to websites or applications they've developed. E-portfolios are different from traditional transcripts because they are owned and curated by the student, and the student can decide who can view the e-portfolio.¹¹ Most employers feel that e-portfolios are useful in evaluating whether job applicants have needed skills, rather than relying on resumes and transcripts alone.¹²

While learners can display things like digital badges on their LinkedIn profiles, a LinkedIn profile doesn't provide evidence of mastery for other types of credential attainment, like degrees. In addition, much of the content on resumes and LinkedIn profiles is self-reported, so they are less verifiable than learning records coming from institutions and other organizations in the education and workforce space.

Why are credentialing records fragmented, and why don't learners own more of their data?

Currently, there is no widely-used digital infrastructure to easily store, share, and display credentials. However, there are nascent efforts to change this.

A variety of higher education institutions have begun developing different next-generation learning records. In particular, the American Association of Collegiate Registrars and Admissions Officers and the National Association of Student Affairs Professionals, with support from Lumina Foundation, are working to help higher education institutions develop and implement the Comprehensive

Learner Record (CLR). The CLR is digital and would provide richer information on learning than the traditional transcript by, for example, linking to e-portfolios and describing hard and soft skills the learner has gained. It would provide a more holistic picture of each learner by providing richer information on learning that happens *outside* the classroom, including through co-curricular activities, internships, and apprenticeships. CLRs would also include information on learning experiences that happen throughout a person's life, such as high school or even earlier.

There are barriers to CLR development and adoption, which range from technological barriers to lack of buy-in or competing projects. For example, even within a single university, the different pieces of information that will end up in a CLR exist in different data storage systems, and it can be technologically challenging and time-consuming to bring these different data systems together.¹³ Bringing in data from employers, the military, and other educational institutions—which also have different data systems—adds to this challenge. Different institutions are developing CLRs, and the T3 Innovation Network is working to develop a technical standard for CLRs so they are interoperable across institutions, employers, and the military. This work is currently in pilot project stages.¹⁴

In addition to the Comprehensive Learner Record, a consortium of universities, including MIT, Harvard, and the University of California, Berkeley, is working to create a shared digital infrastructure that aims to become the standard for issuing, storing, displaying, and verifying credentials.¹⁵ Essentially, the Digital Credentials consortium is developing a secure “digital envelope” for things like the CLR, as well as a way to share that envelope across institutions. The consortium's efforts are still underway, and one challenge will be to develop the technology and technical standards to make the envelope a reality, as well as to access funding needed to do this work.¹⁶

Conclusion

Lifelong learning will be crucial as automation continues to change the nature of work. We need a 21st century credentialing system that allows people to easily share their learning experiences with different employers and training institutions throughout their careers as they change jobs or learn new skills in a variety of settings, including the military, prison, or on the job.

Yet the current postsecondary credentialing system is fragmented and lacks interoperability. The lack of a 21st century credentialing infrastructure makes it difficult for people to share a comprehensive picture of their learning experiences with employers and training institutions. Credentials also lack transparency, making it difficult for employers and institutions to understand what skills a person actually has, or for learners to know which credentials would best help them reach their career goals.

In a forthcoming paper, we will outline solutions to these problems that can be implemented at the state and federal level to promote the creation of a 21st century credentialing infrastructure and the adoption of a common way to describe credentials.

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ENDNOTES

1. Kasriel, Stephane. "Skill, Re-Skill and Re-Skill Again. How to Keep Up With the Future of Work." World Economic Forum. 31 Jul 2017. <https://www.weforum.org/agenda/2017/07/skill-reskill-prepare-for-future-of-work/>. Accessed 21 Feb 2019.

- 2.** “Counting U.S. Secondary and Postsecondary Credentials.” Credential Engine. Apr 2018.
https://credentialengine.org/wp-content/uploads/2018/04/Counting_US_Secondary_and_Postsecondary_Credentials_April_2018.pdf. Accessed 23 Aug 2019.
- 3.** McCarthy, Mary Alice. “Rethinking the Bachelor’s Degree.” Washington Monthly. Sept 2015.
<https://washingtonmonthly.com/magazine/septoct-2015/rethinking-the-bachelors-degree/>. Accessed 24 Jun 2019.
- 4.** “Moving the Goalposts: How Demand for a Bachelor’s Degree is Reshaping the Workforce.” Burning Glass Technologies. Sept 2014. https://www.burning-glass.com/wp-content/uploads/Moving_the_Goalposts.pdf. Accessed 23 Aug 2019.
- 5.** Fuller, Joseph, and Manjari Raman. “Dismissed by Degrees: How Degree Inflation is Undermining U.S. Competitiveness and Hurting America’s Middle Class.” Accenture, Grads of Life, Harvard Business School. Oct 2017. <http://www.hbs.edu/managing-the-future-of-work/Documents/dismissed-by-degrees.pdf>. Accessed 23 Aug 2019.
- 6.** Fuller, Joseph, and Manjari Raman. “Dismissed by Degrees: How Degree Inflation is Undermining U.S. Competitiveness and Hurting America’s Middle Class.” Accenture, Grads of Life, Harvard Business School. Oct 2017. <http://www.hbs.edu/managing-the-future-of-work/Documents/dismissed-by-degrees.pdf>. Accessed 23 Aug 2019.
- 7.** “Connecting Credentials: A Beta Credentials Framework.” Lumina Foundation. May 2015.
<https://connectingcredentials.org/wp-content/uploads/2015/05/ConnectingCredentials-4-29-30.pdf>. Accessed 29 Jul 2019.

- 8.** “Work Group 2 Report: Exploring Sustainable Data Standards Convergence.” T3 Innovation Network. Jul 2018.
https://www.uschamberfoundation.org/sites/default/files/Work%20Group%202_Final%20Report_July%202018.pdf. Accessed 29 Aug 2019.
- 9.** “Phase 1 Report: Developing an Open, Public-Private Data Infrastructure for the Talent Marketplace.” T3 Innovation Network. Oct 2018.
https://www.uschamberfoundation.org/sites/default/files/T3Phase1_Report_FINAL_o.pdf. Accessed 12 Sept 2019.
- 10.** “The What, Why, and How of ePortfolios.” Clemson University.
<https://www.clemson.edu/academics/programs/eportfolio/information.html>. Accessed 16 Sept 2019.
- 11.** “ePortfolios Explained: Theory and Practice.” University of Waterloo Centre for Teaching Excellence.
<https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/educational-technologies/all/eportfolios>. Accessed 16 Sept 2019.
- 12.** “Fulfilling the American Dream: Liberal Education and the Future of Work.” Association of American Colleges and Universities. Jul 2018.
<https://www.aacu.org/sites/default/files/files/LEAP/2018EmployerResearchReport.pdf>. Accessed 16 Sept 2019.
- 13.** “7 Things You Should Know About the Comprehensive Learner Record.” EDUCAUSE. Jan 2019.
<https://library.educause.edu/-/media/files/library/2019/1/eli7164.pdf>. Accessed 29 Aug 2019.
- 14.** “Phase 1 Report: Developing an Open, Public-Private Data Infrastructure for the Talent Marketplace.” T3 Innovation Network. Oct 2018.
https://www.uschamberfoundation.org/sites/default/files/T3Phase1_Report_FINAL_o.pdf. Accessed 12 Sept 2019.
- 15.** “Our Mission.” Digital Credentials Initiative.
<https://digitalcredentials.mit.edu/#mit-mission>. Accessed 30 Jul 2019.

- 16.** McKenzie, Lindsay. "Seeking a Shared Global Standard for Digital Credentials." Inside Higher Ed. 24 Apr 2019. <https://www.insidehighered.com/digital-learning/article/2019/04/24/mit-and-8-other-universities-partner-shared-digital-credential>. Accessed 11 Jul 2019.