DAY ONE PROJECT

Improving Data Infrastructure to Meet Student and Learner Information Needs

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Summary

The Congress should dedicate $1 billion, 1 percent of the proposed workforce funding under the American Jobs Plan, for needed upgrades to Statewide Longitudinal Data Systems (SLDS). Major upgrades are needed to Statewide Longitudinal Data Systems to enable states to effectively monitor and address long-term pandemic learning loss, while ensuring this generation of students stays on track for college and career in the aftermath of the pandemic. With the major influx of planned resources into K12 and postsecondary education from the recent and upcoming relief bills, there is also a critical need to ensure those funds are targeted toward students and workers who are most in need and to measure the impact of those funds on pandemic recovery. Some states, such as Texas and Rhode Island, are already leveraging funds from previous relief bills (e.g., Governor's Emergency Education Relief Fund from the Coronavirus Aid, Relief, and Economic Security, or CARES Act), to modernize their data systems, offering a model for other states to connect education, workforce, and social services information. This demonstrates an interest and need among states for SLDS upgrades, though additional investment is necessary to address historically underfunded data infrastructure.

Challenge and Opportunity

Since the start of their implementation in 2005, Statewide Longitudinal Data Systems (SLDS) have proven themselves to be critical infrastructure in a number of states, tying our education and workforce systems together. These systems facilitated groundbreaking research and gave educators and policymakers insights into long-term education outcomes. They enabled a much greater focus on equity in policymaking by allowing much more deliberate analysis of policies and interventions that affect subgroup and individual student performance.

Some states used SLDS to engage a broad set of stakeholders to work across traditional silos of education, workforce, and other social programs. For example, in Tennessee, researchers used the state's SLDS to conduct the first experimental evaluation of dual-credit programs. Following students across multiple years and settings, the researchers found that math classes offering college credit had a positive impact on enrollment in more advanced high-school math classes and on math performance. A study of Boston charter schools using Massachusetts' SLDS found significant gains on test scores for lottery winners in middle and high school. Massachusetts is building on this success by using the most recent SLDS grant to develop a Statewide Research Hub that provides a central location for approved agency staff, researchers, and the general public to access SLDS data and reports, and to automate data and research requests. Illinois and Texas are also planning to create a Data Commons to allow more efficient access and use of their SLDS data. These states could serve as examples for other states as they push the field forward on leveraging SLDS data to equitably improve outcomes.

Beyond the research application for SLDS data, some states are putting data to work in order to better support students across the education to workforce pipeline. States

like Idaho and Iowa are using their SLDS data systems to automatically determine students' eligibility for admission to public colleges and universities, with Idaho auto-admitting students based on these data. Since the Direct Admissions program was implemented, the state saw a 6.7 percent increase in college enrollment in Idaho institutions. Similarly, California is scaling the College Guidance Initiative statewide as part of the SLDS data system to provide students and families with the information and support needed to navigate the transition from high school to college and ultimately to careers. States like Wisconsin and Minnesota are also leading the field on getting summary data into the hands of practitioners in timely, actionable ways through dashboards to better meet students' educational needs and improve the performance of the educational system. Nebraska and South Carolina are reimagining their SLDS to include real-time data analytics from local Student Information Systems (SIS) and Learning Management Systems (LMS) systems alongside longitudinal data to better support students and the practitioners who serve them.

While some states are making progress, much more needs to be done to update state systems to connect educational, post-secondary, and career data to evaluate outcomes. In 2021, every state (as well as the District of Columbia and Puerto Rico) has an SLDS with the ability to connect data between at least two of the following different systems: early education, K-12, postsecondary, and workforce. But only 16 states have the ability to connect all four systems. Even fewer states integrate social or human services data. For most states, studying and evaluating programs intended to lead to successes in college and workforce are hampered by unintended barriers, including a lack of system integration.

Too many students are still graduating from or dropping out of colleges without the skills they need to start successful careers. Responsible and secure data analytics capabilities can help identify gaps, barriers, emerging trends, and innovative strategies that shift this trajectory. As new initiatives are put in place to close skills and opportunity gaps, high-quality data and rigorous analyses are needed to create new talent pipelines — and reform existing ones — as effectively as possible. The needed insights can be efficiently gleaned with enhancements to the robust research infrastructure provided by SLDS, which facilitate multi-year research and causal impacts for critical policies and programs.

Plan of Action

New investments should support the use of SLDS data to answer critical questions raised by state policymakers, district educators, institutional leaders, researchers, and parents and students. Putting SLDS data to work is particularly important right now as students and workers are responding to pandemic-related disruptions to their education and careers. This includes improving and using these systems to:

- **Ensure children experiencing poverty are enrolled in state- or federally-supported pre-K programs** to help their parents to get back to work and to prepare them for the transition to school.

- **Connect students and families to much-needed public benefits** to ameliorate poverty brought on by or exacerbated by the pandemic, such as the approach in place in Rhode Island.

- **Develop predictive analytics to identify and support K12 and postsecondary students who are off-track** from their diploma or degree, which is critical to succeeding in today's economy, like the system in Massachusetts.

- **Auto-accept and -enroll eligible high school students into college** to reverse major declines in college enrollment across the country, as is being done in Idaho and Iowa.

- **Identify students who dropped out of college with 6-12 credits to completion** (and may currently be unemployed) to get them back in school, like a number of states participating in degree reclamation efforts.

- **Provide students with real-time labor market information** to inform career advising and transitions into the workforce, similar to current activities in Texas, Tennessee, Colorado, and Rhode Island.

- **Identify workers who are unemployed but eligible for Pell Grants** or other financial aid to support them enrolling in postsecondary education or training to upskill for new jobs.

New investments in SLDS systems should focus on five major upgrades:

1. **Modernizing SLDS data systems to leverage industry-grade, cloud-based technology** to build more interoperable and accessible data platforms that enable the use of advanced analytics and privacy-protecting technologies. These capabilities can substantially increase the speed of the cycle from insight to innovation in education. Approaches include the use of interoperable data standards (e.g., CEDS) to connect local Student Information Systems (SIS) and Learning Management Systems (LMS), reducing the burden of data collection while improving the quality and timeliness of SLDS data for districts and schools. Existing approaches underway in Nebraska, South Carolina, and Texas provide successful models to build upon nationally. The pandemic exposed the limitations of aging data infrastructure — from a lack of real-time data to find and engage students to an inability to process unemployment claims — to get people back to work or school and to upgrade their skills in the new economy.

2. **Building stronger linkages along the entire education-to-workforce pipeline**, **including early childhood, social services, and workforce data**, so policymakers and practitioners can implement and monitor the effectiveness of interventions that have a long-term impact on educational attainment and economic mobility. This approach also helps students and their families have better information on the returns to their educational choices and investments. Achieving these outcomes will require improved linkages between education and workforce data within states, but also providing states with secure access to other data assets, such as federal data on workers not included in their Unemployment Insurance systems (e.g., self-employed and federal workers) and federal public benefits. Some states are already expanding their SLDS with better linkage capabilities, while other states are taking a more comprehensive approach by safely integrating state agency data in a secure and privacy-protected cloud-based platform like Innovate Ohio.

3. **Creating a snapshot of the performance of all learners along the education-to-workforce pipeline** that presents data on how learners in the state are progressing on key momentum points, from kindergarten readiness to annual student growth to ninth grade on track to college enrollment and completion. This should also include the conditions and resources that affect student performance on these indicators, as well as regular "learning pulse" checks to provide real-time data to educators and policymakers especially as we recover from the pandemic, which will require interoperability with SIS and LMS systems. Key to success will be analytical dashboards and capabilities to securely download readily accessible files by a wide range of stakeholders. These approaches help provide timely, actionable insights to practitioners so they can better meet their learners' educational needs and improve the performance of the educational system.

4. **Building capacity to use SLDS data through state research-practice partnerships** to test and continuously improve the equitable delivery of education and training. These approaches might build off the existing Regional Educational Laboratories or models like the Tennessee Education Research Alliance which collectively contribute to a sustainable infrastructure. These partnerships should bring both real-time learning and longitudinal data together through interoperability with digital learning and advising platforms, engaging industry to open data currently locked behind paywalls. These partnerships should also include a diverse representation of practitioners to better ground education research in the ever-changing needs of an increasingly diverse student population.

5. **Ensuring robust governance and accountability structures are put into place that include diverse community and stakeholder voices** to ensure these systems transparently address the real priorities, needs, and expectations of communities. Importantly, a range of perspectives and strong accountability will also support continuous enhancements to privacy and security protections, while also promoting implementation of data management practices with fidelity so states safeguard personal information while enabling uses that provide meaningful and direct benefits.

Conclusion

Investment in SLDS is a low-risk, high-reward proposition for the country. The program has demonstrated its worth, providing a framework and infrastructure for education research and policy making that had been sorely lacking. Building on the existing infrastructure, continued investment will further improve capabilities for insights, strengthen privacy safeguards, and provide actionable evidence for decision-makers. Investment in SLDS will help ensure continued gains in our knowledge about what programming and tools work best to help promote student learning, how to address opportunity and achievement gaps, and how best to prepare students for a changing job market. A renewed commitment to modernizing the SLDS data infrastructure and to the students these systems serve is needed.

About the Authors

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