SHEEO State Higher Education Executive Officers

EN ROUTE TO SEAMLESS STATEWIDE EDUCATION DATA SYSTEMS:
ADDRESSING FIVE CROSS-CUTTING CONCERNS

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INTRODUCTION

Student achievement depends upon successful passage through a series of transitions: elementary to middle school, middle school to high school, high school to college. Increasing the efficiency of successful transitions requires the collection and analysis of student data across these transition points. Yet long-standing separations between education sectors and continuing proliferation of multiple, disconnected student data systems have served as barriers to statewide tracking of student progress.

Recognizing that K-12 and postsecondary data systems must be linked to answer critical questions about student preparation and achievement, many states are currently developing longitudinal data systems; their progress, documented by national studies, is encouraging. According to Achieve's 50-state survey, *Closing the Expectations Gap 2008,* 9 states currently have a K-16 longitudinal data system in place, while 38 others have systems in progress.[1] The Data Quality Campaign's 2007 survey reports that 16 states have put into practice at least 8 of its 10 Essential Elements of State Longitudinal Data Systems.[2]

However, creating a coherent, effective and sustainable state longitudinal data system requires much more than simply establishing linkages between existing systems. Through a grant from the Bill and Melinda Gates Foundation, SHEEO convened a workshop, *Linking K-12 and Postsecondary Data Systems*, as a forum for states to engage in peer-to-peer learning. The workshop brought together cross-sector, data-focused, leadership teams from 11 states with content experts from prominent national organizations for two days of collaborative sessions.[3] Through workshop discussions, state teams identified five core processes which are key to successfully implementing longitudinal data initiatives:

- Identifying **shared benefits** as a foundation for cooperative work across sectors

- Reconciling **technical differences** between independently created data systems

- Assuring **student privacy** while sharing data to foster improvement

- Designing a data system to enable **effective use** by key constituencies

- Planning for long-term **sustainability** of state longitudinal data systems

The development of a statewide longitudinal data system is an enormous endeavor; breaking it down into components can help identify appropriate areas of immediate work. Drawing from the experiences shared by workshop participants – education leaders in states actively engaged in the process of creating seamless data systems – this report addresses each of these components in turn and presents an overview of insights and strategies to address emerging, prevalent, cross-state concerns.

IDENTIFY SHARED BENEFITS

The cultures of K-12 education and postsecondary education in the United States are materially and consequentially different. While K-12 has historically focused on equity of opportunity and universal attainment, postsecondary has considered selectivity, the advancement of knowledge, and the propagation of scholars among its core values. In addition, K-12 and postsecondary education have historically operated as separate systems. As a result, governance, regulation, accountability, politics and policy are substantially different between the two sectors. Together, these factors can impede state efforts toward cross-sector work.

Yet the sectors do share a common purpose: increased student attainment, particularly success across the high school to college transition point. And both sectors can benefit greatly from collaborative work towards this shared purpose. The Data Quality Campaign, Achieve, National Center for Higher Education Management Systems (NCHEMS), Pathways to College, and others have produced multiple publications detailing the benefits of using longitudinal data to guide effective policy decisions that improve student achievement at all levels.[4] State leaders can foster cross-sector trust, buy-in and cooperative work towards data system development by keeping all constituents focused on these shared benefits.

Develop a shared, unifying mission between the sectors. Cross-cutting state priority issues, such as workforce development, economic growth, and adult literacy, can serve as galvanizing forces. Begin with a goal – a narrow purpose aimed at a specific, persistent state policy issue – that can only be addressed through linked systems. For example, a state may wish to use longitudinal data to improve the rate of successful high school to college transitions among graduates of certain demographic groups, or to refine early-college high school programs to better meet the workforce needs of new state industries. Once this purpose is identified, it can also serve to resolve arising technical questions.

Beginning with individuals who are already on-board, engage in collaborative cross-sector strategic planning. Leadership is key; states should identify committed leadership at all levels to serve as champions for the new system. Representation is also critical; individuals from all relevant constituent groups who are excited about the data project should be utilized to build energy and engagement around the work. An inclusive planning process builds buy-in, creates cross-sector assurances of individual and collective responsibilities, and provides opportunities for creating intra-agency agreements for reporting and analysis. This process also allows sectors to establish early agreement on a balance between data for accountability and data for improvement.

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Establish a culture of reciprocity. Reciprocal agreements and collaboration can generate responsible and respectful help across sectors – creating system development alliances, providing needed technical assistance, and enabling improved analytic capacity. In some cases, a neutral warehouse to store and "own" shared data can help resolve privacy issues, reduce reporting requirements, and serve as a driver for replicable report generation. In other cases, agencies may find it more helpful to create agreements for sharing a limited set of data between systems. These are not technical challenges, but issues of collaboration. There is no "one size fits all" solution; sectors must work together to determine which type of system will best meet state-specific needs.

RECONCILE TECHNICAL DIFFERENCES

Data "interoperability" requires adherence to common standards, agreement on common metrics, and diligence in ensuring data quality at all levels. When data systems have been built independently to meet discrete demands, it is natural to expect some variability. State leaders

can significantly improve the utility of a longitudinal data system by addressing such differences up-front. Once shared benefits have been identified that can effectively motivate cooperative work between sectors, technical disparities can more easily be resolved, and need only be addressed in areas where the two systems will interface.

Decide on common standards. Effective interoperability depends on adherence to common data standards across systems. The independent standard organizations, Postsecondary Electronic Standards Council (PESC) and Schools Interoperability Framework Association (SIFA), have been working together to provide states with a common standard framework for linked education data systems.[5] State leaders and data users must make the adoption of common standards a priority.

Rather than one overarching data solution, state leaders should plan to implement the system in multiple interconnecting pieces.

Agree on common data elements. State leaders must work with vendors, schools, and colleges to develop a common understanding of data definitions and select the core set of common data elements to be gathered by both sectors and shared across systems. The selected set should consist of only those elements that explicitly serve the purposes of the linked system.

Build incrementally. Rather than one overarching data solution, state leaders should plan to implement the system in multiple, interconnecting pieces. The easiest place to begin is with "low-hanging fruit"; while the specifics will vary between states, this generally involves creating capacity that would benefit both K-12 and postsecondary, built in functional modules. By focusing on small, doable steps, whether that means limiting the number of data elements initially gathered or the reports initially generated, states

can manage expectations and also produce early results to build support among users.

Ensure data quality. Since the metrics, analytics, and reports generated from data systems are only as good as the data itself, processes for data entry, quality assurance, and data audits must be specified and observed. It is also important to note that data use – whether for policy decisions, accountability, or performance – tends to increase data quality. Thus, building and marketing data systems in a way that promotes data use also becomes a quality-assurance measure.

Plan for the future. Monitoring student progress across the secondary-postsecondary transition is critical, but there are many state policy issues that require further linkages. Building state education data systems with the capacity to connect to demographic, financial, and teacher data, or to education data systems across a multi-state region, can create capacity for addressing a wider range of policy issues.

ASSURE STUDENT PRIVACY

FERPA, the Federal Family Education Rights and Privacy Act, serves two main purposes. It provides privacy protection for individuals, preventing the inappropriate release of education data, and also presents a set of guidelines for the appropriate use of data for research purposes. While the right of individual privacy must not be compromised, the regulations described in FERPA are not meant to be an insurmountable barrier to sharing data between systems.

FERPA prohibits the public release of personally identifiable student data. However, under FERPA regulations, anonymous data may be shared for research and policy studies. When states uncouple student education data from personally identifiable information (such as social security numbers and names), and also report data in the aggregate (representing populations of students), such data can be freely shared across systems. This type of data sharing is critically important to investigating statewide retention, progression, transition, and success.

While aggregate anonymous data is appropriate for research purposes, and individual anonymous data may often be sufficient for school improvement, data for individual student im-

provement requires a deeper level of disclosure. Principals, school counselors, and teachers need appropriate access to individually identifiable data to help increase the achievement of particular students. Fortunately, providing student-level postsecondary data back to the student's own high school does not necessarily violate FERPA regulations. By developing secure data-transmission mechanisms that protect against public disclosure, state leaders can enable this type of data sharing while ensuring legal compliance.

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Federal regulations surrounding FERPA leave appropriate room for state interpretation. As a result, states have some leeway in developing guidelines for data sharing, allowing for both privacy protection and research to inform critical policy decisions. *Maximizing the Power of Education Data While Ensuring Compliance with Federal Student Privacy Laws: A Guide for Policymakers*, an issue brief developed by Holland and Knight for the Data Quality Campaign, provides an excellent treatment of the FERPA issue.[6]

ENSURE EFFECTIVE USE

Even the highest quality data, built on common standards and shared effectively across systems, is of limited benefit if state and sector leaders have not anticipated data use. To be used and useful, a linked data system must be developed with clear purposes in mind. Data reports should be designed to address important statewide policy concerns, and be presented to appropriate constituencies in a format that makes sense for decision-making. A good report built on longitudinal data, put to use to improve student achievement, serves as its own marketing tool.

Identify primary data customers. The most critical conceptual task of data system development is customer identification; the audience should determine the content of data reports. The data customer for longitudinal state education data systems can include state policy leaders, K-12 administrators and faculty, postsecondary administrators and faculty, parents, students, and more.

Design the system to address primary customer goals. Once the primary customers are identified, the development team can structure the data system to meet their needs. As a state begins its work on creating a cross-sector data system, it is helpful to narrow the scope to a handful of data elements which have wide buy-in and, to some degree, serve every important customer. Focusing on a limited data set allows developers to identify a small, workable number of target reports, while concurrently building the technical capacity to handle expanded data access demands in the future.

Show your primary data customers how to get the information they need. A data system without trained users will not be used. The primary customers must know what the data system can do for them and how to employ it. Customers can be made aware of the new data resource through a variety of marketing and PR campaigns, including the distribution of useful reports that can only be generated through the newly linked system. In tandem, targeted professional development can provide users with the tools to develop effective queries, generating customized data reports to serve their needs.

SUSTAIN PROGRESS

To retain momentum over the long run, state leaders must ensure that data system development includes plans for the future: ongoing financing, capacity development, progress documentation, and integration with other state education efforts. Including these elements in the

early planning process will increase the likelihood that state investments in data systems will reap dividends for years to come.

Provide sufficient, sustainable funding. Data systems require ongoing financial support – for data entry, analysis, maintenance, and quality assurance; for adequate personnel to keep data up-to-date and fulfill data reporting requests; for professional development of new users, and of all users as new capacity is developed for the system; and for the development of expanded capacity. As part of their development efforts, state leaders should include within the data system budget adequate amounts for both system maintenance and periodic upgrades. However, supporting these measures need not require impossibly large infusions of new funds. While funds to facilitate the transition to a stronger system are likely to be needed, better data systems can be more efficient as well as more effective. States should investigate the reallocation of existing revenue streams and/or shifting funds through strategic redesign efforts as a means of partially financing ongoing system improvements.

Leverage existing resources. State leaders can leverage existing human resources, funding streams, data, data-sharing agreements or processes, and cross-sector relationships in creating a cohesive, statewide, longitudinal data system. It can be helpful to begin with a survey of current capacity within each sector – how sector-specific data systems were built, what needs they were built to serve, how well they are serving those needs, and what might be missing that would be good to have. This process can identify natural areas where the sectors can come together around shared priorities.

Incorporate research capacity. Developers should anticipate the need to demonstrate the value of the new data system for the state, funders, schools, colleges, and students. The ultimate purpose of a state education data system is to improve the educational attainment of the students within that system. Data systems with appropriate data elements, analytical capacity, and reporting methods will be able to demonstrate the improvement of student outcomes over time.

Document progress along the way. By sharing small data system "wins" along the way with political leaders and other constituents, states can foster a growing positive momentum. State leaders can plan for this by clearly communicat-ing the multiple purposes of the data system, and updating periodically on progress; by using the growing data system capacity to more fully document student achievement and build a state story of continuous improvement; and by using external gauges, such as the Data Quality Campaign's 10 elements, to demonstrate growing system capacity.[7]

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Integrate data work in a larger context. A longitudinal data system is a tool, not an end product. What states choose to do with that tool will determine its impact. Reports from longitudinal data can foster academic improvement of students, schools, and institutions; identify weak and strong points in the state education pipeline; and even forecast state education and workforce needs. The collaborative work between sectors required to develop linkages can be solidified into a sustained infrastructure, fostering the development of direct, lasting relationships between colleges and schools.

CONCLUSION

An accurate, timely, and secure statewide longitudinal data system can provide a unified view of student achievement from year to year across the K-16 system. While the technical aspects of the data linkages are critical to successful implementation, equally important are the processes that will lead to mobilizing education sectors around a common goal – increasing student educational attainment at every level.

There are hundreds of decisions that must be made on the path to creating effective statewide longitudinal data systems. This report is not a comprehensive treatment of those decisions.

Instead, it attempts to provide a framework for getting started and for addressing specific issues commonly encountered in the early stages.

Many workshop participants commented on the existence of a "tipping point" in their states – a moment when events converged to create forward movement in data system development and use. Such tipping points are driven by timing, funding initiatives, and/or legislative mandates at the state or federal level. While it was generally agreed that a tipping point cannot be forced before its time, the action steps of this report can prepare states to capitalize on opportune moments.

To move from a better data system to better policy and better outcomes will take time and multiple steps. The process begins with ensuring that all affected constituents see the value of the data system and work together to build it cooperatively around shared state-level purposes. The data elements that are collected must be of high quality and appropriate to informing policy decisions around critical education issues at the state level. States must plan for the analytical capacity required to capture data trends in effective reporting.

The data reports generated through the new system must be used in ways that will foster improvement. They must get to the right people, and those individuals must be trained to utilize the reports. The presence and capacity of the data system must be advertised to all appropriate constituents, which will help to drive data collection, reporting, and use. Finally, gains in student achievement fostered by appropriate data use in local contexts must be collated and reported at the state level, both to help build support for the system and to inform and influence policy change.

More useful data systems can facilitate better policy and better outcomes.

ENDNOTES

[1] Achieve, "Closing the Expectations Gap 2008," February 2008.

[2] DQC, "2007 Survey of State P-12 Data Collection Issues Related to Longitudinal Analysis," September 2007; see also: DQC, "P-16 Data Systems: An Alignment Status Report," June 2006.

[3] SHEEO's workshop, *Linking K-12 and Postsecondary Data Systems*, was held June 19-20, 2007 in Boulder, CO. Participants included state teams from Alabama, Delaware, Kentucky, Louisiana, Massachusetts, Minnesota, Nebraska, New Hampshire, Utah, Washington, and Wyoming; and content experts from the Council of Chief State School Officers, Data Quality Campaign, Holland & Knight, National Governor's Association, Pathways to College, Postsecondary Electronic Standards Council, School Interoperability Framework Association, and the U.S. Department of Education.

[4] Relevant publications from these organizations include: Achieve and DQC, "Measuring What Matters: Creating a Longitudinal Data System to Improve Student Achievement," November 2005; Pathways to College, "Using Data to Improve Educational Outcomes," 2006; NCHEMS, "Critical Connections: Linking States' Unit Record Systems to Track Student Progress," Lumina Foundation for Education, January 2007; and DQC, "The Right Data to the Right People at the Right Time: How Interoperability Helps America's Students Succeed," June 2007.

[5] SIFA and PESC, "Leveraging the Power of Interoperability for A Comprehensive Educational System," February 2007.

[6] DQC and Holland & Knight, "Maximizing the Power of Education Data while Ensuring Compliance with Federal Student Privacy Laws: A Guide for State Policymakers," March 2007.

[7] DQC and Achieve, "Creating a Longitudinal Data System: Using Data to Improve Student Achievement," Update 2006.