Making Workforce Data **Work**

How improved education and workforce data systems could help the U.S. compete in the 21st century economy

BY RACHEL ZINN AND ANDY VAN KLEUNEN

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WORKFORCE DATA QUALITY CAMPAIGN

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Why a campaign about workforce data?

The United States has millions of advertised but unfilled jobs in an economy with tens of millions of un- or under-employed workers. Employers across a range of industries note shortages of recruits with adequate basic skills or occupational middle-skill credentials. At the beginning of his Administration, President Obama called for our nation to not only regain its global lead in the number of college degrees conferred, but also to increase the number of people earning non-degree postsecondary credentials leading to employment.

Despite growing concerns about whether our educational policies are meeting these skill needs, our country is still struggling to develop workforce data systems that can measure a range of credentials, analyze how students and workers are progressing through different education paths, and provide information to assess industry skills gaps.

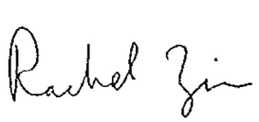
National Skills Coalition (NSC), a diverse network of local leaders committed to investing in America's workers, saw the disconnect between critical workforce policy questions and available workforce data, so it started building on the important work of the Data Quality Campaign (DQC). With a particular focus on K-12 systems, DQC has promoted state-level improvements in the collection, availability and use of privacy-protected education data across the early childhood, K-12, postsecondary and workforce continuum. In 2011, with the support of a number of foundations, NSC began working with the DQC and other stakeholders to broaden the conversation by creating Workforce Data Quality Campaign (WDQC).

A range of organizations from across the skills spectrum (e.g., adult basic education, job training, career and technical education and postsecondary education) spent over a year consulting with research and technical data experts to craft a federal and state policy agenda for WDQC. With the hire of dedicated staff and the creation of its own website at www.workforcedqc.org, WDQC launched in 2013. I am excited to present this report, which lays out the campaign's policy priorities and includes real-world examples of the ways that better data is helping to strengthen education, governance and business.

WDQC looks forward to providing more resources to help improve data usage and continuing to refine its reform agenda with the guidance of its national partners: Association for Career and Technical Education, Center for Law and Social Policy, Data Quality Campaign, Institute for Higher Education Policy, National Association of State Directors of Career and Technical Education, National Association of State Workforce Agencies, National Skills Coalition, New America Foundation and U.S. Chamber of Commerce.

I hope that you find this report useful and that you become engaged with WDQC.

Sincerely,



Rachel Zinn, Director
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Who needs better workforce data?

Rodney was laid off from his job months ago and is trying to plan his next move. There are no job openings in his previous field, so he is thinking about training for a new career. He sees television ads for nearby technical schools that promise to prepare students for high-demand industries, but which training will really lead to a stable new job with a good wage? School recruitment offices and the counselor at the local American Job Center tell of program graduates landing jobs, but Rodney wonders how many. What portion of all graduates are getting jobs? How much are they earning on average?

Governor Lee is worried that her state is falling behind. In the past few months, two large employers have located in a neighboring state instead, citing concerns about the low skill level of her state's workforce. Governor Lee knows that there are several programs — with significant state and federal funding — designed to educate state residents for skilled careers. So, why are employers saying they cannot find enough qualified applicants? She can't find complete information about who these programs are serving, how they work together, and what kind of results they're getting. Without this data, how can she make sure the state is making smart investments to build a competitive workforce?

Marc, the head of a regional manufacturing company, is facing his own dilemma. In order to stay competitive, the company plans to expand. It will need to hire workers, but Marc isn't sure whether he can attract people with the right skills and credentials. He can't find good information about what credentials the workers in his state have earned; there is data on degrees, but he is also looking for people with certificates. Some nearby schools have programs that look like they teach the necessary skills, but how can he be sure? The company can't afford to hire lots of people that need extensive on-the-job training.

At a community college, President Lieber is trying to figure out whether his school is getting results. The school has a low graduation rate because many students transfer to four-year colleges or are recruited by local employers before finishing a degree. President Lieber can't find reliable statistics to show whether these students go on to get B.A. degrees and/or succeed in the workforce. And for those who do find work, he is not sure if they're finding jobs in the occupations for which they trained. How can he assess which programs are succeeding, and which need to be improved, without data on all of his students' eventual employment and earnings?

All of these people want information to help them make important choices. The data they require is hard to find, and even if it is available, it will probably be difficult to use and understand. None of these people care about the technical details of data systems, yet these systems are the foundation for providing students, workers, policymakers, business leaders and educators with information they need to achieve success.

We all care about putting our nation on a path toward economic growth and shared prosperity. A brighter future requires education and training policies that prepare all Americans for a skilled workforce and that help our industries compete in a changing economy.

With the input of experts across the education and workforce spectrum, WDQC promotes federal and state policy reforms that will strengthen the data that students and workers, policymakers, business leaders, and educators rely on to make good choices. This report explains WDQC's reform agenda in detail and gives examples of states effectively collecting and using data to improve their human capital policies and economies.

Workforce Data Quality Campaign (WDQC) contends that we cannot determine if our human capital strategy is up to the challenges of a 21st century economy without inclusive, aligned and market-relevant education and workforce data systems.

We need federal- and state-sponsored data systems that will provide useful information to:

- **Students and workers** trying to figure out which colleges and training programs are best at helping people land a job, continue their studies or advance in the labor market.
- **Policymakers** who need to know whether education and workforce programs are preparing people for good jobs.
- **Business leaders** struggling to find skilled workers and wondering whether education and training programs are preparing enough prospective employees to meet their companies' needs.
- **Educators** at schools, training programs, adult literacy organizations, or career and technical education programs who want to know the long-term education and employment outcomes of their graduates, so they can continually improve their courses and curricula.

Where is the data?

There is already a great deal of data collected by various government agencies to help answer critical policy questions about education and workforce development. The challenge is that it's spread across many different places. For example, if a state legislator wanted to figure out how well all of the publicly funded education and training programs in his state were performing in preparing people for skilled employment, someone would have to bring together information from a number of different data systems. Each of these data systems is administered for different purposes, often under the purview of different state or federal agencies, and each with its own rules for protecting individual privacy.

Education data. Schools at all levels, from preschool to college, keep confidential records to track student progress. Most schools collect the following types of data, though how much is collected varies by state and institution: demographics, enrollment, transcript information, student performance, and financial aid. Information about students is often aggregated to create data at the school level, such as graduation rate. Other school-level data includes financial information about school revenues, expenditures and tuition costs. Finally, especially for K-12 education, data includes information about teacher qualifications and performance.

Workforce program data. There are many programs designed to help workers find employment or build skills to advance in their careers. They include career and technical education; adult education; Workforce Investment Act (WIA) programs for adults, youth and dislocated workers; the Employment Service; and Trade Adjustment Assistance. The entities that serve people in these programs — such as American Job Centers, local nonprofit organizations and community colleges — report such data as the demographics of program participants, the services and financial assistance they have received, and credentials and employment they have attained.

Public benefits data. Several government programs provide both income support and training assistance to people who are unemployed or have low incomes. These include Temporary Assistance for Needy Families (TANF), Unemployment Insurance (UI) benefits, and Supplemental Nutrition Assistance Program (SNAP), which is commonly known as food stamps. Providers of these services maintain data systems about individuals to measure program eligibility, the duration and amount of benefits, and types of services received.

Employment data. Wage records contain confidential information on the employment status and earnings of individuals. There are two major sources of this information: Unemployment Insurance (UI) wage records and tax data.

- UI wage records are submitted quarterly by employers to the state agency that manages UI benefits, which is usually the state workforce agency. These records include basic information about the employee and employer (including industry), and the wages the individual earned in the most recent quarter. State agencies keep these records for at least three years, and submit them to the federal government's National Directory of New Hires and a data set operated by the Census Bureau. UI wage records do not include people who are self-employed or are employed by the military or federal government.

- For tax records, all employers annually submit a W-2 form to the Internal Revenue Service (IRS) that contains information on employers and individuals, as well as the individual's earnings for the year. Both the IRS and the Social Security Administration keep these records at the federal level with full confidentiality protections, along with additional tax data submitted by people who are self-employed. W-2 data is not kept at the state level.

Labor Market Information

States not only collect data about student and worker progress and program outcomes, they also have separate systems that continually collect and update labor market information (LMI) for state and regional labor markets. LMI provides a picture of current and future job openings and sometimes information about skill requirements for these jobs. Most LMI is gathered through surveys, such as those conducted by the Census Bureau and the Bureau of Labor Statistics, and is supplemented by industry and employer surveys conducted by state labor agencies. In addition, some LMI (e.g. reports on industries and earnings) uses data from tax records or other mandatory data reporting. Finally, "real-time LMI" gives a snapshot of the current labor market by pulling information from online job ads and resume databases. LMI uses these three data sources — surveys, reported data, and real-time data — to produce statistics about:

- Workers (demographics, educational attainment, skills)
- Employment (unemployment rates, wages, mass layoffs)
- Industries (staffing patterns, number/size of employers, occupation descriptions)
- Projections (expected job openings by occupation and industry)

Bringing data together: state longitudinal data systems

Over the past decade, a lot of federal and state government attention has focused on trying to do a better job of matching information across these different data sources through state longitudinal data systems (SLDS). These systems are operated by states and contain longitudinal data, meaning that they include data about individuals *across time*. SLDS are important because they contain privacy-protected data that, if properly structured, can follow individuals' progress through different education, training and social service programs over several years. This allows us to see whether the combination of those various programs is helping people access employment and higher earnings.[1]

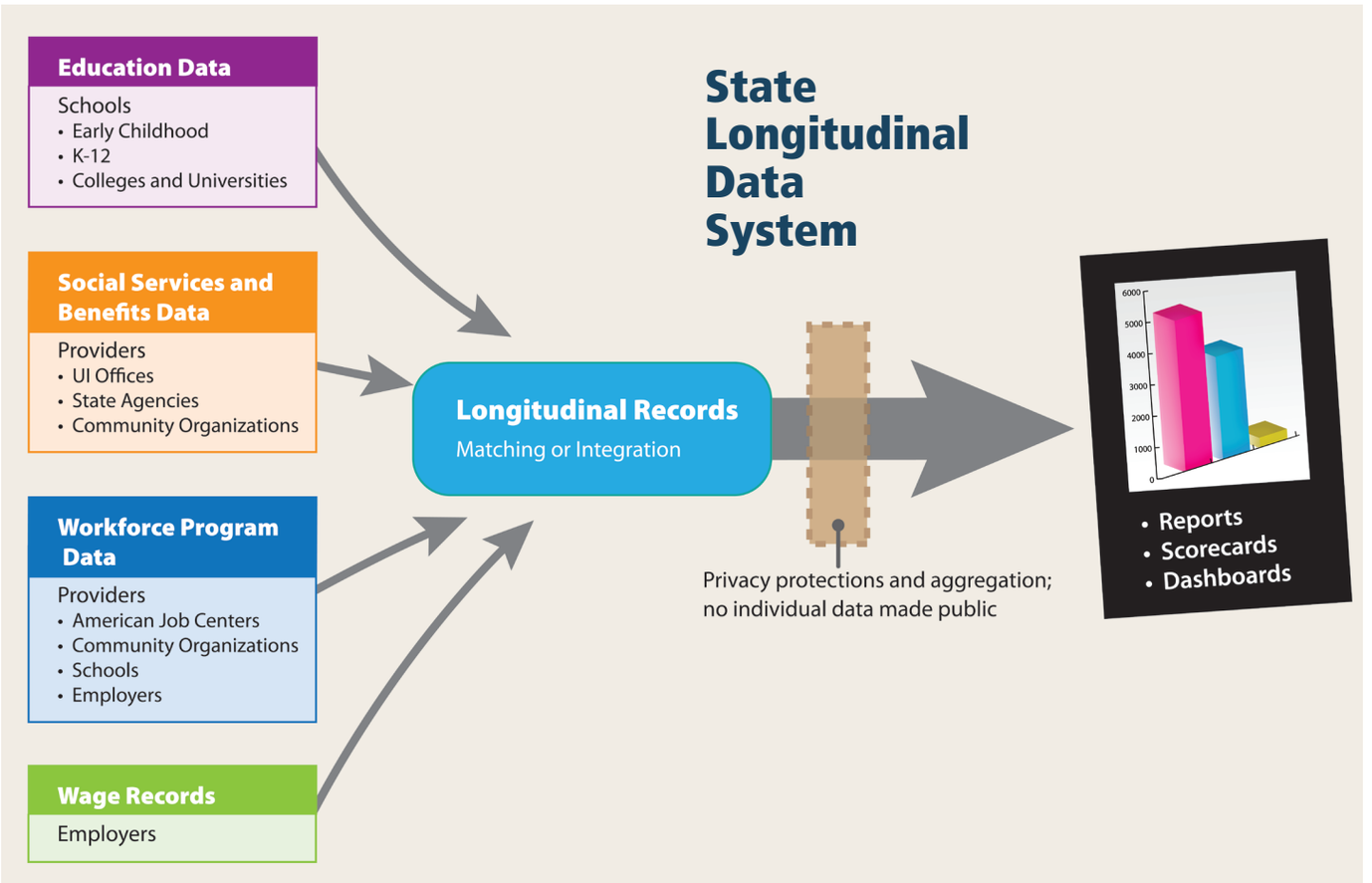
Although there are different ways to structure state longitudinal data systems, all states work to protect the privacy of individuals. Those few state analysts and academic researchers who are allowed access to this information can only see it stripped of its individual identifiers. Data released to the public is only in aggregate form, showing information about groups of students or workers. States have rules about the minimum size of a group so that members of the public cannot combine sources of information to figure out facts about specific individuals, such as test scores or annual earnings.

The ability to aggregate and disaggregate data at all levels, with full privacy protections, make SLDS potentially powerful tools. We can use them to analyze the education and training outcomes of different demographic groups, or aggregate data to answer questions about schools, programs, or even an entire state. Properly structured, SLDS can tell us:

- How do career and technical education programs in high school affect student success in college and employment?
- Which industries employ the majority of a state's high school and college graduates?
- What is the earnings trajectory for workers with different types of credentials?
- Are workforce development programs reducing participation in UI, SNAP and TANF programs?

Building State Data Systems

A few states have operated and used SLDS for decades, like Florida, which created a special data analysis unit in 1988.[2] More states have stepped up their efforts in the last 10 years. The Educational Technical Assistance Act of 2002 established a federal grant program to support SLDS, and the first round of grants ($52 million) was awarded in 2005. The effort gained momentum



when the American Recovery and Reinvestment Act of 2009 (ARRA) provided $250 million of federal funds for SLDS.[3] Administered by the Department of Education, these grants initially focused on building systems for K-12 student records, so states would have more tools to assess how elementary and secondary students were being served.

Unfortunately, by focusing their data efforts primarily on K-12 students, some policymakers were leaving out a wide range of programs and pathways that help people gain knowledge and skills needed to succeed in the labor market, as well as in further postsecondary study.

SLDS could follow what happened to students as they progressed from grade to grade within their elementary or secondary schools, but many states could not assess the college or career success of those same students once they left high school.

To address SLDS limitations, in the past few years, the Department of Education grants have encouraged privacy-protected linkages of K-12 data to postsecondary data and wage records, as well as with early childhood education data systems. In addition, since 2010, a federal grant program administered by the Department of Labor has awarded three rounds of

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grants totaling $30 million to 31 states. These grants, called the Workforce Data Quality Initiative, fund state development of workforce program data and its linkage to education data.

Using the Data

All states now have functioning longitudinal data systems, and a majority of them have stable governance and ongoing state funding for their systems, according to an annual report from DQC.[4] But how are those systems actually being used?

Until recently, much of the focus from government and funders was on *building* these systems rather than on their use. Many of these systems are being underutilized in providing valuable information to policymakers, educators, program managers, employers and the public. To make sure data systems are being used to their full potential, some state policy experts are working with technical staff to design linking and reporting mechanisms that produce useful information to answer a variety of policy questions. Some states are also starting to analyze their SLDS student outcome data relative to labor market demand data in their LMI systems. For example, states could use SLDS to identify the number of students earning credentials in specific fields, and then compare these numbers to job opening projections to see whether there may be an upcoming shortage or excess of workers in certain occupations.

Starting with Policy Questions

When Pennsylvania started developing a system to link education and workforce data in 2012, officials from its Departments of Public Welfare, Labor & Industry and Education began by identifying high-priority policy questions. The following questions were approved by the Governor's office to provide a framework for Pennsylvania's longitudinal data system.

- What are the average wages of individuals that have previously participated in a workforce, welfare or education program? What is the average sustained employment of individuals that have participated in a workforce, welfare or education program?
- What are the current average wages earned by the highest educational attainment of the individual?
- What percent of postsecondary graduates require public assistance after graduation?
- What is the highest educational attainment of individuals participating in workforce and welfare programs, by program?
- For postsecondary graduates, what is the rate of in-state employment within three month intervals from the time of graduation?
- What percent of career and technical education (CTE) graduates is employed in-state in their major/course of study vs. the percent of CTE graduates that are employed in a different major/course of study or not employed?
- For individuals that participate in an Adult Literacy Program, what are average wages before and after participation in the program? What percent utilizes a public assistance program, both before and after participation in the Adult Literacy Program, by program?

Achieving the potential of workforce data systems

State and federal agencies thus collect a tremendous amount of data on education and training programs, on the employment and earnings of people who graduate from those programs, and on the skilled jobs that many of these graduates hope to fill. But how do we bring these data together in a system that creates a full picture of how education and workforce programs are working together to prepare people for success in the labor market?

The WDQC believes that for data systems to be most useful for answering a wide range of real-world questions, they must be inclusive, aligned and market-relevant.

Making Systems Inclusive

Inclusive data systems contain information on participants across all education, workforce development and social service programs. Unfortunately, state longitudinal systems often leave out key pieces of this human capital continuum, such as:

Non-public schools. Of all undergraduate students nationwide, about 15 percent are enrolled in private nonprofit colleges and 9 percent are enrolled in for-profit schools.[5] States often do not collect data from non-public colleges, because they receive little or no state funding and there are fewer incentives for inclusion in data sharing initiatives. States missing this data cannot publicize the employment outcomes for these schools to help students make smart enrollment and career choices, and are overlooking how a significant percentage of residents are developing skills.

Workforce development and adult education programs. There are multiple programs that help unemployed workers find jobs, and train people to build skills and knowledge. These programs, supported by federal and state dollars, have their own data systems to keep track of enrollment and services provided. As noted above, many states do not keep these records as longitudinal data that can be linked to other information, so that they can be used to understand how individuals progress through different programs over time.

Social service and public benefit programs. Social services and public benefits — ranging from TANF and SNAP to UI — often are key elements in successful career pathways strategies that allow individuals to complete their training. Not knowing which students

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received such assistance hides what role such programs may play in the completion of their studies and future economic success. Linked social service data also helps states to assess whether investments in training are reducing reliance on public benefits, and therefore saving the state money.

Making Systems Aligned

Aligned data systems allow data to be matched across programs and states to demonstrate how individuals move through education and career pathways. Many state data systems could improve:

Aligning data definitions. In order to link and combine data across programs, individual program data systems must use the same standards and definitions for reporting data. For example, if one program defines "completion" as ending

What is an Industry-Recognized Credential?

The U.S. Department of Labor describes an industry-recognized credential as being "developed and offered by, or endorsed by a nationally-recognized industry association or organization representing a sizeable 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."[8] This definition encompasses a wide range of credentials including:

- Educational diplomas, certificates and degrees (awarded after program of study)
- Registered apprenticeship certificates
- Occupational licenses (typically awarded by state agencies)
- Certifications from industry or professional associations (based on exam process)

participation (whether by earning a certificate or dropping out) and another program defines it as earning a certificate, the program results on completion won't be comparable and cannot be combined in a way that makes sense to policymakers and the public.

Sharing data across states. More than one-fifth of recent college graduates transferred at least once,[6] and more than 5 million workers have a job in a different state from where they live.[7] Following individuals through their education and career trajectories can be difficult when states only have access to their own data. When people cross state lines and are "lost" in the data, program outcomes like graduation and employment placement rates are incomplete and do not represent a program's true performance.

Making Systems Market-Relevant

Market-relevant data systems incorporate information that shows how workforce program participants, students, workers and employers perform in the labor market. Some state data systems could function better in:

Linking education, workforce program data and wage records. Linkages to wage records are crucial to finding out whether people are getting jobs and what they are earning after finishing education or workforce programs. Policymakers and practitioners need to know if workforce programs are really helping people find employment, and prospective students want to know whether specific education/training programs will lead to a good job.

Measuring all industry-recognized credentials. There are many training programs that do not lead to degrees, but instead to certificates, certifications, licenses and other credentials. Some of these are offered by degree-granting institutions, such as community colleges, but others are operated by community-based organizations that don't have a regular reporting relationship with a state agency. Some federal and state funds support students attending non-degree programs, so lacking their data hurts policymakers' ability to monitor the effectiveness of this funding. As with missing data on non-public schools, state systems without non-degree program data have limited utility for publicizing outcome information that helps prospective students select a program.

Incorporating labor market information. As noted above, this type of data is not based on individual-level, longitudinal records like most of the information in SLDS. Yet it is still extremely useful to ascertain whether the outcomes of a state's education and training programs align with the types of job openings in the labor market, and the skills and credentials that they require. Many states are working to improve their ability to collect and analyze local labor market information to give workers, practitioners and local leaders better information to guide workforce and economic development efforts.

WDQC's agenda for reform

There are a number of state and federal options available to promote aligned, inclusive and market-relevant data systems. In some cases, good working models already exist, and the WDQC intends to broadcast those models to encourage their replication. In other cases, we need action from state and federal policymakers to facilitate improvements.

In the pages that follow, we lay out some specific recommendations for reform that draw on the expertise and input of the WDQC's national and state partners. These proposals are informed by WDQC's five-point agenda:

1. **Including All Students and Pathways:** Beyond tracking student progress in K-12 settings, data systems should include outcome and progress indicators for out-of-school youth, adult workers, and other individuals enrolled in job training, adult basic education and career and technical education programs supported by a range of public policies (e.g. WIA, Perkins Career and Technical Education Act, Higher Education Act, Trade Adjustment Assistance, TANF, SNAP Employment and Training).

2. **Counting Industry-Recognized Credentials:** In addition to documenting traditional high school and college degrees, data systems should capture individual achievement of the wide range of industry-recognized credentials (e.g. certificates, certifications, licenses) and related competencies, including those awarded outside educational institutions by private industry.

3. **Assessing Employment Outcomes for All Participants:** Data systems should be able to match student records to wage records for enrollees across all education and workforce programs, including various postsecondary settings (e.g. nonprofit, for-profit, non-degree). Data systems should also be able to assess what combination of education and training interventions have impacted individuals throughout their careers.

4. **Expanding Use of Labor Market Information:** Data on individual participant outcomes will have limited value if not brought together with the best information available about the changing structure of the labor market, including real-time openings, as well as future projections. Labor market data must be current, available in a variety of settings, and made understandable to students, workers and employers. Labor market information should also be used by policymakers to assess the market relevance of education and training policies, and by education leaders to align their offerings with employer needs.

5. **Ensuring Data Access and Appropriate Use:** Privacy-protected data on student outcomes can and should be made available to education and training institutions, so they can assess their graduates' outcomes and guide program improvements; to students and workers who want to choose the best programs for their respective career goals; and to policymakers who want to know more about the effectiveness of public education and training policies.

Federal policy reforms

The federal government (especially the Departments of Education and Labor) and Congress should work together to:

1 **Make data expectations clear and consistent across pending reauthorizations.** As of this writing, several major federal education and workforce programs are due (or overdue) to be reauthorized, including the WIA, the Perkins Career and Technical Education Act, and the Higher Education Act. Using the same data reporting definitions, and creating opportunities for data linkages between programs, would allow them to work together more effectively.

- ***Adopt common data elements and definitions.*** Legislation should use the same definitions for common information reported across a variety of education and workforce programs, such as the attainment of credentials.

- ***Encourage employment outcome reporting.*** All programs should be able to report aggregate employment outcomes. It may not be appropriate for all adult education, workforce development and postsecondary programs to have employment outcomes used as performance measures (i.e., measures that determine future eligibility for funding). Still, prospective students, service providers and the public should at least have access to information on whether program completers are getting jobs and what they earn on average.

- ***Promote reliable data sources.*** Requirements or incentives to use wage records and data reported by institutions, rather than surveys, for measuring participant progress and outcomes would help ensure that outcome data has consistent meaning and quality across programs.

2 **Redesign federal support** for states' development of aligned education and workforce data systems. Right now, the bulk of grant funding for SLDS goes out through the Department of Education (over $600 million since 2005), while the Department of Labor separately awards a smaller set of grants ($30 million since 2010). Some states report that the technical assistance for these grants is not cohesive and does not encourage enough interagency collaboration at the state level.

- ***Reconsider the current grant structures.*** Federal funding for state longitudinal data system development and use should continue. However, the current structure of grants going from two different federal agencies (Departments of Labor and Education) to different agencies within the same state should be re-examined. Federal funders could consider an alternative grant structure, such as a single grant option for qualifying states, co-managed by the Departments of Labor and Education.

- ***Implement a new approach to technical assistance.*** Different federal agencies providing separate technical assistance to distinct grantees within the same state tends to re-enforce rather than bridge gaps between data. Federal agencies should instead work together to provide technical assistance for states on SLDS development through a state-based team approach, in which state leaders from labor, education, human services and labor market information entities are all participating in training together. The National Governors Association's policy academies, which bring together cross-agency teams from several states, could serve as a model.

- ***Leverage competitive grants and federal regulations.*** Federal agencies should require or encourage states competing for discretionary education or labor grants to commit to the development of more inclusive, aligned and market-relevant SLDS. For example, Race to the Top grants require state applicants to explain their plans for improving SLDS and ensuring that the data is used to improve decision making by a variety of stakeholders.[9]

State Wage Record Sharing

The federal Department of Labor set up the Wage Record Interchange System (WRIS) to allow states to exchange UI wage records under strict privacy protections. The system allows states to find out-of-state employment outcomes for workforce program participants. Data obtained through WRIS may only be used to measure the performance outcomes of specific programs funded by the Department of Labor. All 50 states, the District of Columbia and Puerto Rico participate in the system, which is governed by a data sharing agreement. WRIS is not a single database; it is a mechanism for states to query UI databases and retrieve selected records.[10]

The Wage Record Interchange System version 2 (WRIS2) allows a broader range of education and workforce programs to use the system to determine employment outcomes. More than 30 states belong to the WRIS2 data sharing agreement. It operates similarly to the original WRIS, but has a separate exchange system so that only participating states may use it.[11]

3 Support cross-state data sharing so that more complete data is available on outcomes. Some states cannot get data on college students who transfer across state lines, or on program completers who take jobs in another state, thus limiting assessments of program outcomes.

- ***Encourage states to share data.*** In its third round of grants for state data systems, the Department of Labor required grantees to be members of the WRIS2. This system, funded by the Department of Labor, allows states to share UI wage records to measure the performance of education and workforce programs. As a result of the grants, several states signed up for WRIS2. Federal agencies should look for additional opportunities to promote cross-state data sharing through grants and technical assistance.

- ***Examine federal data sharing platforms.*** The federal government has multiple sources of employment data that could be used to calculate aggregate outcomes (e.g. average earnings) for program completers. The National Directory of New Hires and the Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) dataset contain UI wage records submitted by states, and the Internal Revenue Service and the Social Security Administration (SSA) have individual tax records. These data may only be used for limited purposes prescribed by law, but even under current law, agencies have found new ways to use the data. For example, SSA and the Department of Education signed an agreement to share and match data to calculate average earnings for completers of career-oriented education programs covered by the Gainful Employment regulation. Federal agencies should explore whether additional data uses are appropriate and allowed under current law.

All programs should be able to report aggregate employment outcomes.

National Student Clearinghouse

The National Student Clearinghouse is a nonprofit organization that collects individual student records on enrollment and degree attainment from colleges and universities across the nation. More than 3,500 colleges and universities, enrolling over 98 percent of all students in public and private U.S. institutions, voluntarily participate in the Clearinghouse. For a fee, the Clearinghouse allows employers to verify credentials while hiring employees. It also enables schools to track whether transfer students have graduated from another institution, even if it is in another state.[12] The federal Department of Education is prohibited by the Higher Education Act from maintaining a similar database with records on all students, including those who do not receive federal financial aid.

4 Other Ideas for Consideration

- *Industry Certification Matching:* Support state demonstrations to connect industry-awarded certifications to SLDS data. Future grants from the Departments of Labor and Education could support several states in conducting a pilot to work with industry-based entities to match, with sufficient privacy protections, industry-awarded certifications to student-level data in state education and workforce data systems. Illinois recently partnered with the CompTIA trade association to demonstrate that such linkages are possible (see case study on page 17).

- *Occupational Coding of Employment Data:* Fund a several-state pilot of adding occupation to UI wage data, with the input of industry. UI wage records currently contain the industry of the employer (NAICS code), but not the employee's occupation (SOC code). Including occupation in wage records would allow better tracking of whether students are employed in jobs related to their programs of study. Industry classifications without occupation can be misleading. For instance, a nursing school graduate working as a janitor in a hospital would show up as working in the health care industry, but obviously is not in a job directly related to a nursing degree. Pilots should require input from industry and worker advocates to assess how they might be done in a way that minimizes employer burden.

- *Credential Definition Standards:* Participate in national efforts to develop transparent standards that would demonstrate the quality and value of credentials. The George Washington Institute of Public Policy at George Washington University is partnering with the American National Standards Institute (ANSI) to explore the development of credential standards. This project could lead to a common framework for describing key aspects of credentials, including competencies, assessments and market value. ANSI, a nonprofit organization, has previously organized collaborative processes to improve standards in several fields, including health information technology and energy efficiency.

- *National Credentials Registry:* Create a comprehensive and standardized list of degrees, certificates, licenses and certifications that are typically awarded throughout the country, so that education and training providers can report, in a consistent way, on the actual credentials their graduates are earning. The Department of Labor has already done some of the work that could contribute to the creation of such registry through its online "certification finder" tool.[13] Other federal agencies, like the Departments of Education and Commerce, could help build on this work. Over time, in addition to creating greater consistency in how credentials are reported by programs, the registry could be used to produce reports of credentials awarded — by industry, occupation and region — for review and validation by industry experts, and for comparison to job openings data.

State policy reforms

WDQC has also developed — for reference by governors, state agencies and state legislators — the following State Blueprint with some specific steps states can take to implement the campaign's five-point agenda for reform. Some states have already built out much of this blueprint, while others are working on specific elements.

Including all Students and Pathways

- **Inclusive Cross-Agency Council:** Establish a cross-agency council that includes labor, PreK-12, CTE, higher education, social services, et al. (P-20/W) to oversee statewide data collection and reporting.
- **Count More Students:** Increase the percentage of students across all education and workforce programs included in state longitudinal data systems.
- **Metrics for Career Pathways:** Create consistent metrics across education and workforce programs to facilitate program alignment and integration into state data systems.

Counting Industry-Recognized Credentials

- **Capture Diverse Credentials:** Increase the range of credentials (e.g. certificates, certifications, licenses) being counted in addition to degrees — including those awarded by industry third-parties — within SLDS-monitored outcome data.
- **Industry Validation:** Develop a process for industry validation of awarded credentials across education and workforce programs.

Assessing Employment Outcomes

- **Know if Graduates Get Jobs:** Determine employment and earnings outcomes for graduates of an increasing number of workforce and education programs, including higher education.
- **Cross-State Sharing of Employment Data:** Participate in WRIS2 (or another appropriate platform) to enable the cross-state sharing of employment data.

Expanding Use of Labor Market Information

- **LMI Capacity and Use:** Improve LMI data collection and analysis capacity, and ensure such data is made accessible to a variety of audiences.
- I**ndustry Skills Gaps:** Initiate skills gap analyses, using expanded student reporting, labor market information and industry feedback to assess alignments between education and workforce programs and labor market demand.

Ensuring Data Access and Appropriate Use

- **Scorecards for Students and Workers:** Report de-identified, aggregate program- and institution-level data so that people can compare programs and make career decisions.
- **Feedback Reports to Programs and Institutions:** Establish the means for all education and workforce programs to access de-identified, aggregate data about graduates' long-term employment and education outcomes.
- **Dashboards for Policymakers:** Regularize reporting to the governor and state legislature on education and employment outcomes across all education and workforce programs, for comparison with current and projected data on job openings and future industry demand.
- **State Funding:** Commit state resources, in addition to whatever federal support is available, to develop and maintain these data reporting systems for ongoing use by individuals, educators and policymakers in the state.

Including all Students and Pathways

1 Inclusive Cross-agency Council: Establish a cross-agency council that includes representatives from state agencies and organizations that oversee PK-12, career and technical education, postsecondary education, workforce programs, adult education, and social services to oversee data collection and reporting.

For example, **Indiana** passed a state law in 2013 establishing the Indiana Career Council, a 19-member entity responsible for overseeing the state's workforce development strategy and its state longitudinal data system. The Council includes representatives from several state agencies, including the Department of Education, the Commission on Higher Education, the Department of Workforce Development, the Economic Development Corporation, and the Family and Social Services Administration. It also has members representing business, industry and labor.[14] The Council builds on Indiana's history of cross-agency collaboration. Agencies started sharing data in 2007, and the Indiana system now includes employment data and participant information from many education and workforce programs.

2 Count More Students: Increase the percentage of students and participants across all education and workforce programs included in state longitudinal data systems.

Minnesota is working to include adult basic education (ABE) students in its longitudinal data analyses. The Minnesota State Colleges and Universities system conducted an analysis of ABE student enrollment and completion at its schools. The system contracted with the Minnesota Department of Education to access student records on five years of ABE participants. The ABE participant data has been linked to system enrollment records, as well as to UI wage records. These data linkages enabled Minnesota to analyze ABE students' college enrollment, persistence and credential attainment, as well as their employment outcomes.[15] Minnesota is working toward an ongoing capacity to perform this type of data linkage to better understand students' varied education and career trajectories.

North Dakota has a state labor agency that administers several workforce programs, including UI, WIA, Wagner-Peyser and Trade Adjustment Assistance. Data on participants in these programs is being incorporated in a data warehouse, which will protect individual privacy while storing longitudinal wage records and program participant data. This workforce data will be linked to educational data in the existing SLDS according to the conditions of interagency data sharing agreements. North Dakota's enhanced data system will facilitate new research projects, including a report on the ability of jobseekers with different levels of education to find employment.[16]

3 Metrics for Career Pathways: Create consistent metrics across education and workforce programs to facilitate program alignment and integration into state data systems.

The Alliance for Quality Career Pathways is a group of 10 states (Arkansas, California, Illinois, Kentucky, Massachusetts, Minnesota, Oregon, Virginia, Washington, Wisconsin) that is developing shared metrics for career pathway systems. Career pathways reorient existing education and workforce services into a structure that focuses on the workforce needs of employers and on the education and training needs of individuals as they pursue their career paths. The effort is led by the 10 states and facilitated by the Center for Law and Social Policy (CLASP), a WDQC national partner. States are currently testing a set of metrics that include educational outcomes (e.g. credit accumulation, certificate attainment) and labor market outcomes (e.g. employment placement rates, initial earnings). These metrics would give multiple programs shared outcome measures and similar definitions, such as measuring "initial earnings" as the median earnings in the second and third quarters after career pathway exit. Several of the states are integrating the metrics testing into state data system development projects.[17]

Counting Industry-Recognized Credentials

4 Capture Diverse Credentials: Increase the range of credentials (e.g. certificates, certifications, licenses) being counted in addition to degrees — including those awarded by industry third-parties — within SLDS-monitored outcome data.

Illinois partnered in 2012 with CompTIA, a trade association that provides information technology certifications, to explore ways to match individual-level certification data with other education and workforce program data. This project was successful in matching certification data with student records from Illinois community colleges, to analyze characteristics of students who took and passed certification tests. It was also successful in demonstrating the major legal issues in sharing data and identifying ways to improve the quality of data matching.[18] This initiative provides an example of how a state can build partnerships with industry to improve the quality and completeness of data on student credential attainment. The Association for Career and Technical Education, a WDQC national partner, is working with CompTIA and The Manufacturing Institute to expand this pilot to other states.

Maryland's governor set a goal in 2010 for increasing the postsecondary attainment of the state's citizens as part of the Maryland-Skills2Compete initiative. In order to measure progress toward the goal, 38 partner agencies and organizations collaborated to better track completion of many types of postsecondary education, such as educational certificates, apprenticeships, job training, non-credit community college courses and corrections occupational certificates.[19] As the state's goals have evolved, it continues to work on collecting data about occupational licenses, industry certifications and other non-degree credentials.

5 Industry Validation: Develop a process for industry validation of awarded credentials across education and workforce programs.

Wisconsin promotes regional industry partnerships and engagement by industry in developing career pathways, credentials and curricula at its technical colleges. Western Technical College brought together several local manufacturers to learn about their skilled workforce needs, and in response designed a career pathway in computer numerical control machining.[20] The college created short-term certificates that integrate basic skills education and fit within its one-year diploma program.[21] The Wisconsin legislature recently adopted a proposal to base a portion of state funding for its technical colleges on performance, beginning with the 2014-15 school year. Colleges can pick from several measures, including the number of programs that include industry-validated curricula.[22]

Assessing Employment Outcomes

6 Know if Graduates Get Jobs: Determine employment and earnings outcomes for graduates of an increasing number of workforce and education programs, including higher education.

Seven states (Arkansas, Colorado, Florida, Minnesota, Tennessee, Texas, Virginia) have partnered with **College Measures** to publicize average earnings for graduates of education and training programs. College Measures, a joint venture of the American Institutes for Research and Matrix Knowledge Group, works with states to analyze earnings for students who graduate from certificate and degree programs at two- and four-year colleges. The aggregate data on earnings is derived from matching former student information to the state's UI wage records. The College Measures states offer searchable websites, so policymakers and the public can view earnings by school and by program.[23]

7 Cross-State Sharing of Employment Data: Participate in WRIS2 (or another appropriate platform) to enable the cross-state sharing of employment data, in order to capture the outcomes of students and workers who take jobs across state lines.

Oregon was involved in developing WRIS2, and uses the system to improve data on employment outcomes for several workforce programs, including adult basic education, vocational rehabilitation, career and technical education, and TANF. Its neighboring states of California and Washington are not yet signed up for WRIS2, so state officials suspect they are still missing

a lot of information on program completers who get jobs out of state. But, they see the potential of the system. For the workforce programs that are allowed to calculate outcomes using the original WRIS, which includes all states, capturing out-of-state outcomes increased employment placement rates by more than 10 percent for some completer cohorts.

The Western Interstate Commission for Higher Education (WICHE) has created a data sharing arrangement between the four states of Idaho, Hawaii, Oregon and Washington. Each state contributed to a data set containing information on more than 190,000 students who graduated from a public high school and/or began at a public postsecondary institution in the state. The data set included information on enrollments, postsecondary credential attainment and wage records, so researchers could look at employment outcomes and subsequent enrollments after completing a program of study. About half of graduates had employment records in the same state where they earned a credential. Getting data through the WICHE exchange enabled researchers to find wage records for an additional 4 to 10 percent of completers, depending on the state. Additional state participation naturally would result in even larger amounts. Researchers and policymakers are using the data set to understand how students and workers are moving through the regional labor market. The data exchange is also supplying participating states and state agencies with enhanced information for the students they are able to claim as their own, so that those agencies can more comprehensively analyze employment and other outcomes for the purposes of reporting, strategic planning and program improvement.[24]

Expanding Use of Labor Market Information

8 LMI Capacity and Use: Improve LMI data collection and analysis capacity, and ensure such data is made accessible to a variety of audiences.

Virginia has developed several web-based tools to make labor market information more easily accessible to the public. For example, community profiles provide tables and graphs with information about demographics, employment patterns, occupational projections and educational attainment. The profiles are available for many different levels of geography, including cities, counties, congressional districts and community college regions. With a quick search, users can find out that Virginia Commonwealth University is the largest employer in the city of Richmond, or that biomedical engineering is a growing occupation in the Northern Virginia Community College region.[25]

9 Industry Skills Gaps: Initiate skills gap analyses, using expanded student reporting, labor market information, and industry feedback to assess alignments between education and workforce programs and labor market demand.

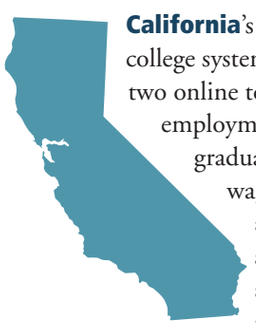
Florida is creating a "Supply and Demand" model that will allow policymakers to better align education and training supply with actual employer demand, while allowing consumers and others to be better informed about the hiring needs of employers in their local area. The supply side will include enrollees and completers from a variety of education and training programs, including WIA and Wagner-Peyser programs, postsecondary technical education, Florida College System programs, Florida Public Universities' programs, and private technical and academic institutions overseen by the Commission on Independent Education. Enrollee data will allow users to see the upcoming pipeline of future completers/graduates. The demand side will include real-time data on job openings from the Conference Board's Help Wanted On-Line system and state labor market information, including average annual occupational openings data that provide a long-term outlook.[26]

Mississippi uses its state longitudinal data system, commonly known as LifeTracks, as a marketing tool for the expansion of jobs in the state. For example, the Yokohama Tire Corporation is building a new manufacturing plant in the state that could provide up to 2,000 jobs. When the company was searching for a site, executives had questions about whether the region had a workforce with the skills they needed. The National Strategic Planning & Analysis Research Center (nSPARC) at Mississippi State University, which manages LifeTracks, was able to provide answers. Researchers used longitudinal data to make projections about numbers of high school career and technical education students who could take courses at area community colleges to get them ready for the new jobs. They also looked at the number of current workers in the region with the necessary credentials. The data helped to assure Yokohama that they would be able to find qualified employees for the new facility.[27]

Ensuring Data Access and Appropriate Use

10 Scorecards for Students and Workers: Report de-identified, aggregate program- and institution-level data so that people can compare programs and make career decisions.

New Jersey has a "consumer report card" website with information on occupational training programs in the state. Users can search by program type or occupation. The program information includes a results tab showing employment rates and average earnings at six months, one year, and two years after graduation. The state calculates these employment outcomes by matching wage records with student records from the state agencies that oversee adult education, workforce development and higher education.[28]



California's community college system recently created two online tools that show employment outcomes for graduates. The college wage tracker displays average wages by school and program at three years after graduation. Users can compare earnings for the same program (e.g. associate's degree in accounting) offered by different schools, or compare the earnings for different programs at the same schools.[29] The salary surfer tool uses the aggregated earnings of graduates from a five-year period to provide an estimate of the potential wages to be earned two years and five years after receiving a certificate or degree in certain disciplines. This information can help students and families as they make decisions about investing time and resources in postsecondary education.[30]

11 Feedback Reports to Programs and Institutions: Establish the means for all education and workforce programs to access de-identified, aggregate data about graduates' long-term employment and education outcomes.

The **Kentucky** Community and Technical College System (KCTCS) receives state UI wage records each quarter and matches them with student data to provide its colleges with aggregate employment outcomes by institution and by program. To protect student privacy, KCTCS does not share results for any programs with fewer than 10 graduates. Colleges look at whether program graduates are getting good jobs when they are deciding to expand particular offerings.[31]

Maine provides reports to all of its community colleges and public four-year universities about the outcomes of their graduates. The state's Department of Labor collects student records from the colleges, matches them with Maine UI wage data, and then reports to schools the aggregate employment rate and average earnings for each program of study. Annual earnings are measured beginning six months after graduation. The state's Department of Education assists with the reports by providing National Student Clearinghouse data, which allows colleges to look at additional education enrollment by their students after transfer or graduation. Colleges are saving money by using data matching instead of surveys to follow up on their students, and are using the information to show the value of postsecondary credentials in the labor market.[32]

12 Dashboards for Policymakers: Regularize reporting to the governor and state legislature on education and employment outcomes across all education and workforce programs, for comparison with current and projected data on job openings and future industry demand.

Texas recently launched a dashboard showing results for eight workforce programs. The online display uses colorful charts to show users program outcomes by selected demographic characteristics. One chart shows employment and earnings indicators for participants both before and after the program. Full program reports show more characteristics and outcomes for program participants, including employment by industry and enrollment in adult basic education or higher education.[33]

Washington prepares annual reports that show results for a dozen of the state's largest workforce programs, including apprenticeship, career and technical education, and the adult, dislocated worker, and youth programs

funded through the WIA. These reports show policymakers key indicators and performance trends over time for each program, as well as demographic and performance data for the programs as a whole. The report also includes information from a return on investment study conducted every four years. The study estimates the cost/benefit to taxpayers of each program by looking at factors like program expenses vs. tax revenues from program completers' increased wages. Cost/benefit analyses can help state legislators make decisions about program funding.[34]

13 State Funding: Commit state resources, in addition to whatever federal support is available, to develop and maintain these data reporting systems for ongoing use by individuals, educators and policymakers in the state.

Arkansas has strong support from its governor and legislature for developing and maintaining a longitudinal data system. This support has resulted in continued state funding for system operations, which supplements the money received through federal grants. In 2011, the state passed a law that mandates reporting on student outcomes in the labor market. This reporting can be achieved using the state's data system, which allows linkages between education records and wage data.[35]

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