Aligning Skills With Labor Market Demand

Data-Driven Approaches for Credentialing in Today's Rapidly Changing World

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3 billion
Job postings

6.3 million
Companies

34,000
Skills

242 million
Salary observations

500 million
Career profiles

165
Countries

17
Languages

1,800+
Unique occupations

Labor market insights covering more than 99% of the workforce

Lightcast combines **18B+ data points** from job postings, profiles, and government statistics into actionable labor market intelligence—
Informing better decision making across enterprise, education, and the public sector.

In today's competitive job market, industry-recognized credentials have become a crucial tool for signaling that students and workers possess the skills necessary to succeed in the workforce.

Nearly 1 in 4 job postings requests some kind of non-degree credential

For jobs asking for less than a bachelor's degree that increases to 1 in 3

Demand for Credentials is Increasing

Since 2018, the share of job postings requesting a non-degree credential increased from 26% to 31%. As this trend continues, demand for credentials will go from 1-in-4 job postings to 1-in-3
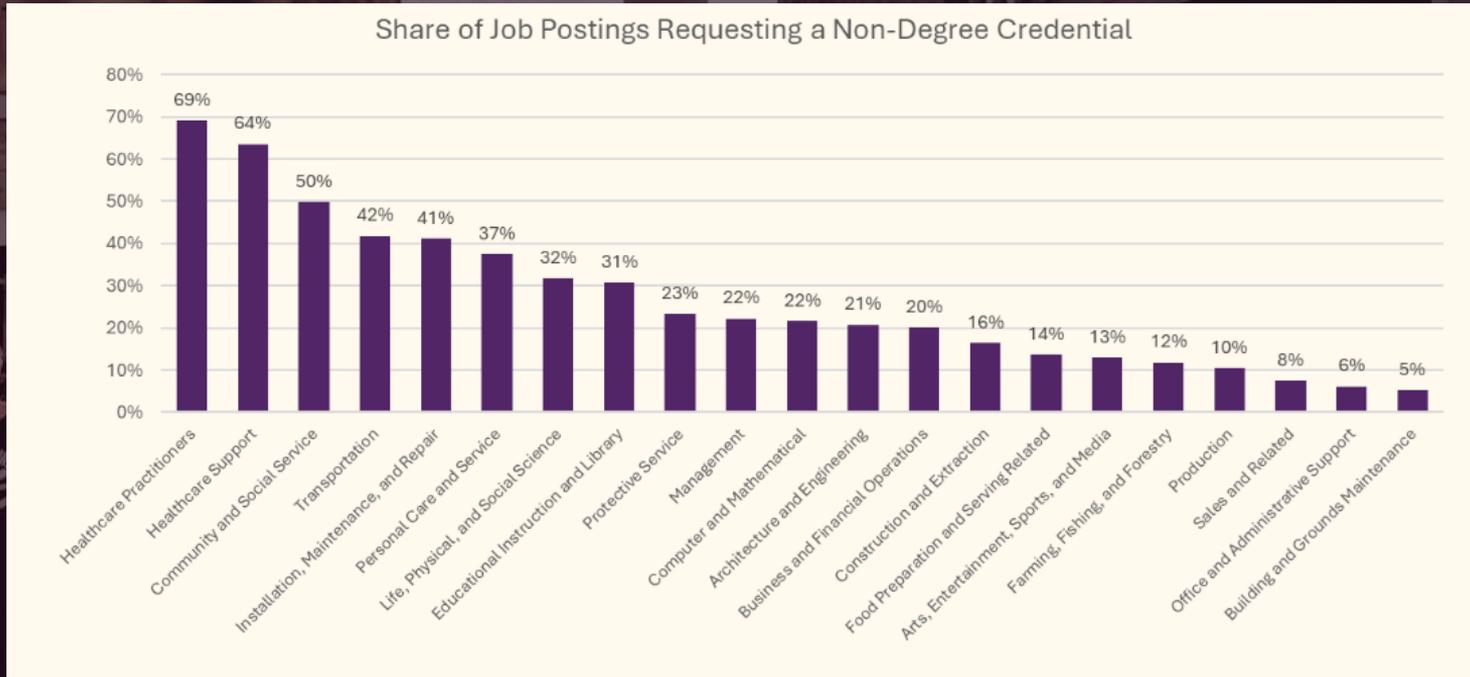
Share of Job Postings Requesting a Non-Degree Credential

Year	Share
2018	26%
2019	25%
2020	27%
2021	27%
2022	26%
2023	29%
2024	30%
2025	31%
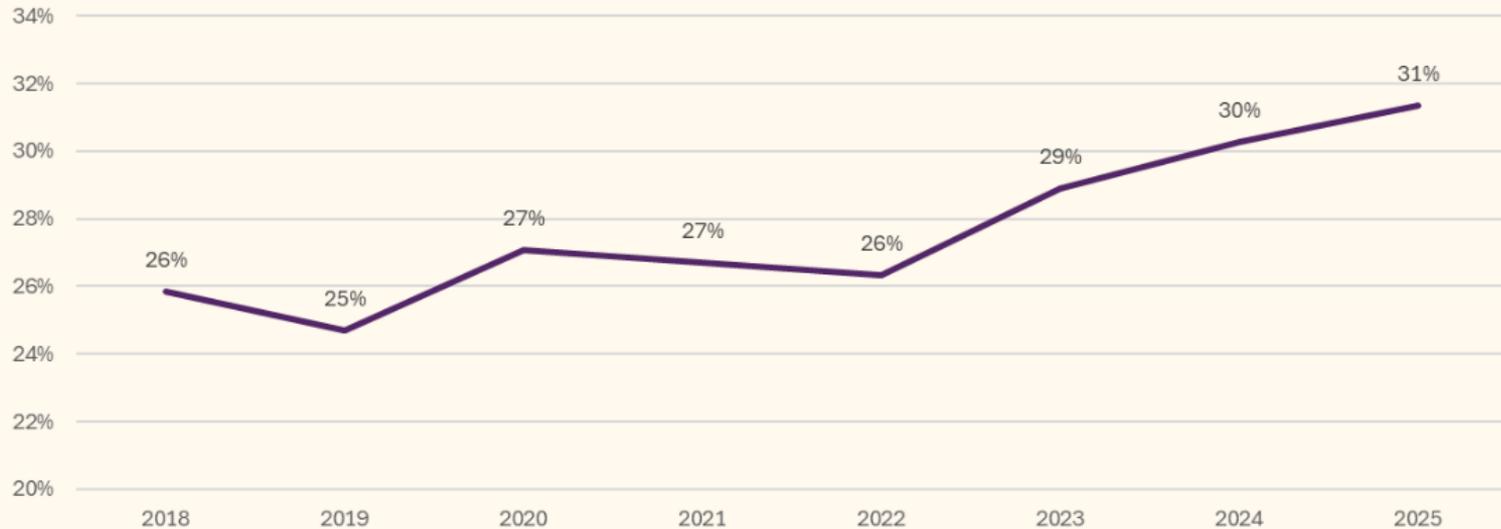
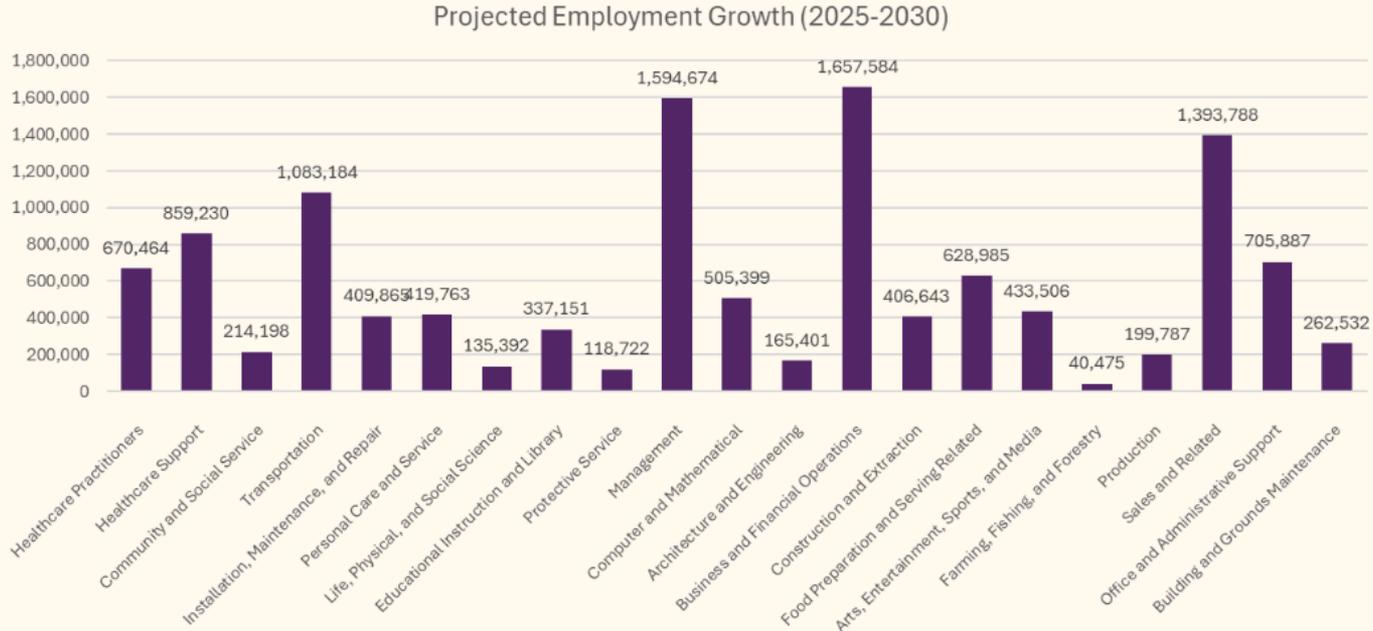# Credentials are Meaningful Onramps into Careers

Healthcare and social service jobs dominate the non-degree credentialing universe with half to two-thirds of job postings in those career areas requesting a non-degree credential. Credential attainment is a clear onramp into these fields.

Share of Job Postings Requesting a Non-Degree Credential

Career Area	Share
Healthcare Practitioners	69%
Healthcare Support	64%
Community and Social Service	50%
Transportation	42%
Installation, Maintenance, and Repair	41%
Personal Care and Service	37%
Life, Physical, and Social Science	32%
Educational Instruction and Library	31%
Protective Service	23%
Management	22%
Computer and Mathematical	22%
Architecture and Engineering	21%
Business and Financial Operations	20%
Construction and Extraction	16%
Food Preparation and Serving Related	14%
Arts, Entertainment, Sports, and Media	13%
Farming, Fishing, and Forestry	12%
Production	10%
Sales and Related	8%
Office and Administrative Support	6%
Building and Grounds Maintenance	5%

Credentials Present Unique Talent Pipeline Options

Given anticipated employment growth in the U.S. over the next 10 years, down-credentialing away from bachelor's degrees and substituting for non-degree credential onramps will be important for management roles, business roles, and sales roles.
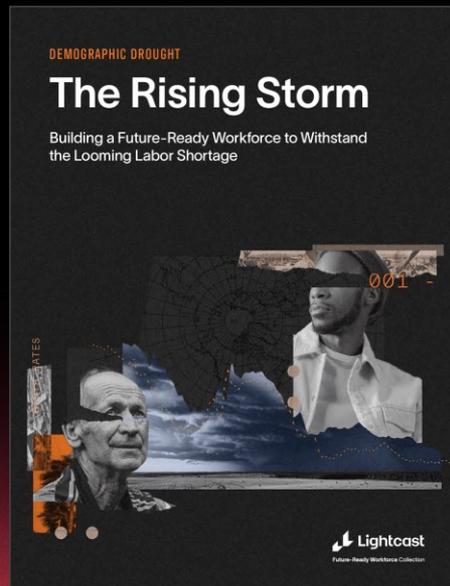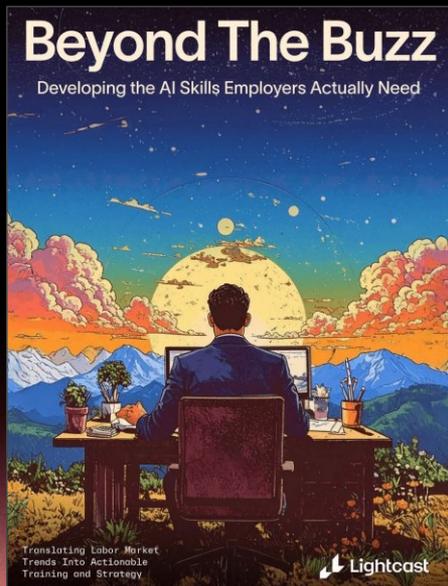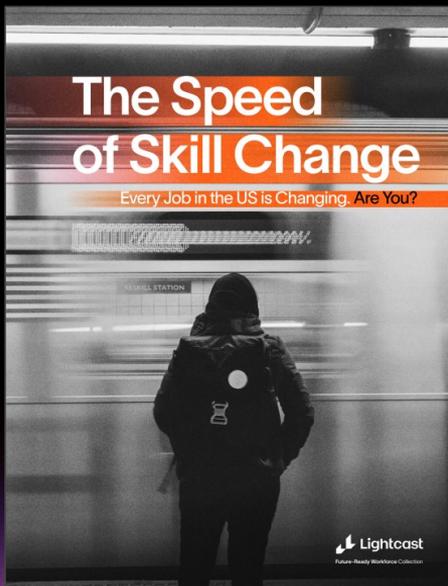

Projected Employment Growth (2025-2030)

Category	Value
Healthcare Practitioners	670,464
Healthcare Support	859,230
Community and Social Service	214,198
Transportation	1,083,184
Installation, Maintenance, and Repair	409,865
Personal Care and Service	419,763
Life, Physical, and Social Science	135,392
Educational Instruction and Library	337,151
Protective Service	118,722
Management	1,594,674
Computer and Mathematical	505,399
Architecture and Engineering	165,401
Business and Financial Operations	1,657,584
Construction and Extraction	406,643
Food Preparation and Serving Related	628,985
Arts, Entertainment, Sports, and Media	433,506
Farming, Fishing, and Forestry	40,475
Production	199,787
Sales and Related	1,393,788
Office and Administrative Support	705,887
Building and Grounds Maintenance	262,532

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What are we seeing that affects nearly every industry sector?

Skill requirements changing more rapidly than ever before.

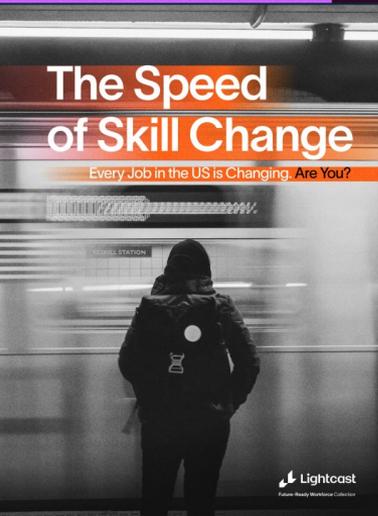**AI changing the future of work across all industries.**

Labor market shifts leading to critical workforce shortages

Skills-based hiring strategies present opportunities

The Speed of Skill Change

Every Job in the US is Changing. Are You?

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Future-Ready Workforce Collection

Beyond The Buzz

Developing the AI Skills Employers Actually Need

Translating Labor Market Trends Into Actionable Training and Strategy

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DEMOGRAPHIC DROUGHT

The Rising Storm

Building a Future-Ready Workforce to Withstand the Looming Labor Shortage

001

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FEBRUARY 2025

EMPOWERING PROGRESS

Harnessing Skills-Based Strategies to Drive Public Sector Excellence

NATIONAL GOVERNORS ASSOCIATION   Lightcast

Speed of Skill Change & Future of Credentials

Key Findings

The Speed of Skill Change
Every Job in the US is Changing. Are You?

Lightcast
Future-Ready Workforce Collection

Skill change is measured and felt at the occupation level.

1/3 The average job has seen **one-third** of its skills change from 2021 to 2024.

75% One in four jobs (the top quartile) has seen **75%** of their skills change in 3 years.

AI is causing more **disruption** than any other trend, followed by sustainability and cybersecurity.

The pace of skill change is **accelerating**: the disruption of the past three years is similar to that of the previous five.

Credential-occupation linkages make sense *if* created via *skill matches* at the level of the occupations seeing skill change.

Non-degree credentials can be attained more quickly, enabling them to keep up with the rapid rate of skill change more fluidly.

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Artificial Intelligence & Future of Credentials

Beyond The Buzz
Developing the AI Skills Employers Actually Need

Translating Labor Market Trends Into Actionable Training and Strategy

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28%
salary premium in job postings with at least one AI skill compared to similar roles w/out AI.

Key Findings

AI is changing not just tech jobs but jobs in all industries and career areas.

2024: 51%
of AI job postings were outside IT & computer science

2019: 39%
of AI job postings were outside IT & computer science

AI skills are now increasingly in-demand in a range of career areas / functions
Share of postings in each occupation area mentioning AI skills %

	2016	2018	2020	2022	2024
Information Technology and Computer Science	4.33%	7.55%	9.02%	11.06%	14.00%
Marketing and Public Relations	2.27%	3.58%	4.76%	5.25%	8.11%
Science and Research	2.63%	3.86%	4.13%	5.49%	6.16%
Social Analysis and Planning	2.02%	2.29%	3.42%	3.87%	4.01%
Engineering	1.85%	2.74%	3.06%	3.83%	3.80%
Design, Media, and Writing	0.97%	1.16%	1.57%	1.78%	3.06%
Military	0.53%	0.79%	0.88%	2.11%	2.18%
Human Resources	0.79%	1.36%	1.15%	1.53%	2.00%
Performing Arts	0.50%	0.69%	0.58%	1.00%	1.65%
Business Management and Operations	0.54%	0.81%	0.74%	1.03%	1.40%
Education and Training	0.71%	0.73%	0.79%	1.10%	1.34%
Finance	0.45%	0.70%	0.62%	1.01%	1.33%
Customer and Client Support	0.46%	0.64%	0.57%	0.87%	1.04%
Law, Compliance, and Public Safety	0.36%	0.52%	0.41%	0.69%	0.95%
Sales	0.20%	0.43%	0.46%	0.61%	0.76%
Maintenance, Repair, and Installation	0.21%	0.39%	0.49%	0.41%	0.65%
Clerical and Administrative	0.26%	0.36%	0.31%	0.56%	0.56%
Manufacturing and Production	0.26%	0.37%	0.32%	0.46%	0.52%
Community and Social Services	0.33%	0.38%	0.29%	0.35%	0.43%
Healthcare	0.14%	0.20%	0.24%	0.28%	0.37%
Agriculture, Horticulture, & the Outdoors	0.40%	0.61%	0.46%	0.37%	0.35%
Construction, Extraction, and Architecture	0.16%	0.18%	0.18%	0.29%	0.30%
Transportation	0.10%	0.15%	0.13%	0.16%	0.20%
Personal Services	0.10%	0.11%	0.10%	0.16%	0.17%
Hospitality, Food, and Tourism	0.09%	0.09%	0.06%	0.07%	0.10%

Source: Lightcast job postings data

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Artificial Intelligence & Future of Credentials

Key Findings

While some skills are needed across the board, AI skills training needs to be tailored to the requirements of each specific role

AI upskilling will be critical for the future of work across industries & occupations, with credentialing scaffolding rapid learning and development.

AI integration is also driving non-AI skills changes that need to stay relevant.

AI skill requirements vary by career areas
Share of AI postings requiring a given set of AI skills

	AI Ethics, Governance and Regulations	Artificial Intelligence	Autonomous Driving	Generative AI	Machine Learning	Natural Language Processing	Neural Networks	Robotics	Visual Image Recognition
Business Management and Operations	1%	63%	5%	8%	33%	9%	1%	1%	2%
Clerical and Administrative	0%	59%	3%	6%	17%	20%	0%	1%	2%
Community and Social Services	0%	70%	1%	2%	10%	20%	0%	1%	0%
Construction, Extraction, and Architecture	0%	41%	12%	1%	17%	8%	9%	14%	3%
Customer and Client Support	0%	69%	1%	7%	20%	17%	1%	1%	1%
Design, Media, and Writing	0%	62%	5%	17%	17%	23%	1%	1%	2%
Education and Training	1%	60%	5%	10%	36%	12%	4%	2%	4%
Engineering	0%	38%	22%	4%	37%	3%	4%	18%	9%
Finance	1%	56%	1%	8%	48%	8%	2%	1%	1%
Healthcare	0%	49%	2%	2%	18%	16%	1%	15%	6%
Hospitality, Food, and Tourism	0%	46%	5%	3%	38%	11%	0%	2%	1%
Human Resources	0%	62%	2%	8%	29%	19%	1%	1%	1%
Information Technology and Computer Science	1%	51%	5%	16%	71%	14%	15%	2%	6%
Law, Compliance, and Public Safety	1%	60%	6%	8%	30%	12%	1%	1%	3%
Maintenance, Repair, and Installation	0%	20%	38%	5%	11%	4%	0%	24%	4%
Manufacturing and Production	0%	45%	5%	3%	34%	7%	1%	11%	6%
Marketing and Public Relations	0%	60%	1%	16%	38%	19%	2%	0%	2%
Sales	0%	68%	3%	11%	28%	11%	2%	1%	3%
Science and Research	1%	43%	14%	10%	60%	11%	17%	2%	15%
Social Analysis and Planning	1%	41%	11%	6%	49%	11%	1%	0%	4%
Transportation	0%	39%	40%	4%	19%	4%	2%	2%	4%

Source: Lightcast job postings data

Demographic Change & Future of Credentials

DEMOGRAPHIC DROUGHT

The Rising Storm

Building a Future-Ready Workforce to Withstand the Looming Labor Shortage

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By 2032, the labor force of 16-24 year olds will SHRINK by 1.1 million

Key Findings

Demographic shifts are behind the looming labor market shortage and already affecting key sectors.

The occupations facing the greatest labor market shortages are not those requiring 4yr degrees.

BLS projects net labor force growth of **6.4 million** by 2032.

But 3.8M of that growth is expected to be age 65+... ... leaving just 2.6M age 16-64. ● =10K people
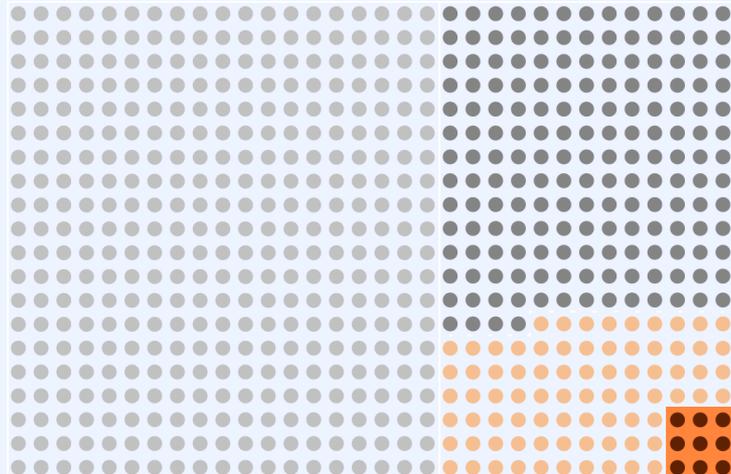
Two thirds of those are likely to have 4-year degrees...

...meaning total 10-year increase of just 900K without a BA—

or net annual growth of only 90K

But currently, we have **850K job openings** in just these 3 critical sectors:

350K job openings in the food industry

300K openings in community service

200K jobs in construction & home improvement
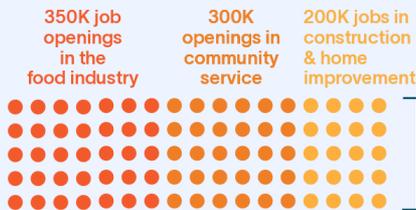
How can only 90K prime-age, non-BA workers per year meet this demand?

Credentials can accelerate hiring for these jobs.

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Skills-Based Hiring & Future of Credentials

Key Findings

More than half of U.S. states have issued policy directives centered around skills-based hiring.

Several states have already made significant strides in removing degree requirements, with positive outcomes such as reduced vacancy rates, increased application numbers, and improved job fit.

As states move away from degree requirements, they still need ways to validate skill fit.

State Government Employer	2019	2024	Change 2019-2024
Virginia Government	58%	90%	1.5x increase
Maryland Government	36%	52%	1.4x increase
Tennessee Government	27%	39%	1.4x increase
Massachusetts Government	26%	34%	1.3x increase
Colorado Government	45%	58%	1.3x increase
Alaska Government	62%	77%	1.2x increase
Idaho Government	65%	76%	1.2x increase
South Dakota Government	55%	64%	1.2x increase
Utah Government	65%	74%	1.1x increase
North Carolina Government	54%	59%	1.1x increase

Metrics

- Percentage of job postings that do not require a degree.
- Percentage of job postings that include inclusive language, such as explicitly inviting candidates without a degree to apply.
- Percentage of job postings that offer a variety of ways to signal competency, such as non-degree credentials, prior experiences, or a portfolio or example of past work.
- Employee satisfaction with role descriptions and job postings, measured through feedback from hiring managers and employees staffed in similar roles.

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CASE STUDY: Indiana's Integrated Approach

Indiana establishes *value* by linking credentials to Top Jobs in the state.

- All 867 federally-defined occupations are indexed and scored according to the criteria to the right.

- An earnings threshold is applied to prioritize the middle- and high-skill occupations that support the state's economic growth and lead towards increased household wealth.

- Data can be searched, filtered, and sorted. It is produced regionally and state-wide. Each occupation has a descriptive profile.

The Top Jobs system is Indiana's primary labor market signal. Anchoring Credentials of Value to the Top Jobs system facilitates legitimacy, accountability, and adoption.

TOP JOBS INDIANA

A Single Source for Data-Driven, Employer-Based Labor Market Information for the State

Weighted Indicators

DEMAND
Signals the likelihood that employment opportunities will be consistently available

35% of score

RETENTION
Indicates an occupation's stability and counteracts churn

28% of score

GROWTH
Measures how quickly employer demand is growing

25% of score

EARNINGS
Indicates the relative value employers place on an occupation

12% of score

Descriptive Indicators
* NOT INCLUDED IN THE TOP JOBS SCORE *

JOB TRANSFERABILITY
Indicates an occupation's adaptability across industries

Occupation's measurable presence across multiple industries (accounts for at least 2% of employment at the 4-digit NAICS level)

UPWARD MOBILITY
Indicates an occupation's potential for advancement

Number of potential, skill-similar roles with higher earnings, reflecting greater potential upward mobility

JOB STABILITY
Measures an occupation's resilience and likelihood of offering fulltime hours & benefits

- Changes In Employment Growth That Run Counter To Regional Growth Trends
- Share Of Full-Time Job Postings

SKILL CHANGE
Measures how "disrupted" an occupation is due to technological advancements and changing skills

Change in skills and training requested in job postings over time

Earnings Threshold
Top Jobs' increased emphasis on wages is an effort to drive up wages in the state, improving household wealth and purchasing power.

Star Rating	Wage Rule	Share of the Average Wage
★★★★½ / ★★★★★	$56,488+	100%
★★★★	$42,366 - $56,487	75%
★★★	$28,245 - $42,365	50%
★★	$0 - $28,244	25%

CASE STUDY: Indiana's Integrated Approach

How Lightcast is helping Indiana use job market demand data to assess and link Credentials to its Top Jobs occupations

Signaling Value
Looks *narrowly* at whether the job *explicitly* requested the credential.

AWS Certified Welders

Link to Live Job Posting: Posting is no longer active

Location: Russellville, AR	O*NET: 51-4121.00
Company: Express Employment Professionals	Job Title: Certified Welders

A local company needs AWS Certified Welders for a job in Danville, AR!

Requirements:

Must be a certified welder through the American Welding Society (AWS) Must have own welding hood and gloves Must pass pre-employment requirements Come by Express - 701 E Main St Ste 18, Russellville, AR 72801 Call us at 479-967-7070 Or apply online at expresspros.com/russellvillear/ today!

Parse Job Postings and Standardize Data to Generate Detailed and Granular Information

- Job Title & Occupation
- Employer & Industry
- Technical Skills
- Foundational Skills
- Certifications
- Educational Requirements
- Experience Levels
- Salaries

Skills Value
Look *broadly* at the employer requested *skills* aligned with the credential.

Welder

Link to Live Job Posting: dejobs.org

Location: Dodge Center, MN	O*NET: 51-4121.00
Company: Aerotek	Job Title: Welders

Job Title:

Production WelderJob DescriptionCandidates will adjust welding current to proper weld configurations along with heating and forming metal parts and components using hand tools, torch, or welding equipment. Candidates will weld components in flat, vertical, or overhead positions. They will accurately operate and read measuring devices, assemble and weld various metal parts together. This role involves production welding inside for 10-12 hours a day.Responsibilities Adjust welding current to proper weld configurations.Heat and form metal parts and components

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CASE STUDY: Indiana's Integrated Approach

Indiana then establishes Credential-Occupation linkages & alignment scoring based upon skill fit with employer demand
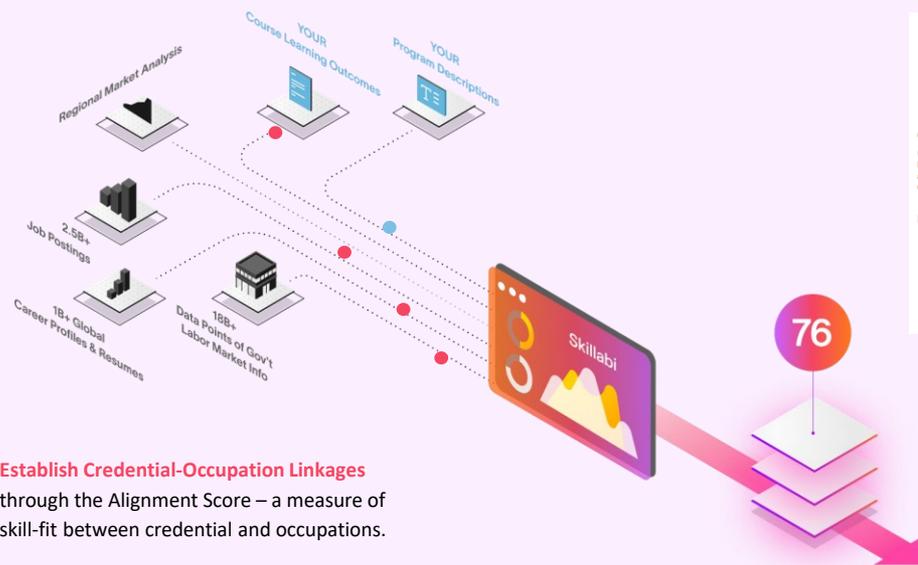
Establish Credential-Occupation Linkages through the Alignment Score – a measure of skill-fit between credential and occupations.

Evaluate Curricular Skill Fit to Stay Future-Ready by comparing the skills in a credential's curriculum and learning outcomes against the skills required by employers for the linked occupations.

Set a Minimum Alignment Score to be more or less strict about how credentials and occupations are linked.

CASE STUDY: Indiana's Integrated Approach

Outcomes and Results in Indiana

1. **Stronger Alignment Between Education and Labor Market Demand**
   By linking credentials to the skill profiles of Top Jobs occupations, Indiana ensures that educational offerings directly feed into high-demand roles. This reduces credential mismatch and improves ROI for both learners and employers.

2. **Transparent, Evidence-Based Definition of "Value"**
   "Value" is no longer subjective or determined by committee. Value tied to measurable labor-market data: wages, demand, and skill alignment. This makes the system defensible and transparent.

3. **Unified Framework Across Agencies**
   Top Jobs is a shared reference point for multiple agencies and stakeholders, so major programs (Career Scholarship Accounts, Next Level Jobs, Workforce Ready Grants, etc.) operate from the same playbook.

4. **Clearer Signals for Learners and Employers**
   When credentials are mapped to occupations and skill sets, learners understand where a credential leads, what to expect, and how to position themselves in the labor market when they have earned the credential.

5. **Adaptability to Changing Skill Demands**
   Evaluating credentials based on their skills linkage allows Indiana to update its credential lists dynamically as the labor market evolves.

Additional Examples & Initiative for Aligning Skills With Labor Market Demand

Ensuring Employer Learning Program Value

Guild is a talent development company that connects employees to employer sponsored education and skilling programs.

Guild uses skill alignment analysis to ensure programs are designed to match the demands of real roles and that learner outcomes are connected to a company's overall organizational success.

Insights support strategic workforce planning and employee upskilling strategies, and identify programs for learners to acquire the relevant skills needed to advance in their careers.

Investment in New High-Quality Short-Term Programs

Last week, ED announced a new Special Projects grant opportunity that includes $50M in funding to support capacity-building for high-quality short-term programs.
Key Priorities:
- Supporting the Creation of New Accrediting Agencies
- Creation of New & Expansion of Existing High-Quality Programs

Strong emphasis on engaging employers, developing talent marketplaces, and integrating work-based learning components into short-term postsecondary programs.

Common Credentialing Provider Use Cases

Some of the many ways in which our partners leverage data- credentialing strategies include:.

- Credential competency model mapping to skills taxonomies and occupation demand signals
- Career pathway exploration platforms to support talent attraction and enrollment
- Inform industry outreach and employer engagement
- Inform outreach and marketing of credentials to individuals based on occupation and geography.

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Keys to Success

Based on our experience conducting credential analyses across the country, a few key factors are essential for success:

- **Stakeholder Alignment:** Ensuring all stakeholders are aligned on a common understanding and definition of a high-quality credential is critical for productive collaboration and evaluation.

- **Accurate and Consistent Data:** Reliable student-level credential attainment data is the foundation of a successful analysis. It is vital that institutions at both the K-12 and postsecondary level report credentialing information consistently and accurately to track trends and make informed decisions.

- **Labor Market Signal Integration:** Regularly incorporating labor market demand into the ongoing validation of credentials helps ensure that they remain relevant in an ever-evolving job market. Today's rapidly changing skills landscape necessitates making this a continual process.

- **Creating Career Pathways to Include Stackable Credentials:** For credentials in demand but linked to lower-wage jobs, building pathways to additional, stackable credentials can elevate the value of the credential and improve long-term career outcomes for workers.

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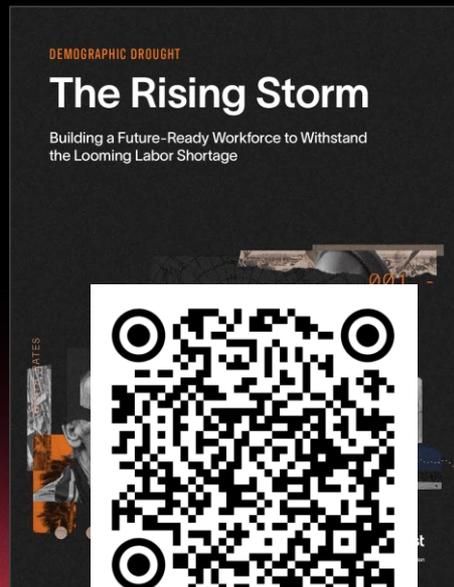
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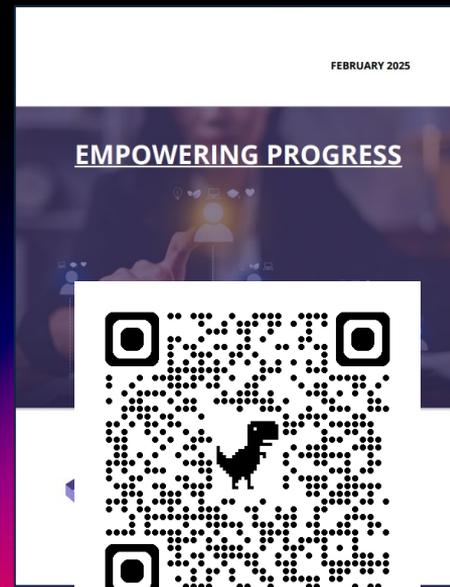
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