CERTIFICATIONS

THE IDEAL, REALITY, AND POTENTIAL

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ABOUT THE PROJECT

Many workers seek to acquire new skills and credentials that they hope will support their careers. They do so to enter or stay current in their field, obtain promotions, change careers, or find work after a layoff. In the process, however, they face a confusing landscape of credentials—degrees, certificates, certifications, licenses, and badges.[1] Among these, the least understood may be certifications, a type of credential that reliably indicates an individual has acquired the knowledge, skills, and abilities required to perform a specific occupation or job. In all, more than 43 million Americans hold a professional certification or a license.[2] Yet many employers, workers, students, policymakers, and education and workforce development practitioners know little about the use and value of certifications.

The Corporation for a Skilled Workforce, George Washington Institute of Public Policy, and Workcred embarked on a research project to provide an unprecedentedly clear picture of the dimensions, patterns, and trends among certifications, as well as how they currently or could interrelate with other types of credentials. To inform this project, the team conducted research from 2019–2021 on 16 certifications that spanned cybersecurity, healthcare, information technology, and manufacturing, and resulted in **five reports and separate overviews for each certification**.

The first report issued in December 2020, *Understanding Certifications*, is a primer to help policymakers and practitioners navigate the complex and little understood "wild west" of certifications. Three more in-depth issue briefs follow—*Certifications as Tools for Promoting Economic Mobility, Accreditation Standards: The Primary Source of Quality Assurance for Certifications,* and *Recertification: A Distinguishing Feature of Certifications.* The final publication, *Certifications: The Ideal, Reality, and Potential*, highlights questions that emerged during the research and topics that need further research. As a set, these reports are intended to help policymakers, practitioners, employers, and funders better understand the characteristics of certifications and their potential to help people enter the labor market for the first time or after a layoff, obtain a career goal, or reskill for a new career.

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1   For more information on the types and differences among credentials, see Workcred's **How do Credentials Differ?** graphic, or view the video, **"Differing Types of Workplace Credentials."**
2   Cunningham, "Professional Certifications and Occupational Licenses: Evidence from the Current Population Survey" (2019).

THE FOLLOWING CERTIFICATIONS WERE SELECTED FOR USE IN THIS PROJECT

American Academy of Healthcare Providers in the Addictive Disorders Certified Addiction Specialist

American Healthcare Information Management Association Registered Health Information Technician

American Nursing Credentialing Center Psychiatric-Mental Health Nursing - Board Certified

American Registry for Diagnostic Medical Sonography Registered Diagnostic Medical Sonographer

American Society for Clinical Pathology Board of Certification Medical Laboratory Technician

Association for Supply Chain Management Certified Supply Chain Professional

Behavior Analyst Certification Board Certified Assistant Behavior Analyst

Board for Global EHS Credentialing Certified Industrial Hygienist

CertNexus Certified Ethical Emerging Technologist

CompTIA A+ Core Series

EC-Council Certified Ethical Hacker

(ISC)² Certified Information Systems Security Professional

Manufacturing Skills Standards Council Certified Production Technician 4.0

Microsoft Certified Azure Fundamentals

Project Management Institute Certified Associate in Project Management

Smart Automation Certification Alliance Certified Industry 4.0 Associate - Basic Operations

Selection criteria for the certifications studied included:

» a mix of more established certifications as well as certifications that have been developed recently to address emerging skills and occupations;

» representation of certifications with a range of educational and experience prerequisites—from entry-level to post-baccalaureate specialization with particular attention to certifications that provide accessibility to workers without a prior college degree;

» a mix of accredited and non-accredited certification bodies and certifications;

» an opportunity to study the relationship between industry certifications and academic credentials; and

» an opportunity to map career pathways.

For each certification, the project team reviewed the certification bodies' websites, and interviewed staff at all of the represented certification bodies. Each interview was conducted using a standard interview protocol and the questions were grouped around the following topics: purpose and scope; assessments and recertification; accreditation and quality assurance; data; employer engagement; candidate outreach; and relationships with educational institutions. In addition, the recommendations in each report are informed by a literature review of certifications and the project team members' experiences working with the certification community.

This is the final report in this project on the certification landscape, and focuses on what could be done to improve certifications, increase their usage, and better integrate them into our education and training systems. The recommendations included stem not only from this project's research, but from a literature review and our extensive experience with certifications and their providers and accreditors.[3]

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3   Author's note: as the final report in this series about the certification landscape, it is both a summary of the recommendations found in the other reports as well as new recommendations.

CERTIFICATION: AN IMPRESSIVE AND COMPLEX CREDENTIAL

Among workforce credentials, certifications stand out for their exacting process for determining and assessing occupational knowledge and skills. Unlike degrees and certificates, they require passing a competency-based exam by an independent third party. Further, the competencies assessed are determined by experts who have conducted a job task analysis. In addition, they are valid for a limited period, usually three to five years, after which they expire unless renewed through a recertification process.[4]

The result is a credential that makes it exceptionally easy for employers to identify and hire workers with specific competencies, and that helps job seekers know what skills they demonstrably possess and to seek jobs accordingly. This transparency fosters greater efficiency in a labor market that struggles to achieve good matches between those offering and seeking jobs and that frequently leaves one or both parties (employers and new employees) seeking a costly change when a mismatch becomes evident.

Another strength of certifications is their accessibility relative to four-year degrees. The knowledge and skills needed to pass a certification exam can be obtained through self-study, experiential learning at work, or training programs offered by professional associations, boot camps, and community organizations, as well as through traditional college coursework and internships. These ways of developing the needed competencies are less expensive and time-consuming than college, and thus offer individuals—especially low-income youth and working adults—more affordable pathways to desired careers. It is not clear at present that many of them take advantage of these opportunities, but they might if they knew more about them.

To be sure, many certification exams have substantial educational and/or experience prerequisites, and some national certifications are a requirement for obtaining a license or doing certain jobs. And, most certification holders do have an associate or bachelor's degree. Nonetheless, workers with only a high school diploma can and often do obtain valuable certifications in construction, manufacturing, facilities management, information technology (IT), healthcare, and other industries. They do so by taking free online courses or attending intensive boot camps that cost a fraction of a year in college

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4   Albert et al., *Recertification: A Distinguishing Feature of Certifications* (2022).

and lead to well-paying jobs. A growing number of community colleges also offer similarly intensive non-degree programs that are aligned to certifications.

In addition, many certifications are supplementary credentials obtained by workers who are already employed. These workers may seek to document skills they have obtained on the job. Or they may take training or special courses, such as how to operate new equipment or perform certain safety or quality-control roles. The courses or training are often paid for by their employer and offered by the equipment manufacturer.

Finally, most certifications produce labor market and other benefits to those who obtain them, and can thus motivate skill acquisition and facilitate economic mobility. Their impact on employment and earnings is complex and varies by gender and education.[5] The earnings gains for workers without a college degree arise primarily from the transitions to higher-paying occupations and industries that credentials facilitate rather than promotions or salary gains with their current employer.[6] For women, labor-market gains are primarily concentrated among those without a bachelor's degree and flow largely from increased employment rather than wage hikes for those already employed. For men, there is little impact on employment, but those who are employed tend to see increases in earnings.[7]

Certifications also provide other, less tangible benefits to their holders, such as making jobs more interesting, securing additional prestige among one's colleagues and clients, and earning the satisfaction of being a more skilled practitioner. Whatever the benefit sought, the key point is that certifications not only enable economic mobility, especially for those lacking bachelor's degrees, they also serve as on-going motivators of skill acquisition in an economy that depends on the skills of its workforce. They do so through recertification requirements that motivate keeping up in one's existing field, and also through the wide variety of supplementary certifications that invite workers to expand their skill sets.

Unfortunately, these impressive characteristics of certifications—their signaling accuracy, their accessibility, and their capacity to motivate skill acquisition and improve labor-market outcomes—are often obscured by the widespread lack of knowledge about them.[8] Why aren't certifications better known and understood? One reason is that there are thousands of them—more than 8,000 and counting[9]—spanning a wide range of industry sectors. As an example, the Indeed editorial team identified "10 In-Demand Career Certifications" that span numerous industry sectors: project management (Certified Associate in Project Management and Project Management Professional);

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5   Albert, "What We Know About Non-Degree Credentials: A Literature Scan" (2019).

6   Baird et al., *Beyond Traditional Academic Degrees: The Labor Market Returns to Occupational Credentials in the United States* (2021).

7   Ibid.

8   Marcus, "Credential chaos: Growing 'maze' of education credentials is confusing consumers and employers" (2021).

9   Author's note: this total number of certifications may not seem large in comparison to Credential Engine's estimates in their *Counting U.S. Postsecondary and Secondary Credentials* report for Title IV institution degrees (196,139) and certificates (122,048), but these numbers include every degree issued by each of thousands of colleges and universities counted separately. In reality, there are only hundreds of fairly standard four-year degrees, such as math, nursing, accounting, civil engineering, law, and so forth.

business analysts (Certified Business Analysis Professional and the IIBA Agile Analysis Certification); supply chain (Certified in Production and Inventory Management; Certified Supply Chain Professional; Certified in Logistics, Transportation and Distribution); marketing; skilled trades (Journeyman); human resources (Professional in Human Resources, Senior Professional in Human Resources); sales; and accounting (Certified Public Accountant, Chartered Financial Analyst).[10]

Another reason, as mentioned above, is that they vary widely in the education level and other prerequisites. Such prerequisites can even impede entry to certain professions and thus reduce social mobility. They vary in other ways as well—some are accredited, but most are not. And while many appear to abide by standards for personnel certifications, such as the International Organization for Standardization (ISO) standard ISO/IEC 17024:2012, *Conformity assessment – General requirements for bodies operating certification of persons*, or the National Commission of Certifying Agencies (NCCA) *Standards for the Accreditation of Certification Programs*,[11] it is difficult to discern which do and which do not. Additionally, many serve as qualifications for entry into an occupation, others are more advanced occupational credentials, and still others attest to specialized supplementary skills.

Moreover, unlike degrees, certifications are issued by a variety of unregulated industry and professional associations, vendors, employers, and even federal government agencies, even though they are often a requirement for obtaining a legal license to practice. Finally, until recently they have been concentrated in a handful of industries—especially IT, healthcare, manufacturing, and financial services—and operate somewhat differently in each of them. To complicate matters, a growing number and variety of industry and professional associations are developing them to meet their members' needs, thus increasing the diversity of certifications. Such diversity, combined with the lack of regulation, has contributed to a problematic variability in the usage of the term "certification." Organizations are free to and do award credentials that they label certifications, but that often do not meet the criteria spelled out in the major certification standards referenced above.

For all these reasons, major stakeholders in the credentialing marketplace have difficulty understanding what certifications are and what purpose they serve. Some of the problematic variability is inherent in certifications and even related to their strengths. That, however, makes it even more important to identify and address the reasons that certifications are not realizing their potential. These include low rates of accreditation, weaknesses in recertification procedures, insufficient transparency about their processes, and a lack of data collection and voluntary reporting by many certification bodies. The remainder of this report explains more about these problems and offers specific recommendations for addressing them.

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10   Indeed, "10 In-Demand Career Certifications (And How To Achieve Them)" (2021).
11   For more information about the ISO/IEC 17024 standard, see **https://www.iso.org/standard/52993.html**; for more information on the NCCA standards, see **https://www.credentialingexcellence.org/Accreditation/Earn-Accreditation/NCCA**.

COLLECT BETTER DATA

Each report in this project has emphasized the lack of good data on certifications. Students, career counselors, education and training providers, employers, policymakers, researchers, and others need more and better data to improve their analyses and decision-making:[12]

Employers need to know, for hiring and internal promotion purposes, which certifications result in more skilled and productive workers.

Students, workers, and their advisors, including workforce intermediaries and community-based organizations, need to know which certifications, alone and in combination with other credentials—degrees, certificates, licenses—typically yield what sorts of career outcomes.

Colleges and universities need to know the extent to which specific certifications complement their degrees and certificates, and thus could help their graduates better succeed in the labor market; This information could also lead to integrating more certifications into higher education curricula.

State governments need to know which certifications should be included in their Eligible Training Provider Lists (ETPLs) and which represent training opportunities for the state's workforce.

The federal government needs to know whether to make certification exams an eligible expense by those holding Pell grants and other forms of student assistance.

Researchers need better data to answer questions about the contribution of certifications to labor market efficiency, career mobility, and labor market fairness.

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12 Author's note: the U.S. Department of Labor (DOL), through its "**Certification Finder**" and "**Competency Model Clearinghouse**," provides some data, as do Credential Engine, American National Standards Institute, Workcred, Institute for Credentialing Excellence, National Commission for Certifying Agencies, International Certification Accreditation Council, the National Student Clearinghouse, and Emsi Burning Glass. The U.S. Department of Education's "**Adult Training and Education Survey**," and the National Science Foundation's "**National Training, Education, and Workforce Survey**," are helpful but would have to ask more and better questions to be very useful. Some states collect some data, but these efforts are scattered and uncoordinated. Most certification bodies keep records on their applicants and awardees, and some conduct salary surveys, but many of them do not track applicants and certification holders by race, gender, and age. Moreover, since they receive no public money, unlike colleges and universities, they are not required to report such information and have little incentive to do so. And in fact, their data is considered proprietary. There is a growing trend for states to require certification bodies to report data on K-12 students (high school students) who are receiving certifications in their states. States then will reimburse school districts for the number of students who receive certifications. An example is Texas, but only for certifications on its **approved list**.

Some much needed work on data is underway. A notable example is the partnership among the National Student Clearinghouse, the National Association of Manufacturers/Manufacturing Institute, and the U.S. Census Bureau (Census). By combining data on certification holders in various manufacturing areas with college enrollment data and aggregate Census and Internal Revenue Service data on wages earned, this research is yielding revealing data on the employment and earnings associated with the attainment of certain manufacturing certifications by demographics such as gender, race, and ethnicity, and age groups, and credential attainment level.[13] Thus far, it has produced data on only a few specific certifications earned by hundreds of thousands of individuals, but efforts are underway to engage additional certification bodies, and Workcred is reaching out to certification bodies in other industries to broaden this research.[14]

This research represents an important start, but there are thousands of certification bodies and even more certifications. Moreover, there are several other kinds of data that is needed. Specifically, better data is needed on:

» the distribution and differential growth of various types of certifications;

» the market value and return on investment (ROI) of various certifications, with the market value and ROI calculated for different demographic groups and various combinations of certifications and other degrees, certificates, and licenses;

» the number of certifications awarded and renewed, and the age, gender, race, veteran's status, disability status, family socioeconomic status, education, employment, and earnings of individuals who seek, obtain, and renew various certifications;

» the varying motivations that individuals in different regulated and unregulated industries have for obtaining and renewing certifications, including promotion, increased salary, remaining relevant vis-à-vis advances in their industry, career changes, professional prestige, marketing themselves as self-employed practitioners and the ties to licensing; and

» employers' utilization and assessments of the value of various certifications by industry, firm size, and region.

Obtaining such data will require surveys of employers, certification holders, and others, but the starting point is the certification bodies themselves. It is vital that they collect and report basic information about those they test, certify, and recertify. This may require inducements along the lines discussed in the next recommendation. Subsequent recommendations address the question of where and how such data should be stored, and the technologies for communicating and verifying individual certifications.

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13   National Student Clearinghouse, *Industry Credentials* (2021).
14   For more information on Workcred's data-linking project, see: **https://www.workcred.org/Our-Work/Demonstrate-Value-through-Linking-Data.aspx**.

BRING CERTIFICATION BODIES INTO THE POLICYMAKING PROCESS

Certification bodies constitute a fragmented and largely isolated assortment of independent credential providers. They exist outside the federal and state systems for regulation and financial assistance, and thus are exempt from the government requirements that obligate most colleges and universities to provide data about enrollment, credential attainment, and labor-market outcomes. That is a big reason that employers, students, educators, career counselors, and governments seem to know so little about them.

To develop a more data-driven and integrated credentialing system, efforts should be undertaken to bring certification bodies into the broader federal, state, and public-private systems for collecting and housing information, allocating funds, and setting standards. Certification bodies should be "at the table," not only to explain their work and express their concerns about proposed changes, but to contribute their expertise in competency determination and assessment design efforts to improve the credentialing system and subsystems. How might this be done in practice?

THE FEDERAL GOVERNMENT

A promising initiative would be for the U.S. Department of Education and the U.S. Department of Labor (DOL) to jointly establish an interagency working group to review the role and potential of certifications in the broader learn-and-work ecosystem. This working group should involve all the U.S. federal agencies (e.g., Department of Commerce, Department of Defense, Environmental Protection Agency, Department of Health and Human Services, Federal Aviation Administration, Department of Agriculture, etc.) that confer or approve certifications. The working group should also include the agencies that collect related data, such as the National Center for Science and Engineering Statistics.

In the process, the group should consult with the major certification bodies, the major accreditors of certification bodies, key employer associations in the industries where certifications are commonly preferred or required, and the leading higher education associations. The priority should be to ensure the collection and dissemination of better data on certifications. It might consider recommending establishment of an office of certifications comparable to DOL's Office of Apprenticeship—an office that could conduct and/or commission such studies. The group could also examine what other nations are doing in this arena. Canada's central government, for example, gives grants for the development of new certifications that are needed. Finally, the group should issue recommendations for steps that the agencies, the White House, and/or Congress could take to improve credentialing in the U.S.

STATE GOVERNMENTS

States authorize higher education institutions to operate within their jurisdictions and provide key funding. They establish official ETPLs for the purpose of directing spending by individuals who have obtained public training grants. States also provide incumbent worker training grants to employers. Most relevantly, they require and issue licenses for many occupations, and often require or recognize a certification as a qualification for obtaining a license. Thus, it stands to reason that states could

launch initiatives aimed at better integrating certification bodies and related data into their regulatory processes.

The National Governors Association could take the lead in involving certification bodies more by producing a "Governor's Guide to Certification," hosting workshops, or even a "policy academy" aimed at developing and disseminating best practices. The National Conference of State Legislatures could also take similar actions. But state governments, acting alone or in concert with neighboring states, should be the leaders in taking such action, as several have done to advance youth apprenticeship programs. If consortia of states do launch such initiatives, it is important that they invest in interoperable systems that simplify reporting (e.g., common data standards), enable comparisons across jurisdictions, and facilitate connections to other data sets, as further discussed in the next recommendation.

EMPLOYERS

Employers frequently express dissatisfaction with the skills of the individuals they hire, including college graduates. Some large employers and a small but increasing number of small- and medium-sized employers are experimenting with skills-based hiring—framing job descriptions and candidate screening around skills needed for the job in question—as an alternative to reliance on postsecondary degrees as a proxy for job readiness. Certifications offer a way to ensure job candidates possess those needed skills. Major industry and business associations could play a key role in bringing certification bodies to the table and encouraging, and in some cases assisting them, to provide more comparable information, expand the credentials they offer, and integrate certifications into degree curricula.

CERTIFICATION BODIES

Certification bodies could also form a coalition of the willing and take action themselves. Those that see it in their self-interest to collect and share data and be included in state or federal workforce and higher education policy processes could form working groups to clarify their interests and communicate their availability to state workforce and education authorities. Many certification bodies are concerned about how to distinguish high-quality certifications from low-quality ones and are interested in protecting and advocating for their quality brand. This may also be an opportunity for a foundation to support the formation of a national coalition.

FORMAT AND STORE DATA IN WAYS THAT FACILITATE USE BY ALL STAKEHOLDERS

It is not enough to collect good data on certifications—the data must also be useful and available for informing decisions by various stakeholders. That requires that it be comparable across certification bodies and jurisdictions, and be interoperable with other kinds of data sets, like data on degrees, certificates, state longitudinal data systems, etc. Certification data must also be accessible to researchers and analysts, which is not usually the case with public agencies that typically restrict access.

Employers may be more willing to consume certification data if it were easier to integrate into their talent management platforms—ensuring skills from validated certifications are properly accounted for when someone is considered for a job. Blockchain-based digital learning and employment records could transform how certifications are shared by the learner and validated by employers. A step towards such a future would be for accreditors of certification bodies to require that certifications be built on some sort of standard technology or infrastructure that worked with and was portable across the many blockchain solutions already in use.[15] However, that may not be necessary, as it would seem to be in the certification bodies' own interests to engage in the development and use of these new methods for sharing credentials. The best certification can be created, but if the employer cannot easily consume and validate it, and thus the individual cannot get full value from it, it will not be widely adopted. To be sure, building the needed data infrastructure will be a challenge. A practical starting point may be for a third party to connect human capital management or talent management providers (already deeply engaged with employers) with the certification bodies.[16]

The previous paragraph focuses on data about *individual certifications*, that in a blockchain system would belong to certification holders and not available to others. Yet, stakeholders (especially governments and researchers) need access to the aggregate data on the earnings and employment outcomes of the certification holders themselves, as well as comparable information about other credentials. The best place to house such data would be in a neutral organization, such as the National Student Clearinghouse or an organization like the Coleridge Initiative, rather than a government agency, since both federal and state government agencies tend to restrict access or require extraordinary efforts to obtain access to such information. To the extent that states collect such data, they should commit to using a common language and metrics to enable aggregation across states.

Three key dimensions of this data-sharing challenge are:

1) the technology by which data about a specific certification and holder of it are communicated;

2) the standards for making all certification data interoperable; and

3) the infrastructure for housing the data.

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15 Author's note: examples of recent progress in making credentials transparent, comparable, and accessible include Credential Engine and its **Credential Transparency Description Language (CTDL)**; the **Coleridge Initiative**; and the joint U.S. Chamber of Commerce Foundation and HR Open Standards Consortium's **Jobs and Employment Data Exchange project**. See also Goger and McDermott, *Digital Transformation in Labor and Education Systems* (2021).

16 Author's note: thank you to John Kessler, global lead for responsible assessment, credentialing, and learning measurement at Accenture, for this information.

CERTIFICATION BODIES SHOULD IMPROVE THEIR INTERNAL PROCESSES AND PRACTICES

TRANSPARENCY

Certification bodies should not only commit to being more transparent about how they develop their certifications, whether they are accredited, and how they report data, but also to working with other certification bodies to develop and implement common standards for the definitions and metrics used. Many already provide information on subject matter experts, how competencies are validated, and how new exam questions are developed. However, this information is often hard to find or is accessible only by association members. If this information were more publicly available, easy to find, and verified by a third party, individuals would be able to distinguish between certifications that have rigorous assessment development processes and those that do not.[17] Similarly, as noted in another report of this project, *Accreditation Standards: The Primary Source of Quality Assurance for Certifications*, certification bodies should make clear which accreditation standards, if any, their certifications meet. Furthermore, whether accredited or not, they should clearly outline their exam/assessment development process and relevant data/metrics. For example, the job task analysis should be made available along with a list of who was involved in developing it, when it was developed, and when it was last updated.[18] They should also agree to common standards for collecting and reporting disaggregated data on their certification holders.

RECERTIFICATION PRACTICES

Certification bodies and their accreditors should also examine the validity of the non-assessment activities that are used to demonstrate continuing competency in recertification requirements. Certification bodies vary in the extent to which they require that continuing education credits obtained for attending courses be validated by assessment. Moreover, when assessments are conducted, they may involve simple reading or listening comprehension questions that do not reflect the real situations in which practitioners must apply professional expertise.

For example, many certification bodies interviewed during this study were unable to point to evidence that non-instructional activities such as publishing and volunteering for service in professional societies were as effective as continuing education courses at ensuring the accumulation and retention of knowledge during the recertification process.[19] Therefore, at a minimum, certification bodies should conduct research that demonstrates the value of these activities with respect to their goal of ensuring continuing competency in the occupations they serve. In the absence of such evidence, certification bodies should require that individuals demonstrate continuing competence through other means, such as re-assessment.

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17   Cardenas-Navia et al., *Accreditation Standards: The Primary Source of Quality Assurance for Certifications* (2022).
18   Ibid.
19   Albert et al., *Recertification: A Distinguishing Feature of Certifications* (2022).

EQUITY

Certification bodies should also do more to ensure equitable access to higher-impact recertification activities. While some certification bodies note that free and low-cost recertification opportunities exist, such opportunities—especially if based upon self-study or distance education—may not provide the same or parallel professionalization benefits that the more expensive recertification activities (e.g., conferences and live trainings) can provide.[20] Given that some certification bodies point to professional socialization and engagement as positive outcomes of recertification by achieving units of credit, they—and, perhaps, affiliated membership associations—should ensure certified individuals can choose their array of recertification activities on the basis of educational value and competencies retained rather than cost, convenience, or time commitment. This may require certification bodies to do more to evaluate the different routes to recertification they offer and the educational quality of activities that count towards recertification. If evidence suggests that knowledge is better retained from in-person training or longer courses than self-study, online courses, certification bodies should change their requirements accordingly. Ensuring that recertification offerings fulfill their promise with respect to assuring continuing competence not only benefits the public, but also provides direct value to certified individuals who may appreciate the ROI that comes with being able to do their jobs more effectively and with less risk of error. This ROI may also prompt more individuals to renew their certifications, ultimately enhancing the sustainability of certification programs.

Finally, certification bodies should also re-examine their current prerequisite requirements as noted earlier in this report, taking into account their impact on equity and provide justification based on research data. If certification bodies do not make such changes on their own, employer associations, relevant accreditation organizations, and state and federal policymakers should explore ways to incentivize the needed changes.[21]

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20 Albert et al., *Recertification: A Distinguishing Feature of Certifications* (2022).

21 Ganzglass et al., *Certifications as Tools for Promoting Economic Mobility* (2022).

GOVERNMENTS AND EMPLOYERS SHOULD ENCOURAGE WIDER RELIANCE ON CERTIFICATIONS IN HIRING AND EFFORTS TO MAKE RECERTIFICATION MORE ACCESSIBLE

Policy proposals for "individual learning accounts" (i.e., tax-advantaged savings accounts for training and upskilling activities) and other forms of public funding for training and workforce development are not new, though they are experiencing a resurgence in the Covid-19 era.[22] Any new program providing favorable tax incentives for certification-related expenses could potentially reduce the cost burden of recertification activities as well as initial examinations. As noted in another report of this project, *Recertification: A Distinguishing Feature of Certifications*, employers need not wait for policymakers to make the first moves with respect to alleviating the financial burdens of certification and recertification activities.[23] In a hyper-competitive labor market in which tuition assistance is a highly-sought employee benefit, employers may find that retention and recruitment processes are improved if they include the fees and costs associated with certification and recertification— and professional development activities are eligible for reimbursement as well.[24] In addition to benefitting employees, such efforts would likely benefit the employer's bottom line by bolstering clients' confidence in the quality of services provided and ensuring that workers have the necessary competencies by updating their skills.

Many employers use post-secondary degrees as their minimum hiring requirement, thereby excluding from consideration many job applicants who may be perfectly capable of performing required work. Fortunately, a growing number of employers are experimenting with competency-based hiring (i.e., direct assessment of skills) as an alternative. They do this to expand the pool of eligible workers and because of dissatisfaction with at least some traditional degrees and other educational credentials. Yet, there are significant implications for labor-market fairness and social mobility. Because the paths to certifications typically cost less than degrees to follow and are more skill- and job task-focused, a greater reliance on certifications in hiring would open the labor market to a broader more diverse talent pool.[25] A recent survey of 750 human resources leaders found that 34 percent of them are using some form of skills-based hiring, but that while two-thirds of them using pre-hiring assessments, only 39 percent are "prioritizing" certifications.[26]

Employers could signal that they also value recertification by seeking out job candidates with valid or renewed certifications and/or by offering such incentives as increased compensation or recognition in the workplace to those who recertify. Doing this will help ensure that recertification

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22   Albert et al., *Recertification: A Distinguishing Feature of Certifications* (2022).

23   Ibid.

24   Schwartz, "From Appetizers to Tuition, Incentives to Job Seekers Grow" (2021).

25   Author's note: thank you to Van Freeman, regional head of the Washington DC region at Opportunity@America, for this information.

26   Author's note: thank you to Sean Gallagher, founder and executive director of the Center for the Future of Higher Education and Talent Strategy, and executive professor of educational policy at Northeastern University, who provided information from the Wellspring Initiative study, *Digital Credentials and Competency Frameworks: Exploring Employer Readiness and Use in Talent Management* (2021), for use in this report.

delivers in practice on its purpose to improve competency and quality. Requirements for individuals seeking certification to hold baccalaureate degrees, for example, or a given number of years of work experience, should be based on evidence that certification holders who meet those requirements are better at their jobs. Where such evidence does not exist, certification bodies should not hesitate to remove these barriers to eligibility, especially if it might disproportionately exclude specific races or other demographic groups.

EDUCATION AND WORKFORCE SYSTEMS SHOULD ENGAGE MORE DEEPLY WITH CERTIFICATIONS

Education and workforce systems certainly have key roles to play in the certification arena. As noted in another report of this project, Certifications as Tools for Promoting Economic Mobility, anecdotal evidence from career pathways initiatives suggests that because of life circumstances, it is often difficult for some people to attain an initial credential or move beyond initial attainment to earn additional credentials that would help them advance in a career. While progress is being made in implementing competency-based practices and integrating certifications within relevant educational programs of study, significantly more needs to be done to spur systemic reforms and create more aligned and flexible systems that make it easier to attain portable, high-quality credentials. Such reforms include changes in credit, transfer, quality assurance, and accountability policies as well as provisions for improved navigational, financial, and other supports to help people attain the credentials needed to advance. In addition, a better understanding is needed of how various policy levers can be applied to promote greater integration of certifications into the education and workforce systems, as well as a greater commitment among credential providers, learners, employers, accreditors, and policymakers to establish a more connected credentialing system to better serve the needs of the diverse U.S. workforce.[27]

One challenge facing credential providers, especially community colleges, is that the economics of certification preparation programs favor foundational certifications (e.g., Manufacturing Skill Standards Council's certifications for production, logistics, and forklift technicians; CompTIA's A+ certification for entry-level jobs in information technology; Certified Nursing Assistant certification in health care) over the more specialized occupational ones because they attract more students. To the extent that community colleges do offer specialized certification programs, they tend to favor the long-established and better-known ones. This is often because there are thousands of specialized certification programs and it is beyond the capacity of most education and workforce bodies to search through and determine the best programs for their purposes. The result is a neglect of newer certifications even though they may be of high quality. State education authorities and economic and workforce development bodies should consider how they might incent a better mix of certification programs.

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27   Ganzglass et al., *Certifications as Tools for Promoting Economic Mobility* (2022).

GOVERNMENTS AND FOUNDATIONS SHOULD FUND ADDITIONAL RESEARCH ON CERTIFICATIONS

This study underscores how vast and varied the world of certifications is and how little we know about it. Even given the current lack of good data, there is much that additional research could do to shed light on key dimensions of certification production and consumption. And at a time of growing interest in certifications, it is important that initiatives to improve their performance and utilization are as evidence-based as possible.

Examples of needed research on certifications include determining:

the distribution of certifications by the number of individuals holding them and across industries, occupations, and locations; trends in these distributions and the nature and reasons for the trends;

whether and how those who obtain certifications benefit, controlling for occupation, stage of career, gender, race and education (sub-baccalaureate or not) and by the nature of the benefit—earning and employment gains, promotions, ability to switch careers, professional respect;

the impacts of real and perceived trade-offs between educational and work experience prerequisites on individual's decisions to pursue a certain certification and their success in the certification exam and job performance;

the extent to which career pathways in the world of certifications are truly stackable, either towards more advanced certifications or academic degrees, and how often that pathway is traveled;

Employer attitudes towards—and utilization of—certifications and the implication for increasing the diversity of their workforces;

the payoffs realized by employers who use certifications to recruit, hire, upskill, and promote workers, and how these vary by industry, size of firm, and business model;[28]

the reasons that new certifications are established, including the costs and benefits involved;

the reasons that some certifications are terminated and the consequences for their holders;

the varying quality of certifications and mechanisms for assuring better quality;

whether and how certification affects occupational solidarity and the impact of any increase in solidarity on the formation of unions or relations with the relevant certification body;

whether and how certification affects efforts to obtain licensing; and

whether and under what circumstances certifications could and should replace state licenses.

Since these questions represent so much that we do not know about the vast world of certifications, and could help to rectify many of the challenges identified through this study, research that answers these questions will enable a wider appreciation and better use of certifications by all stakeholders.

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28 Author's note: A **recent survey** by Pearson Vue revealed that more than 50% of responding IT decisionmakers and learning and development professionals estimate an annual economic benefit of more than $10,000 for each certified employee.

CONCLUSION

Certifications stand out among the various credentials in the labor market for their capacity to accurately signal the relevant knowledge and skills of their holders. They thus improve the functioning of the labor market and spare employers and employees the negative consequences of poor hiring decisions. Many certifications also offer career pathways that do not require a four-year or postsecondary degree, and thus are more accessible to low-income individuals. Finally, recertification requirements and the existence of many easily attained supplementary certifications motivate workers to maintain their skills and broaden their skill sets.

Yet, the full potential of certifications goes unrealized because too little is known about them and because certification bodies are often not included in the broader credentialing system's governance. The time has come to develop common standards for collecting and reporting information about their processes and to integrate certifications and their issuers into the broader U.S. credentialing ecosystem. Such changes will require creative and sustained initiatives by key stakeholders—employers, education providers, policymakers, foundations and certification bodies themselves—but the results will be well worth the effort.
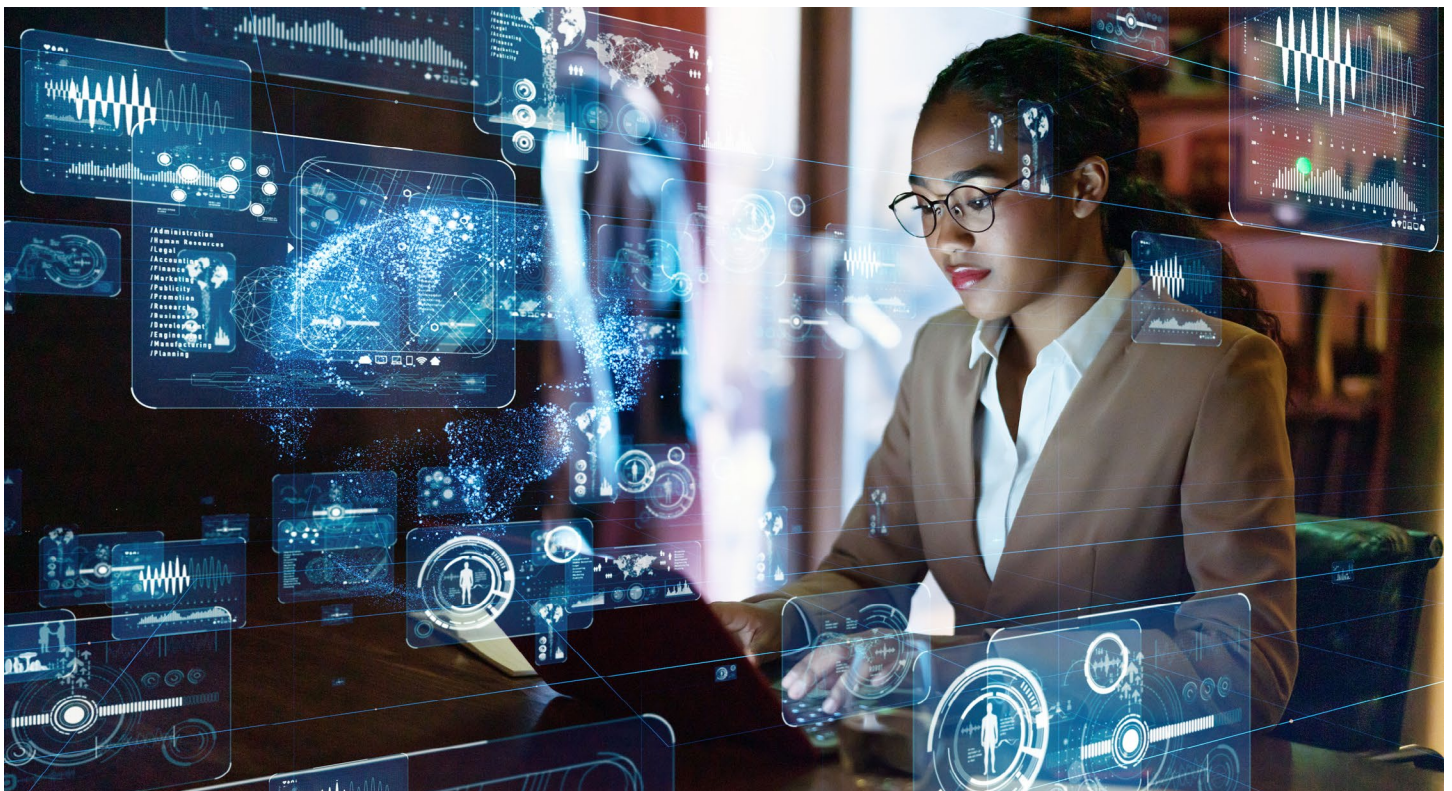
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