



Tracking Industry-Based Certifications:

PROMISING PRACTICES IN CAPTURING DATA ON THE WORKFORCE
SUPPLY OF INDUSTRY-CERTIFIED WORKERS

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EXECUTIVE SUMMARY

As the number of jobs that require at least a high school diploma decrease, more students are turning to alternative postsecondary education and training pathways to improve employability and overall outcomes. By 2020, about 65 percent of job openings will require some form of postsecondary education or training.¹ While the traditional baccalaureate degree is still viewed as the primary pathway to postsecondary success, interest in middle-skill jobs has increased the desire and need for other avenues of education. Middle-skill jobs are primarily occupations that require education or training beyond high school, but not necessarily a bachelor's degree.

This report will focus on industry-based certifications and national promising practices for capturing relevant certification information and data. Across the nation, the process for collecting data on industry-based certifications is either limited or in development. Without a method to track industry-based certifications, it becomes difficult to determine how industry-based certifications fit into and benefit the overall workforce system. Thus, the question is: Does a reliable model exist to capture the information necessary to determine the workforce supply of industry-certified workers?

This report will first provide the necessary background definitions followed by a review of existing national industry-based certification data systems and programs. Next, selected state case studies of promising practices from Virginia, Maryland, Illinois, and Florida are described. Finally, concluding comments are offered. In order for policy makers and stakeholders to make informed decisions on the performance and direction of workforce development, accurate and timely tracking of statewide industry-based certifications is necessary to complement other educational and training data that are currently being collected.

¹ Carnevale, et al. (June 2013).

SECTION 1: INTRODUCTION

Research Scope

The purpose of this research is to report on promising practices used to capture information and data on industry-based certifications to examine models that may assist in providing insight into the workforce supply of industry-certified workers for demand occupations. This report will present national methods that may be replicated or used as the basis for capturing nontraditional credentials, such as industry-based certifications, in Texas. It will communicate to stakeholders a better understanding of industry-based certifications,² the role of certifications in the workforce system, and the steps required to produce a high-quality tracking system.

Many regions in the United States are currently experiencing a skills shortage. Contributing to the issue is the lack of a coherent and comprehensive system for earning and reporting the breadth of postsecondary credentials, including those conferred by an entity other than a college or university. The voluminous number of educational and training credentials that exist may also dilute the value of earned awards. Traditional four-year degrees only scratch the surface of the available awards an individual may earn. Nontraditional credentials vary from industry to industry and state to state. Additionally, the paths by which various nontraditional credentials are earned can be numerous. As the number of nontraditional credentials increase, distinguishing the differences between the various types can become difficult and blurred. Options may create confusion among students, educators, industry employers, and state policy makers. This confusion therefore creates questions regarding the necessity and value of various credentials in the labor market.

Understanding Workforce Credentials: Distinguishing the Differences

The process of analyzing postsecondary educational and workforce-related credentials can be a daunting task given the sheer breadth of credentials that currently exists. Added to that are the sometimes fractured and inconsistent pathways by which individuals can earn a valid credential. Various public and private institutions, trade schools, and professional organizations offer competing training programs or examinations that provide value that students may not be aware of.

A key step to addressing the aforementioned challenges is to distinguish between various types of postsecondary awards. First, traditional and nontraditional postsecondary awards can all broadly be classified as types of educational or training credentials. Within postsecondary credentials, the distinction between traditional four- and two-year degrees and nontraditional awards is relatively clear. However, within nontraditional credentials, the defining lines are often distorted by varying perspectives, standards, and interested parties. More specifically, nontraditional credential awards encompass numerous forms, such as certificates, licenses, certifications, apprenticeship certificates, non-secondary diplomas, and more. As three of the more commonly awarded nontraditional credentials operating within the workforce environment, certificates, licenses, and certifications require further clarification. These credentials are sometimes incorrectly combined or used interchangeably. While all three are similar in principal and offer the recipient a valuable award, important distinctions will be addressed for this report. The descriptions illustrate the most widely accepted features and characteristics that distinguish each type of credential.³

² For concision and consistency the term “certification” will be used throughout the remainder of this report as a synonym for industry-based certification. For this report, certifications will represent an award or document given to an individual that demonstrates, through assessment only, competency and proficiency in a given field or industry where the examination of knowledge is administered by an independent, third-party testing center. Testing centers are nationally accredited or recognized by industries or professional organizations. In this report, certifications will represent other similar vocabulary commonly used such as industry-recognized certification, industry-ready certification, third-party/independent certification, industry credential(s)(ing), and skills certification(s).

³ Browning, et al. (1996); Downing (1998); Durley (2005); Andrews (2008), (2009); AHA (2009); Knapp and Kendzel (2009).

- *Credential.* A credential is the all-encompassing term used to describe any type of traditional and nontraditional award within the context of education, training, workforce, and employment development. Credentials are awarded by third-party entities, who have relevant authority to issue such credentials, after individuals demonstrate proficiency or competency in a given occupation or field. Credential awards can be earned from a variety of sources, including, but not limited to, educational institutions, industry associations, or government agencies.⁴
- *Certificate.* A certificate may be awarded by either an educational institution or independent education and training provider associated with specific programs of study. Educational and training programs teach students skills related to specific occupations. Certificate programs are generally created, taught, and assessed directly by the provider of a program. Students are awarded certificates after successfully completing instruction and demonstrating proficiency through provider-administered exams. Obtaining a certificate generally signifies the end of the instructional program.
- *License.* A license is a type of nontraditional credential that is generally awarded by a government-regulated agency. This award may be granted by a federal entity, but usually comes from the state level. Of the three types of credentials, a license is the most heavily regulated and restrictive due to its governmental association. Like the two other credentials, a license signals that an individual has completed or achieved certain standards. Unlike the two other credentials, a license is required before an individual may work in specific professions. Plumbers, electricians, real estate brokers, and nurses are examples of occupations that require an individual to have a valid license.
- *Certification.* A certification is a type of nontraditional award to an individual that demonstrates proficiency and knowledge, through examination, in a specific industry or trade. As opposed to a certificate, obtaining a certification award is not dependent on any actual education or training program. Instead, evaluating candidates for certification relies on independent, third-party professional and industry-based groups. These national organizations develop and maintain relevant proficiency standards that are assessed and sanctioned by industry-approved examination facilities, independent of any educational institution or training program. Furthermore, certifications often have an expiration date, requiring individuals to participate in continuing education or reexamination in order to stay current. This characterization of certification awards have been accepted and endorsed by national entities, such as the National Association of Manufacturers (NAM) and the American Association of Community Colleges.⁵

The distinction between certificates, licenses, and certifications is important for this report, which exclusively examines practices for capturing data on industry-recognized certifications awarded through independent third-party organizations. Based on the characteristics of certifications, it is clear that they present an important value for students, employers, policy makers, and other related stakeholders.

Certifications in the Workforce System: Addressing Industry Needs and Related Issues

Traditionally, state and federal agencies collect detailed data on demographics and attainment figures only for bachelor's, associate's, and some certificates granted by colleges or universities. Yet, anecdotally, it is

⁴ U.S. DOL, p. 1 (15 December 2010).

⁵ Manufacturing Institute (2015a).

apparent that businesses also value other types of credentials, as indicated by industry efforts to promote certification education and training.⁶ Manufacturing groups, such as NAM, have long advocated for a

*...system of industry-recognized skills credentials...to reform education and training for twenty-first century manufacturing by providing skills assessments, standardized curriculum requirements and nationally portable credentials that validate the attainment of critical competencies required by industry.*⁷

In order to address a growing interest in certifications and industry concerns regarding the lack of qualified workers, it is important to first examine the issues that certification awards can resolve. The most common preparation method for certification exams is through occupational programs offered by postsecondary institutions. More importantly, certifications provide an optimal solution to several problems associated with postsecondary credentials, such as portability, uniformity, and applicability.⁸

- *Portability.* Validation by an impartial third party helps to authenticate certifications. This affords individuals who obtain a certification award job or career portability because the value and features of a certification are not bound to any particular region of the country or company-defined measure of proficiency.⁹ Certification completers are able to transfer acquired knowledge across state lines and businesses more easily because third-party validation addresses specific standards and requirements within industries. By addressing definite proficiencies, employers have an easier time identifying value and qualified workers.
- *Uniformity.* Variations in grading standards among postsecondary institutions diminish uniformity. This makes it difficult for employers to judge the meaning of credits, grades, and overall grade point averages from the myriad of two- and four-year institutions, for-profit schools, and other institutions across the nation. On the other hand, the characteristics of a certification award are specifically defined. Without having to decipher the value of college classes and credits, employers can immediately identify whether an applicant has the definite and concrete skills required. Moreover, certification exams and results are standardized and help validate skills and knowledge consistently within an industry.
- *Applicability.* Since high-demand and high-skill occupations are constantly changing, certification awards provide a level of flexibility over traditional degrees. Industry activity keeps certification-oriented programs and assessments up to date with the latest industry standards and required proficiencies. Besides evaluating job candidates quickly, the up-to-date standards that certification awards demonstrate can help businesses determine where to start or expand operations to find the most talented workers.

As the proliferation of and confusion about nontraditional credentials increase, the benefits of earning a certification become more apparent. Given the increasing demand for qualified personnel, especially in middle-skill occupations, certification awards have increased in value as an indicator of trained and skilled workers. More consistent language and reporting, and a comprehensive directory would allow stakeholders to more accurately evaluate certification awards to determine their value in the labor market.

While the U.S. Department of Labor (DOL) has an extensive definition that outlines educational and workforce credentials, including both traditional and nontraditional, it is confusing in its reference to

⁶ Wolters Kluwer Law and Business (27 June 2010); Manufacturing Institute (2011); Hall (2 July 2014).

⁷ NAM (2012).

⁸ Carnevale, et al. (September 2012).

⁹ Barnhart (28 January 1997).

postsecondary career-enhancing credentials. Specifically, DOL introduces new language to describe what is otherwise referred to as industry-recognized certifications.

*...developed and offered by, or endorsed by, a nationally recognized industry association or organization representing a sizable portion of the industry sector, or a credential that is sought or accepted by companies within the industry sector for purposes of hiring or recruitment which may include credentials from vendors of certain products.*¹⁰

This report exclusively examines practices for capturing third-party, industry-recognized certification data and information at the national and state levels. Therefore, based on specific characteristics and parameters, the working definition of certifications for this report emulates the State of Florida's Education Code statute due to the statute's specificity. As one of the pioneers in the use of certification data, the State of Florida, through its Department of Economic Opportunity, defines certification as:

*A voluntary process, through which individuals are assessed by an independent, third-party certifying entity using predetermined standards for knowledge, skills and competencies, resulting in the award of a time-limited credential [sic] that is nationally recognized and applicable to an occupation [that is included in the workforce system's targeted occupation list or determined to be an occupation that is critical, emerging, or addresses a local need].*¹¹

Nationally, nearly \$1.5 trillion is spent each year on the development of human capital. Of that figure, approximately \$25 billion is spent on certifications.¹² Certifications are outcomes that can be associated with career and technical education (CTE) program participation. The Carl D. Perkins Career and Technical Education Act of 2006, a reauthorization of Perkins 1998, requires states to update CTE programs to ensure programs are current and relevant to industry demands. Also, CTE programs receiving federal funds are required to report on core performance indicators, including secondary and postsecondary state or industry-recognized certifications.¹³ Several years later, legislative action indicated an increasing awareness among national policy makers regarding the benefits of certifications in the workforce system. A bill was introduced to Congress in 2009 requiring the development of a one-stop delivery system that prioritized services and programs culminating in a portable, high-demand certification.¹⁴ The bill was later updated and reintroduced in 2013.¹⁵ The increase in demand for nontraditional credentials by various stakeholders in the workforce system has helped to shed light on certifications. Policy makers are discovering the value certifications can provide at various levels of the workforce.

The remainder of this report will investigate in more detail promising practices in capturing certification data and related information. The next section provides background on the development of data tracking, broadly, and certifications, specifically. Next, current multistate collaborations and an overview of the Certification Data Exchange Program, a multistate and industry collaboration to track and share certification data, are presented. Then, state-specific case studies from Virginia, Maryland, Illinois, and Florida are examined. Each of these states has embarked on systems and methodologies to better capture

¹⁰ U.S. DOL, p. 6 (15 December 2010).

¹¹ Florida State Senate (2014); FLDOE (2015b). The definition was originally created by the Agency for Workforce Innovation. In 2011, the Agency for Workforce Innovation was merged into the Florida Department of Economic Opportunity by the state legislature.

¹² Calculations based on data from the U.S. Department of Education's IPEDS, the DOL's Employment and Training Administration, the American Association of Community Colleges, the U.S. Department of Education's Office of Vocational and Adult Education, Survey of Employer Provided Training, and Bureau of Labor Statistics from Carnevale et al. (September 2012).

¹³ 109th Congress of the United States Second Session (2006).

¹⁴ 111th Congress of the United States (2009). The bill passed the House in 2010, but not the Senate.

¹⁵ 113th Congress of the United States (2013). Last action on April 23, 2013, when it was referred to the Subcommittee on Higher Education and Workforce Training.

certifications, and credentials in general, that could provide a starting point for Texas. Finally, concluding comments are noted.

SECTION 2: GENERAL DATA TRACKING PRACTICES

Why Collect and Track Data?

As a matter of state policy, collecting and tracking a variety of data have become integral functions of states' performance measurement systems. States across the nation are seeking ways to improve their data and tracking systems to better serve educational and workforce groups. Tracking allows states to focus limited resources more effectively and improve decision making. In order for stakeholders to evaluate the effectiveness of various programs it is necessary to track and identify key outcomes such as participation and completion rates. Tracking outcomes is critical since the diverse population of potential workers often enters the educational and training system under varying circumstances. Moreover, state and local stakeholders need to know where qualified talent exists within their regions or where talent development needs to be bolstered. Stakeholders will then be able to advise businesses and employers where skilled and experienced talent exists to influence expansion or relocation decisions. Tracking participants' certification outcomes is an important tool for understanding performance.

Current Data Tracking System Issues and Limitations

One issue states encounter when creating and implementing data systems is the metrics to be used. While detailed tracking of educational outcomes in the U.S. is improving, completion records of postsecondary awards below an associate's degree are inconsistent, sparse, or completely missing. Likewise, scope and definition variations can further complicate matters. The lack of detailed tracking afforded to nontraditional postsecondary awards, such as certifications, results in an incomplete picture of workforce supply figures that, if complete, could prove invaluable to industries and states. The data programs and associated issues described below broadly represent national, state, and institutional collecting tools.¹⁶

In the 1980s, a few states developed student unit record systems in order to better evaluate and analyze programs. Since then, numerous governmental and nongovernmental entities have designed unit record systems for their own purposes. But, many early designs had problems gathering data on private schools, cross-state transfers, dropouts, and other variables.¹⁷ The National Center for Education Statistics (NCES)¹⁸ operates several databases that gather and report on educational statistics and issues. One such report is the Integrated Postsecondary Education Data System (IPEDS), which gathers data from every postsecondary educational, technical, and vocational institution in the nation that participates in any federal student aid program. By law, institutions are required to participate. Thus, IPEDS collects a wide range of data on information such as enrollment, financial aid, and graduation rates.¹⁹

However, aggregate data present certain restrictions. Due to its expansive nature, IPEDS has difficulty disaggregating and collecting data used to track evolving trends because the framework cannot

*accurately capture changing enrollment and completion patterns in the postsecondary education sector, especially given increasing numbers of nontraditional students.*²⁰

In an effort to address the above-mentioned issues associated with data collection, an independent and nonprofit national organization started tracking postsecondary information. Due to a federal prohibition on collecting student unit-level data, as well as inconsistent reporting procedures by individual states, the

¹⁶ The descriptions are by no means comprehensive, but instead present a relevant timeline on major available resources and the issues most commonly associated with gathering data.

¹⁷ Cunningham, et al. (March 2005).

¹⁸ The NCES is attached to the U.S. Department of Education and gathers information from institutions across the country.

¹⁹ U.S. ED (2015a).

²⁰ Cunningham, et al., p. iv (March 2005).

National Student Clearinghouse (NSC) has become an important resource for educational reporting and research. Originally connected to the student loan industry, the NSC collected student enrollment information to verify loan eligibility and graduation status. Increased utilization of the NSC has been aided by reporting standards instituted by the national government for states receiving federal funding.²¹

While the NSC provides invaluable student data on enrollment, intensity, and graduation, the system has several limitations.²² One issue is the reliability of enrollment data collected by the NSC; participation is voluntary and reporting levels may vary by member schools. Additionally, the NSC's coverage of postsecondary institutions and the formula for calculating student enrollment may influence reliability.²³ Matching errors associated with the NSC's large data set present another issue. Errors may occur because records are primarily matched by a student's name or date of birth. Variations in either category within individual data may create duplicate or missing information. Moreover, postsecondary data acquired by the NSC are from degree-awarding institutions. Thus, awards below an associate's degree are not captured in the data system. Finally, the Family Educational Rights and Privacy Act (FERPA)²⁴ presents an important challenge to assembling any student-oriented database because the law protects the privacy of educational records. Institutions receiving federal funds must comply with FERPA and students or institutions can elect not to disclose any data at all.

In order to innovate and address deficiencies in the system, the NCES recommended that IPEDS be retooled into a national student unit-record system to gather data and track students over time. However, Congress prohibited the creation of a national unit-record database in the Higher Education Opportunity Act of 2008.²⁵ Despite the national prohibition, language in the Higher Education Opportunity Act stipulates that states are not prohibited from developing, implementing, or maintaining their own student-tracking systems. Since then, states have developed and refined their longitudinal data tracking systems.²⁶

In 2012, a report conducted by the State Higher Education Executive Officers Association examined the degree to which postsecondary data systems were being developed and shared across states.²⁷ The report found that 19 states operated their own statewide early education, K–12, higher education, and workforce (P–20W)²⁸ data warehouses or federated data models and 20 more states were developing independent systems. In 45 states, 56 postsecondary entities were participating in data-sharing agreements across state lines. Unlike national surveys, individual state databases are generally more accurate. State-specific databases also provide better context for state stakeholders. However, from state to state the scope, framework, and implementation of database systems may vary. Additionally, data from private schools, for-profit institutions, and cross-state migration variables are usually unaccounted for.

Moreover, every state operates, in some form, a labor market informational database.²⁹ These databases provide state statistics designed to support stakeholders with information on the labor market, occupational areas, and even educational statistics. Labor market data offer several benefits—from employment figures for states, to information that helps in site selection for businesses. While state labor market information is valuable, it does not provide the best projection of state workforce needs because

²¹ U.S. ED (7 March 2009). The State Fiscal Stabilization Fund requires states receiving funding to report various statistics, including enrollment and persistence data. U.S. ED (April 2009).

²² Dynarski (October 2013).

²³ States use a federal formula in conjunction with the NSC that calculates college enrollment based on weeks attended. Four-year, public institutions are the most represented and for-profit institutions are the least represented.

²⁴ FERPA (20 March 2015). FERPA deals with educational records related to students or educational data maintained by educational agencies or institutions. Personally identifiable educational records include student names, mother's maiden names, addresses, dates of birth, social security numbers, and parent's names. Moreover, FERPA prohibits the redisclosure of individual and identifiable student record data.

²⁵ U.S. ED (August 2008).

²⁶ For instance, the Statewide Longitudinal Data System grant has funded efforts by states to create and improve their data systems.

²⁷ Garcia and L'Orange (November 2012).

²⁸ P–20W contains Preschool, Grade 20 or higher education, and workforce information.

²⁹ BLS (16 April 2015). Directs users to state-level labor market data.

issues with data integration, coverage, and overall usability present important challenges.³⁰ These limitations can impact estimations of workforce supply and demand figures, as they have in the manufacturing industry. In order for states to more effectively forecast growth, it has become necessary to increase alignment with industries and employers. The Manufacturing Institute reported that

*many states found that their state-level data weren't classified in a way that matches actual manufacturing conditions. Department of Labor Statistics did not fully reflect potential growth in manufacturing that surveys conducted by employer associations were showing.*³¹

By most standards, the current national education, training, and workforce data-collecting systems are invaluable tools for stakeholders at any level. At minimum, they provide important baseline figures and statistics that researchers use at the start of any national or state-level project. Nevertheless, because of the nature of the data and the size of the systems, limitations exist within the various national systems. Thus, to improve nontraditional credential information and data gathering, many states and national industries have embarked on creating data-collecting and reporting protocols to suit specific issues or demands.

³⁰ Wright (16 July 2008).

³¹ Manufacturing Institute, p. 29 (October 2013).

SECTION 3: KEY NATIONAL AND STATE-LEVEL CERTIFICATION PRACTICES AND TRACKING SYSTEMS

National Industry-Recognized Certifications

Available educational databases can provide invaluable information for stakeholders. But individual educational databases do not currently have the ability to comprehensively track all postsecondary credentials. One reason is the focus on tracking traditional educational pathways—an associate’s degree or higher. As the demand for and usage of certifications has increased, many national industry associations have developed and implemented certification systems to validate the skills certain occupations demand. Not only can national certification systems dictate the necessary qualifications candidates need, they also administer exams or certify independent testing centers.

There are a myriad of certification and certifying groups in the nation. Often times, stakeholders and associated entities organize occupations into broad industry initiatives. One such nationally recognized entity is the Skills Certification System (System), developed by the Manufacturing Institute and endorsed by the National Association of Manufacturers (NAM).³² The goal was to develop a system of certifications designed, utilized, and endorsed by the manufacturing industry. From that point educators would be able to more accurately design programs aligned with current industry needs and standards. Thus, the cyclical nature of the process serves to strengthen and support the future of workforce development in the field. By aligning standards to address the skill shortages in the manufacturing industry, the System has effectively increased the number of certifications and skilled workers. Certifications sanctioned by the System are nationally portable and applicable to nearly all areas of the manufacturing sector. Industry partners are able to validate and understand the meaning of certifications. Furthermore, since the System has been embedded into various levels of postsecondary education, individual schools are able to track what certifications students are earning and the types of employers that are hiring those students.³³ As of 2014, the System has awarded nearly 418,000 certifications.³⁴

Moreover, other national and occupation-specific certification reporting systems provide their own benefits. The National Coalition of Certification Centers was created to strengthen the connection among educational institutions and major industry sectors by emphasizing industry-specific training and certification. As a facilitator of certification development, the coalition is affiliated with certification centers around the nation.³⁵ Many information technology-related certifiers are able to track demographics, exam results, and the relevant history of certification candidates.³⁶ Along with traditional postsecondary tracking, the National Student Clearinghouse (NSC) has recently started offering certification verification services to businesses and organizations.³⁷ The NSC contracts with national certification providers to foster industry efficiency in hiring, promoting, and validating employee skills.

Multistate Collaborations

Improved multistate collaborations have also played an important role. As a regional, interstate agency, the Western Interstate Commission for Higher Education was established to improve the transmission of educational data among member states. In an effort to strengthen their own longitudinal data systems, Hawaii, Idaho, Oregon, and Washington were the first states to participate. The Western Interstate Commission emphasizes collaboration and cooperation not only between member states but also between

³² In 1995, NAM, the largest manufacturing association in the U.S., established the Manufacturing Institute as a research and educational entity.

³³ Manufacturing Institute (2015a).

³⁴ Manufacturing Institute (2014).

³⁵ NC3 (2015).

³⁶ ProTraxx (2014); TeraData (2015).

³⁷ NSC (2015).

postsecondary educational and training institutions.³⁸ In 2009, the Multistate Longitudinal Data Exchange Pilot Project (Multistate Exchange) was launched by the Western Interstate Commission to capture educational and workforce data outcomes by connecting individual state system projects to track individual-level data across states.

Several outcomes resulted from the Multistate Exchange. First, by satisfying the Family Educational Rights and Privacy Act (FERPA), the project successfully analyzed confidential student data across agencies and borders. Next, the project addressed gaps and generated a more comprehensive picture of workforce data and outcomes, which represented a greater spectrum of education and labor sectors. The Multistate Exchange increased insight into local workforce demands and state investments in education. Finally, it demonstrated the viability of a longitudinal information-sharing exchange that tracks and analyzes outcome data between agencies, institutions, and states. As individuals move within and between states, policy makers are better equipped to address educational and workforce planning.³⁹

Statewide Longitudinal Data Systems (Statewide Systems)

In January 2002 the Education Sciences Reform Act was passed creating several new entities, including the Institute of Education Sciences and the National Center for Education Statistics.⁴⁰ Also authorized by the act was the Statewide Systems, which awards grants to states for the development and application of longitudinal data systems that track students from early learning into the workforce.⁴¹ Longitudinal data systems are intended to facilitate efficiency and accuracy of educational data within states so that stakeholders can make informed decisions on the direction of student learning and outcomes. Grantees are required to submit annual reports, and since 2005, 47 states have received at least one round of funding.

Thus far the act has provided five separate rounds of funding from 2005 through 2012. States that received grants are in various stages of building and implementing longitudinal data systems. To foster collaboration and expansion within and among states participating in the longitudinal data system, the Common Education Data Standards (Common Standards) tool was created. The Common Standards has become an important tool for states to exchange, compare, and understand educational data across various institutional levels and sectors by standardizing and increasing the value of educational data.⁴² Since integrating the Common Standards, several individual states have improved their systems.

As a grantee, North Carolina instituted the Common Education Data Analysis and Reporting System. The reporting system functions as a centralized repository and analysis tool for state educational data. From early childhood education through one year after high school, the state uses data acquired from different educational levels over time to develop more accurate policy. Components of the state's analysis include student performance and educational attainment, which encompass nontraditional credentials like certifications. A key component of the reporting structure was the creation of a Unique Identifiers system. The Unique Identifiers system tracks students to follow long-term employment outcomes. The system has enabled North Carolina to align standards across educational sectors into the workforce and identify gaps in data or inconsistent definitions between agencies within the system. Moreover, by participating with other states to create a longitudinal data system, North Carolina is now able to share and transmit data across state lines. Through the State Exchange of Education Data, North Carolina joined with seven other states to follow the Common Standards protocol in order to streamline data for students transferring from

³⁸ Sixteen member states include Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, Wyoming, and the Commonwealth of the Northern Mariana Islands.

³⁹ Bransberger (July 2014); Prescott (July 2014).

⁴⁰ 107th Congress of the United States, Second Session (2002).

⁴¹ U.S. ED (2015b).

⁴² NCES (2015).

one member state to another and for member states to more accurately account for graduates and dropouts.⁴³

Another grantee, Kansas, encountered classification and language issues that stemmed from existing data spread over various state agencies, organizations, and interest groups. The Common Standards were used to create a common language system and to restructure early childhood data. The tool facilitated the integration of existing early childhood data into a new system. The state was also able to more effectively track students through secondary education by issuing student identification variables. This action produced several different data repositories that served stakeholders at different levels.⁴⁴ By instituting a Statewide System initiative, North Carolina and Kansas were able to use the Common Standards component as an efficient and effective tool to unify and integrate data systems to update definitions, identify gaps, and connect data elements to better address policy issues.

Certification Data Exchange Program

According to Perkins Career and Technical Education (CTE) Act of 2006, states are required to track and collect data on certifications, certificates, or degrees.⁴⁵ At the end of the year, states submit progress and performance data on core indicators in a Consolidated Annual Report. Nevertheless, certifications remain one of the more difficult credentials to track since many certifications are obtained post-coursework.

Based on a pilot project conducted by Illinois and the Computing Technology Industry Association (CompTIA), the Association for Career and Technical Education and other partners developed the Certification Data Exchange Program to improve certification tracking and sharing between state and national certifying organizations.⁴⁶ Created as a multi-year project, the program generated a database that states, educational institutions, and interested stakeholders could access to obtain relevant data on students and certifications. The program was developed by selecting eligible states, organized into first and second rounds, to work together with national industries.⁴⁷ States were required to comply with the specific objectives, deliverables, and timelines prior to their initial involvement.⁴⁸ The resulting database helped states and various industry stakeholders raise awareness on the benefits of an improved certification data repository for educational and workforce development. The program also demonstrated the feasibility of developing a national data system.

This program relied on the cooperation between states and national industry representatives. The Certification Data Exchange Program began with CompTIA and the Manufacturing Institute as the primary industry partners representing information technology and various manufacturing consortiums.⁴⁹ As of December 2014, CompTIA completed its original pilot project with Illinois and is currently working with other states as part of the next round in the exchange program. Utilizing the NAM-endorsed Skills Certification System, the Manufacturing Institute has followed the path of CompTIA by leveraging its association with 17 manufacturing certification organizations to work with eligible states to improve

⁴³ North Carolina Department of Public Instruction (2015); Public Schools of North Carolina (17 May 2010); Public Schools of North Carolina (2015). State Exchange of Education Data charter participants: Alabama, Colorado, Florida, Georgia, Kentucky, North Carolina, Oklahoma, and South Carolina.

⁴⁴ Kansas State Department of Education (September 2011); U.S. ED (30 June 2014).

⁴⁵ 109th Congress of the United States, Second Session (2006).

⁴⁶ ACTE (2015).

⁴⁷ This project has drawn interest from the U.S. Department of Education as a solution to address the issues surrounding the collection of data by individual states. Selected first round pilot states: California, Kansas, Maryland, North Carolina, Ohio, and Oklahoma. Selected second round states: District of Columbia, Iowa, Kentucky, Washington, and Florida. ACTE (2013). States that signed the CompTIA data-sharing agreement by October 2014 for live and online meetings: California, Iowa, Oklahoma, North Carolina, and Florida.

⁴⁸ ACTE (2013).

⁴⁹ CompTIA (2015); Manufacturing Institute (2015b).

certification tracking and matching. Potential participating states and major industry representatives are in the process of creating a pilot that is mutually beneficial for all stakeholders.⁵⁰

With the Certification Data Exchange Program well under way, several important issues have been addressed:

- Awareness of the need for a national database that focuses on certifications has increased.
- A long-term investment in data tracking has facilitated better decision making and an improved understanding of student performance. Improved data coherency and reporting practices have helped to further those goals.
- Increased emphasis on CTE initiatives has strengthened the link to certifications.⁵¹
- State and industry connections have increased. Collaborative partnerships have addressed critical issues, needs, and objectives more effectively.
- Because of FERPA, where data originates and how it is transferred between entities was important for states and industries to understand in order to successfully gather and share student information.⁵² Therefore, as the initial participant of the pilot project, Illinois agreed to and signed an indemnification agreement.⁵³ California has since become the second state to successfully negotiate an agreement.⁵⁴

As this section has illustrated, numerous states and national industries have recognized the importance of tracking certifications, as well as other nontraditional credentials. Whether the goal is to bolster industry-relevant skills or to improve statewide data systems to support policy makers, the move toward accurately gathering certification data to incorporate that data with other credential data in tracking systems to produce a more comprehensive education and training dataset is well under way across the nation.

⁵⁰ Koch (17 December 2014); Latto (17 December 2014); Hale (December 2014).

⁵¹ Folkers (31 October 2012).

⁵² King (8 May 2014).

⁵³ An indemnification agreement is a mechanism for transferring risk, liability, or responsibility from one party to another. In this case, agreements between participating states and industry partners are related to the transmission of student data.

⁵⁴ Due to various legal situations in which an indemnification agreement could not be signed, states selected for the first round did not all participate concurrently with California. Both Illinois and California worked with CompTIA as their industry partner. Clarification from the Department of Education later noted that FERPA did not apply to the Certification Data Sharing Project. Instead, future collaborations with CompTIA required only a data-sharing agreement to be signed by participating parties. Koch (17 December 2014).

SECTION 4: SELECTED STATE CASE STUDIES

Credential Tracking and Industry-Based Certifications in Practice

While no comprehensive certification data gathering model exists nationally, many states are becoming more involved with integrating certifications into their workforce system information. State investments in educational and training information have led to more comprehensive records and data gathering systems, along with increased collaboration between associated agencies.⁵⁵ Besides increasing agency collaboration, partnerships and data sharing techniques between states, institutions, and industries have improved.

For instance, by improving career and technical education (CTE) pathways, some states are able to provide students who plan to enter the workforce immediately after high school the opportunity to obtain a certification preparing them for demand occupations.⁵⁶ From this, some states are able to create and endorse a list of certifications based on specific economic needs. States are also structuring their strategic plans to explicitly address the need to improve their data collecting and reporting systems to better assess the value and impact certifications have on their workforce systems.⁵⁷ By aligning related agencies and creating detailed timelines, these states are improving accountability to produce meaningful results.

With one of the strongest state economies in the nation, Texas has long promoted multiple educational and training pathways. Like other states, Texas has developed and instituted robust educational and training data systems. Windham School District offers annual performance reports that track and detail the number of CTE participants, percentage of CTE completions, and overall certifications earned. Certification performance data allows Windham to improve the effectiveness of their programs and client services.⁵⁸ The Texas Education Agency (TEA) also collects data on certifications awarded to senior high school students.⁵⁹

As part of the guidelines, state agencies and institutions that participate in the Perkins grant are required to assess their federal core indicator performance compared to state targets and outline strategies for improvement. TEA helps develop and improve academic and CTE oriented programs for secondary students. Through the Program Effectiveness Report, TEA reports student success at completing certifications and licenses, and operates as a CTE certification guide, though it does not officially operate a list of approved or recognized certifications.⁶⁰

Similarly, the Texas Higher Education Coordinating Board collects data on various postsecondary- and program-level data from community and technical colleges in the state. Texas provides core indicator data through the national Consolidated Annual Report, whereby each applicant is required to meet state targets within 90 percent for each core indicator. As one of the core indicators, credentials, certificates, and degrees (2P1) are reported on. Texas is able to track annual statistics from institutions across the state by campus. Information is further broken down into programs of study and credit hours.⁶¹ However, statistics are aggregated with no distinction between each type of credential earned. Additionally, reported figures focus on credentials awarded by educational institutions. The reports do not account for certifications as defined by this report since certifications are awarded through independent third-party entities, outside of

⁵⁵ Massie (April 2014).

⁵⁶ Louisiana Workforce Investment Council (20 April 2010); Louisiana Workforce Investment Council (December 2013); Louisiana Department of Education (26 February 2014); Louisiana Department of Education (2015).

⁵⁷ North Carolina Works Commission, p. 63 (2 March 2015).

⁵⁸ Windham School District (2013–2014).

⁵⁹ TEA (2015).

⁶⁰ TEA (2007); TEA (December 2013); TEA (29 August 2014).

⁶¹ THECB (2011); THECB (2015a); THECB (2015b).

educational programs and institutions. Nevertheless, standards required by Perkins provides an opportunity to improve certification information and data tracking.

In March 2015, the Texas Workforce Commission (TWC) reported on the Industry-Recognized Skills Certification Initiative for discussion, consideration, and possible action regarding development and funding. One position shared by policy makers and industry leaders is a lack of qualified workers to fill available jobs around the state. TWC identified statewide local workforce development boards as key stakeholders and important for their unique perspective regarding the types of relevant certifications for in-demand occupations in their area. Thus, TWC recommended a certification initiative to increase the number of workers with certifications to support in-demand jobs. The certification initiative includes \$2.8 million in federal workforce funding for two years. The certification initiative requires that local boards and local employers collaborate to identify critical certifications for their workforce areas. Moreover, several foci were emphasized, including: (1) manufacturing, information technology, health care, and construction industries; (2) low-, middle-, and high-skill occupations; and (3) nationally or regionally recognized, portable certifications. Finally, it was recommended that local boards expand or create new skill certification centers and provide annual performance reports regarding relevant certification figures and statistics.⁶² However, the program does not detail a method for creating a system or model to capture certification data to inform supply figures.

The following state case studies illuminate promising practices from Virginia, Maryland, Illinois, and Florida regarding models or methods that may be replicated to bolster existing educational and training databases by including certification data.

Virginia

The Path to Industry Certification

A few states have incorporated strategies to increase certifications into their education and workforce planning to advance skills and credentials among students. Like many states, Virginia has emphasized dual credit participation for high school students. However, instead of focusing solely on credit primarily for transfer to postsecondary education, Virginia has integrated certifications into the general curriculum so students may earn a certification and diploma concurrently. The focus on certification-oriented dual credit later evolved into the High School Industry Credentialing Program. In 2012, Virginia passed legislation intended to enrich education and workforce development, stipulating that:

Beginning with first-time ninth-grade students in the 2013–2014 school year, requirements for the standard diploma shall include a requirement to earn a career and technical education credential...that could include, but not be limited to, the successful completion of an industry certification. School boards shall report annually to the Board of Education the number of Board-approved industry certifications obtained...Numbers shall be reported as separate categories on the School Performance Report Card.⁶³

Under the law, the state reviews and approves the various professional or industry-related competencies and exams. This process distinguishes the type of certifications a student may earn in order to qualify and meet graduation requirements.⁶⁴ Virginia's certification efforts at the secondary level have allowed students to earn qualifying CTE credit approved by the state board of education. The Industry

⁶² TWC (29 March 2015).

⁶³ Virginia General Assembly 2012 Session (30 March 2012).

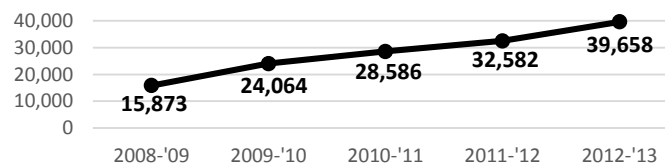
⁶⁴ VDOE (13 January 2011).

Credentialing Program allows high school students that are scheduled to graduate — but have no immediate plan to pursue postsecondary education and have not finished a CTE sequence of courses — a pathway to earn a diploma while receiving technical training in preparation for a certification exam. This program has grown, in part, because it provides a competitive edge for immediate entry into the workforce.⁶⁵

Performance Tracking in Virginia

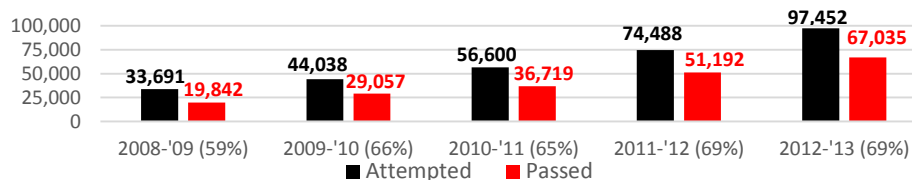
Recognizing the importance of certifications, Virginia began examining certifications in the early 2000s. By instituting a quality tracking system, Virginia has been able to isolate and analyze information and data on certification attainment. In a study conducted by the state in 2002, only 22 percent of students were enrolled on a path that would result in a certification. In order to address the changing workforce landscape and track certifications, the state moved to expand secondary school exposure to certifications. By 2008, nearly all CTE-related programs in the state had an avenue for earning a certification. As a result, more than 13,000 students earned a certification in some form from 2006 to 2007. As Figure 1 demonstrates, since 2008, Virginia has seen a steady increase in secondary school certification attainment. To keep pace with the number of students earning certifications, Virginia has worked to increase the number of teachers that are certification-trained in demand industries. Over 70 percent of CTE teachers in the state are certified in at least one certification-granting field of study.⁶⁶

Figure 1: Total Number of Certifications Awarded in Virginia⁶⁷



Improved tracking has allowed Virginia to more accurately plot the increasing trend of students earning not only certifications, but also state licenses and other assessments.⁶⁸ Figure 2 highlights the total number of exams attempted and passed for all CTE credentials tracked in Virginia. As indicated, the trend of students attempting and passing a credential exam has increased. These data provide important statistics for stakeholders to judge the performance and growth of various credentials in the state.

Figure 2: Total Number of Exams Attempted and Passed, All Credentials (% Pass Rate) in Virginia⁶⁹



⁶⁵ Additional sources: NGA (31 January 2005); Education Commission of the States (September 2006); Strayer (2011); VDOE (2012); Wharff (15 November 2012); Career and Technical Education and Adult Education Services (2015).

⁶⁶ VDOE (19 February 2008).

⁶⁷ VDOE (March 2014).

⁶⁸ VDOE (February 2013).

⁶⁹ VDOE (March 2014). “All credentials” are earned by students, reported by secondary schools, and consist of certifications, National Occupational Competency Testing Institute Assessments, State Licensures, and Workplace Readiness programs.

Certification Supply and Demand

In 2014, Virginia applied for and received a national grant to further support education and workforce system development. As part of the grant requirements, Virginia is developing an online supply and demand database of available regional and state-level middle-skill jobs to better identify skill gaps. The database will focus primarily on nontraditional credentials that are tracked throughout the state.⁷⁰ This action was integrated by executive order into the state's New Virginia Economy Workforce Initiative. The order stipulates an increase in the number of certifications aligned with employer demands. It also calls for an improved tracking system of the state's available supply of workforce credentials for demand occupations.⁷¹ Moreover, the Virginia Community College System conducted a report to better understand the data-tracking process more effectively. The results have been incorporated into the current certification discussion among schools in order to identify and address the barriers institutions encounter when attempting to track students from educational programs through the certification process.⁷²

Maryland

The Skills2Compete (S2C) Initiative

Like other states, Maryland has experienced a shortage of skilled workers to meet new demands. Maryland has determined that its future labor market will be dominated by middle-skill jobs. In fact, middle-skill occupations will represent the largest share of all future job openings in the state.⁷³ In an effort to address the shortage of skilled workers and the increase in demand, Maryland developed its S2C initiative in 2010.⁷⁴ This statewide initiative was designed to bolster the skill level of the state's workforce up to the equivalent of at least two years of postsecondary education or training. The ultimate aim of S2C was to increase the number of individuals receiving skills training by up to 20 percent by 2012, and to expand the state's credential tracking system.⁷⁵

The initiative served as a starting point for Maryland to improve the preparedness of its workforce and increase its competitiveness as an economic and educational leader. Nontraditional credentials have continued to garner interest from policy makers due to demands for qualified and competent workers. In order to evaluate outcomes, a key component of Maryland's initiative is to develop a "means for tracking success toward the governor's goal, an innovative approach to counting Marylanders' degree, credential, and basic skills attainment across a broad array of public programs".⁷⁶

Skills2Compete Assessment

Bringing numerous agencies to the table to align data-collecting efforts and determine performance outcomes for funding was one important hurdle. Addressing this issue helped broaden data-collection efforts to enable improved evaluations on investments in training pathways and highlight certifications as important credentials. The initiative created a process for stakeholders to tangibly measure acquired information to make data-driven decisions. During an evaluation of the existing system, agency representatives identified numerous gaps in data created by a cumbersome, often confusing, array of state and federal mandates with different data-collection procedures. Government and independent

⁷⁰ Virginia Board of Workforce Development (22 July 2014); Virginia Office of the Governor (29 August 2014).

⁷¹ Virginia Office of the Governor (13 August 2014); Zinn (14 August 2014).

⁷² Massie (19 December 2014).

⁷³ National Skills Coalition (March 2010). Between 2010–2016 an estimated 42 percent of all jobs in Maryland will be middle-skill, compared to low- and high-skill.

⁷⁴ Maryland Association of Community Colleges (2 March 2010).

⁷⁵ DLLR (1 July 2010); Woolsey Group (June 2011).

⁷⁶ Unruh and Seleznow, p. 1 (August 2011).

stakeholders collaboratively worked on strategies, analyzed information, and tracked performance outcomes.

The initiative resulted in an annual accountability report that detailed and tracked various outcomes on state policy priorities. Maryland examined the total number of individuals that enrolled and completed programs to gauge progress and success. Annual figures were then compared against the established baseline. Across all state agencies, the baseline figure was created by the state to encompass all individuals enrolled in any type of postsecondary educational or training program. Once the baseline number was established for 2009, performance reports were produced for subsequent years to determine the progress of S2C. Figures 3 and 4 illustrate that Maryland was able to successfully count and track certification and license data on enrollment, graduation, and even on students who started but later exited the program. Moreover, S2C has supplemented the state’s efforts to strengthen its longitudinal database.

Figure 3: Continuing Education Enrollment that Led to a Government or Industry-Required Certification or License in Maryland⁷⁷

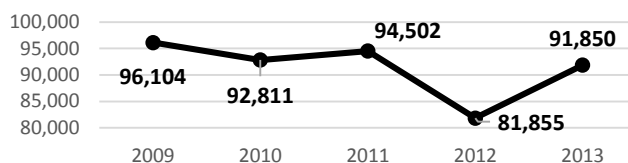
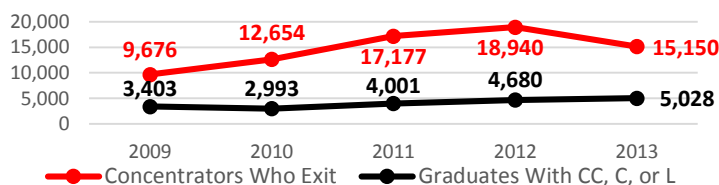


Figure 4: CTE Concentrators Who Exit Programs Aligned to an Industry Certification and CTE Graduates with College Credit (CC), Credential (C), or License (L) in Maryland⁷⁸



Skills2Compete Update

Utilizing S2C, Maryland upgraded its educational and training system and increased the state’s commitment to its data-tracking and exchange system. By reorganizing the state’s data and assessment tools, Maryland has been able to track and compile more accurate annual data to document the progress of various cross-agency initiatives.⁷⁹ By alleviating issues like ineffective agency communication and disparate tracking methods, Maryland has made significant progress toward its educational and workforce goals. More importantly, stakeholders were able to define and find value in reinforcing training pathways and outcomes, such as certifications.⁸⁰

As a resource for tracking performance outcomes, Maryland has also increased and improved accountability and alignment between education and industry stakeholders. Maryland was able to make

⁷⁷ Maryland Department of Information Technology (4 December 2014). Enrollment figures that led to a government or industry certification or license are counted and calculated as part of the Total Annual Entries. The state’s Total Annual Entries over the same time period are 282,150 (2009), 301,186 (2010), 312,475 (2011), 301,592 (2012), and 303,811 (2013).

⁷⁸ Maryland Department of Information Technology (4 December 2014). The CTE Graduate figures are counted and calculated as part of the Total Annual Completions. The state’s Total Annual Completions over the same time period are 36,513 (2009), 41,464 (2010), 41,350 (2011), 42,571 (2012), and 42,099 (2013). The CTE Concentrators who exit are counted and calculated as part of the Total Annual Entries. The state’s Total Annual Entries over the same time period are 282,150 (2009), 301,186 (2010), 312,475 (2011), 301,592 (2012), and 303,811 (2013).

⁷⁹ Unruh and Seleznow, p. 13 (August 2011); Maryland Governor’s Delivery Unit (4 December 2014).

⁸⁰ Unruh and Seleznow (August 2011).

significant investments in its databases and leverage the system efficiently and cost effectively. As of 2013, the state's workforce board reports progress toward its goal of having 20 percent of the workforce population obtain at least two years of postsecondary education or training. Through additional multilateral partnerships, the state anticipates achieving this goal by 2018.⁸¹ Other states are employing similar strategies and initiatives to address their own challenges.⁸²

Illinois

The Need to Address Quality and Reliability Issues

With the proliferation of nontraditional credentials, one reoccurring issue for stakeholders has been the level of quality and reliability of certification awards. Due to the awards' detachment from educational institutions and a rise in the number of associated programs and certifiers, students, schools, employers, and policy makers have difficulty discerning certification quality and reliability. In order to address these challenges, the American National Standards Institute (Institute) took on the responsibility of verifying national accrediting services. Recognized internationally as America's primary accreditor of voluntary standards in developing organizations, the Institute has worked to develop the American National Standards that signify the credibility of an organization's accreditation process.⁸³ But, the issue faced by many national certifying organizations is that the Institute's standards are cumbersome and expensive. While a few large industry organizations have some certifications that are Institute sanctioned, the majority of industries do not.⁸⁴

In an effort to increase awareness, assure relevancy, and build confidence in certifications, major industry certifiers have gone to great lengths to design certification programs. Efforts by organizations such as the Computing Technology Industry Association (CompTIA) and the National Association of Manufacturers to secure credibility and standing within their sectors has resulted in certifications that are current for industries, relevant for students to earn, and beneficial for states to support. Illinois addressed its own issues by cooperating with multiple stakeholders at various points of the certification development process to improve quality and reliability. The partnerships have helped to combat the proliferation of substandard certifications that may jeopardize the integrity of the entire system.

The Illinois Industry Certification Data Sharing Pilot

As referenced earlier, the Certification Data Exchange Program was an extension of the collaboration between Illinois and CompTIA. In 2012, both sides partnered to pilot a project to improve data collection, matching, and integration. As a major source of information technology certifications, CompTIA started developing independent and vendor-neutral certifications in the early 1990s. The Illinois Industry Certification Data Sharing Pilot began with the premise that certification validation, legitimacy, and tracking are critical to measuring performance and efficiency.

The partnership began with CompTIA and the Illinois Community College Board supplying and matching both student unit-record certifications and various student demographics, respectively. That dataset was then incorporated with employment information from the Illinois Department of Employment Security by way of the Center for Governmental Studies at Northern Illinois University. CompTIA and the College

⁸¹ Governor's Workforce Investment Board (2013).

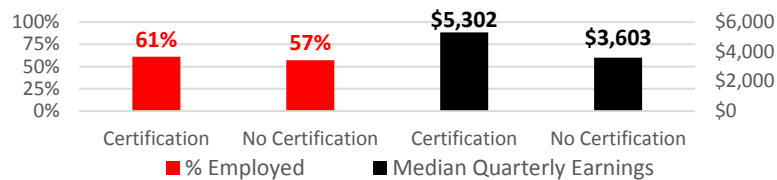
⁸² State of Maryland (2015). Other state endeavors include Skills2Compete Campaign - Illinois, Michigan, Mississippi, New Mexico, Oregon, Rhode Island, Washington, Wisconsin, California EDGE Campaign, Campaign for a Working Connecticut, Iowa Works Campaign, North Carolina Alliance for Workforce Competitiveness, Ohio Workforce Coalition, Rhode Island Workforce Alliance, and Vermont Coalition for Workforce Solutions.

⁸³ ISO (1 September 2004).

⁸⁴ A recent account finds that less than 10 percent of certifications are accredited by any organization and fewer than two percent come from the American National Standards Institute. Jacoby (2 December 2014).

Board were able to produce a large volume of records from 2006 to 2010 to generate the sample period. The combined database produced demographic variables based on whether students passed a certification exam. Upon completion, the pilot had an almost 80 percent successful matching rate. Additionally, students that passed exams had better employment rates and higher initial earnings (Figure 5).⁸⁵

Figure 5: Illinois Certification Exam Participation Outcomes⁸⁶



The Illinois pilot demonstrated the successful merging of information on certification exam participation rates, passage rates, and individual data records. This pilot identified methods by which data matching could be achieved across public and private organizations. Moreover, it provided a blueprint to address privacy and legal concerns when sharing sensitive information. The collaboration between the Illinois Community College Board, CompTIA, and the State of Illinois demonstrated a feasible template for other states and groups to emulate to increase the quality and comprehensiveness of student performance data.⁸⁷

Challenges and the Future of Certifications in Illinois

While developing the database, stakeholders associated with the Illinois pilot encountered several challenges that will need to be addressed in future projects. The first issue was the limited amount of certification data available for matching. While CompTIA and state community college records were available, the amount of data was limited. Over the entire pilot, CompTIA had about 3,500 records. Conversely, the state community college board had over half a million records each year from all of its locations across the state. The discrepancy in the volume of state community college records and the limited data points CompTIA collected made initial matching a challenge.

Another issue was the legality of sharing the performance data of certification exam participants. Student privacy concerns created the need for CompTIA to sign an indemnification agreement with Illinois to release itself from any data liability. This agreement relied on the notion that states would then be held culpable if shared data were misused. Additionally, state-specific laws and jurisdictions did not apply to other states should privacy laws be violated. Thus, many states hesitated to sign agreements with CompTIA for an expanded project due to the uncertainty of protecting privacy across state lines.⁸⁸

Despite challenges, Illinois and CompTIA provided an outline for future data-tracking endeavors and projects. Groundwork by Illinois spawned the industry and multistate Certification Data Exchange Program. Along with a workable solution to data-sharing issues and privacy laws, an improved profile of individuals participating in and receiving certifications was formulated.

As the Illinois pilot moves forward, an expanded timeframe will be necessary to understand long-term trends. Continued collaboration between stakeholders will be necessary to enhance certification data and student-performance matching rates. Expanding the project also means incorporating more identification

⁸⁵ Koch and Parke (December 2014). Student-identifying information included first name, last name, and zip code. Demographic information included age, gender, ethnicity, language, disability status, economic/academic disadvantage status, household makeup, occupation of certification, employment status, and earnings.

⁸⁶ Massie (April 2014) from Koch and Parke (December 2014).

⁸⁷ Massie (April 2014).

⁸⁸ Massie (April 2014), (3 June 2014); Koch (17 December 2014). Thus far, only Illinois and California have signed indemnification agreements.

variables and states, as well as national third-party certifiers, which are needed to ensure a comprehensive database of records. While more certifiers would require additional legal agreements to share information, the potential benefits could include greater data points and coding variables. Aiding this process was a recent U.S. Department of Education reexamination of the Family Educational Rights and Privacy Act (FERPA). Specifically, the department clarified that FERPA does not apply to data-sharing projects such as the Illinois certification program.⁸⁹ Since then states and industry certifiers have reviewed the need for indemnification agreements and have moved toward signing independent data-sharing agreements. In 2014, several newly identified participating states and third-party industry stakeholders agreed on terms and are in various stages of a multistate certification expansion of data collecting and sharing.

Florida

The Career and Professional Education (CAPE) Act

In June of 2007 the CAPE Act was signed into law in Florida.⁹⁰ The act was designed to provide individuals with a certification, and businesses with a standard to quickly and efficiently address employer supply and demand needs. The goal of the partnership between education and industry was to increase the number and quality of certifications to support workforce development across the state. To achieve this goal, CAPE 2007 focused on secondary education as the starting point. The act instituted additional rigorous and career-oriented courses in secondary schools that lead participating students to a certification. To accelerate the integration and compliance of CAPE into the school system, Florida required that all school districts register at least one school under their jurisdiction as a career academy by 2009. Thus, approved CAPE academies were created and quickly emerged across the state. Besides the benefit of bolstering their certification programs, school districts received added incentive to organize and integrate career academies. Registered academies that are approved by the state are eligible to receive additional school funding provided by the Florida Education Finance Program. The program follows an explicit formula that assigns varying weights to eligible certification programs.⁹¹ Furthermore, the state features an approved comprehensive industry certification list to provide guidance on in-demand certifications and required training.⁹² The certification list also helps academies design and tailor programs to the specific needs of individual districts, regions, or industries.

Career and Professional Education Act of 2013

Six years after CAPE was enacted the state updated and reauthorized the act in 2013.⁹³ The updated act was intended to continue improving the state's pipeline of industry-qualified employees and identify the supply of CAPE certifications. Also, CAPE 2013 bolstered the alignment between secondary and postsecondary certification programs by adding academic and career courses, third-party assessment entities, and an enhanced ability to track and record individuals that earn certifications.⁹⁴ At schools across the state, districts collect and send performance reports to the Florida Department of Education. Along with other information, variables such as the school year, region, field of certification, and exam outcome are reported.⁹⁵ Moreover, districts are required to report on individuals that earn a certification outside of their cohort year and all individuals that attempt a certification exam but do not earn a

⁸⁹ FERPA (December 2008); U.S. ED (2011); DQC (March 2013). Data and information owned by third-party groups, which are not considered educational institutions, are not subject to FERPA. Therefore, third-party certifiers are not subject to liability should any data misuse occur. States and educational institutions must still comply with FERPA by not releasing student-level data, only information in the aggregate.

⁹⁰ CAPE Act of 2007 (26 June 2007a/b); Bradenton Times (2012); Florida Office of the Governor (22 April 2013).

⁹¹ FLDOE (2015a). Florida academy eligibility is based on student enrollment, certification completion, and receipt of a high school diploma.

⁹² CareerSource Florida (2015). Additional sources: FLDOE (2015c). Florida Department of Economic Opportunity and CareerSource Florida created the industry certification list.

⁹³ CAPE Act Bill Text Enrolled (22 April 2013); Florida CAPE Act (2014).

⁹⁴ Goodman (13 November 2013), (November 2014). Additional changes include the industry certification calculating methodology, funding requirements, addition of teacher bonuses, and the removal of graduation requirements.

⁹⁵ FLDOE (1 July 2013). Additional identifiers can be found at the Florida Department of Education website.

certification.⁹⁶ The Florida Division of Career and Adult Education was authorized to provide a summary of enrollment figures and certification awards to ensure individual academy and district accountability.⁹⁷

Career and Professional Education Act Outcomes

The development of CAPE helped to integrate CTE certification awards into Florida’s secondary and postsecondary school systems. This collaboration between education and industry fostered similar initiatives at the elementary- and middle-school levels with grade-level-specific curriculum. As illustrated in Table 1, the integration of career-oriented education and training into secondary schools has increased certification-related activity.

Table 1: Florida Middle School (MS) & High School (HS) Participation and Certification Summary⁹⁸

	'07-'08	'08-'09	'09-'10	'10-'11	'11-'12
# of Individually Registered CAPE HS Academies	246	490	838	1,298	1,511
# of Individually Registered CAPE MS Academies	NA	NA	NA	NA	56
Total	246	490	838	1,298	1,567
# of School Districts with Registered HS Academies	38	66	68	68	68
# of School Districts with Registered MS Academies	NA	NA	NA	NA	9
# of Certifications Attempted	1,112	3,592	29,906	49,383	NA
# of Certifications Earned	954	2,732	16,408	33,189	NA
Pass Rate	85.8%	76.1%	54.9%	67.2%	NA

From 2007 to 2008, one independent study found that secondary students who participated in at least one technology class and one certification exam had improved attendance and higher grade-point averages than students with similar demographics and no certification participation. While the study focused on technology courses, the findings indicated that—at a minimum—there existed a positive relationship between CAPE and educational improvement. The study also indicated, on average, an attendance increase of 17 days and a grade-point average increase from 2.55 to 2.92. Additionally, during the reported 2011 school year, approximately 18 percent of high school students were enrolled in a CAPE academy compared to 2.2 percent in 2007. The percentages represent an increase in the total number of students enrolled in an academy from under 20,000 to over 150,000 students between 2007 and 2011.⁹⁹ Table 2 provides current data on the relationship between certifications and CTE-related courses reported by Florida from 2013 to 2014.

Table 2: Florida CAPE Academy Performance Report, Grades 9–12, 2013–2014¹⁰⁰

Performance Indicator	Non-CAPE, No Certification	CAPE, No Certification	Non-CAPE + Certification	CAPE + Certification
Average GPA	2.66	2.71	2.87	2.99
Chronically Absent	18.1%	16.7%	17.1%	11.2%
At Least 1 Disciplinary Action	14.6%	17.2%	10.0%	9.4%
Dropout Rate	2.8%	1.1%	0.3%	0.3%
At Least 1 Accelerated Course	30.6%	30.4%	45.5%	43.6%
12th Graders Earning Standard Diploma	67.5%	81.9%	88.7%	94.2%

⁹⁶ Duckworth (April 2015).

⁹⁷ Goodman and McLarmon (2013).

⁹⁸ UNC Greensboro (2012); Grunwald Associates LLC (2012). In 2011, the Florida Department of Education listed the number of registered high school CAPE academies at 1,298. Organized by career cluster in descending order: Information Technology (218); Health Sciences (180); Hospitality & Tourism (161); Arts, Audio/Visual Technology & Communications (126); Business Management & Administration (106); Architecture & Construction (102); STEM (95); Agriculture, Food & Natural Resources (82); Transportation, Distribution & Logistics (67); Education & Training (56); Marketing, Sales & Service (53); Finance (29); Law, Public Safety & Security (11); Manufacturing (8); Human Services (2); Other (2).

⁹⁹ Grunwald Associates LLC (2012).

¹⁰⁰ FLDOE (December 2014).

Similar to many states, Florida has a wide range of available jobs in major industries such as manufacturing and engineering, but not enough skilled workers to fill those positions. Coupled with an aging workforce, demand for a new generation of well-trained workers has intensified. Many workers currently lack basic, industry-oriented skills, knowledge, and qualifications that a diploma or degree may not necessarily indicate, but a certification can. Unlike previous attempts to reform the state's education system,

CAPE academies offer curricula designed by industry, taught by industry-certified instructors. Industry tests students' skills and industry awards certifications that are nationally recognized currency in the job market. Most importantly, industry then competes to hire the graduates.¹⁰¹

¹⁰¹ Gaetz and Weatherford (11 June 2013). Special column to the Tampa Bay Times by Florida Senator Don Gaetz and Representative Will Weatherford.

SECTION 5: CONCLUDING COMMENTS

Concluding Comments

Throughout the nation, states recognize the impact that traditional and nontraditional credentials will play in their future economies and workforce systems. As the need for qualified and skilled workers increases, individuals seeking to obtain a variety of workplace credentials, in addition to traditional degrees, will also increase because nontraditional credentials provide numerous benefits to students, employers, and the overall workforce system. The move to collect and report traditional and nontraditional credential data indicates a change in the way stakeholders view the value of education and credentials in the workforce system.

The role traditional credentials play in creating a strong workforce cannot be understated. But more than ever, stakeholders are turning to nontraditional credentials, especially certifications, to complement their existing education and training efforts. Effective data tracking and collaboration between participants are key in understanding the contribution of different credentials to the overall performance of a state and the total supply of potential employees.

As an alternative, or supplement, to traditional credentials, certifications provide important workplace-related benefits and address several industry-related issues such as portability, uniformity, and applicability. Moreover, certification tracking provides invaluable data, such as total certification attainment and demographics, to policy makers that may influence a state's economic development or future workforce.

Certifications will continue to grow and garner interest as an important component of the workforce system. However, as the application of certifications expands, challenges will need to be addressed and solutions tailored to individual states. While the practice of comprehensively tracking and collecting certification data has been limited, states and industries have started to build systems to integrate this data into existing state databases. Numerous states have demonstrated the feasibility of creating a multilevel or cross-state model to capture a variety of information important to their workforce and economy. In particular, Virginia, Maryland, Illinois, and Florida have focused their efforts to improve certification tracking at the secondary and postsecondary level. The results they have obtained not only help guide the direction of future state policy, but have allowed them to address challenges ranging from student performance issues to industry-specific demands.

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