Measures
that Matter

Next Generation State Data System: What is Needed to Support the Next Generation Assessment and Accountability Systems

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Using Data To Improve Student Achievement

Introduction

In order for the next generation of assessment and accountability systems to include much broader information about students' academic and performance histories than they currently do, state data systems will need to expand to include more student information. Currently, state education agencies (SEAs) and local education agencies (LEAs) in most states maintain separate student-level data systems that are each designed to meet their own reporting requirements. In order to contemplate how to create or transition to a state-level next generation system, we need to evaluate how current systems are organized.

The Data Quality Campaign (DQC), a strong advocate for statewide student-level longitudinal data systems,[1] recommends that state P-12 data systems include ten essential elements (see box). With these essential elements, the data system becomes a powerful tool for tracking individual student progress, serving as an early warning system, conducting program evaluation activities, and answering important policy questions. For example, the ability to assess college- and career-readiness for individual students or to evaluate school- or district-wide college and career readiness trends is dependent on having a robust data system.

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10 Essential Elements of a Comprehensive Longitudinal Data System[1]
Although each state's P–12 education system is unique, 10 essential elements are critical to a longitudinal data system:

1. A unique statewide student identifier that connects student data across key databases across years
2. Student-level enrollment, demographic and program participation information
3. The ability to match individual students' test records from year to year to measure academic growth
4. Information on untested students and the reasons they were not tested
5. A teacher identifier system with the ability to match teachers to students
6. Student-level transcript information, including information on courses completed and grades earned
7. Student-level college readiness test scores
8. Student-level graduation and dropout data
9. The ability to match student records between the P–12 and higher education systems
10. A state data audit system assessing data quality, validity and reliability

[1] Data Quality Campaign, *Creating a Longitudinal Data System: Using Data to Improve Student Achievement,* (2007) www.DataQualityCampaign.org/files/Publications-Creating_Longitudinal_Data_System.pdf.

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[1] Data Quality Campaign. *Measuring What Matters. Creating a Longitudinal Data System.* Austin, TX: Data Quality Campaign. 2007.

Beyond the first four essential elements, three others provide critical data for assessing college- and career-readiness:

- *Element 6* — *Student-level P-12 transcript information, including information on courses completed and grades earned* provides the information necessary to determine whether or not students have completed the requisite rigorous courses towards a college- and career-ready inspired diploma. By collecting and analyzing course grades in addition to test scores, administrators can evaluate the relationship between grades earned, end-of-course scores and ACT/SAT scores. With this data, one can identify possible problems with grade inflation, pinpoint particular courses or sections of courses that are not living up to rigorous standards or discover schools or districts that generate higher than average numbers of students requiring college remediation.

- *Element 7* — *Student-level college readiness test scores* addresses the need to collect student-level scores on the ACT, SAT, and AP exams. Matching these scores with other student-level performance, course data and program participation data can provide valuable information for educators to use when working with individual students about their progress toward college readiness, but also for policymakers, schools and districts to use when evaluating their policies towards preparing students for postsecondary education.

- *Element 9* — *The ability to match student records between the P–12 and higher education systems* is critical for evaluating whether students perform at college-readiness levels once they arrive in a postsecondary system. The student-level connection between the two systems allows one to investigate what the P-12 academic history and performance levels were for students who enroll in college remediation and allows administrators to identify possible contradictions between P-12 and postsecondary indicators of success — either within or across schools — that need to be addressed to ensure that college- and career-ready standards are being met in P-12 institutions.

State Progress in Building College-and Career-Ready Data Systems

According to the DQC's 2007 Survey[2] about P-12 state data systems and the 10 essential elements:

- Four states (Arkansas, Delaware, Florida, and Utah) report having all ten elements.
- 17[3] report having Element 6 (course transcripts and grades).
- 15[4] report having Element 7 (college-readiness test scores). It should be noted that in order to get full credit for Element 7, state education agencies must

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[2] Results of 2007 NCEA Survey of State P-12 Data Collection Issues Related to Longitudinal Analysis.
[3] Seventeen states with Element 6: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Hawaii, Kentucky, Louisiana, Mississippi, Nevada, North Carolina, South Carolina, Texas, Utah, Washington and West Virginia.

receive AP scores and either ACT or SAT scores. The DQC feels strongly that AP courses and exams are an important way to ensure the availability of rigorous high school courses and provide an opportunity to ensure students are college ready.

- 22[5] states report having Element 9 (ability to connect P-12 and postsecondary data systems at the student level).
- Only eight of these states report having Elements 6, 7 *and* 9 (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Texas and Utah)

These findings indicate that only 16 percent of our states (50 states, plus DC) *might* have the ability to drill down to the student level to explore the intricate relationship between students' course-taking patterns and test scores in P-12 and their postsecondary experiences.[6]

One View of a Future Data System

The primary purposes of aligned and linked data systems are improving teaching and learning, providing early warning signals, and evaluating school and district performance.

Improving teaching and learning
During the school year formative and benchmark assessments are used at classroom, school and even district levels to provide immediate feedback to staff on how to tailor teaching and learning for current students. Across years, data are used at school, district and state levels to analyze and review the effectiveness of specific programs, policy and curricula. With enough detailed data tracking students across years, teacher effectiveness and the effectiveness of professional development programs can be evaluated as well.

Early warning indicator system
During a given school year, scores from formative assessments and other types of student data can "trigger" signals that particular students are not on path to successful completion of their coursework or success in future rigorous courses and then teachers can begin necessary interventions. Student-level data from previous years can be used to predict the likelihood of success in future years. Indicators such as assessments, absenteeism, language delay and retention can help define and fine tune the warning systems and interventions that teachers and administrators use to outline the appropriate interventions for students.

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[4] Fifteen states with Element 7: Alabama, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Indiana, Massachusetts, Ohio, Texas, Utah, Virginia, West Virginia and Wisconsin.
[5] Twenty-two states with Element 9: Alabama, Alaska, Arkansas, Delaware, District of Columbia, Florida, Georgia, Hawaii, Kentucky, Louisiana, Massachusetts, Mississippi, Missouri, Nevada, North Carolina, Oregon, Tennessee, Texas, Utah, Vermont, Washington and Wyoming.
[6] The DQC survey asks about the capacity of the data system, and not the actual use of the data.

Accountability and reporting
Data used from district and state data systems are used to evaluate the effectiveness of schools and districts in meeting statewide accountability standards. These data are also used to meet state- and federally-mandated reporting requirements about student demographics, student performance, teacher preparation and program participation.

An ideal data system would meet these three purposes in an efficient and aligned collaboration between the state's longitudinal data system and district data systems. This requires the technical capacity to link and share these data, as well as the political will to work together to ensure effectiveness and efficiency.

In this type of next generation system the SEA data system would collect detailed student-level data directly from schools and districts on a daily or weekly basis and makes that data available almost immediately to teachers, counselors, principals and other school and district administrators. This system would also include detailed teacher data, including information about their teacher preparation and professional development experiences. In this system, there would also be a way to connect teacher and student data, so that each teacher can see detailed histories for each of their current students. Longitudinal student data would include course history and grades, statewide assessment and formative assessment data in each grade level, historical information about the programs from which students received services, and outside college-readiness scores (e.g., ACT, SAT, and AP exam scores). Teachers would have daily access to the information they need to inform instruction, principals and district administrators would have the information they need to evaluate current policies and practices, and SEA staff would have the information they need to meet state and federal reporting requirements and to conduct the analyses necessary to assist schools and districts in determining if they are at risk of not meeting accountability standards and where changes are needed.

Features of Current Student-Level Data Systems at the SEA and LEA Levels

Student Information Systems
Many states have developed a student information system that they make available to LEAs. These systems provide the data architecture for LEAs to collect, store and submit student-level data required by the state. The state system is typically connected to the LEAs in such a way that the state can pull data from the LEAs on a regular basis without requiring any extra programming from district staff. In most states, LEAs have the option of using this state system or of purchasing a system from a third party vendor. In most states where this option is available, there always seem to be some districts that choose to purchase their own student information system. They, then, are responsible for ensuring that all necessary data is collected and reported to the state data system in the correct format and on the correct submission cycles.

Student Identifier
Most states have implemented a statewide unique student identifier (ID) within the past three years, although a few states have yet to do so (6 according to the 2007 DQC Survey). This student ID allows states to track students as they move across schools and districts within the state and track students as they move from one grade to another. Typically, these IDs are generated by the state and may be shared with the district. Ohio, however, has a state law that says that the SEA cannot maintain students' identifiable information (i.e., names, dates of birth). The SEA does have access to the student ID, but without other personally identifiable information it is difficult for them to share data with other entities.

Students are not typically aware of their own unique statewide ID. SEAs and LEAs are working together to determine if and how to include the statewide student ID on student transcripts, since there is much discussion between P-12 and postsecondary staff about including the P-12 student ID in the postsecondary data system as a way to link student-level data across the two systems. School districts also typically assign a local student ID, which students probably do know and use. The SEAs allow districts to submit the local ID to the state system, but SEAs rarely, if ever, actually use or reference the local ID.

Program Participation Data
SEAs are required to report on the number of students participating in programs such as Special Education, Title I, Bilingual and English Language Learner, as are LEAs who receive money directly from the federal government. Historically, LEAs and SEAs have reported aggregate counts of students received special services by program area, but as SEAs build robust student-level data systems, states are collecting participation information on an individual basis annually. With this data, they can not only meet federal reporting requirements, but they can also analyze student performance information by program participation in order to more thoroughly evaluate program effectiveness. At the end of a school year, many – if not most – LEAs roll the data forward to the new school year and then archive their student data for that school year. When the next school year begins, they update student demographics and program participation data as necessary, but other data is entered fresh into the system. Consequently, the LEA data systems often do not have historical student data available during the year.

LEAs that have built data warehouses with longitudinal data would be the exception to this rule. Typically, only larger districts with the necessary financial and staff resources have already built their own data warehouses. Some large districts around the country have more research and evaluation and/or information technology staff than their SEA counterpart and, consequently, have preceded the SEAs in developing more sophisticated data systems and reporting tools. Most districts, however, do not have this capacity.

Assessment Data
SEA systems typically collect data on the statewide assessment system. In the past, some states only collected summary performance statistics, rather than individual student scores. As states are building more robust student-level data systems, though, SEAs are beginning to collect student-level scores, and in some cases even item-level responses, from the testing contractors. States enter into contracts with testing vendors and specify in the contracts what types of reports are to be sent directly to the districts versus to the SEA. SEAs then typically analyze this data in various ways for both state accountability ratings and federal reporting requirements. LEAs also use this data to provide reports to parents and students.

Formative assessment data is not typically used by SEAs for either state accountability or federal reporting; consequently, many states do not feel that it is within their purview to collect this data. Nebraska, which does not have a single statewide assessment, must use the data from each district's formative assessment to calculate No Child Left Behind statistics. The Nebraska SEA does not get the actual scores on the formatives assessments, however; the LEAs categorize the students' performance into the NCLB proficiency groups and send the performance status to the SEA. SEAs across the country generally have policies in place that they do not collect data from a district that they (the SEA) are not required by state or federal law to have. Most SEAs rely on the statewide assessment as an indicator in the accountability system, since they can then hold all districts to the same standard on the same test. Since formative assessments generally are not standardized across districts within a state, SEAs do not generally even collect this information from the districts. Likewise, SEA systems are not set up to collect, report or use information on classroom tests.

Course Completion Data
Few states have collected student-level course completion data until recently (17 states reported on the 2007 DQC Survey that they have course completion data at the high school or middle school level). Many states believe that since this type of information is not typically required by state or federal mandates it is not the purview of the state to collect and use course data. Only a few states have developed a standardized statewide course numbering system, although more states have recently begun this endeavor. The National Center for Education Statistics has recently published guidelines about course numbering systems that some states are considering. Aside from a standardized course numbering system, states acknowledge that there are not procedures in place to ensure that the course content matches the course title. With the dearth of course completion data, few states are able to report on the numbers of students or identify which students complete specific course sequences, such as Academic Competitiveness programs or State Scholars Program. This type of information must come from LEAs in most states, although if the LEA data system is not set up to maintain historical data this may be difficult for some.

Ability to Connect Student and Teacher Data
Only 18 states report the ability to connect student and teacher data together, per the 2007 DQC survey. One state education commissioner has stated publicly that he would not create this connection, because he did not want teachers evaluated on student performance data. While the debate about whether or not to develop pay-for-performance systems (and how best to implement them) rages, people should recognize that pay-for-performance activities are not the only use for teacher-student connection. Other reasons to connect student and teacher data include the ability to evaluate the effectiveness of teacher preparation programs and the ability to determine which teachers serve which students best. The ability to relate student performance data to teachers allows administrators to evaluate assessment scores (both formative and statewide assessments) to determine which classroom teacher needs to change in order to help improve student achievement.

Historically, this type of data has been available at the school and district level and not at the SEA level. This type of classroom and school evaluation has not been the purview of the SEA, since the state accountability systems have typically focused on school and district performance and not classroom performance indicators.

Graduation and Dropout Data
Most states (49 per the 2007 DQC Survey) have taken steps the past few years to collect student-level graduation and dropout data, rather than rely on summary statistics provided by LEAs. As more years of student-level enrollment and exit data becomes available in states, more states will be able to track individual students across four, five and six school years and determine which ones actually graduated, transferred, or dropped out; and they will be able to calculate graduation and dropout rates at the state and LEA level with a greater degree of accuracy.

Data Warehouses versus Reporting and Analysis Tools

Robust data warehouses are vital for providing complex amounts of data to policymakers and educators in a useable format, and many states and school districts are currently investing in building them. The educational data warehouse can feed a comprehensive system of both standardized and customized reports and analytical tools that answer questions posed by policymakers, district administrators, local educators and parents. Implementing and using a data warehouse, along with reporting and analysis tools, can enable educators and policymakers to effectively use the vast amounts of data collected in the state's data system.

Discussions about data warehouses and reporting and analysis tools so often occur at the same time that it is easy to think that they are one and the same. Although these two components of a robust data system go hand-in-hand, they require separate types of technology and staff expertise. A data warehouse is, in essence, a storage facility for many datasets culled from a variety of source files, such as student enrollment, program participation, graduation, state-level test data, teacher data and financial data.

Reporting and analysis tools, however, are essentially the software programs written to calculate the statistics that stakeholders need to evaluate the performance of a student, school, district or state and produce reports (electronic or print) that answer stakeholder questions.

An example of information that teachers can benefit from include item-level analyses of performance on statewide and formative assessments. By reviewing how students responded to each item and analyzing which types of students gave incorrect responses (for example, relating the responses to English Language Learner status or their primary teacher or last year's teacher or school), both teachers and administrators can identify the appropriate interventions for these students as well as possible interventions with prior grade-level teachers.

As highlighted in the DQC Quarterly Issue Brief in March 2007, a teacher from Ohio showed how her school used academic growth data – comparing students' test scores from one year to another – to determine that she excelled at teaching 5th grade Mathematics to high performing students and getting them to continue to increase in proficiency, while another teacher was better at teaching previously low performing students and helping them to increase their proficiency levels. With this knowledge, administrators and teachers in this school can better serve all students.

Other Types of Data Maintained at the LEA
The LEAs are also responsible for maintaining student data that are not a part of a state's assessment or accountability system, such as library, nursing/health services, transportation, and cafeteria services. SEAs do not typically collect this data, since they do not use it. Often, these data systems are developed by a different set of vendors than are the student information systems. LEAs and SEAs, however, are working with the Schools Interoperability Framework Association (SIFA) and other organizations to make it easier for each other these systems to share data within and across districts so that any piece of student-level data can be entered only once in a system and then used by the other systems. This process will reduce the amount of resources necessary for data entry, reduce data entry errors and increase efficiencies across data systems.

National Data Resources
As states expand their data systems and ability to create more informative subsets of data, the U.S. Department of Education (USED) is enhancing and fine-tuning their data system. In 2003, the USED started working with states to reduce the data collection burden on SEAs and districts by creating standard data element definitions, reporting requirements across program areas, and data collection cycles and processes. They are building a data warehouse and their own reporting and analysis tools (Ed*Facts*) that different divisions within USED will access and use. More recently, the Council of Chief State School Officers, with support from the Bill & Melinda Gates Foundation, has launched the State Education Data Center (SEDC) — accessible via www.SchoolDataDirect.org — which collects annual aggregate datasets from states, and in the near future from Ed*Facts*, and makes these datasets available to researchers and other organizations who analyze school and district data. These national

repositories do not include student-level data, but do serve as a model for how to collect and share data for widespread use.

The Future is Here – Sort Of …

Delaware's Data System
The Delaware Department of Education makes a state-developed and funded student information system available to all LEAs; although each can choose to purchase their own system from third-party vendors. The SEA also hosts districts' student-level data on state-provided servers, when the district chooses to use this feature.

The SEA maintains student-level data for all districts and charter schools in a central repository, but does not have access to all of the districts' student-level data. This central repository is divided into 37 separate databases: one for every district and charter school and one for the SEA's data. Within each district's database, the district stores student-level data that the state needs and data that the district alone uses. Districts can set up their database to collect formative assessment data, health, discipline, course, transportation data, among other things, but store it on the servers that the SEA maintains. The SEA then goes into the district's database on a nightly basis to extract the data needed to complete state and federally mandated reports. The SEA does not ever extract, cleanse, update or use district-defined data outside of those elements that it is required to collect.

The SEA also supports various reporting and analysis tools that can be used by LEA staff with the SEA and district databases. Each district is responsible for having well-trained staff to run analyses of their own district data. The SEA produces some standard reports using the state data (for example, school and district demographics, student performance on the statewide assessment by student group, and attendance, graduation and dropout statistics) and can help with some special reporting requests, but they do not run analyses of district-specific data.

In the Delaware system teachers enter their data, such as attendance and grades, directly into the data system, and they can pull down information and reports about their own students from the data system on a daily basis. The LEA defines what data they collect outside of state-mandated collections The SEA provides a storage facility for district data, but the SEA very emphatically states that they are not the owners or users of district-defined data.

Delaware is also working with vendors to establish a balanced score card that will show districts and schools where they stand on a set of leading and lagging indicators. There are a set of common indicators used across districts (for example, percent of proficient students on reading and math tests, graduation and dropout rates, percent of classes taught by highly qualified teachers). Districts and schools can also develop other custom indicators that they wish to measure. Each measure has a target value and a

target date established and the report card will provide schools and districts where they are in meeting those targets.

West Virginia

West Virginia also has a data system that receives data directly from LEAs on a daily basis. This system was built and is maintained with state funds under legislative mandate. The SEA is exploring the possibility of connecting a teacher grade book system to the statewide data system, since most districts use the same grade book data system. The state's system already collects daily transactions such as attendance, transfers, end-of-period grades and discipline data. Teachers can see student transcripts and parent contact information. The state system allows teachers to see historical assessment data (including the accountability statewide test, writing assessments, and ACT Plan and Explore). To date, the state system does not collect formative assessment data.

Massachusetts

Massachusetts has recently launched their data warehouse and has included room to store district-specific variables and formative assessment data. Like other states, though, they do not run any analyses, reports, cleansing or data quality checks on the district-specific variables and formative assessments. They are providing the option for districts to store the data, but districts have expressed a lot of reservations about storing their data in an SEA storage facility. There was great concern that the SEA would use the data inappropriately and take a snapshot on incomplete or 'not the most up-to-date' data and represent the district in an inappropriate way. Conversations between SEA and LEA leaders led to a set of documented procedures on how district formative assessment and other data variables could be used.

Other States

While the technology exists for other states to provide the same type of data collection and storage systems to their districts, the issues of state funding, state mandates and local control would likely make this a much more difficult enterprise in most states. The size of Delaware and West Virginia – both in terms of the number of districts and amount of students – makes the cost and functionality of a single centralized system much more palatable than it would be in larger states. Larger states may face greater challenges regarding communication, governance, and programming in order to organize such a data system. These states may also require increased resources to support the hardware and software requirements. The technology exists, but whether or not the state could or would take on the financial burden to support this type of enterprise is another story.

The DQC has conducted site visits to seven states since 2006, and in most states district staff report that they receive very little, if any, funding from the state to support required changes in their data systems. They usually absorb all costs related to staff time, as well as much of the technical costs. If the state were to build a centralized data system to include district-specific variables, thus obviating the need for stand-alone

district data systems, the state would have to absorb substantial costs that districts now absorb.

Differences between the Future Data System and Current Data Systems

States that currently have all or most of the 10 essential elements can do a tremendous amount of research and evaluation into what makes effective teachers, schools and districts — even without maintaining district-specific formative assessment data. With a robust student-level data system that is able to connect teacher data to student data, track course completion information, associate college-readiness test scores and connect school- and/or district- level financial data, research into what the strongest predictors of student success are can be done; that is, what student variables are the strongest predictors of success in relation to which teacher variables, which school and district demographic factors and the amount of school and district funding. For instance, more district funding might not be as important as how the district spends its funds. Some states have the data systems in place to conduct this research already, but it is usually based on data collected annually and cannot be "turned around" in short order to inform local educators. However, in the image of the future data systems, formative assessment and accountability systems provides an even richer amount of information with which to understand how to improve continuous student and teacher achievement and can be analyzed more often.

The biggest difference between the image of the future data system and the current systems appears to be a philosophical, if not political, one. Currently, many states have a philosophy, if not a stated policy, that the SEA cannot and will not collect any data from an LEA that the SEA does not actually use. This means that most SEAs, even as they are building data warehouses with the goal of helping both state and local educators, will not collect district-specific formative assessments and some are still considering whether or not to collect course completion data.

Ohio has provided funding to build a data warehouse that is housed at a regional technology center and includes student-level data from the state's assessment system. Teachers can access this data warehouse to see how their students are performing on an item-by-item basis. The goal of this system was to allow educators to share lesson plans and resources that are aligned with the Ohio content standards with each other, as well as to serve as a database for formative assessments. To date, formative assessments have not been included in the data warehouse and long term funding and sustainability of this data warehouse has not been established. This data warehouse is maintained separately from the SEA data warehouse which is used to complete state and federally mandated reports. The regional data warehouse is managed by a steering committee, of which the SEA is a member, and only includes assessment data and content standard resources to this point, not the additional student level data needed for an accountability system.

The way in which SEAs use the data may change over time also, if the goal of future state data, assessment and accountability systems requires the SEA to collect and use more district-specific information. Few SEAs maintain a Research and Evaluation division or similar unit comprised of staff with the necessary analytical skills and responsibility to evaluate the plethora of data the SEA collects every year. The SEAs have historically collected the data and then turned it into school report cards, state graduation and dropout reports, and federally-mandated reports. They have not historically conducted regular analyses to identify ways to help schools and districts develop improvement plans, ensure college- and career-readiness or evaluate program effectiveness. Schools and districts are often left to their own devices to do these things.

With the next generation assessment and accountability systems and a robust student-level data system to match, the SEAs role with regards to data systems will likely change. That change will not happen without significant changes in the culture of data use and funding of data systems throughout the state and LEAs. The image of the future data system will require a conversation about the role of the SEA and how it relates to the LEA, both in terms of the data collected and shared and how the data is used. The SEAs do not typically have the capacity to conduct much analysis of data beyond what is required by state or federal mandate; yet, increasingly more teachers, administrators and policymakers are asking for the data to be analyzed in order to inform decision-making. Policy discussions are needed to address this contradiction between resources and data requests. Where best should the capacity to address policy questions reside — at the state or local level? Who should have control of the data for analytical purposes?

Policymaker Considerations

Local control
Most states claim to be a strong local control state. That is, decisions about textbooks, assessments, block scheduling, spending, teacher hiring, student information systems, and so on are typically made at either at the district or school level. As an example, some districts have not always had standard student transfer forms or policies across schools, much less states having standard forms and policies across districts. Practices such as this affect statewide data systems and data quality. Even in Delaware where the state collects and stores the district-specific data, the state is clear that they will not touch or use that data without permission from the district. To what degree is the state willing to tackle the issue of local control with regard to assessment, accountability and data systems and try to standardize any of these issues across districts and/or centralize control at the state level?

Financial resources
Over the past five years, many states have struggled with budgetary crises and many SEAs have experienced significant reductions in staff. Today, in 2008, discussions of budget shortfalls and reductions in education spending are becoming more frequent. While the vision of future assessment and accountability systems may not require more

state involvement, the image of the corresponding future data system does require more involvement and management at the state level. This involvement will require significantly more funding to the SEA for hardware, software, staff, communication and professional development activities. Do states have the necessary funds to support larger, more sophisticated data systems, analytical capacity, and staff at the SEA level? If the USED Institute of Education Sciences does not continue their statewide longitudinal data system grant program where they provide three-year competitive grants to states, will the states be able to pick up the burden?

Role of the SEA versus LEA
Historically, most SEAs have served more as a conduit between LEAs and the USED in terms of data reporting, monitoring and compliance. The new visions for assessment, accountability and data systems would require a significant culture shift both at the SEA level and by state legislatures and local districts. How will that culture shift be conveyed and supported by state policymakers? How will that affect the role of and relationships among state boards of education, teacher certification boards, and local school boards?

Ownership and use of data
Will the perceived ownership of and access to district-specific data change to allow SEA more access and use of the data? If the data is stored in a state-supported system, will the SEA be free to or required to access and analyze this data under the new accountability and assessment systems? Who provides that change in authority and governs it?

Connection of P-12 and postsecondary data systems
How will states ensure that student-level college- and career-ready data can be and will be shared between the P-12 and postsecondary systems, if there is not a single P-20 data system in the state? What role do state policymakers (e.g., governor, state legislators, agency chiefs) have in ensuring the connection and appropriate use of the data occurs? Where will the data reside? Who is responsible for maintaining it?

State legislation
In some states, legislation that prevents the SEA from maintaining identifiable student data or that prevents the ability to share student-level data between districts and SEA or SEA and postsecondary needs to be eliminated. In most states, the expansion of the SEA's data system – no matter how small or large – must be mandated in state or federal law; SEAs generally will not change their data system (and subsequently require LEAs to change theirs) without a specific mandate. They perceived that they have neither the financial resources nor the authority to make such changes arbitrarily. Will state legislatures be willing to mandate a centralized data system? Will SEAs and LEAs work together to change the data system structure without state mandates?

Conclusion

Presently, the difficulty in building and implementing robust student-level longitudinal data systems is not one of technology. The state-of-the art technology exists to build a student-level data collection system that readily shares data across districts, between districts and the SEA, and even between the SEA and the postsecondary environment. The difficulty is not in whether or not the SEA can collect data on a daily basis from the classroom teacher or find a way to analyze data and provide weekly reports to teachers or principals.

There are no technological barriers to building the next generation of assessment, accountability and data systems. The obstacles are cultural, political and financial. Culturally, educators and administrators need to learn to embrace the use of data, instead of fear it. Politically, policymakers need to make the sharing of student-level data — while protecting student confidentiality — not only acceptable, but mandatory across educational institutions. State laws, such as those in OH, that prevent the SEA from maintaining identifiable student information create a burden to the state, both from a financial and a data perspective. Interpretations of the Family Educational Rights and Privacy Act (FERPA) that prevent P-12 and postsecondary systems from sharing student-level data hinder the ability to improve student achievement. Financially, without significant state investment the development and maintenance of the education data system, the next generation data system will not be functional. LEAs will continue to bear much of the financial burden for maintaining their own separate data systems and will likely then claim ownership of the data.

The next generation data system will likely come to fruition when we have both local educators and state policymakers calling for access to more data in easy to use formats on a more frequent basis. The convergence of demands from the 'bottom up' and the 'top down' will create the perfect storm to create a new breed of data system, but that demand can only be filled if financial commitments are made to ensure that the systems are built and sustained.