

Holding New Credentials Accountable for Outcomes: We Need Evidence-Based Funding Models

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Key Points

- With over 1.1 million credentials available but only 12 percent delivering significant wage gains, learners face a chaotic marketplace that lacks effective oversight.
- Top-decile credentials yield annual wage gains of nearly \$5,000 and significantly increase career-switching success and advancement opportunities, while bottom-tier credentials provide few or no benefits.
- New data analytics enable objective measurement of credential outcomes across wages, career mobility, and promotion metrics.
- Public funding for credentials must be tied to empirical evidence of labor market value to protect learners and taxpayer investments.

Amid escalating college costs, mounting student debt, and rising college graduate underemployment, students of all backgrounds increasingly question college as a path to economic mobility. This shift has sparked interest in alternatives to college—from high school career and technical education (CTE) programs to short-term adult training courses proposed for Pell Grant funding expansion. These credentials offer attractive advantages: rapid skill acquisition, flexibility for learners juggling work or family commitments, and promising pathways for adults seeking to reenter or advance in the workforce.

Yet while the potential is significant, so is the risk of wasting learners' time and taxpayer dollars on credentials that don't pay off.

This risk is exacerbated by today's chaotic credentialing marketplace where over 1.1 million different credentials are now on offer—but with minimal oversight to separate value from empty promises.¹ We show below a severely skewed distribution of credential value: only about 12 percent of credentials deliver significant wage gains that earners wouldn't have otherwise gotten, and just 18 percent of credential earners are likely to see wage increases their peers didn't enjoy.

The right credentials can be transformative. Compared to bottom-tier options, credentials in the top decile yield annual wage gains of nearly \$5,000, increase career switching success sixfold, and boost the probability of promotion in the earner's current field 17-fold. These outcomes serve as proof that well-designed programs can open doors to life-changing opportunities.

These top credentials can serve as effective pipelines into skilled professions, leading roughly half of earners into new jobs by equipping them with in-demand skills, and have demonstrated the power to close long-standing income gaps, particularly for historically underrepresented groups. Black and Hispanic women who earn high-value credentials, for example, experience wage increases of 10 percent or more, helping bridge earnings gaps with white male peers.²

To fund transformative credentialing programs effectively, it is crucial to leverage large datasets that offer the opportunity to observe empirically the economic returns of credentials across millions of careers. Analyzing these data allows us to evaluate the outcomes that specific credentials yield across an array of metrics and to distinguish programs that truly benefit workers from those that don't.

The Policy Landscape

A pressing question is whether and how government funding should support alternative pathways to economic mobility. Since 1972, Pell Grants have fueled the expansion of America's college-educated workforce, helping over six million low-income students pay for college each year. However, higher education faces a crisis of public confidence, with Gallup polling showing a 20-point drop over the past decade.³ As skepticism grows about college being the sole gateway to well-paying jobs, nondegree credentials are increasingly viewed as a more direct route to employment and a stronger signal of skill proficiency.

As American skepticism about the importance of college grows and new alternatives proliferate, lawmakers have been weighing the idea of extending the Pell program to encompass funding for short-term, career-oriented grants aimed at programs lasting eight to 14 weeks. Referred to as Workforce Pell, its goal is enabling more people to access practical training to prepare for better work and higher wages.⁴ Similarly, the Senate has been considering increasing funding for the Perkins Act as it comes up for reauthorization.

In theory, funding Workforce Pell would represent a clear win-win-win. For the 60 percent of working Americans who don't have a bachelor's degree⁵ and the 77 percent of recent high school graduates who either don't enroll in college,⁶ don't complete their degree,⁷ or

fail to land a college-level job,⁸ more funding for nondegree credentials could open new, more effective training opportunities. Credential providers would have the chance to serve a wider swath of learners. And employers could tap a better skilled workforce.

The problem lies in defining what constitutes a valuable credential. In most cases, a credential is simply a provider's assurance of mastery—or even, merely, completion. The Perkins Act requires that credentials it funds be “industry-recognized,” but offers little guidance on the level of employer demand necessary to meet this standard.⁹ Without clear definitions of credential quality, learners and employers are left adrift in a sea of unverifiable claims. This dynamic takes on a new level of concern given the explosive growth of credentialing options flooding the market.

The Wild West of Credentials

The world of credentials has experienced a Cambrian-like explosion: Credential Engine counts 1.1 million credentials currently on offer, a 10 percent increase in the past year alone.¹⁰

It's a breathtaking tally—six times greater than the number of headwords in the *Oxford English Dictionary*, though perhaps not surprising. After all, demand is surging. Completion of short-term (less than one year) certificates grew by a third from 2013 to 2023, compared to a decline of 5 percentage points in associate degrees and 8 percent growth in bachelor's degrees (Table 1).

Learning has been democratized: Now, anyone with an internet connection can sign up for a program at their local community college or even an accredited university. Entirely new third-party learning platforms offering wide libraries of learning content have emerged as well, such as Coursera and Khan Academy for the public or Degreed and Cornerstone for corporate workplaces. Many of these courses and programs include a credential—whether one of the new breed of online credentials or more traditional certifications like the Chartered Financial Analyst certification, 30-Hour Occupational Safety and Health Administration certification, or CompTIA Network+ certification. (Certifications differ from other nondegree credentials in that they include a third-party proficiency assessment, suggesting a more rigorous quality standard.)

Table 1. Growth in Credential Attainment, by Type

Credential	2013	2023	Growth
Short-Term Certificate (Less Than One Year)	456,568	605,113	33%
Associate Degree	1,015,835	965,382	–5%
Bachelor’s Degree	1,857,899	1,978,539	8%

Source: US Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, <https://nces.ed.gov/ipeds/use-the-data/download-access-database>.

But how many of these offerings help their earners launch their career, move up in their field, or switch to a new occupation? Before deciding whether to expand funding for nondegree credentials, we should demand data on which, if any, of these credentials deliver a positive return on investment.

Identifying Credentials with Value

Until now, the value of different credentials has been an enigma wrapped in a riddle. We can observe features of programs—for example, program costs, learning objectives, and length of training—but there has been scant data on the *results* of these programs. A rigorous quantitative lens has been missing—which is especially critical given the findings of a 2020 study by Burning Glass and ExcelinEd that concluded that only 18 percent of CTE credentials were in demand by employers.¹¹ Given the substantial investment many credentials require, an outcomes-oriented lens is critical. Too often, learners spend weeks or months earning a credential only to find that the credential goes unrecognized by potential employers, leaving the learners with little to show for their effort and money.

The Wild West of credentials has produced a gold rush, with far too many credentials delivering far too little recognizable or material returns. This frames a policy imperative: We must avoid building blank-check funding vehicles that allow tax dollars to be squandered on low-value programs.

We need to measure different credentials’ efficacy, but no single metric will suffice. Our analysis considers three distinct dimensions of credential outcomes,

all of which should enter the decision to pursue the credential. First, will the credential increase the earner’s wages? Second, will the credential facilitate a career switch they have been considering? Third, will the credential help them advance in their current field?

Overview of Methodology

Our analysis uses the Burning Glass Institute’s comprehensive labor market database, which contains career histories of over 65 million Americans. We identified a set of 23,444 commonly reported credentials from 2,056 providers. For each of them, using advanced AI and natural language processing, we extracted detailed information about the education, employment, wages, and demographics of those who earned them. To isolate the true impact of credentials, we constructed a counterfactual cohort by comparing credential earners to similar workers who didn’t pursue these credentials, matching individuals on five key factors: sex, race and ethnicity, education level, work experience, and pre-credential occupation. All wage gains and other outcomes reported represent the difference between credential earners and these matched counterparts, allowing us to attribute observed benefits specifically to the credential itself rather than pre-existing advantages. We applied a 10 percent threshold of significance for wage gains throughout our analysis.

Table 2. Wage Gains After One Year Compared to Counterfactual, by Field

	Overall	Data Science	Marketing	Accounting	Leadership	Project Management	Real Estate	Nursing
Top Decile	\$4,700	\$5,500	\$5,700	\$4,410	\$4,700	\$4,890	\$4,080	\$14,150
Top Quartile	\$3,000	\$3,600	\$4,000	\$2,650	\$3,350	\$3,400	\$2,125	\$7,925
Median	\$1,400	\$2,200	\$2,600	\$850	\$1,800	\$2,000	\$700	\$3,000
Bottom Quartile	\$0	\$800	\$1,050	\$0	\$750	\$200	\$0	\$1,400
Bottom Decile	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$150

Source: Burning Glass Institute analysis.

Wage Gains

Wage gains are only one metric of a credential's value, but they offer a clear and concrete demonstration of the differences in outcomes, especially between top and bottom credentials. Specifically, we measure how much earners of a given credential make in the years that follow completion.

We found that the top 10 percent of credentials provide an incremental earnings boost of nearly \$5,000 annually after just one year of earning the credential relative to peers—a quick and sizable return on investment. (To ensure that we are attributing to the credential only the incremental benefit it delivers and not the wage gain that a worker might have enjoyed simply through typical career progression, all measurements in this report are compared to observations for a cohort of counterfactual peers—that is, those working in similar occupations and with similar demographic and educational attainment profiles.)¹² However, the average credential earner earns only \$1,200 more than their peers; in many cases, it would take years just to cover the cost of getting the credential.

Credentials span a range of fields. It makes sense that an occupational safety certification should yield lower returns than a highly sought-after cybersecurity credential. To control for these sorts of variation, we analyzed the return on investment of credentials in the same field (Table 2). The wide span of outcomes persists. In each

of the fields represented in the table below, the difference in wage gain versus the experience of a counterfactual cohort is over \$5,000 between top and bottom credentials, whether in data science or marketing.

Programs Matter

Programs matter. Codecademy, for example, is an online platform that offers free, interactive programming classes. Of the 10 most common Codecademy credentials, all produced positive wage gains for earners, with even the lowest-performing course, Python Fundamentals, linked to wage gains of \$2,900 one year after completion. Similarly, Wall Street Prep's Finance and Financial Management course is linked to wage gains of over \$10,000 within a year.

However, a provider's brand is no guarantee of good outcomes. Consider Stanford University, a pillar of the Silicon Valley tech economy. While Stanford's Data Science Foundations program is associated with \$4,200 in incremental wage gains, its project management certification fails to boost earnings meaningfully. Similarly, LinkedIn's IT Security Foundations: Operating System Security yields no wage gains at all, suggesting either that employers don't view it as a credible signal of competence or that it doesn't impart career-advancing skills. Yet LinkedIn also offers strong credentials under less flashy titles. For example, its Advanced SQL for Data Scientists is linked to wage gains of \$4,300. Such

Table 3. Percentage-Point Difference in Aligned Job Placement for Credential Earners Compared to the Counterfactual

	Overall	Data Science	Marketing	Accounting	Leadership	Project Management	Real Estate	Nursing
Top Decile	19.7	22.1	18.1	17.8	10.9	16.8	34.4	16.6
Top Quartile	14.7	17.5	14.9	13.6	7.2	13.4	24.2	10.2
Median	10.4	13.6	12.0	9.6	4.7	10.3	13.1	6.6
Bottom Quartile	6.4	10.3	9.0	5.1	2.7	7.1	8.1	4.0
Bottom Decile	3.2	7.2	5.7	2.1	0.9	3.9	5.7	2.4

Source: Burning Glass Institute analysis.

variation even among prestigious, well-recognized providers underscores why better data are needed to help learners and policymakers identify the best programs.

Switching Careers

One reason people choose to earn a credential is to acquire skills and build the credibility to switch careers. But how often do credential earners realize this ambition?

The same dataset we use for estimating wage gains offers detailed insight into the transition patterns that follow credential attainment. Successful transitions—which we define as the incremental share of workers who move to a new job aligned with their credential—are not a given. For the bottom decile of credentials, very few workers make successful transitions; in fact, these workers experience only a 3-percentage point bump in their likelihood of being able to switch careers. Meanwhile, top credentials yield a more than sixfold increase in the odds of successful transition (20 vs. 3 points).

One might assume that someone who studies marketing hopes to find a marketing job. However, even among the best credentials, relatively few earners successfully make such a transition, and the likelihood varies widely by field and provider (Table 3). For example, in real estate, earners of top credentials are 34 percentage points more likely than their counterfactual peers to wind up switching into a job that aligns with

their credential, while those earning bottom credentials land aligned jobs only about 5.5 percentage points more often. Take, as another example, Rice University’s digital marketing certificate, which helps earners boost their chances of landing an aligned marketing role by 30 percentage points. Meanwhile, Pryor Learning’s digital marketing certificate has no positive impact on helping earners move into aligned roles.

Some of the most effective credentials at driving career switches are nationally recognized board certifications. For example, the National Council of State Boards of Nursing drives a 60-point increase in the share of earners entering registered nursing or similar roles.

Moving Up

Of course, not everyone earning a credential is looking to switch careers. Instead, many are simply looking to move up in their current field. To measure whether credentials are serving this purpose, we identified workers who stayed in their current career after earning a credential and analyzed the share of these workers who saw their wages increase (Table 4). Unfortunately, few credentials are effective for workers looking to move up in their field—with the share of credential earners moving up in their field only 4 points higher than they would have otherwise. The top decile of credentials does somewhat better, with a boost of 10 to 15 points,

Table 4. Percentage-Point Difference in the Share of Earners Who See Wage Increases in Their Current Career, Compared to the Counterfactual

	Overall	Data Science	Marketing	Accounting	Leadership	Project Management	Real Estate	Nursing
Top Decile	13.3	14.2	11.8	13.7	12.4	11.5	12.1	46.2
Top Quartile	9.6	10.6	8.2	9.2	9.0	8.5	8.6	24.3
Median	6.4	7.8	6.0	6.5	6.4	6.4	5.3	13.9
Bottom Quartile	3.6	5.4	3.6	4.2	3.5	4.4	3.0	9.1
Bottom Decile	0.8	2.3	1.0	1.0	0.9	0.8	0.9	4.4

Source: Burning Glass Institute analysis.

depending on credential category, but these gains are still far from certain.

In project management, a field with one of the highest shares of workers moving ahead after earning a credential, top decile credentials increase the share of earners experiencing a wage increase in their field by only 15 percent relative to the counterfactual. Even in specific credential categories, there is variance across providers. The Lean Six Sigma Green Belt certification appears to drive wage gains of more earners, by 16 percentage points, when taught by industrial giants like Amazon, General Motors, or 3M but provides far less benefit when taught by universities like the University of Wisconsin–Milwaukee, Temple University, or even high-reputation University of Illinois Urbana-Champaign, exemplifying the power of learning in an applied rather than academic context.

What Drives Differences?

While deeper investigation is required to explain the stark disparities in outcomes between top and bottom credentials, we have some clues.

In its 2022 report, Credential Engine identified 108,000 new credentials—pushing the total number to 1.1 million.¹³ We fear that, as providers rush credentials to market, they may be underinvesting in quality assurance. Providers may rely largely on anecdotes instead

of data to validate demand, and their faculty may be largely unfamiliar with emerging fields. Indeed, there are few barriers to entry into the credential market and little regulatory oversight; unproven providers can easily launch programs and advertise them to learners. Consumers have little guidance to help distinguish valuable credentials built around effective programming, those with rigorous and expert-developed curricula, and those that employers take seriously from shoddy programs.

The rise and subsequent collapse of for-profit colleges in this century's first two decades offers a cautionary tale of what can happen without data-driven outcomes standards. These institutions expanded rapidly, drawing students with promises of career advancement and higher earnings through quick, accessible programs. However, as scrutiny increased, it became evident that many of these colleges prioritized profits over outcomes, leaving students saddled with debt and limited career progress. Many of these institutions have since shuttered.

Credentials can be valuable. As detailed above, the top 10 percent of credentials offer opportunities for a wide range of workers and learners to accelerate their careers. While 10 percent may seem marginal, in practice this encompasses over 2,000 common credentials in our evaluation database alone, representing ample opportunity for all learners. How can we ensure that

more Americans find their way to these credentials and avoid wasting time and money on credentials that will keep them running in place? Just as importantly, how can we ensure that taxpayer resources are effectively directed toward programs with a proven track record of imparting skills and boosting careers?

From Data to Action

A one-size-fits-all approach to funding short-term education and credentialing is insufficient. A recent US Department of Education pilot study of Pell Grant eligibility expansion for short-term training programs demonstrates the necessity of outcomes-based measurement and accountability.¹⁴ The pilot's results should not be surprising: Access to training increased as more learners could fund short-term training. Yet without quality standards for which credentials could be funded, the study found no improvement in wages.

Policymakers are right to see the potential for non-degree credentials to provide an alternative to degrees and offer new, more widely shared routes to economic mobility. Yet most credentials fail to deliver on this promise. For short-term credentials to represent a viable pathway for American workers, we need a new mechanism for assuring quality—one that departs from the process-based evaluations of traditional accreditation regimes, which, in practice, seldom work to root out poor programs, and replaces them with empirical study of the outcomes earners experience.

Any new funding for nondegree credentials must be undergirded by a rigorous data-driven evaluation of efficacy. We can now, for the first time, design a funding model that holds to account providers and the credentials they issue for whether they help earners earn more, switch careers, and move ahead, and whether they are valued by employers in practice. Only then can policymakers assess whether the credentials they fund are worth the investment.

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Appendix A. A Brief Note on Methodology

The Burning Glass Institute has built an enriched database spanning the career histories of over 65 million Americans. Through advanced AI-based natural language processing analysis, we extract an array of information from each career history, including education, employment histories, job titles, wages, demographic information, and others. Additionally, through a rigorous process of data collection and cleansing, we have developed a catalog of 23,444 credentials with meaningful levels of representation in the US labor market, spanning 2,056 providers. For each one, we identify a range of characteristics, including the topic area of the credential, the top skills imparted by the credential, the number of jobs requesting that credential, and aligned occupations.

By linking these two datasets—career histories and credentials—we can analyze the impact of various credentials on the careers of earners. We can see, for example, which credentials are associated with the greatest

wage gains, which ones are linked to promotions for earners, and which ones help earners find jobs aligned to the credential topic. For this analysis, we apply a 10 percent threshold of significance for wage gain.

Of course, the population of credential earners is not necessarily the same as those who do not earn credentials. Therefore, to further isolate the impact of the credentials themselves, we compare workers who get credentials to workers with similar demographic and occupational characteristics who do not report attaining a credential (our *counterfactual*). The counterfactual matches workers based on the following five traits: sex, race and ethnicity, highest level of educational attainment, years of work experience, and occupation (in the year before receiving credential, as measured by SOC-6 code).

All data presented here represent outcomes compared to the counterfactual.

Notes

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