



APPENDIX: Some Information on Credentials

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Some credentials have real labor-market value, especially when it comes to securing a job and supporting career advancement.

The U.S. faces an annual shortage of 712,000 certificates and associate's degrees aligned with middle-skills jobs that pay more than \$55,000 per year for early-career workers. Shortages are concentrated in blue-collar occupations (360,800), management and professional office roles (253,000), STEM (87,500), and protective services (10,600), and are projected to persist through at least 2032. Workers with credentials aligned to these occupations are more likely to land in high-paying roles: 73% of credentialed workers in STEM find high-paying middle-skills jobs, followed by 58% in protective services, and 47% in management and office roles.

- Source: Emma Nyhof McLeod, Kathryn Peltier Campbell, Zachary Mabel, and Jeff Strohl, *Bridging the Middle-Skills Gap: Connecting a Diverse Workforce to Economic Opportunity Through Certificates and Associate's Degrees*, Georgetown University Center on Education and the Workforce, June 2025, <https://cew.georgetown.edu/cew-reports/bridging-middle-skills-gap/>.

The best credential programs yield wage gains of nearly \$5,000 per year and have been shown to improve holders' chances of promotion and career switching across an analysis of 23,444 credentials and 65 million career records.

- Source: Matt Sigelman, Mark Schneider, Shrinidhi Rao, Scott Spitze, and Debbie Wasden, *Holding Credentials Accountable to Outcomes: We Need Evidence-Based Funding Models*, Burning Glass Institute and American Enterprise Institute, June 2025, <https://www.burningglassinstitute.org/research/holding-credentials-accountable-to-outcomes>.

Roughly one in three credentials delivers meaningful value when the definition of value is expanded beyond short-term wage gains to include career mobility and field entry—triple the share identified under wage-only metrics. Over 20% of credentials with low initial wage gains place workers into occupations likely to support onward career mobility.

- Source: Stuart Andreason, Shrinidhi Rao, Scott Spitze, and Debbie Wasden, *Measuring What Matters: A New Framework for Evaluating Non-Degree Credential Quality*, Burning Glass Institute, February 2026, <https://www.burningglassinstitute.org/research/measuringwhatmatters>.

A first job-relevant nondegree credential yields a 3.8% wage premium, more than double the 1.8% premium for a job-irrelevant credential, and each additional job-relevant credential increases wages by 1.0%. Workers without degrees realize premiums from credentials that are 1.5 to 2 times larger than those seen by degree holders who earn credentials, and early-career workers see a 6.1% wage premium from their first job-relevant credential—suggesting that well-targeted credentials can narrow earnings gaps for the workers who need them most.

- Source: Eduardo Levy Yeyati, Ian Seyal, and Sophia Henn, *The Market Value of Non-Degree Credentials*, Brookings Institution, December 2025, <https://www.brookings.edu/articles/the-market-value-of-non-degree-credentials/>.

Career pathway programs that lead to credentials are associated with improved ability to secure employment. Pathways produced large gains in industry-specific employment—a 72% relative increase, from 26% to 45%—and smaller gains in general employment (a 9% relative increase, from 60% to 66%) across 46 impact evaluations.

- Source: Laura R. Peck et al., *A Meta-Analysis of 46 Career Pathways Impact Evaluations*, U.S. Department of Labor, 2022, https://www.dol.gov/sites/dolgov/files/ETA/publications/ETAOP2022-04_A%20Meta-Analysis%20of%2046%20Career%20Pathways%20Impact%20Evaluations_final%20report.pdf.

The best sector-based training programs—including Year Up, WorkAdvance, and Project QUEST—have produced earnings gains of up to \$2,000 per quarter (30–40%) lasting 7–11 years in randomized controlled trials, among the largest effects ever observed in the literature. But these programs are described as "little gems" that each cost roughly \$10,000 above the usual cost of a community college credential and scaling them while maintaining quality remains an open question.

- Source: Brent Orrell, ed., *What's Working?: Perspectives on Key Issues in Workforce Development Programs and Practices*, American Enterprise Institute, Brookings Institution, and the Project on Workforce at Harvard University, October 2024, <https://www.aei.org/wp-content/uploads/2024/10/Whats-Working-October-2024.pdf>.

Forty percent of California's public two-year colleges enable students to recoup their educational costs in under a year, and the top 25 institutions—23 of which are community colleges—enable cost recovery within six months. These top performers overwhelmingly serve low-income students, charge less than \$5,000 annually, and produce typical earnings at least \$10,000 above the state's median wage for high school graduates.

- Source: College Futures Foundation and The HEA Group, *Golden Returns: A Regional Look at the Return on Investment of California's Community and Career Colleges*, August 2025, <https://collegefutures.org/golden-returns-2-year-roi/>.

Employer demand for credentials is concentrated in healthcare and focused on workers who also have associate's degrees: 61% of job postings requiring an associate's degree also sought a certification in 2022, compared to just 22% of postings requiring only a high school diploma. Wage premiums from credentials vary by occupation—in some fields like sales, credentialed workers earn meaningfully more, while in others, like education, only workers who also hold bachelor's degrees see a wage bump from credentials.

- Source: Anna Crockett, Emily Ryder Perlmeter, and Xiaohan Zhang, "How Valuable Is a Short-Term Credential for a Job Seeker? It's Complicated," Federal Reserve Bank of Dallas, *Communities* magazine, August 2024, <https://www.dallasfed.org/cd/communities/2024/2408>.

Certificates in health care fields can produce a 46% increase in earnings (\$9,000 per year, though from a lower base), while non-health certificates produced only a 7% increase. Certificates in certain IT subfields, culinary arts, and education showed no statistically significant earnings gains at all.

- Source: Melanie A. Zaber, Brian Phillips, and Lindsay Daugherty, *Examining Short-Term Credentials and Student Outcomes in Indiana*, RAND Corporation, 2025, https://www.rand.org/content/dam/rand/pubs/research_reports/RRA3400/RRA3407-1/RAND_RRA3407-1.pdf.

Noncredit occupational training in transportation (primarily commercial vehicle operation) can produce annualized earnings gains of nearly \$12,000, far exceeding the overall average of roughly \$2,000. Students in engineering technology and construction also see significantly higher-than-average gains, and programs exceeding 150 contact hours generally produced larger returns—illustrating that field of study and program length drive most of the variation in credential value.

- *Source:* Peter Riley Bahr and Rooney Columbus, "Labor Market Returns to Community College Noncredit Occupational Education," *Educational Evaluation and Policy Analysis*, November 2025, <https://doi.org/10.3102/01623737251360029>.

In Virginia's community college noncredit workforce programs, industry-recognized credentials increased quarterly earnings by approximately \$1,000 and the probability of employment by 2.4 percentage points. Earnings gains exceeded program costs in roughly half a year on average, though returns varied substantially across fields.

- *Source:* Di Xu, Kelli A. Bird, Michael Cooper, and Benjamin L. Castleman, "Noncredit Workforce Training, Industry Credentials, and Labor Market Outcomes," EdWorkingPaper No. 24-959, Annenberg Institute at Brown University, 2024, <https://doi.org/10.26300/6rd4-tg25>.

Ford reports 5,000 unfilled mechanic positions that can pay \$120,000–\$160,000 annually for the most productive technicians in busy markets. But the 2024 median pay for a dealership mechanic in the U.S. was \$58,580 according to the Bureau of Labor Statistics, it takes roughly five years of training and on-the-job experience to reach top-tier pay, and mechanics must invest tens of thousands of dollars in their own tools—illustrating how even high-ceiling trades produce modest median outcomes.

- *Source:* Nora Eckert, "The \$160,000 Mechanic Job That Ford Can't Fill," *Wall Street Journal*, January 7, 2026, <https://www.wsj.com/business/autos/the-160-000-mechanic-job-that-ford-cant-fill-fe6fd121>.

Most credentials do not lead to meaningful or lasting earnings gains.

Only 12% of more than 23,000 certificates analyzed lead to material wage gains—meaning 88% of credentials do not produce significant earnings increases beyond what holders would have experienced without the credential.

- *Source:* Matt Sigelman, Mark Schneider, Shrinidhi Rao, Scott Spitze, and Debbie Wasden, *Holding Credentials Accountable to Outcomes: We Need Evidence-Based Funding Models*, Burning Glass Institute and American Enterprise Institute, June 2025, <https://www.burningglassinstitute.org/research/holding-credentials-accountable-to-outcomes>. See also: Credential Value Index, <https://www.credentialvalueindex.org/#cvi>.

More than half of employed adults whose highest credential is a short-term certificate earn \$30,000 or less per year—below the federal poverty line for a family of four. The highest concentration (18%) earns \$10,000 or less annually. Roughly 40% of adults with only a short-term certificate are not employed.

- *Source:* Monique O. Ositelu, "Five Things Policymakers Should Know About Short-Term Credentials," *New America*, March 2021, <https://www.newamerica.org/education-policy/reports/five-things-policy-makers-should-know-about-short-term-credentials/>.

The national postsecondary attainment rate has risen from 38% in 2008 to 54.9% in 2023, but under Lumina's updated "credentials of value" standard—which counts only credentials whose holders earn at least 15% more than the median high school graduate—just 43.6% of working-age adults hold credentials of value. The gap between this figure and the 54.9% overall attainment rate reveals that more than one in five credential holders does not earn a meaningful wage premium. Among credential types, 70% of bachelor's degree holders meet the earnings benchmark, compared to 54% of associate's degree holders and 55% of certification holders. Attainment rates remain markedly lower for Black, Hispanic, Native American, and rural Americans.

- Source: Lumina Foundation, "Credentials of Value," *A Stronger Nation*, 2025, <https://strongernation.luminafoundation.org/credentials-of-value>. See also: Lumina Foundation, "Lumina Releases Initial Data Tracking Whether Nation Educated, Trained for Economic Prosperity," February 5, 2026, <https://www.luminafoundation.org/news-and-views/lumina-releases-initial-data-tracking-whether-nation-educated-trained-for-economic-prosperity/>.

In half of the nation's 565 local labor markets, at least 50% of all certificates and associate's degrees would need to be granted in different fields to align with projected demand through 2031—and one-quarter of labor markets would need to redistribute more than 60%. Twenty-eight percent of all middle-skills credentials awarded nationally have no direct occupational match; over 90% of these are in liberal arts, general studies, and humanities, and only 42% of completers in those fields transfer to four-year institutions within six years.

- Source: Jeff Strohl, Zachary Mabel, and Kathryn Peltier Campbell, *The Great Misalignment: Addressing the Mismatch between the Supply of Certificates and Associate's Degrees and the Future Demand for Workers in 565 U.S. Labor Markets*, Georgetown University Center on Education and the Workforce, May 2024, <https://cew.georgetown.edu/cew-reports/greatmisalignment/>.

Short-term earnings gains from career pathways programs were minimal—a 6% increase within three years of program completion—across 46 impact evaluations. After three years, there was no meaningful difference in earnings between program participants and comparison groups, with both earning just over \$10,000 per quarter.

- Source: Laura R. Peck et al., *A Meta-Analysis of 46 Career Pathways Impact Evaluations*, U.S. Department of Labor, 2022, https://www.dol.gov/sites/dolgov/files/ETA/publications/ETAOP2022-04_A%20Meta-Analysis%20of%2046%20Career%20Pathways%20Impact%20Evaluations_final%20report.pdf.

Accumulating job-irrelevant credentials produces either no wage gains or a wage penalty, and badge accumulation can actually hurt wages for some groups. Yet workers cannot easily distinguish rigorous certifications from low-stakes participation badges, and the same credential can be extremely valuable in one occupation and worthless in another, a distinction invisible to most learners at the point of enrollment.

- Source: Eduardo Levy Yeyati, Ian Seyal, and Sophia Henn, *The Market Value of Non-Degree Credentials*, Brookings Institution Working Paper 196, December 2025, <https://www.brookings.edu/articles/the-market-value-of-non-degree-credentials/>.

Noncredit credentials and nondegree programs are associated with higher earnings than having no postsecondary education, but lower earnings than holding a degree. Earnings outcomes vary sharply by field and gender: credentials in male-dominated fields provide a wage boost of nearly \$20,000 over adults with no credential, while female-dominated fields show little to no wage premium.

- Source: Michelle Van Noy, Sam Scovill, and Nicole Sandelier Boyd, *Review of Recent Research on Noncredit Outcomes*, Education and Employment Research Center, Rutgers University, 2024, https://smlr.rutgers.edu/sites/default/files/Documents/Centers/EERC/Review%20of%20Noncredit%20Outcomes_EERC_1.4.24.pdf. See also: Clive Belfield and Thomas Bailey, *Labor Market Returns to Sub-Baccalaureate College: A Review*, Community College Research Center, March 2017, <https://ccrc.tc.columbia.edu/wp-content/uploads/2017/03/labor-market-returns-sub-baccalaureate-college-review.pdf>.

Sixty-nine percent of nondegree credentials offer minimal value to workers even when evaluation looks beyond wages to account for career mobility and field entry. Wage-only metrics miss 21% of credentials that deliver value through other channels, but even this expanded definition of value still leaves a substantial majority of credentials failing to produce meaningful returns.

- Source: Stuart Andreason, Shrinidhi Rao, Scott Spitze, and Debbie Wasden, *Measuring What Matters: A New Framework for Evaluating Non-Degree Credential Quality*, Burning Glass Institute, February 2026, <https://www.burningglassinstitute.org/research/measuringwhatmatters>.

Two years after completing credit-bearing community college workforce programs less than one year in duration, completers had median annual earnings of \$32,000.

- Source: Davis Jenkins, John Fink, Tatiana Velasco, and Daniel March, "Community College Awards for Post-Completion Success Dashboard," Community College Research Center, <https://ccrc.tc.columbia.edu/dashboard/community-college-awards-for-post-completion-success.html>.

Entry-level manufacturing roles available after community college certificate completion— assembler and operator positions—pay wages only marginally better than retail or service jobs, and employers described certificate holders as having only a marginal advantage over high school graduates competing for the same positions. College personnel were more likely to describe certificate programs as designed to "spark interest" or help students "get their foot in the door" than as pathways to family-sustaining wages, while graduates expected the credential would lead directly to a quality job.

- Source: Mina Dadgar, Francie Genz, Terra Thorne, and Dina Buck, *Making Every Rung of the Credential Ladder Count: Understanding How Community College Certificates Can Meet Learner Expectations for Economic Mobility*, Education Equity Solutions, September 2024, <https://www.edequitysolutions.com/every-rung-of-the-credential-ladder-counts>.

Of the 1.425 million community college credentials awarded nationally in 2022–23, approximately 562,000 (39%) have questionable post-completion value: roughly 300,000 liberal/general studies transfer associate's degrees with poor field alignment, 122,000 general education certificates with no transfer or employment value, and 140,000 workforce credentials with median earnings well below \$35,000 per year. Median earnings two years after completion for common credentials include early childhood education certificates (\$18,000), cosmetology certificates (\$21,000), liberal or general studies associate's degrees (\$24,000), and business administration associate degrees (\$24,500).

- Source: Davis Jenkins, John Fink, and Tatiana Velasco, *Which Community College Awards Are Likely to Prepare Students for Post-Completion Success?*, Community College Research Center, Teachers College, Columbia University, April 2025, <https://ccrc.tc.columbia.edu/wp-content/uploads/2025/04/Which-Community-Colleges-Awards-Are-Likely-to-Prepare-Students-for-Post-Completion-Success-V5.pdf>.

In a randomized controlled trial of the federal Workforce Investment Act's Adult and Dislocated Worker programs—the largest experimental evaluation of U.S. public workforce training—participants who received the full suite of services, including vocational training, showed no statistically significant earnings gains over those who received only basic job-search assistance at 30 months. Dislocated workers who received full services actually earned several thousand dollars less than the comparison group.

- Source: Kenneth Fortson et al., *Providing Public Workforce Services to Job Seekers: 30-Month Impact Findings on the WIA Adult and Dislocated Worker Programs*, Mathematica Policy Research, 2017,

<https://www.dol.gov/agencies/eta/research/publications/providing-public-workforce-services-job-seekers-30-month-impact>.

Young workers ages 25–34 with bachelor's degrees had median annual earnings of \$66,600 in 2022, compared to \$49,500 for associate's degree holders—a 35% premium. The bachelor's-to-associate's earnings gap widened from \$13,400 in 2012 to \$17,100 in 2022, and this pattern has held every year for more than a decade.

- Source: National Center for Education Statistics, "Annual Earnings by Educational Attainment," *Condition of Education*, U.S. Department of Education, Institute of Education Sciences, 2024, <https://nces.ed.gov/programs/coe/indicator/cba/annual-earnings>.

Adults with associate's degrees and nondegree credentials reported median earnings around \$50,000 per year—more than high school graduates (\$32,000) but far less than adults with a bachelor's degree (\$75,000). About three-in-five workers with nondegree credentials or associate's degrees are satisfied with their jobs, compared to seven-in-ten adults with a bachelor's degree or higher.

- Source: Fierce Education, "Non-Degree Programs Gain Momentum Among College Graduates," August 3, 2021, <https://www.fierce-network.com/administration/non-degree-programs-gain-momentum-among-college-graduates>.

Average earnings gains from community college noncredit occupational training—the type of short-term program Workforce Pell would expand access to—are roughly \$2,000 per year (about 4%) within two years, based on an analysis of 128,000 students in Texas. Average gains for women are a fraction of the gains for men, a disparity not entirely explained by differences in fields of study.

- Source: Peter Riley Bahr and Rooney Columbus, "Labor Market Returns to Community College Noncredit Occupational Education," *Educational Evaluation and Policy Analysis*, November 2025, <https://doi.org/10.3102/01623737251360029>.

For 25 million adults with "some college, no award," the earnings advantage commonly attributed to postsecondary education disappears entirely when controlling for foundational literacy skills. Without skills controls, the earnings premium over high school graduates was 8.6%; with literacy controls, it dropped to 4.6% and was no longer statistically significant. Certificates showed zero earnings premium over "some college, no award" after controlling for skills, while field of study mattered enormously: engineering/science majors earned 18.7% more and health majors 17.4% more than education/humanities/social sciences majors.

- Source: Neeta Fogg, Paul Harrington, Ishwar Khatiwada, Irwin Kirsch, and Anita Sands, *Skills, Earnings, and Employment of Americans with Postsecondary Education Below the Bachelor's Degree*, Educational Testing Service, September 2023, <https://www.ets.org/pdfs/rd/skills-earnings-employment-americans-postsecondary-education-bachelors-degree.pdf>.

About 44% of postsecondary institutions have graduates earning at least a \$10,000 premium over workers with only a high school education, and those are disproportionately institutions awarding bachelor's degrees. About 8% of institutions failed to bring their typical graduate above 150% of the poverty line. Institutions offering only certificates were the least likely to provide an earnings premium, with short-term programs in fields like cosmetology and massage therapy showing especially poor returns.

- Source: Michael Itzkowitz, *Ensuring a Living Wage Through Higher Education*, HEA Group, February 2024, <https://www.theheagroup.com/blog/ensuring-a-living-wage-through-higher-education>. See also: Elyse Ashburn, "New Research Adds to the Complex Story on College ROI," *Work Shift*, February 22, 2024, <https://workshift.org/new-research-adds-to-the-complex-story-on-college-roi/>.

Among California's 327 community and career colleges, 45% of private nonprofit and for-profit institutions provide no economic return on investment at all, and access to high-value options varies sharply by region: 38% of Bay Area institutions deliver ROI in under a year, compared to just 6% in the Inland Empire. Only 5% of private institutions enable students to recoup costs within a year, compared to 40% of public colleges.

- Source: College Futures Foundation and The HEA Group, *Golden Returns: A Regional Look at the Return on Investment of California's Community and Career Colleges*, 2025, <https://collegefutures.org/golden-returns-2-year-roi/>.

Most credentials earned by high school students are ineffective at opening doors to good jobs.

High school students account for 45% of all certifications reported by states, making K-12 the single largest pipeline for nondegree credentials. Yet certification bodies face no mandate to report outcomes, and few have the resources to do so—meaning the credential type most commonly earned in high school settings is also the one for which the least outcome data exists.

- Source: Isabel Cardenas-Navia, "Certification Bodies Need Incentives to Collect & Share High-Quality Data," *Workcred*, April 13, 2022, <https://blog.ansi.org/workcred/certification-bodies-incentives-share-data/> and Isabel Cardenas-Navia, "Certification Bodies are Well-Positioned to Link Data and Deepen Understanding of ROI of Certifications," *Workcred*, January 11, 2021, <https://blog.ansi.org/workcred/certification-bodies-link-data-roi/>.

High school career credential attainment has tripled in some states over the last few years, but massive mismatches exist between the credentials students are earning and what employers actually seek. Students earn huge numbers of OSHA safety certificates, CPR certifications, and retail customer service credentials that few employers request, rather than the credentials employers do want, such as Microsoft Office Specialist certifications and nursing licenses. Over a quarter of all high school career credentials provide only general workplace readiness skills—digital literacy, financial literacy, safety awareness—which employers do not typically rely on credentials to assess. States vary greatly in how well they research a credential's value before steering schools and students toward them. Not a single state closely aligns the credentials schools offer to employer demand, and just 16 states are even moderately aligned.

- Source: Patrick O'Donnell, "Credential Chaos: Career Certificates Boom in High School, But Not All Have Value," *The 74*, September 18, 2025, <https://www.the74million.org/article/credential-chaos-career-credentials-boom-in-high-school-but-not-all-have-value/>.

Only 18% of all credentials earned by high school students are in demand among employers. Eight of the top 10 information technology credentials earned by high school students appeared in not a single job posting for positions paying \$15 per hour or more. Only 1% of business credentials earned by high school students are in demand among employers. Additionally, 27% of industry-recognized credentials earned by high school students are not aligned to specific occupations or industries, focusing instead on general career readiness.

- Source: ExcelinEd and Burning Glass Technologies, *Credentials Matter Phase 2: A 2020 Update on Credential Attainment and Workforce Demand in America*, September 2020, https://excelined.org/wp-content/uploads/2020/11/ExcelinEdBurningGlassTechnologies.CredentialsMatter.Phase2_Report.September2020.pdf. See also: Credentials Matter, "Data Exploration," <https://credentialsmatter.org/data-exploration/in-which-career-clusters-are-students-earning-credentials/none/>.

Industry-recognized credentials (IRCs) are only weakly associated with short-term employment gains, and only a few specific credentials—in cosmetology, transportation, and health science—were positively correlated with earnings increases. Those benefits were concentrated among students who entered the workforce directly rather than attending college. For half of IRC fields, fewer than 5% of students went on to work in a related career, and misalignment between IRCs and later college majors was similarly high: public safety was the only field where more than one-third of college-going IRC earners pursued an aligned major.

- Source: Matt Giani, *How Attaining Industry-Recognized Credentials in High School Shapes Education and Employment Outcomes*, Thomas B. Fordham Institute, August 2022, <https://fordhaminstitute.org/national/research/industry-recognized-credentials>.

IRCs are associated with modest wage gains overall, but only when aligned with both CTE coursework and regional labor market demand. Students with aligned IRCs earned significantly more and were more likely to obtain postsecondary credentials in high-demand fields than students with misaligned certifications. Misaligned IRCs yielded lower earnings and no increased likelihood of pursuing postsecondary education among high school graduates who entered the workforce directly. Only IRCs aligned with both coursework and local demand produced significantly higher wages and greater probability of earning postsecondary credentials in high-demand fields.

- Source: Jacob Kirksey, Jennifer Freeman, Angela Crevar, Braden Reed, and Rachel Martin, *The Value of Alignment: How Do Industry-Based Certifications Impact Texas High School Graduates Entering the Workforce?*, Center for Innovative Research in Change, Leadership, and Education, Texas Tech University, 2025, <https://hdl.handle.net/2346/103789>.

As IRC attainment rates rose, the rate of alignment between students' certifications and their CTE coursework simultaneously declined—suggesting schools are using credential attainment as a superficial way to meet college-and-career-readiness policy requirements rather than to deepen technical preparation. School-level factors, not student characteristics, explain the overwhelming majority of variation in whether credentials align with coursework, indicating this is an institutional response to accountability pressure rather than a student-driven phenomenon.

- Source: Matt S. Giani, Madison E. Andrews, Tasneem Sultana, and Fortunato Medrano, "Curricular-Credential Decoupling: How Schools Respond to Career and Technical Education Policy," EdWorkingPaper 25-1128, Annenberg Institute at Brown University, January 2025, <https://doi.org/10.26300/he7x-3a63>.

Among the top 20 most popular IRCs earned by Texas high school students, representing 78% of all certifications earned, six showed no significant associations with workforce or college enrollment outcomes—including the two most popular credentials: Microsoft Word certification and the floral skills exam. Between 2017 and 2023, Texas students earned over 800,000 IRCs with direct exam costs exceeding \$20 million, not including state bonus investments totaling \$186 million in 2021 and \$197 million in 2022. CTE teachers reported that IRCs "dampen the value of CTE" by shifting time away from hands-on learning to test preparation, and described being forced to "sugarcoat" credential value to

students while school leadership tracked numbers and expected programs "to be doing better every year."

- Source: Madison E. Andrews, Kaitlin Ogden, and Matt Giani, "Weighing the Value of Industry-Based Certifications Against Their Costs," *NASBE State Education Standard*, January 2026, <https://www.nasbe.org/weighing-the-value-of-industry-based-certifications-against-their-costs/>.

There are indications that some of Ohio's urban school districts are routing low-achieving students into bundles of IRCs—such as OSHA safety certificates, CPR training, and National Incident Management System certifications—to accumulate enough "graduation points" to earn diplomas. Of the 141,000 approved industry credentials Ohio students earned in one recent year, only 16% appeared on the state's own list of in-demand workforce credentials. The pattern recreates the tracking dynamics of the old vocational-technical system, in which low-income and minority students were placed in programs with minimal career value.

- Source: Aaron Churchill, "Bad Old Vo-Tech Ways Return in Ohio's Urban Districts," Thomas B. Fordham Institute, February 13, 2025, <https://fordhaminstitute.org/ohio/commentary/bad-old-vo-tech-ways-return-ohios-urban-districts>.

Despite growing interest in microcredentials in K-12 education, there is little evidence that these credentials are useful in securing employment. Employer reluctance is especially pronounced for "durable skills" credentials; when Indiana piloted classroom-based employability skills badges, employers said they did not trust skill development happening in the K-12 space and that applied, workplace settings were the only credible context for those skills. In addition, significant hurdles to scaling high-quality microcredentialing exist, including uneven quality, a dearth of accountability, and a lack of rigorous evidence to support the credentials' value.

- Source: Anne Kim, *Skill Building: The Emerging Micro-Credential Movement in K-12 Education*, FutureEd, Georgetown University, May 2025, <https://www.future-ed.org/wp-content/uploads/2025/05/Skill-Building-The-Emerging-Micro-Credential-Movement-in-K-12-Education.pdf>.

While few IRCs earned by high school students lead to positive employment outcomes, some IRCs are linked to positive academic and postsecondary education outcomes.

Florida high school students who earned certifications had higher rates of immediate enrollment at two-year colleges and higher rates of associate's degree completion than their peers who did not earn IRCs—though few individual career clusters showed positive postsecondary outcomes relative to other clusters. A follow-up quasi-experimental study of nearly 900,000 Florida public high school students found that earning a certification had a meaningful influence on on-time high school graduation, with stronger effects for students who were at risk of dropping out or were economically disadvantaged.

- Source: Elizabeth J. Glennie, Randolph Ottem, and Erich Lauff, "The Influence of Earning an Industry Certification in High School on Going to College: The Florida CAPE Act," *Journal of Career and Technical Education* 35, no. 1 (2020): 17–35, <https://journalcte.org/articles/10.21061/jcte.v35i1.a2>. See also: Elizabeth Glennie, Ben Dalton, Roger Studley, and Erich Lauff, "The Influence of Earning Industry Certifications on High School Graduation: Evidence from Florida," *Educational Policy*, 2025, <https://doi.org/10.1177/08959048241292625>.

Earning an industry certification in high school is associated with postsecondary enrollment and degree attainment in Florida, but outcomes depend on timing. Among two cohorts of first-time 9th graders, students who earned certifications earlier (9th–10th grade) were more likely to enroll at four-year institutions, while later earners (11th–12th grade) were more closely associated with two-year college enrollment—suggesting early certification may function as an exploratory on-ramp, while later certification channels students toward more immediate workforce training.

- Source: Elizabeth Glennie, Erich Lauff, Roger Studley, and Ben Dalton, "Pathways to Credentials: Does the Timing of Earning an Industry Certification in High School Influence Postsecondary Educational Outcomes?" *Journal of Research in Technical Careers* 7, no. 1, 2023, <https://doi.org/10.9741/2578-2118.1119>.

Among Texas high school students, health science IRCs were the most strongly associated with increased college enrollment, and health science was among the few IRC fields where college-going IRC earners pursued aligned postsecondary majors at meaningful rates. However, these educational benefits were concentrated in a small number of career clusters; for most IRC fields, fewer than 5% of college-going earners enrolled in an aligned major.

- Source: Matt Giani, *How Attaining Industry-Recognized Credentials in High School Shapes Education and Employment Outcomes*, Thomas B. Fordham Institute, August 2022, <https://fordhaminstitute.org/national/research/industry-recognized-credentials>.

Indiana's Core Transfer credential (ICC), a general education transfer certificate introduced in 2014, is associated with 29% bachelor's degree attainment within four years—compared to 11% for occupational long-term certificates. The ICC is not an occupational credential; it is designed for college transfer. By 2021, it accounted for 24% of all Indiana certificates, with 38% earned by high school students.

- Source: Melanie A. Zaber, Brian Phillips, and Lindsay Daugherty, *Examining Short-Term Credentials and Student Outcomes in Indiana*, RAND Corporation, 2025, https://www.rand.org/content/dam/rand/pubs/research_reports/RRA3400/RRA3407-1/RAND_RRA3407-1.pdf.

A correlational study of CTE high school students in Louisiana found a positive relationship between completing CTE courses with industry-recognized credentials and self-efficacy toward employment, specifically on measures of perseverance and performance. However, all students—regardless of IRC attainment—exhibited high mean self-efficacy scores, suggesting that CTE course-taking itself, not just credential receipt, may contribute to students' confidence in their ability to pursue employment.

- Source: Jayda G. Spillers and Myra Lovett, "Do They Feel Ready? Self-Efficacy of Career and Technical Education High School Students," *Research Issues in Contemporary Education*, Fall–Winter 2022, <https://eric.ed.gov/?id=EJ1344352>.

Anecdotal evidence from early K–12 microcredentialing pilots suggests that competency-based badging frameworks—particularly for academic content—can improve student engagement and achievement, especially among students who previously struggled. Microcredentials may also function as mechanisms for career exploration rather than direct workforce entry. However, several microcredentialing pilots have been discontinued due to low participation and lack of measurable impact. In one such pilot, only 16% of eligible students earned badges over three years, and researchers found no statistically significant differences between badge earners and non-earners on test scores, attendance, or disciplinary referrals. No rigorous evaluations showing that microcredentials improve K–

12 learner outcomes on metrics such as graduation rates, college attendance, wages, or employment exist.

- Source: Anne Kim, *Skill Building: The Emerging Micro-Credential Movement in K-12 Education*, FutureEd, Georgetown University, May 2025, https://www.future-ed.org/wp-content/uploads/2025/05/Skill-Building_The-Emerging-Micro-Credential-Movement-in-K-12-Education.pdf.

Credentials have proliferated rapidly and without evidence to justify the scale of investment.

Between 2022 and 2025, the number of nondegree credentials grew by 96%, from approximately 782,000 to over 1.5 million. The number of credentials is growing nearly nine times faster than the number of traditional degrees. As of 2025, the United States had 1,850,034 unique credentials provided by 134,491 credential providers, with \$2.34 trillion spent annually on credential delivery and attainment.

- Source: Credential Engine, *Counting Credentials 2025*, December 2025, <https://credentialengine.org/wp-content/uploads/2025/12/Counting-Credentials-2025-Report.pdf>.

Thirty-four states have collectively invested over \$8 billion to date in short-term credentials, spanning 111 distinct programs that include student aid, capacity-building grants, innovation funds, and data infrastructure.

- Source: HCM Strategists, *A 2025 Update on Short-Term Credential Pathways*, December 2025, <https://hcmstrategists.com/news-updates/new-insights-for-2025-how-states-are-funding-and-expanding-short-term-credential-pathways>.

The number of sub-baccalaureate certificates conferred by institutions of higher education has grown by 89% over the last two decades, and the rate of growth has been even greater among non-academic credential providers.

- Source: Anna Crockett, Emily Ryder Perlmeter, and Xiaohan Zhang, "Short-term credentials meet growing interest among students, employers," Federal Reserve Bank of Dallas, March 6, 2024, <https://www.dallasfed.org/cd/communities/2024/2402>.

Enrollment in short-term credential programs grew 6.6% in fall 2025—far outpacing associate's degrees (3.1%) and bachelor's degrees (1.2%). Community college enrollment rose 4% overall.

- Source: Johanna Alonso, "Enrollment Growth Continues, Bolstered by Short-Term Credentials," *Inside Higher Ed*, November 11, 2025, <https://www.insidehighered.com/news/admissions/traditional-age/2025/11/11/short-term-credentials-bolster-enrollment-boom>.

Community colleges increased short-term credential awards by 27% between 2017–18 and 2023–24, while associate's degree awards fell 4% over the same period—from 838,000 to 805,000. By 2023–24, community colleges conferred 1.52 million credentials to 1.14 million students, averaging 1.34 credentials per student.

- Source: Kent Phillippe, "DataPoints: An Increase in Short-Term Credentials," *Community College Daily*, October 20, 2025, <https://www.ccdaily.com/2025/10/datapoints-an-increase-in-short-term-credentials/>.

Nearly half of adults with a college degree also hold a nondegree credential. Adults combining an associate's degree with a nondegree credential rated their education substantially higher than those with a degree alone—70% said the combination made them an attractive job candidate versus 43% of those with the degree only.

- Source: Fierce Education, "Non-Degree Programs Gain Momentum Among College Graduates," August 3, 2021, <https://www.fierce-network.com/administration/non-degree-programs-gain-momentum-among-college-graduates>.

In the last five years, 34 states have passed 92 laws related to industry-recognized credentials in career and technical education (CTE), and national secondary CTE credential attainment has grown rapidly: from 227,765 students (36.9% of CTE concentrators) in 2021 to 400,136 (51%) in 2023. State-by-state attainment rates vary greatly—from 98% in Washington and 85% in Alabama to 12% in Michigan and 19% in Delaware—reflecting differences in state approval criteria rather than actual quality differences. States that provide direct financial bonuses based on credential attainment rates report that these incentives create political pressure from vendors to approve low-value credentials and pressure from educators when credentials don't meet quality thresholds, leading to what some describe as "random acts of credentialing."

- Source: Advance CTE, *The State of Career Technical Education: Credentials of Value*, 2025, https://careertech.org/wp-content/uploads/2025/09/StateofCTE_Credentials_2025_FullReport.pdf.

Only four states use outcomes measures (rather than input measures such as credential attainment) for career readiness in their K-12 accountability systems, making it impossible in 46 states to assess whether credentials lead to longer-term success.

- Source: Anne Hyslop, *Let's Measure Ready*, All4Ed and the Urban Institute, July 2025, https://all4ed.org/wp-content/uploads/2025/07/Final_Lets_Measure_Ready.pdf.

The number of states that incorporate career readiness indicators in their K-12 accountability systems grew from 14 in 2014 to 43 in 2024, with more than half prioritizing industry-recognized credentials. As of 2023, 16 states use IRC receipt as an indicator in their ESSA plans, and 22 states chose IRC attainment as their Perkins quality indicator.

- Source: Scott Cheney, "The Role of State Boards in Making Credentials' Value Transparent," *NASBE State Education Standard*, January 2026, <https://www.nasbe.org/the-role-of-state-boards-in-making-credentials-value-transparent/>.

The extraordinary growth of U.S. credentialing has been driven not by functional demand for skilled workers, but by competition for social status: as individuals pursued credentials to distinguish themselves in the labor market and access expanded, the value of each credential eroded—producing escalating demand for more and higher credentials. This dynamic of positional competition makes credential expansion self-perpetuating rather than self-correcting.

- Source: David F. Labaree, foreword to David K. Brown, *Degrees of Control: A Sociology of Educational Expansion and Occupational Credentialism* (New York: Teachers College Press, 1995). Reproduced at <https://davidlabaree.com/2020/06/29/credentialing-theory-on-the-extraordinary-growth-in-us-higher-ed-in-the-19th-century/>.

Workforce Pell expands federal investment in short-term credentials without resolving quality concerns.

Nearly half of the short-term credentials that were already eligible for Pell funding prior to the passage of Workforce Pell (which lowered the minimum eligible program length from 15 weeks to 8) leave graduates earning less than a typical worker with only a high school diploma, adding up to approximately 175,000 students per year who spend time and money but end up worse off. Credentials under one year do not improve outcomes for men and only marginally help women find year-round employment.

- *Source:* Rachel Fishman, "Short-Term Pell Already Exists," New America, Education Policy Program, April 2024, <https://www.newamerica.org/education-policy/edcentral/short-term-pell-already-exists/>.

Expanding Pell Grants to cover short-term credentials substantially increased enrollment (by 15–26 percentage points) and completion (by 9–17 percentage points), but produced no labor market gains for learners. Across two experiments covering 2,684 students at 46 colleges, employment and earnings 3–5 years after expected completion showed no differences between those offered Pell Grants and those not offered the grants. Students offered Pell Grants had slightly lower average earnings than those not offered, though the differences were not statistically significant.

- *Source:* Jaime Thomas, Naihobe Gonzalez, Breyon Williams, Andrew Wiegand, Nora Paxton, Jensen Hu, and Leela Hebbar, *The Effects of Expanding Pell Grant Eligibility for Short Occupational Training Programs: New Results on Employment and Earnings from the Experimental Sites Initiative*, National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education, November 2024, <https://www.luminafoundation.org/wp-content/uploads/2024/12/The-Effects-of-Expanding-Pell-Grant-Eligibility-for-Short-Occupational-Training-Programs.pdf>.

Federal requirements for Workforce Pell set a low bar for earnings. The value-added earnings metric used to determine Workforce Pell program eligibility compares program completers' earnings to just 150% of the federal poverty line, which works out to \$11.30 an hour for a full-time worker in 2025—less than the minimum wage in 26 states. If used as the threshold for wages, the value-added earnings metric has the potential to leave learners and workers worse off than they were before enrolling in a short-term program. The federal statute also requires that eligible programs align to high-skill, high-wage, OR in-demand industries and occupations, but meeting just one of these three standards is no guarantee of positive outcomes. Credentials aligned to high-skill or high-wage industries are unlikely to lead to employment if they aren't also in demand, and demand alone can be a sign of low-quality jobs with high turnover.

- *Source:* Charlotte Cahill, *Fulfilling the Promise of Workforce Pell: Why We Need State Leadership*, All4Ed, 2025, <https://all4ed.org/state-policy-center-fulfilling-the-promise-of-workforce-pell-why-we-need-state-leadership/>.

The Congressional Budget Office estimates the Workforce Pell Grant program will add approximately \$298 million in mandatory federal spending on short-term credentials over 10 years, with about 100,000 new recipients annually receiving roughly \$2,200 each. Some independent analysts project actual costs at \$2 billion to \$6 billion or more, noting that when Congress expanded Pell eligibility year-round in 2008, actual costs were ten times higher than CBO's initial estimate.

- *Source:* Congressional Budget Office, "Reconciliation Recommendations of the House Committee on Education and Workforce," May 2025, <https://www.cbo.gov/publication/61412>. *See also:* Committee for

a Responsible Federal Budget, "Pell Grant Program Still Faces Large Shortfall, Despite One-Time Fix," December 2025, <https://www.crfb.org/blogs/pell-grant-program-still-faces-large-shortfall-despite-one-time-fix>.

Workforce Pell implementation is likely to be a challenge for states. For example, only about 4% of North Carolina's short-term credential programs are expected to meet Workforce Pell's eligibility requirements.

- Source: Analisa Sorrells Archer, "NC Workforce Pell: Only a Fraction of Programs Expected to Qualify," *The 74*, February 2026, <https://www.the74million.org/article/nc-workforce-pell-only-a-fraction-of-programs-expected-to-qualify/>.

We lack the data systems needed to fully understand the outcomes of credentials.

No consensus exists on how to define or evaluate credential quality, and many states lack the data systems to monitor the short-term credential programs they fund. As Workforce Pell introduces new federal dollars, states may struggle to distinguish high-value programs from those that leave students worse off.

- Source: Phil Oliff, "How Will Workforce Pell Change Student Decisions About Nondegree Credentials?" *Work Shift*, February 9, 2026, <https://workshift.org/how-will-workforce-pell-change-student-decisions-about-nondegree-credentials/>.

About three-quarters of states collect noncredit community college data at the state level, but this data is not always standardized, and basic information such as program duration and field of study can be unclear.

- Source: Mark M. D'Amico and Michelle Van Noy, "Workforce Pell for Community College Noncredit Education: How Well Positioned is the State Noncredit Data Infrastructure?" *Community College Journal of Research and Practice*, August 2025, <https://www.tandfonline.com/eprint/4MJP3QJEHQZBPNZHJYJ6/full?target=10.1080/10668926.2025.2546361>.

An estimated 4.1 million community college students—roughly 40% of enrollment—are in noncredit programs that fall outside traditional data collection systems, and colleges are not required to report noncredit enrollment or outcomes to IPEDS. State data systems vary dramatically in how they define and track noncredit offerings, and in some states, more than half of noncredit enrollments lack basic demographic data such as race and ethnicity.

- Source: Michelle Van Noy, Mark D'Amico, Eliza K. Peterson, Justin Vinton, Tom Hilliard, Anjali Srivastava, Di Xu, and Peter Riley Bahr, *State Noncredit Data Infrastructure Cross-State Report*, Education and Employment Research Center, Rutgers University, November 2024, https://sites.rutgers.edu/state-noncredit-data/wp-content/uploads/sites/794/2025/06/SNDP_Cross-State-Report_11.2024_2.pdf. See also: Katherine Hughes and Michelle Van Noy, *Four Things We Need to Know About Community College Noncredit Workforce Programs*, Education and Employment Research Center, Rutgers University, May 2025, https://www.luminafoundation.org/wp-content/uploads/2025/07/Four.things.we_need_to_know.pdf.

Very few rigorous studies of noncredit education and nondegree credential outcomes exist, and most are descriptive—unable to control for confounding variables like prior education or work experience. Causal analyses of whether credentials improve earnings remain rare because the data needed to conduct them are usually unavailable.

- *Source:* Michelle Van Noy, Sam Scovill, and Nicole Sandelier Boyd, *Review of Recent Research on Noncredit Outcomes*, Education and Employment Research Center, Rutgers University, January 2024, https://smlr.rutgers.edu/sites/default/files/Documents/Centers/EERC/Review%20of%20Noncredit%20Outcomes_EERC_1.4.24.pdf.

Certifications are the most common nondegree credential—representing 54% of all nondegree credentials reported by states—yet no centralized source of data on certification outcomes exists. Certification bodies typically collect only names, face no government mandate to report outcomes, and few have the resources to track employment or wages.

- *Source:* Isabel Cardenas-Navia, "Certification Bodies Need Incentives to Collect & Share High-Quality Data," Workcred, April 13, 2022, <https://blog.ansi.org/workcred/certification-bodies-incentives-share-data/> and Workcred, "Obtaining Outcomes Data for Certifications and Other Credentials," n.d., <https://workcred.org/Our-Work/Obtaining-Outcomes-Data-for-Certifications-and-Other-Credentials.aspx>.

Only eight states have data systems capable of linking industry-recognized credential attainment to wage outcomes, and fewer than half consider occupational demand or wage data when approving credentials for inclusion in CTE programs. States are three times more likely to rely on educator recommendations than outcomes data. Twenty-five states do not connect credential data to state student information systems, 84% have no data-sharing agreements with credential vendors, and 13 states have not removed any credentials from their approved lists in the past five years.

- *Source:* Advance CTE, *The State of Career Technical Education: Credentials of Value*, 2025, https://careertech.org/wp-content/uploads/2025/09/StateofCTE_Credentials_2025_FullReport.pdf.

In several states, noncredit community college programs are funded outside traditional higher education appropriations and excluded from standard FTE funding formulas. This separate funding stream places noncredit programs outside the accountability, data reporting, and oversight structures that govern credit-bearing programs.

- *Source:* Laura Ullrich, "How Community Colleges Meet the Needs of Students and Employers via Non-Credit Programs," Fed Communities (Federal Reserve Bank of Richmond), August 21, 2024, <https://fedcommunities.org/how-community-colleges-meet-needs-students-employers-via-non-credit-programs/>.

A federal amendment to the 2008 Higher Education Act reauthorization prevents the creation of a national student-level data system, and most state education and workforce data systems remain siloed. Few evaluations of college-to-career interventions follow students into employment or measure success through employer-side metrics like retention or return on investment.

- *Source:* David Deming, Joseph B. Fuller, Rachel Lipson, Kerry McKittrick, Ali Epstein, and Emma Catalfamo, *Delivering on the Degree: The College-to-Jobs Playbook*, Project on Workforce at Harvard University, 2023, <https://college-to-jobs-initiative.netlify.app/college-to-jobs-playbook.pdf>.

Not all states have the statewide longitudinal data systems needed to link education and workforce data to understand wage and employment outcomes for credential holders.

- Source: Education Commission of the States, *50-State Comparison: Statewide Longitudinal Data Systems 2024*, 2024, <https://www.ecs.org/50-state-comparison-statewide-longitudinal-data-systems-2024/>.

All approved programs under federal accountability measures report completion and job placement rates that easily clear the "70-70 rule" threshold (70% completion rate and 70% job placement rate). However, completion and job placement rates are unlikely to be effective metrics without further definition and guidance about what constitutes meaningful outcomes.

- Source: Stephanie Riegg Cellini and Kathryn J. Blanchard, "Quick College Credentials: Student Outcomes and Accountability Policy for Short-Term Programs," Brookings Institution, July 22, 2021, <https://www.brookings.edu/articles/quick-college-credentials-student-outcomes-and-accountability-policy-for-short-term-programs/>. See also: Stephanie Riegg Cellini, *Workforce Pell: Expensive for Taxpayers and Risky for Students*, Postsecondary Education and Economics Research Center, May 2025, https://www.american.edu/spa/peer/upload/workforce-pell_rpt_final.pdf.

At least 16 states use industry-based certification receipt as an indicator of college-and-career readiness in their ESSA accountability plans, and at least 22 states use it as a core Perkins V indicator—yet no study had previously examined whether the certifications students earn are even aligned with their coursework. When Texas's statewide data was analyzed, certification rates had risen dramatically while alignment with CTE coursework declined, revealing that accountability systems are rewarding credential attainment without verifying whether credentials reflect substantive technical preparation.

- Source: Matt S. Giani, Madison E. Andrews, Tasneem Sultana, and Fortunato Medrano, "Curricular-Credential Decoupling: How Schools Respond to Career and Technical Education Policy," EdWorkingPaper 25-1128, Annenberg Institute at Brown University, January 2025, <https://doi.org/10.26300/he7x-3a63>.

Over \$14 billion in federal funding has flowed through the National Science Foundation's Advanced Technological Education program to support community college workforce education, and the bipartisan CHIPS Act directed additional millions specifically to community college technician training. Yet a comprehensive literature review of community colleges' economic development role found no established framework for measuring whether these investments translate into workforce or regional economic outcomes—only a conceptual model for how such evaluation might eventually work.

- Source: Michelle Van Noy, Andrew Weaver, Allison Forbes, and Debra Bragg, *The Community College Role in Economic Development: A Conceptual Model*, Education and Employment Research Center, Rutgers University, December 2023, <https://sites.rutgers.edu/eerc-hii/wp-content/uploads/sites/609/2023/12/The-Community-College-Role-in-Econ.-Dev.-EERC-12.2023.pdf>.

Learners often struggle to navigate a landscape of 1.5 million nondegree credentials, most of which lack outcome data.

Students enrolling in short-term credential programs operate with minimal information—or receive information at the wrong time, disconnected from decision-making moments. Access to mentoring and coaching that could help students assess their skills and interests varies widely.

- Source: Rutgers Education and Employment Research Center, "Are We Ready for Workforce Pell? What Research Is Telling Us," *Work Shift*, September 23, 2025, <https://workshift.org/are-we-ready-for-workforce-pell-what-research-is-telling-us/>.

Many learners report that the credentials they earned fell short of their expectations. In over 100 in-depth interviews with college certificate earners, learners reported clear and highly consistent expectations for their credentials: a job that pays a living wage, good working conditions, a safe working environment, and opportunities for advancement. But college personnel described certificate program goals differently—in terms of "raising awareness about the industry," "sparking interest," or helping students "get their foot in the door"—rather than as a direct path to a good job. When certificates failed to lead to good jobs, graduates expressed disillusionment with the value of postsecondary education itself, and first-generation students were especially likely to view the experience as evidence that further education would not pay off.

- Source: Mina Dadgar, Francie Genz, Terra Thorne, and Dina Buck, *Making Every Rung of the Credential Ladder Count: Understanding How Community College Certificates Can Meet Learner Expectations for Economic Mobility*, Education Equity Solutions, September 2024, <https://www.edequitysolutions.com/every-rung-of-the-credential-ladder-counts>.

Forty-two percent of community college students reported their colleges taught them "very little" or "not at all" about in-demand jobs in their regions, and 46% said they received little or no information about expected earnings in their chosen careers. Ninety percent said they had chosen a career path, yet 64% had never used their college's career counseling services.

- Source: Center for Community College Student Engagement, *How Clear Is Their Path? Guided Career Pathways and Community College Students*, University of Texas at Austin, April 2024, <https://www.ccsse.org/guided-career-pathways/Guided-Career-Pathways.pdf>.

Incoming community college students are asked to select from well over 100 programs at many colleges—including certificates, applied associate's degrees, and transfer degrees within the same field—but many report having only limited support in making these decisions. Faculty and staff interviews revealed that students frequently choose programs based on family or cultural expectations of "safe" fields rather than personal interests, and that financial constraints pressure students to prioritize immediate earnings over career exploration.

- Source: Hana Lahr, Veronica Minaya, Rachel Baker, and Patrick Lavalley Delgado, *How Do Incoming Community College Students Think About Programs of Study and Potential Careers?* Community College Research Center, August 2025, <https://ccrc.tc.columbia.edu/publications/community-college-students-program-study-career.html>.

Sixty percent of students lack awareness of local CTE options and 52% have limited access to career exploration tools.

- Source: YouScience, "CTE Holds the Key to America's Future: Why the Nation's Workforce Depends on Stronger Career and Technical Education," November 2025, <https://resources.youscience.com/career-and-technical-education-report.html>.

Some learners may be uncertain about what credentials their programs will lead to. At one college, 18% of students answered "other" and 10% chose "unsure" when asked what credential their program leads to. At another, 13% answered "other" and 8% chose "unsure." Few students speak with an advisor or counselor before beginning their programs.

- Source: Michelle Van Noy and Katherine Hughes, *Measuring What Matters for Non-Degree Credentials and Noncredit Programs*, Education and Employment Research Center, Rutgers University, Winter 2026, [https://smlr.rutgers.edu/sites/default/files/Documents/Centers/EERC/Holistic%20Quality 12.1.25%20final%20matted.pdf](https://smlr.rutgers.edu/sites/default/files/Documents/Centers/EERC/Holistic%20Quality%2012.1.25%20final%20matted.pdf).

The share of workers listing at least one nondegree credential on their resumes grew from 6.5% to 7.5% in a single year—a nearly 35% increase in total credentials listed across a dataset of 37 million U.S. workers. Yet workers cannot easily distinguish rigorous certifications from participation badges, the same credential can be valuable in one occupation and worthless in another, and irrelevant credential accumulation produces zero or negative wage returns.

- Source: Eduardo Levy Yeyati, Ian Seyal, and Sophia Henn, *The Market Value of Non-Degree Credentials*, Brookings Institution, December 31, 2025, <https://www.brookings.edu/articles/the-market-value-of-non-degree-credentials/>.

Employers, like learners, struggle to make sense of credentials—with the result that credentials are often not considered in hiring processes.

Employers who prioritize credentials in hiring generally seek workers who hold credentials in combination with associate's or bachelor's degrees, rather than credentials as standalone qualifications.

- Source: Anna Crockett, Emily Ryder Perlmeter, and Xiaohan Zhang, "Short-Term Credentials Meet Growing Interest Among Students, Employers," Federal Reserve Bank of Dallas, March 6, 2024, <https://www.dallasfed.org/cd/communities/2024/2402>.

When describing actual hiring practices, 54% of employers acknowledged "it is less risky to hire someone with a college degree," and 52% still hire from degree programs because it's the "less risky choice." The gap between what employers say about credentials and what they do in practice is substantial: 81% of employers agreed in principle that "organizations should hire based on skills rather than degrees," but 33% cited "risk of hiring the wrong candidate" as a barrier to hiring candidates without degrees.

- Source: Society for Human Resource Management, *The Rise of Alternative Credentials in Hiring*, 2022, <https://www.shrm.org/content/dam/en/shrm/about/press-room/The-Rise-Of-Alternative-Credentials-In-Hiring.pdf>. See also: American Student Assistance and Jobs for the Future, *Degrees of Risk: What Gen Z and Employers Think About Education-to-Career Pathways...and How Those Views are Changing*, 2022, https://expandopportunities.org/wp-content/uploads/2022/10/ASA_JFF_Degrees-of-Risk-.pdf.

Small and mid-sized businesses report that they find the number and variety of credentials "confusing and overwhelming." For entry-level positions, many are either unaware of credentials that could demonstrate a candidate's skills or unfamiliar with particular credentials presented by jobseekers. These same businesses do value and often require specific credentials for advancement opportunities, but are unfamiliar with credentials for durable skills, despite reporting that teamwork, communication, and conflict resolution are what they most value in workers.

- Source: Jeran Culina and Amanda Bergson-Shilcock with Brooke Valle, *Big Insights from Small and Mid-Sized Businesses: What Local Employers Say About Hiring Challenges—and How Policy Can Help*, Business

Leaders United, October 2025, https://nationalskillscoalition.org/wp-content/uploads/2025/10/BLU_BigInsights_Oct_2025.pdf.

Forty-six percent of employers do not know how to evaluate the quality of a nondegree credential when they see one on a résumé, and 42% cannot assess the skills and competencies the credential represents. Though 69% report being familiar with nondegree credentials, 65% want to see proof of effectiveness before acting on them.

- Source: Susan D'Agostino, "Microcredentials Confuse Employers, Colleges and Learners," *Inside Higher Ed*, March 2, 2023, <https://www.insidehighered.com/news/tech-innovation/teaching-learning/2023/03/02/microcredentials-confuse-employers-colleges-and>.

For every 100 job postings where employers dropped a bachelor's degree requirement, only about 4 additional candidates without degrees were actually hired—translating to roughly 97,000 workers out of 77 million annual hires, or fewer than 1 in 700 hires nationally. Of companies that dropped degree requirements, 45% made no meaningful change in their actual hiring behavior, and nearly all real increases in hiring of candidates without degrees were driven by just 37% of firms.

- Source: Matt Sigelman, Joseph Fuller, and Alex Martin, *Skills-Based Hiring: The Long Road from Pronouncements to Practice*, Burning Glass Institute and Harvard Business School Project on Managing the Future of Work, February 2024, <https://www.burningglassinstitute.org/research/skills-based-hiring-2024>. See also: David Deming, "We Need Supply-Side Education Policy," *The Atlantic*, September 27, 2024, <https://www.theatlantic.com/ideas/archive/2024/09/skills-based-hiring-degree-requirements/680044/>.

Over one million digital education credentials and learning and employment records (LERs) exist in the United States, but employer hiring platforms and HR systems cannot ingest or make sense of them—and employers are not demanding that HR technology vendors add this functionality. The large majority of people who complete MOOCs and earn related digital credentials already hold a bachelor's degree and are employed full-time, complicating the narrative that LERs serve as alternative routes from learning to earning.

- Source: Michael Trucano and Sopiko Beriashvili, *Exploring the Disconnect: Digital Credentials and Employer Demand*, Brookings Institution, September 20, 2024, <https://www.brookings.edu/articles/exploring-the-disconnect-digital-credentials-and-employer-demand/>.

The applicant tracking systems used by roughly 40% of U.S. employers do not accept digital credentials or collect skills data in structured form—they still primarily record basic educational information like degrees and process résumés as unstructured PDF attachments. A survey of 750 HR leaders found that half reported data-rich learning and achievement records would challenge their current systems and processes, and that candidates' applications often pass through multiple software systems and intermediaries, leading to data loss.

- Source: Sean Gallagher, Mark Leuba, Christopher Houston, and Emilee Trieckel, *Digital Credentials and Talent Acquisition Tech: Closing the Data Gap between Learning and Hiring*, Center for the Future of Higher Education and Talent Strategy, Northeastern University, March 2023, https://cps.northeastern.edu/wp-content/uploads/2023/03/Digital_Credentials_Talent_Acquisition_Tech.pdf. See also: Elyse Ashburn, "Talk of Digital Credentials and Skills in Hiring Is Everywhere—But the Tech Isn't There Yet," *Work Shift*, March 22, 2023, <https://workshift.org/talk-of-skills-based-hiring-is-everywhere-but-the-tech-isnt-there-yet/>.

Narrow, technical credentials become obsolete as the labor market changes.

Career-focused education produces initial employment advantages over more general education—but those advantages reverse over the lifecycle as technology changes the labor market. The tradeoff is most pronounced in countries emphasizing apprenticeship programs (Denmark, Germany, and Switzerland), where vocationally trained workers experience steeper employment declines with age compared to their generally educated peers. The pattern holds after controlling for ability and using propensity-score matching, suggesting that the specificity of vocational training that helps with initial job placement becomes a liability as occupational demand shifts.

- Source: Eric A. Hanushek, Guido Schwerdt, Ludger Woessmann, and Lei Zhang, "General Education, Vocational Education, and Labor-Market Outcomes over the Lifecycle," *Journal of Human Resources* 52, no. 1 (2017): 48–87, <https://doi.org/10.3368/jhr.52.1.0415-7074R>.

Coding bootcamps—once a paradigmatic example of the "short-term credential as economic mobility" narrative—have undergone significant contraction. Reasons for bootcamp closures have included AI, low-cost competition, and tech layoffs. The Bureau of Labor Statistics projects an 11% decline in computer programming jobs between 2022 and 2032, and software development job postings on Indeed fell 71% between February 2022 and August 2025.

- Source: Kathryn Palmer, "Have Coding Boot Camps Lost Their Appeal?," *Inside Higher Ed*, January 9, 2025, <https://www.insidehighered.com/news/tech-innovation/teaching-learning/2025/01/09/changes-boot-camp-marks-signal-shifts-workforce>.

Middle-wage "steppingstone" occupations—jobs that historically served as conduits between low- and high-wage work—accounted for 16.5% of employment in 2019, but maintaining that share through 2029 would require 775,000 additional jobs that BLS projections do not anticipate. At the same time, 37.5 million workers are trapped in "sandpit" clusters of low-wage occupations where only 38% of transitions are upward.

- Source: Marcela Escobari, Ian Seyal, and Carlos Daboin Contreras, *Moving Up: Promoting Workers' Upward Mobility Using Network Analysis*, Brookings Institution, June 2021, <https://www.brookings.edu/articles/moving-up-promoting-workers-upward-mobility-in-a-time-of-change/>.

In practice, credentials rarely stack toward degrees.

Research on credentials across five states found that only 5% of learners in noncredit programs go on to enroll in for-credit postsecondary programs that lead to degrees.

- Source: Peter Riley Bahr, Rooney Columbus, Kennan Cepa, Jennifer May-Trifiletti, Samuel Kaser, "Investigating the Hidden College: A Study of Community College Noncredit Education in Five States," Opportunity America and the University of Michigan, December 2022, <https://www.dropbox.com/scl/fi/6xeecfts8y4h1sdw48xg/Bahr-et-al.-2022-Noncredit-in-Five-States.pdf?rlkey=dpxqvyruc1596crm6oufte4s&e=1&dl=0>.

Under 5% of the U.S. workforce holds stackable credentials, and the majority of those who do earned their credentials after completing degrees rather than stacking credentials toward degrees.

- Source: Monique O. Ositelu, Clare McCann, and Amy Laitinen, *The Short-Term Credentials Landscape: What We See and What Remains Unseen*, New America, May 2021, <https://files.eric.ed.gov/fulltext/ED614528.pdf>.

Noncredit workforce programs at community colleges award contact hours rather than credit hours, which are not transferable to other institutions or applicable toward degrees. These programs bypass general education requirements entirely, speeding workforce entry but eliminating the academic foundation needed for further postsecondary progression.

- Source: Laura Ullrich, "How Community Colleges Meet the Needs of Students and Employers via Non-Credit Programs," Fed Communities, August 21, 2024, <https://fedcommunities.org/how-community-colleges-meet-needs-students-employers-via-non-credit-programs/>.

No differences in earning patterns were observed between learners in Ohio who stacked additional credentials and those who did not. Only 16% of noncredit certificate earners went on to earn any additional credential within four years, compared to 39% of similar community college students and 51% of university students.

- Source: Michelle Van Noy, Sam Scovill, and Nicole Sandelier Boyd, *Review of Recent Research on Noncredit Outcomes*, Education and Employment Research Center, Rutgers University, 2024, https://smlr.rutgers.edu/sites/default/files/Documents/Centers/EERC/Review%20of%20Noncredit%20Outcomes_FERC_1.4.24.pdf.

In Virginia's statewide noncredit career and technical education system, 78% of students enrolled in only one program, and less than 12% pursued subsequent credit-bearing training. Some colleges decided it was "not a worthwhile investment of time and resources to build noncredit-to-credit pathways" given the low transfer rates, and qualitative research found that entry-level jobs available after training sometimes did not pay premium wages, with some students considering returning to pre-training retail jobs that offered higher pay.

- Source: Betsy Tessler, Kelsey Brown, and Di Xu, *Noncredit Career and Technical Education Programs in Virginia: Early Findings from the FastForward Study*, MDRC, June 2024, https://nocache.mdrc.org/sites/default/files/VCCFastForward_Brief_FINAL.pdf.

Manufacturing certificate completers found it nearly impossible to return for additional credentials when their initial post-program job did not meet basic thresholds for wages and working conditions. Long hours, low pay, and inflexible schedules in entry-level roles made further education impractical. Some graduates expressed skepticism that additional postsecondary education would differ from their first experience, even as colleges had designed their certificate programs as "stackable" first steps toward higher credentials.

- Source: Mina Dadgar, Francie Genz, Terra Thorne, and Dina Buck, *Making Every Rung of the Credential Ladder Count: Understanding How Community College Certificates Can Meet Learner Expectations for Economic Mobility*, Education Equity Solutions, September 2024, <https://www.edequitysolutions.com/every-rung-of-the-credential-ladder-counts>.

Seemingly high stacking rates (more than 70% of certificate-earners earned additional credentials within three years) in Indiana were driven largely by credentials earned simultaneously with the first certificate—45% of short-term certificates and 32% of long-term certificates stacked simultaneously. Black certificate-earners were less likely to stack than their white counterparts, and only a small portion of this difference was explained by field of credential. Researchers noted they could not

disentangle "productive stacking" from "unproductive stacking" and questioned whether simultaneous stacking represents an artifact of registrar policies.

- Source: Melanie A. Zaber, Brian Phillips, and Lindsay Daugherty, *Examining Short-Term Credentials and Student Outcomes in Indiana*, RAND Corporation, 2025, https://www.rand.org/content/dam/rand/pubs/research_reports/RRA3400/RRA3407-1/RAND_RRA3407-1.pdf.

Low-income students were more likely to stack credentials than higher-income peers, and more likely to stack vertically (building toward higher credentials in the same field). More than 70% of vertical stackers in nursing and mechanics earned middle-income wages within six years, but horizontal stacking (earning credentials at the same level) and stacking in fields like culinary arts produced far weaker outcomes.

- Source: Lindsay Daugherty, Peter Riley Bahr, Peter Nguyen, Jennifer May-Trifiletti, Rooney Columbus, and Jonah Kushner, *Stackable Credential Pipelines and Equity for Low-Income Individuals: Evidence from Colorado and Ohio*, RAND Corporation, April 13, 2023, https://www.rand.org/pubs/research_reports/RRA2484-1.html.

No standardized framework exists to describe what any given credential contains—making it impossible for employers or institutions to compare credentials or assess their equivalency. Record-keeping systems are equally fragmented, leaving students unable to aggregate or transfer their credential histories across institutions or sectors.

- Source: Kelsey Berkowitz, *Hurdles to Connected Credentials*, Third Way, September 25, 2019, <https://www.thirdway.org/report/hurdles-to-connected-credentials>.

Stacking credentials with longer qualifications—particularly bachelor's and associate's degrees—appears to produce substantial economic benefits, but stacking short credentials alone shows weaker or inconsistent returns. In healthcare, stacking produced quarterly earnings gains of \$950 compared to non-stackers, versus an average of \$380 in other fields. In addition, recognition of micro-credentials across institutions is not yet widely established, limiting their portability and stackability in practice.

- Source: OECD, *Micro-credentials for Lifelong Learning and Employability: Uses and Possibilities*, OECD Education Policy Perspectives, No. 66, March 2023, <https://doi.org/10.1787/9c4b7b68-en>.

Most institutional work on stackable credentials ends when a credit-articulation policy is codified—not when a student successfully uses it. Stackable pathways remain underutilized in practice, and gaps in uptake across race and ethnicity persist.

- Source: Annie Phillips and Kanler Cumbass, *Stackability Guide: Building Credential Connections Within Institutions*, Education Strategy Group, February 2023, <https://edstrategy.org/resource/stackability-guide-building-credential-connections-within-institutions/>.

Community colleges with a vocational program focus grew 16% in fall 2023 enrollment compared to the prior year, surpassing pre-pandemic levels by nearly 30,000 students. Transfer-focused community colleges grew just 0.2%.

- Source: Joshua Bay, "Job-Focused Community College Programs Grow—But Grim Transfer Trend Continues," *The 74*, March 5, 2024, <https://www.the74million.org/article/job-focused-community-college-programs-grow-but-grim-transfer-trend-continues/>.

Longer credential programs produce better outcomes than shorter ones.

There is a consistent positive correlation between program length and labor-market outcomes across OECD countries. An analysis of administrative records from 49 postsecondary institutions in eight U.S. states found larger and more consistent earnings gains for credentials taking over six months to complete than for shorter ones. In Singapore, workers who completed a full qualification saw a 5.8% real wage increase, compared to just 0.8% for those who completed only individual modules. The value of shorter credentials also depreciates faster.

- Source: OECD, *Micro-credentials for Lifelong Learning and Employability: Uses and Possibilities*, OECD Education Policy Perspectives No. 66, March 2023, <https://doi.org/10.1787/9c4b7b68-en>.

Credentials under one year do not improve labor market outcomes for men; for women, the benefit is marginal, limited to slightly higher rates of year-round employment.

- Source: Rachel Fishman, "Short-Term Pell Already Exists," New America, Education Policy Program, April 2024, <https://www.newamerica.org/education-policy/edcentral/short-term-pell-already-exists/>.

Students who start with short-term certificates and then stack additional credentials in the same field take about two years to reach middle-income wages, compared to less than half a year for students who initially earn an associate's degree.

- Source: Sarah Bohn and Shannon McConville, *Stackable Credentials in Career Education at California Community Colleges*, Public Policy Institute of California, October 2018, <https://www.ppic.org/publication/stackable-credentials-in-career-education-at-california-community-colleges/>.

Data on credential attainment rates and outcomes reveal significant inequities along intersecting lines of race, gender, and class.

Certificates account for one in five postsecondary credentials completed by white students, compared with one in three for Black and Latine students. White students are far more likely to earn a degree from a public four-year institution, where bachelor's degrees are the predominant credential, while Latine and Black students are disproportionately concentrated at for-profit institutions, which award many certificates and carry much lower labor-market value. Women disproportionately enroll in short-term certificate programs that lead to low-earning occupations—education, administrative support, and health—while men disproportionately enroll in programs tied to higher-earning occupations like computers, construction, and engineering. The short-term credentials associated with the highest earnings are overwhelmingly for male-dominated occupations, and the programs most readily available for and commonly occupied by women in this segment of the labor market are overwhelmingly for low-wage jobs.

- Source: Monique O. Ositelu, Clare McCann, and Amy Laitinen, *The Short-Term Credentials Landscape: What We See and What Remains Unseen*, New America, May 2021, <https://files.eric.ed.gov/fulltext/ED614528.pdf>.

Students enrolled in certificate programs are more likely than bachelor's degree students to be first-generation college students, to have lower incomes, and to be students of color. These learners disproportionately complete certificates in fields with lower economic returns in the labor market.

- Source: Katrina Borowiec, *Understanding Short-term Credentials*, Society for Research on Educational Effectiveness, October 2021, <https://www.sree.org/assets/Katrina%20Borowiec%20lit%20review.pdf>.

Among Black, Hispanic or Latine, Native Hawaiian or other Pacific Islander, and Indigenous students, sub-baccalaureate certificates and degrees made up the highest share of completions. In 2021, approximately 22% of Black students and 28% of Native Hawaiian or other Pacific Islander students who earned short-term certificates did so in the for-profit sector, compared with about 13% of all short-term certificate recipients. Latine students were the most concentrated at public two-year institutions, with 50.8% of their undergraduate completions awarded in that sector.

- Source: Ji Hye Kim, Maria Claudia Soler, Zhe Zhao, and Erica Swirsky, "Chapter 4: Undergraduate Completion," *Race and Ethnicity in Higher Education: 2024 Status Report*, American Council on Education, May 2024, https://www.equityinhighered.org/wp-content/uploads/2024/05/REHE2024_Chapter4.pdf.

Black and Latine students are overrepresented in short-term credentialing programs relative to bachelor's degree programs, even though bachelor's degrees produce stronger long-term economic returns. The median monthly cost of attendance for short-term certificate programs ranges from \$2,000 to \$3,000, placing a disproportionate financial burden on the students of color and low-income students most likely to enroll in them.

- Source: Jinann Bitar, Sandra Perez, Sabreyna Reese, and Mia Elliott, *Understanding the Full Cost of Short-Term Credentials*, The Education Trust, November 2024, <https://edtrust.org/rti/understanding-the-full-cost-of-short-term-credentials/>.

About one in five Black postsecondary students (21%) reported discrimination in their academic programs. Black learners in short-term credential programs were twice as likely to report discrimination (33%) as those seeking associate (16%) or bachelor's degrees (14%).

- Source: Gallup and Lumina Foundation, *The State of Higher Education 2022: The Black Student Experience*, Gallup, 2023, <https://news.gallup.com/poll/469292/one-five-black-students-report-discrimination-experiences.aspx>.

About one in four Latine students reported experiencing discrimination at their institutions—a higher rate than for any other racial or ethnic group. As is the case for Black students, these experiences are concentrated in short-term credential programs: roughly four in ten Latine students in certificate programs reported discrimination, two to three times the rates in associate or bachelor's degree programs.

- Source: Gallup and Lumina Foundation, "Hispanic Students Feeling More Discrimination at School," Gallup, September 27, 2023, <https://news.gallup.com/opinion/gallup/510323/hispanic-students-feeling-discrimination-school.aspx>.

Hispanic/Latine adults are 1.3 to 1.6 times more likely than adults of other racial/ethnic backgrounds to live in labor markets where credential production is poorly aligned with projected job demand. American Indian/Alaska Native adults are 3 to 18 times more likely than other groups to live in areas with no local middle-skills credential provider at all.

- Source: Jeff Strohl, Zachary Mabel, and Kathryn Peltier Campbell, *The Great Misalignment: Addressing the Mismatch between the Supply of Certificates and Associate's Degrees and the Future Demand for Workers in 565 US Labor Markets*, Georgetown University Center on Education and the Workforce, May 2024, <https://cew.georgetown.edu/cew-reports/greatmisalignment/>.

Credentials in male-dominated fields provide a wage boost of nearly \$20,000 over the earnings of adults with no credential, while female-dominated fields show little to no wage premium—a pattern that compounds existing gender wage gaps. Men earn more than women with the same credential type, and racial disparities in returns to credentials persist across fields and credential levels.

- Source: Michelle Van Noy, Sam Scovill, and Nicole Sandelier Boyd, *Review of Recent Research on Noncredit Outcomes*, Education and Employment Research Center, Rutgers University, 2024, <https://smlr.rutgers.edu/sites/default/files/Documents/Centers/EERC/Review%20of%20Noncredit%20Outcomes%20EERC%201.4.24.pdf>. See also: Monique O. Ositelu, Clare McCann, and Amy Laitinen, *The Short-Term Credentials Landscape: What We See and What Remains Unseen*, New America, May 2021, <https://files.eric.ed.gov/fulltext/ED614528.pdf>.

Average earnings gains from community college noncredit occupational training for women are a fraction of the gains for men, a disparity that does not appear to be entirely explained by differences in the fields of study men and women choose. Women see significantly higher returns from employer-sponsored programs than from open-enrollment programs they pay for themselves, a pattern not observed for men.

- Source: Peter Riley Bahr and Rooney Columbus, "Labor Market Returns to Community College Noncredit Occupational Education," *Educational Evaluation and Policy Analysis*, November 2025, <https://doi.org/10.3102/01623737251360029>.

Only 16% of community college students earn a bachelor's degree within six years of entry—up just two percentage points from 2016. Completion rates for students with low incomes (11%), Black students (9%), and older students (6%) are substantially lower.

- Source: Tatiana Velasco, John Fink, Mariel Bedoya-Guevara, Davis Jenkins & Tania LaViolet, *Tracking Transfer: Community College and Four-Year Institutional Effectiveness in Broadening Bachelor's Degree Attainment*, Community College Research Center and the Aspen Institute, February 2024, <https://ccrc.tc.columbia.edu/publications/tracking-transfer-community-college-and-four-year-institutional-effectiveness-in-broadening-bachelors-degree-attainment.html>.

Across 40 states, Black and Latine students were less likely than white peers to enroll in STEM and information technology CTE courses and more likely to enroll in hospitality and human services—fields associated with lower-wage jobs. In South Carolina, Black and Latine students made up 43% of the student body, but just over one-quarter of those enrolled in multiple STEM classes, while accounting for nearly 60% of students specializing in hospitality and human services, which typically lead to careers with more limited earning potential.

- Source: Sarah Butrymowicz, Jeff Amy, and Larry Fenn, "How Career and Technical Education Shuts Out Black and Latino Students from High-Paying Professions," *The Hechinger Report/Associated Press*,

October 2020, <https://hechingerreport.org/how-career-and-technical-education-shuts-out-black-and-latino-students-from-high-paying-professions/>.

Latine and Black women face the lowest shares of upward occupational transitions—37% and 43% respectively—compared to 57% for white men and 61% for Asian men. In health care, white licensed practical nurses are more likely to transition upward into registered nurse positions, while Black and Latine LPNs are more likely to transition downward into lower-wage home health and personal care jobs.

- Source: Marcela Escobari, Ian Seyal, and Carlos Daboin Contreras, *Moving Up: Promoting Workers' Upward Mobility Using Network Analysis*, Brookings Institution, June 2021, <https://www.brookings.edu/articles/moving-up-promoting-workers-upward-mobility-in-a-time-of-change/>.

Short-term credentials can be costly, and learners bear much of the financial burden.

The median monthly cost of attendance for certificate programs ranges between \$2,000 and \$3,000, with costs climbing as high as \$26,000 per month. While academic tuition is typically twice as high as workforce tuition, total cost of attendance is similar due to living expenses. In states with low minimum wages, the hourly program cost can exceed the state minimum wage—meaning students in Texas (with a \$7.25 minimum wage) must work seven times more hours than students in Washington (\$16.28 minimum wage) to afford similar programs.

- Source: Jinann Bitar, Sandra Perez, Sabreyna Reese, and Mia Elliott, *Understanding the Full Cost of Short-Term Credentials*, Education Trust, November 2024, <https://edtrust.org/rti/understanding-the-full-cost-of-short-term-credentials/>.

Average annual out-of-pocket costs for certificate programs are on average greater than those for bachelor's degree programs for students from families earning less than \$75,000 a year. The average annual cost of a certificate from a private or for-profit institution is almost twice the annual cost of a bachelor's degree from a public institution.

- Source: Michael Itzkowitz, *Understanding College Affordability*, The HEA Group, 2024, <https://static1.squarespace.com/static/63617bfab00c640904baab4c/t/66ad23d052553e6f98a10b1e/1722622928927/CarnegieFoundation+ResearchPaper+CollegeAffordability+71924+1.pdf>.

More than half of learners in nondegree credential programs report paying for them out of pocket—51% for vocational certificates and 71% for professional licenses—and two-thirds used only a single form of financing. Many credential programs do not qualify for federal financial aid because they are too short, are offered by unaccredited providers, or are designated as noncredit within accredited institutions. About 20% of students reported using government or private loans, while only 15% cited employer financial support for vocational certificates and 24% for professional licenses.

- Source: Ilan Levine, *Interest Surging in Nondegree Credentials but How Do Students Finance Them?*, The Pew Charitable Trusts, October 23, 2025, <https://www.pew.org/en/research-and-analysis/articles/2025/10/23/interest-surging-in-nondegree-credentials-but-how-do-students-finance-them>.

For-profit providers play a significant role in the short-term credential market.

For-profit colleges have played a pivotal role in fostering the growth of credentialism, which reflects a structural shift in which responsibility for workforce training and its financing has moved from employers and public institutions to individual workers—who face increasing pressure to credential themselves in an economy that demands qualifications without consistently producing the jobs those credentials promise. Black women are disproportionately enrolled in for-profit credential programs, whose growth tracks closely with rising unemployment and inequality rather than with labor market demand for specific skills. Students at for-profit colleges account for roughly 11% of all student borrowers, but 39% of loan defaults. The 12-year default rate at for-profit institutions is 52%, rising to 65.7% for Black students.

- Source: Tressie McMillan Cottom, *Lower Ed: The Troubling Rise of For-Profit Colleges in the New Economy* (New York: The New Press, 2017).

For-profit institutions offer about 70% of short-term credential programs eligible for federal student loans, with nearly half of all approved programs in cosmetology subfields. Despite reporting high completion and job-placement rates, average post-completion earnings for graduates of these programs are approximately \$24,000 per year—about \$12 per hour for a full-time worker. When Brookings applied its lowest earnings benchmark of \$25,000 (roughly the average for high school dropouts), more than half of short-term programs failed, and 96% of failing programs were in for-profit institutions.

- Source: Stephanie Riegg Cellini and Kathryn J. Blanchard, *Quick College Credentials: Student Outcomes and Accountability Policy for Short-Term Programs*, Brookings Institution, July 22, 2021, <https://www.brookings.edu/articles/quick-college-credentials-student-outcomes-and-accountability-policy-for-short-term-programs/>.

Among California's top 25 institutions for return on investment, 23 are public community colleges and just one is a private for-profit. Only 5% of private institutions enable students to recoup their educational costs within a year, compared to 40% of public colleges, and 45% of private institutions produce no economic return on investment at all.

- Source: College Futures Foundation and The HEA Group, *Golden Returns: A Regional Look at the Return on Investment of California's Community and Career Colleges*, 2025, <https://collegefutures.org/golden-returns-2-year-roi/>.