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State Longitudinal Data Systems: The Power and the Promise

by Elizabeth Grovenstein, Senior Education Policy Analyst

Which preschool programs best prepare students for kindergarten? Which students from which schools need remediation classes in higher education? How successful are college graduates in the workforce by major or credential? These are just a few of the questions that can be answered by a robust longitudinal data system that enables a state to track student performance from early learning through the workforce.

Statewide Longitudinal Data Systems (SLDS) can enhance the ability of states, districts, schools, educators and other stakeholders to efficiently and accurately manage, analyze, and use education data to make informed decisions that can improve student learning and outcomes. SLDS also facilitate research to evaluate and improve institutional and program performance.

SLDS Uses

A **P-20W** (P = Preschool, 20 = higher education, and W = Workforce) SLDS provides stakeholders the tools needed to answer critical questions and make informed decisions. For state policymakers, these data systems can:¹

- Create momentum for desired policies;
- Demonstrate the progress of reforms;
- Empower constituents, including parents, to make informed choices;
- Hold educational institutions accountable for performance; and
- Provide transparency about state spending on programs and services.

A recent study by the University of Illinois identified six areas of study that hold importance to both policymakers and educational researchers, including education finance, market-based education reforms (e.g. charter schools, private school vouchers, open enrollment, etc.), teacher effectiveness, teacher mobility, special populations (English language learners, students with special needs, students from low-income families), and P-20 pipeline and transition issues.² In Michigan, for example, a partnership between university and state education agency officials has resulted in the creation of a comprehensive,

longitudinally-linked, research-ready structure that will facilitate the study of specific curriculum impacts and postsecondary transitions.³ Access to longitudinal data and, particularly robust data sets using quasi-experimental designs, can provide policymakers with important insight into outcomes associated with programs and policy.

While facilitating research is one use of a SLDS, one of its most important features is the ability to provide timely information to the public. With the advent of the *No Child Left Behind Act of 2001* (NCLB), states were required to publicly report aggregate-level data about schools and districts and to disaggregate those data by race, ethnicity, socioeconomic status and other categories (also known as subgroups) for the first time. Under older data collection approaches, data were collected to meet state and federal reporting requirements and were not readily available for use. With the infusion of substantial federal funding over the past 10 years, states have expanded upon those initial school report cards that were established under NCLB to track key information over time. And, as a requirement of accepting the *State Fiscal Stabilization Fund* under the *American Reinvestment and Recovery Act of 2009*, states were required to complete statewide longitudinal data systems that met the 12 *America COMPETES Act* elements (among other requirements).

North Carolina's SLDS

Federal laws and financial incentives have played a major role in the development of a NC P-20W SLDS. The Institute of Education Sciences SLDS grant program awarded North Carolina a \$6 million federal grant in 2007 to establish the NC Common Education Data Analysis and Reporting System for K-12 data. In 2012, North Carolina was awarded an additional \$3.6 million to establish a P-20W system that would, via a federated database system (individual source systems that maintain control over their own data but agree to share some or all of this information with other participating systems upon request):

- Establish common infrastructure for each student in postsecondary education systems (UNC System, NC Community College System, and NC Independent Colleges and Universities) and coordinate UIDs (unique identifiers) with workforce data (NC Department of Commerce);
- Establish a data broker-based system so that agency researchers can ask questions that each of the data systems linked can answer;
- Automate regular cross-agency reporting; and
- Provide key data to empower the legislature and policymakers to make better decisions concerning funding and program assessments as well as identifying trends in North Carolina education.

This system is governed by *NC General Statute Chapter 116E* as enacted in June 2012 and amended in 2013. Governed by a board consisting of 18 members that provide general oversight and direction, the North Carolina Longitudinal Data System is housed in the NC Department of Public Instruction. In addition, a P-20W Council, comprised of agency program and technical staff from five key participating state agencies (NC Department of Public Instruction, UNC System, NC Community College System, NC Independent Colleges and Universities, and NC Department of Commerce), meets monthly to ensure effective implementation.

The system allows users to effectively organize, manage, disaggregate and analyze student and workforce data. All data within the system are de-identified, and any data released from the system must abide by the *Family Educational Rights and Privacy Act* (FERPA), the Internal Revenue Code, and other relevant privacy laws and policies. In June 2014, the NC General Assembly enacted legislation to ensure the privacy and security of student educational records. The law requires a data inventory, detailed security plan, and restrictions on the collection of and access to student data, among other requirements.

Now known as NC SchoolWorks (NCSW), the SLDS project is in the testing and pilot phase with an expected launch date in summer 2016. The participating partners are currently designating the data elements to be included in a data dictionary, which will provide a set of clearly and consistently defined data elements, data definitions, and attributes. In addition, a

One exemplar for high-quality public reporting of education data is the state of Michigan's public reporting data dashboard - www.mischooldata.org - that serves as an official public portal for education data to help citizens, educators and policymakers make informed decisions.



The system contains data from all sectors of education – early childhood, K-12, postsecondary – and the workforce. Although still a work in progress, this system demonstrates the promise of a P-20W SLDS.

process and request form has been developed to consider data requests. Any data request must be approved by all affected participating partners. If approved, data records from each impacted agency will be given temporary, masked identifiers before being made accessible to the requestor on a secure server for a limited time.

The NC Early Childhood Integrated Data System (ECIDS) is a system designed to be the single source for integrated early childhood data for education, health and social services programs, funded by an \$8.9 million project of the *Race to the Top – Early Learning Challenge Grant*. The system is designed to provide information about when and how children are being served and the program services they receive. NC ECIDS is scheduled for completion in December 2016 and will integrate with NCSW by using the same UID system to enable the examination of the effects of early childhood programs and services over time.

Considerations for North Carolina

While the state of North Carolina endeavors to implement a P-20W SLDS over the coming months, the challenge is prioritizing access to the data in an easy-to-use format that provides stakeholders the information they need. For 10 years, the Data Quality Campaign (DQC) has surveyed states to assess state progress and key priorities to promote the effective use of longitudinal data. DQC has established 10 state actions regarding effective data use, which call for states to move from collecting data only for compliance and accountability purposes to using data to answer critical policy questions, inform continuous improvement, and strengthen educational outcomes (see table below).

Data Quality Campaign's 10 State Actions to Ensure Effective Data Use, 2014 ⁴		
	NC	# of States
Link state K-12 data systems with early learning, postsecondary, workforce and other critical state systems.	YES	19
Create stable, sustained support for longitudinal data systems.	NO	41
Develop governance structures to guide data collection and use.	YES	42
Build state data repositories.	YES	46
Provide timely, role-based access to data.	NO	11
Create progress reports for educators, students, and parents.	NO	35
Create reports with longitudinal statistics to guide system change.	YES	45
Develop a purposeful research agenda.	YES	41
Implement policies and promote practices to build educators' capacity to use data.	YES	18
Promote strategies to raise awareness of available data.	YES	33

NOTE: NC is 1 of 12 states to achieve 7 of DQC's 10 recommended actions to ensure effective data use. Nineteen states have achieved 8 or more actions.

As states progress to full SLDS implementation, there are a number of important considerations to ensure successful implementation and public reporting. DQC recommends the following actions:⁵

- Ensure publicly-reported data are accurate, trustworthy and safeguarded;
- Maintain coordination across P-20W organizations;
- Ensure the data meet the needs of all stakeholders; and
- Ensure the information is easy to find, access and understand.

It is also critical that student data are secure. The state should supplement FERPA and other federal laws with privacy and security policies that include roles and responsibilities for data stewardship and clear communication and documentation of laws, policies and decisions regarding data use. The Foundation for Excellence in Education developed model legislation that contains protections for student data, including:⁶

- Designating a state Chief Privacy Officer to oversee privacy policies, provide training, and be a point of contact for schools and parents;
- Requiring a state student data inventory and security plan;
- Limiting data collection and reporting;
- Establishing restrictions on outside operators' use of student data; and
- Strengthening parental rights and creating a process for complaints.

References

- ¹ Data Quality Campaign. *Empowering Parents and Communities through Quality Public Reporting*. October 2014.
- ² Linick, M. & Robinson, J. (2013, June). *Education Lessons Learned with Longitudinal Data Systems and Quasi-Experimental Design*. Champaign, IL: Illinois Collaborative for Education Policy Research, University of Illinois at Urbana-Champaign.
- ³ Conaway, C., Keesler, V., & Schwartz, N. (2015, May). *What Research Do State Education Agencies Really Need? The Promise and Limitations of State Longitudinal Data Systems*. AERA.
- ⁴ Data Quality Campaign. *Data for Action 2014*. November 2014.
- ⁵ Data Quality Campaign. *Empowering Parents and Communities through Quality Public Reporting*. October 2014.
- ⁶ Foundation for Excellence in Education. <http://excelined.org/student-data-privacy/>

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