POLICY ANALYSIS

Examining SLDS Development and Utility

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As states tackle more complex policy issues spanning the entirety of the preschool through workforce (P20W) spectrum, the utilization and importance of data to inform education policy has increased. Longitudinal data plays a vital role in addressing complex policy issues. For example, data sharing

STATE OFFICIALS STRESSED THE IMPORTANCE OF EQUAL INVOLVEMENT OF PARTICIPATING AGENCIES.

between K-12 and higher education systems to produce high school feedback and college readiness reports allows states to address issues such as postsecondary attendance, remediation and completion, among others. States can have a difficult time conducting these types of analysis when systems lack effective connections to one another.

Education Commission of the States' previous work on statewide longitudinal data systems (SLDS) examined which states connect data, the types of data they connect, how those connections originated and how they are structured. As

highlighted in Education Commission of the States' 50-State Comparison on Statewide Longitudinal Data Systems, 37 states plus the District of Columbia (D.C.) connect data between at least two educational systems and only 16 states plus D.C. have full P20W systems, connecting early learning, K-12, postsecondary and workforce data.

While all states have the capacity to connect data, and most do, states continue to explore how to effectively and extensively use data. Based on Education Commission of the States' analysis, states that maximize their data connections use data to expand publicly available information and inform legislation and decision making on education issues.

This policy analysis discusses the value and use of connected data systems and identifies the benefits of connecting education data. It also examines some of the obstacles preventing states from connecting data, including political and financial constraints, and data privacy concerns. Additionally, case studies from three states are included, providing examples of how states develop and use data systems.

State officials believe that **staff continuity** plays a **significant role** in the **longevity** of data systems.

States take a **variety of approaches** to **fund** their longitudinal data systems.

Click on the image below to view key takeaways from the recent SLDS 50-State Comparison:
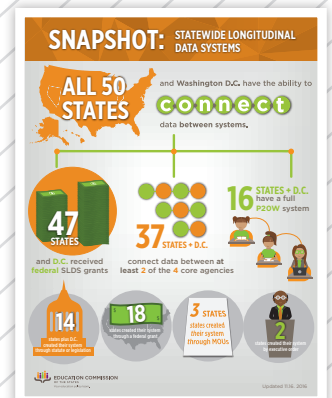
Definitions

In the 50-State Comparison on Statewide Longitudinal Data Systems, Education Commission of the States designated four core state agencies within data systems: early learning, K-12, postsecondary and workforce. SLDS was defined as a data system with formal connections across two or more of these core agencies. Additionally, the data systems that met this definition did not always match those associated with the U.S. Department of Education SLDS grant program.

Benefits of Connecting Data

State policymakers often must find solutions for difficult, complex issues that span the entirety of the P20W spectrum. When addressing such issues, using data from only one education system may not suffice. As mentioned previously, data linkages have led to a number of potentially useful applications including reports, public-facing websites and dashboards, as well as improved policymaking. These tools can help ensure that state education policies collectively support student success over time. For example, high school feedback reports provide information about the postsecondary enrollment of high school graduates and trends in remedial or developmental coursework, which can enhance decision making on improving K-12 curriculums and standards.

Reports

States use longitudinal data to generate reports and respond to requests on a variety of issues. The most common types of reports relate to high school feedback, college and career readiness and teacher preparation or evaluation. States can look at broad trends or drill down to the district or school level. States can also disaggregate information by various student characteristics, including race/ethnicity or income.

Websites and Dashboards

Linking data commonly allows states to establish comprehensive, public-facing websites featuring the collected data. Some of these websites include interactive, user-friendly dashboards that allow individuals to sort through and make use of data from across the P20W spectrum. However, some states that connect data either

do not have a website for their data system or have a password-protected website, allowing only certain users to access the data.

Legislation and Decision Making

States can utilize student data to inform legislation and as a measurement for state benchmarks. With connected data systems, states can see the progression of student success over time. State legislatures can use the information to measure student growth and to set goals for the future.

Challenges in Connecting Data

While there are many benefits to connecting and using data, a number of states face potential challenges and concerns that can limit their ability to do so. As previously mentioned, 37 states plus D.C. connect data between at least two educational systems, but only 16 states plus D.C. have full P20W systems. Thirteen states do not connect data between any systems.

In speaking with state leaders, Education Commission of the States found that political and financial obstacles and public concerns about student data privacy either limited states in establishing new systems or prevented the growth and longevity of existing systems.

Capacity

Capacity issues often create obstacles to establishing and maintaining a SLDS. Obstacles can include staff turnover in key departments, shifts in leadership or the changing role of state departments. Without a persistent and committed staff, states may not have the resources to effectively maintain and monitor data systems over time.

Financial

Cost may also limit the potential for a SLDS. Over the course of six rounds of funding, the U.S. Department of Education awarded SLDS grants to 47 states plus D.C. to support projects related to data use. Many states used this funding to help establish or maintain a connected educational data system. According to conversations with state leaders,

some states had difficulty finding sufficient new funding to maintain the system after federal SLDS funds were depleted.

Data Privacy

As the collection and use of individual data expands, both generally and in education, the public continues to voice more questions and concerns. The chief concerns coming from parents, students, educators and administrators revolve around information technology security and the inappropriate sharing or use of data. Parents and other individuals want to know that the collected student information is secure. Public concerns also exist around the idea that companies might misuse and profit from data by selling certain information to advertisers for targeted marketing.

In policies addressing the collection and use of data, many states developed rules on data sharing and privacy or established a data governance board to oversee access and privacy issues. Additionally, states attempted to safeguard student data by introducing legislation focused on increasing data privacy. According to the Data Quality Campaign, 36 states introduced 110 bills on data privacy in 2014[1], followed by 182 bills in 46 states in 2015[2] and 112 bills in 34 states in 2016[3].

Methodology/Selection Criteria for Case-Study States

In the 50-State Comparison on Statewide Longitudinal Data System, Education Commission of the States categorized states based on factors including how they established their data system, how they structured data connections and what types of data they connected. For the case studies in this analysis, Education Commission of the States chose states representing a variety of those factors. The following examples include centralized and federated systems, data systems created by statute and by grants, and systems that link either two or four educational systems.

Information about each state was collected through statute, the public-facing website for the state data system and phone interviews with state leaders from departments overseeing or related to longitudinal data systems.

Case Study – Connecticut

Connecticut's **Preschool through 20 and Workforce Information Network (P20 WIN)** connects data between all four educational systems. Connecticut established the system through voluntary collaboration supported by memorandums of understanding (MOUs) between the agencies involved. P20 WIN is a federated system through which each agency contributes to data connections while retaining ownership of its data.

P20 WIN acts as more of a data governance structure in the federated system. No central data repository exists and thus there is no real-time data matching. Instead, the state connects data across agencies as needed.

Connecticut's system relies heavily on MOUs which are required to move and connect data between systems upon request. The Department of Labor maintains responsibility for physically matching data through the use of a third-party tool. The Connecticut State Colleges and Universities (CSCU) take on the role of administering P20 WIN, including website maintenance and agency coordination.

Some states use a data matching tool developed internally by their IT departments, while other states use larger external systems created solely for housing and connecting education data. When designing its data system, Connecticut did not have access to either option. Instead, the state chose Data Ladder, a tool that allows for various types of data matching, although not necessarily designed solely for education data.

Among other benefits, the lack of a centralized system and the use of a third-party data matching tool have been cost-effective for Connecticut. Connecticut received the initial funding for its systems through a federal SLDS grant. Currently, the state is out of federal SLDS funds and has no other funding sources. The system now runs based on in-kind support from its agencies. In Connecticut's case, it

is less costly for each agency to maintain its own data and make connections as necessary than it would be for the state to fund a centralized system.

The federated setup helps the system address data privacy concerns in a number of ways. First and foremost, data connections are made only when necessary. States use a two-step matching process, combining generic one-time user ID's with Personally Identifiable information (PII), such as name, date of birth and gender. Then, after connecting the data, the PII is destroyed so that data does not continue to exist in its connected form. Additionally, Connecticut attempts to be as transparent as possible about which data they collect and the process used to house and connect data.

With a federated system, agency involvement is of the utmost importance per the Connecticut state official interviewed. Currently, five agencies guide the governance of P20 WIN: the department of labor, CSCU, the department of education, University of Connecticut and Connecticut Conference of Independent Colleges. A sixth agency, the Office of Early Childhood, is in the process of joining. Connecticut has a three-tiered governance structure composed of an executive board, a data governing board and a data steward committee. The three governing boards are responsible for broad leadership decisions and funding, policy and staffing, and ground-level work, respectively.

A state official from Connecticut firmly believes that the P20 WIN system came to fruition due to the staff continuity between 2012 and late 2014, when the system launched, especially among staff at the ground level. Throughout that process, most key staff from the department of education, department of labor and other departments remained the same. Continuity with staff involved at the ground level allowed the system to withstand significant turnover in leadership and executive positions.

The stability in staff also allowed for trial and error that benefited the system directly. With staff on hand that carried over from earlier iterations of the system, the

state intentionally and effectively improved the system by recognizing any flaws it initially had. With significant staff turnover, data systems may not remain a significant priority.

> "I can't tell you how much **staff continuity** helped with the **longevity** of our system."
>
> – CT State Official

Case Study – Rhode Island

Rhode Island's data system, Rhode Island DataHUB, is a comprehensive tool for the state, as it includes not only education data, but also economic, health, civic engagement and justice data. It connects data between all four educational systems.

According to a state official from Rhode Island, the state understands that policymakers want access to quick and easily digestible data. This led state officials to experiment with different methods of presenting the collected data. The RI DataHub website features data stories, data reports and a data catalog, each tailored to accommodate various audiences. Data stories are "interactive slideshows that guide (the user) through data related to a policy question."[4] Data reports are "pre-made graphs that allow (the user) to examine a specific topic."[5] The data catalog serves as an interactive search tool that allows the user to search by a key term and filter by level – school, district, census tract, etc. – to locate data from more than 20 different sources.

Rhode Island entered into a consortium with eight other states to secure data visualization software. The Open Indicators Consortium (OIC) is a partnership for the development of the open source platform, Weave, in collaboration with the Institute for Visualization and Perception Research at the University of Massachusetts Lowell. The OIC, and the use of Weave, allow Rhode Island access to data visualization software at no cost to the system or state.

The initial funding, a Safe and Drug Free Schools grant, laid the foundation for Rhode Island's data system. According to an official from Rhode Island, this allowed state leaders to see the potential of connected data. To create a more formal and robust system, the state then applied for and received federal SLDS grants in 2009 and 2012. As their federal funding ends, Rhode Island is seeking a sustainable, state-based model of funding. While Weave is free through the consortium, Rhode Island currently uses funding from various small grants to maintain its data connections. Many in the Rhode Island data community believe that state agencies should contribute financially towards the upkeep of the system; this may be a potential outcome for future funding.

While some states built their data systems from the top down, an official from Rhode Island credits their system's success to the grassroots and collaborative effort that played a key role in its development. The process started small, with agencies discussing data sharing agreements and ensuring that the right people were involved to best help link data. According to the state official, by giving each agency and department an equal voice, the state built a collaborative and longitudinal system.

The equal involvement of different agencies also contributed to the system's longevity. According to a Rhode Island official, it is important that the process involves a variety of individuals who are knowledgeable in education and data connection. When Rhode Island assembled their advisory council, they specified that members could not be leaders of a state agency. Instead, advisory councilmembers were required to have a long standing history in the field and experience in working with data. The state sought individuals committed to building the system over time and willing to advocate for the growth and maintenance of the system.

In Rhode Island's experience, the system benefited from staff continuity. An official from Rhode Island stated that to ensure the ability of a system and its parts to exist over time, the state should find individuals committed to the long-term success of the system. The state needs individuals at all levels who plan to remain engaged with the system over time, from those who work at the ground level doing data collection and matching to those who oversee the project.

> "It was important that **all agencies involved** in building our system had an **equal voice**."
>
> – RI State Official

Case Study – Wisconsin

The Wisconsin Information System for Education (WISE) currently connects data between two systems: K-12 and postsecondary. The state created the centralized system through statute. WISE yields a number of features, including WISEdash, WISExplore and WISELearn. WISEdash is a "data portal that uses 'dashboards' to provide multi-year education data about Wisconsin schools."[6] The publicly-accessible portal is the system's main reporting tool. WISExplore is a partnership between the Department of Public Instruction and the Cooperative Educational Service Agencies Statewide Network to develop a common data inquiry process for teachers and school leaders. WISExplore guides districts and schools in using their data effectively. Educators curate WISELearn which acts as a centralized depository for classroom resources and helps educators at the ground level.

According to a state leader from Wisconsin, data impacts schools and classrooms across the state. Officials built tools – such as WISExplore – that can be easily embedded in daily education work and that can facilitate action for educators and others working directly with students. Additionally, the number of visits to the website continues to increase each year.

The overall focus of WISE is to make an impact at the district and school levels. A state official from Wisconsin commented that the demographics of Wisconsin school districts lend themselves to maximizing economy of scale. Out of Wisconsin's 425 school districts, 30 account for more than one-third of total enrollment. The median school district size is only 900 students. The many smaller districts throughout the state do not have the capacity to handle data inquiries on their own. By partnering with cooperative educational service agencies and professional associations – including superintendents, principals, school boards

and others – states can help engage most of their school population with minimal effort from all parties involved.

According to the Wisconsin state official, these and other partnerships played a fundamental role throughout the process of establishing a longitudinal data system. Realizing that a system would fail if one agency attempted to do all of the work, the state stressed equal partnerships. Within each organizational division, several teams collaborate on data connection and use issues. A common vocabulary allows all agencies to work together. The latest SLDS grant awarded to the state included a partnership with the University of Wisconsin-Madison's Wisconsin Center for Educational Research to bring the research community and academic leaders into the system.

The funding sources to support Wisconsin's education data system have shifted over the years. The initial funding to create WISE came from federal SLDS grants in 2006 and 2009 and through the American Recovery and Reinvestment Act grant in 2009. The state parlayed the early success of the system into a conversation about its sustainability. This led to state-level funding in the form of an annual appropriation to maintain and grow the data system.

As the data system grows, Wisconsin state officials have prioritized data security across the entire process. At the ground-level, training materials are distributed to data collectors and users to ensure that they handle data appropriately. Each school district manages which individuals have access to data to limit any potential external risks. Statewide, breach policies exist in protocol and are tested internally. WISE leaders also participated in a legislative council study committee to inform policies related to student data security, which may result in proposed legislation.

> "Nothing is **more important** than **data privacy**. **Period**."
>
> – WI State Official

Policy Considerations

A number of common themes were found in discussions between Education Commission of the States and state officials in Connecticut, Rhode Island and Wisconsin that may be helpful to other state policy and education leaders. These takeaways include the following:

- The state officials interviewed all advocated for the equal involvement of all participating agencies. They also noted that contributions of individual players are paramount in a longitudinal system. In addition, creating a common vocabulary and establishing consistent partnerships between all parties involved can help the success and longevity of a system.

- Each of the state officials also endorsed the importance of staff continuity, especially among those working directly on data connections and policy. The less staff turnover, the better a system can withstand changes in leadership.

- States with successful data systems represent a wide range of funding options. Some states rely on annual appropriations, while others operate with little to no consistent funding. Though funding serves as a key component in establishing a system, states may explore low-cost options for maintaining their system.

- As with funding, no definitive correct approach for system structure exists. Federated systems have their pros and cons, as do centralized systems. Federated systems often come at a lower cost and provide more flexibility in data connections, while centralized systems allow for real-time data. Additionally, the differences between the two structures are not always as black and white in practice. Many systems operate hybrid models containing some federated features – such as data storage and connections – and some centralized features – such as governance.

Final Thoughts

In reviewing SLDS and conducting interviews with state leaders, Education Commission of the States found that a wide variety of approaches can lead to successful systems. Strong partnerships, staff continuity and effectively using connected data are more important than the approach states take to build their longitudinal data systems.

Endnotes

1. Data Quality Campaign, *Student Data Privacy Legislation: What Happened in 2014, and What Is Next?* (Washington D.C.: Data Quality Campaign, 2014), 1, http://dataqualitycampaign.org/resource/state-student-data-privacy-legislation-happened-2014-next/ (accessed January 12, 2017).

2. Data Quality Campaign, *Student Data Privacy Legislation: What Happened in 2015, and What Is Next?* (Washington D.C.: Data Quality Campaign, 2015), 1, http://dataqualitycampaign.org/resource/student-data-privacy-legislation-happened-2015-next/ (accessed January 12, 2017).

3. Data Quality Campaign, *Student Data Privacy Legislation: A Summary of 2016 State Legislation* (Washington D.C.: Data Quality Campaign, 2016), 1, http://dataqualitycampaign.org/resource/2016-student-data-privacy-legislation/ (accessed January 12, 2017).

4. "About the DataHub," Rhode Island DataHUB, 2015, http://ridatahub.org/ (accessed February 2, 2017).

5. Ibid.

6. "WISEdash Public Portal," Wisconsin Department of Public Instruction, 2017, https://dpi.wi.gov/wisedash (accessed February 7, 2017).

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