



**State Educational Technology Directors Association
Leadership Summit's Toolkit 2006
Using Data for School Reform**

Goal, Process & Components

Goal

To provide effective and useful tools for state educational technology directors that assist them in leveraging the data being collected for federal reporting purposes to improve teaching and learning at the school and student levels.

Process

A working group of 17 state level educators, data experts from national organizations including State Interoperability Framework (SIF) and the Council of Chief State School Officers, as well as executives from Education Testing Services (ETS) convened at the SETDA Leadership Summit in October 2005. The purpose of this three hour in-depth session was to provide leadership and direction regarding the content of the “*Using Data for School Reform*” chapter.

Upon completion of the direction setting, subsets of the larger group along with experts from National Center for Education Accountability (NCEA) and educational research professionals met monthly via conference call and through consistent Web collaboration to refine the documents, messaging, and audiences that are in this tool.

Components

This chapter includes four major components;

1. A policy recommendation for the reauthorization of NCLB and or state level approaches to funding statewide data systems,
2. Sample survey questions that begin to analyze a state’s capacity to leverage the data being collected for the improvement of teaching and learning instead of addressing the technical parameters of the system,
3. Independent research and case studies that support the work above.
4. Specific leadership documents and sample templates targeted to three different audiences (policy makers, teachers & administrators, and parents & community leaders) that help state level educators explain why statewide data systems are so important to the success of schools today.

NCLB Policy Recommendation

Grants for Statewide Data Systems: Leveraging Federal Reporting Requirements for Data Informed Instruction & Accountability

Purposes:

- Provide states with block grants that support systemic approaches to school improvement using the Federal reporting requirements as leverage for states to recognize need for planning and implementation of “just in time” instruction with the data collected.



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- Use federal leadership to expand upon the current investments in technology and build the human capacity of state, district and school educators to recognize the importance of state wide data systems including planning, implementation, and the need for educators to learn the skills to analyze the appropriate data.
- Use federal reporting requirements in combination with the proposed state grants as a catalyst for state funding to modernize pedagogical approaches that inform instruction, increase personal accountability, and improve the quality of information shared among stakeholders.
- Provide incentives for states to invest in the implementation of statewide data systems that not only report NCLB required data, but improve teacher and student accountability, real-time assessment, and achieve individualized instruction for each student.

The Need

A New Title Addressing Statewide Data Systems Under NCLB for State Grants:

President Bush mentioned the need for proper technology infrastructure to increase productivity and reduce costs within the Healthcare industry during his State of the Union Address. This is also imperative in building a competitive workforce through our nation's public educational institutions – which are similarly inadequately equipped to maximize productivity due to a lack of leadership and ownership of the technological infrastructure within most states.

Leverage the Investment Already Made

The federal government has allocated resources for wiring the classrooms with Internet access and providing teachers and students with computers, but this investment has resulted in “islands of excellence” rather than wide ranging transformation. The vast potential of this past investment will not truly be realized until states have the capacity to leverage networked Internet ready computers into a cohesive data system for high-stakes online assessments, project based learning, student-centered portfolios, online professional development and individualized instruction.

School and Teacher Quality

The data being collected for federal reporting requirements should be used for accountability purposes, but this data should also be shared with district and school level educators in the form of user-friendly data points and reports that inform specific instructional approaches and promote the advancement of student learning. The real-time reports should not be punitive, but serve as professional development tools to address individual teacher and school quality.

We Are Not There Yet

The National Council for Educational Accountability (NCEA)'s survey on statewide data systems found that many states currently have statewide data systems and/or collection vehicles in place, but none of them are robust enough to fully address the Essential



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Elements for Statewide Data Systems that are necessary to fully deliver on the goals of No Child Left Behind (NCLB). In fact, only 16% of the states have more than six of the ten essential elements in place. For details view:

http://www.dataqualitycampaign.org/activities/state_of_nation.cfm.

Business as a Model: True Accountability through Proper Data Use

We witnessed business successfully take the leap to data driven decision making in the last 20 years, but it wasn't without investment and pain. With demonstrated productivity gains, it is evident that the investment made by businesses provided them with a solid return.

Business Using Data for Accountability: A strong business example of accountability through the appropriate use of data is the case of United Parcel Service (UPS) and/or Federal Express. Both companies embraced the notion of accountability and invested in a technological infrastructure necessary to track each package individually from point A to point B. These businesses are thriving due to their strategic decisions to embrace accountability and streamline its processes with data systems.

- ***One Decision: UPS Goes Bluetooth - To track its millions of packages, UPS is going to a wireless scanning system.***
http://www.technologyreview.com/BriefcaseSpecialSection/wtr_16269_326,p1.html
- <http://www.sustainability.ups.com/future/main.html>

It is not being suggested that America's students are to be treated like packages. But in the case of UPS each package is treated as an individual entity – which is the goal of NCLB. It cannot be accomplished with pen and paper. Robust statewide data systems must be in place to achieve “data informed instruction” for all learners.

Just In Time Teaching With Flexible Content & Quality Data - Another possible example where business can inform the discussions of effective uses of technology in education is Dell Computer's just in time manufacturing approach. Instead of carrying the cost of inventory on computers that have not been sold and may not address the needs of the purchaser, Dell chose a business model that provides them with the flexibility to build each computer to the exact specifications of each customer. This approach keeps costs low and it ensures that each customer receives a computer that matches their specific needs.

Dell's Make-To-Order System Leaves Competitors in the Dust

<http://www.manufacturingnews.com/news/98/0703/art1.html>



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Dell's approach to customize production and output is something to analyze in education reform discussions. Just as each Dell Customer has different needs, each American student has different needs. One book does not necessary fit all learners. Dell's approach in education would explore the notion of replacing costly printed books with quality learning objects available in various media (some books) that is all mapped to federal, state and local standards. Teachers could select these learning objects for their whole class, as individual interventions, or as enrichment activities for excelling students. Leveraging the potential of a statewide data system to organize and deliver flexible and individual learning objects that are tailored to each student's learning needs would provide teachers with more influence on each student's learning path and it would decrease overall costs by paying for only what is actually being used for instruction. Additionally, the individualized approach would hold the teacher more accountable for his/her pedagogical approaches and the students more accountable for their own learning.

More Business Approaches

The American Productivity & Quality Center (APQC) is a non-profit membership organization that analyzes business approaches and shares best practices. APQC has created some valuable research and reports that use business as a model to address the proper use of data in schools. APQC believes that, "Every school has opportunities for improvement and can leverage the membership's expertise and methodology. Go to http://www.apqc.org/site/bookstore/html/Education_Publications.html to view best-practice research, metrics, and tools, and authored by leading experts.

Comprehensive Research Glossary

For references and resources supporting the planning and implementation of statewide educational data systems, visit the research section of "*Using Data for School Reform*" chapter.

Incentive for State Funding

The existing IES State Longitudinal Grants are a good start, but do not adequately fund full implementation or provide the necessary incentives that will drive state funding to enhance each state's data systems. It is recommended that the current IES grant be expanded under the reauthorization of NCLB to include 1) a competitive process for small states that have

not begun their data system projects and 2) a formula based on a per pupil allocation based on a state match for the enhancement of their existing data systems.

This proposed state grant under NCLB could provide state level educators with the leverage necessary to secure matching state level funding to address the vital need in every state to enhance their current systems. The grant will help convince state legislators of the need for funding to enhance or create statewide data systems even in the case of



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difficult budget circumstances or push-back on perceived unfunded mandates and over-zealous reporting requirements from the Federal Government.

State Grant: Key Components

Component A: Alignment to Federal Reporting Requirements & Analysis of Needs

States will use this funding to align state data to the EDFAX federal reporting requirements. States will need to develop a glossary of common language as well as document excepted practices around data collection for their state that address federal reporting requirements, data transferability among states and districts, and streamlining reports and data dissemination processes.

This component will also address the importance of analyzing current resources at the school and district level to ensure participating jurisdictions have the technology (Internet connections, computing power, software, servers, and hard disk space) necessary to successfully implement the data collection, reporting, assessment processes and content delivery the system demands.

- Developing a data dictionary of all the elements
- Alignment of state and federal standards
- Address transferability of data among states
- Streamlining reports and processes

Leadership & Communications

Successful grantees will outline a consistent communications plan that includes an active Statewide Leadership Team including:

- MIS Professionals
- Education Technology Professionals
- Business Administrators
- District Level Leaders
- State Level Leaders (Deputy Commissioner or Assistant Commissioner)
- Curriculum Professionals
- Virtual Learning Professionals
- Professional Development Professionals
- Assessment Professionals

This Leadership Team will develop a communications plan that includes consistent reports to the federal and state government on the progress of the data system implementation process.

Component B: Successful Implementation, Long Term Maintenance & Sustainability

Each state will assess and demonstrate its ability to manage, implement, and maintain the data system. As part of the block grant application process, each state must demonstrate its ability to maintain the system adequately and independently with state and/or private funding preceding the federal development phase involvement of the program.



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This analysis should include:

- School connectivity and bandwidth analysis through surveys and observations.
- Security plans and safeguards from an MIS and data perspective. Seven year development project plan with implementation timelines for a data system based around the NCEA framework that will include but not be limited to how the system will:
 - Collect and distribute assessment data at the student level.
 - Maintain the privacy of teachers, students, and parents.
 - Enhance parental and community participation in school effectiveness with a strong communications infrastructure.
 - Align teachers with students and distribute effectiveness data to schools for accountability purposes.
 - Aggregate and disaggregate data.
 - Track teacher certifications and professional development activities.
 - Integrate state and federal standards at the student level.
 - Provide virtual learning opportunities aligned to standards and assessments in core curriculum areas such as math, science, foreign language, and social studies.
 - Offer interoperability for schools to easily share records of migrant students.
 - Provide students with individualized learning opportunities such as “my education space” and portfolios.

Component C: Data Integrity Training at the School & District Levels

A successful grant application will address school level MIS needs including extensive training for administration employees and/or an adequate regional system to address technology maintenance needs at the school and district levels, privacy policies (FERPA training), data integrity issues, report planning and processes.

This data integrity training will be best managed by the person at the state level who is familiar with the federal reporting requirements for data and who has a strong MIS background. The data integrity component is critical to the success of the statewide data system and thus needs to develop appropriate processes within the state's infrastructure to address the goal of having flexible, quality data that can be manipulated for federal reporting as well as individualized instruction at the student level.

Component D: Data Informed Instruction & School Improvement

A significant portion of the grant should be allocated to professional development of teachers, office personnel and administrators regarding the opportunities for individualized instruction through the proper use of data. This portion of the program will leverage the data and use it to enhance teaching and learning for all students. This component will be administered by the person in charge of educational technology within



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the state in cooperation with the overall data system leadership team. It will provide professional development and technical assistance on data analysis, provide user friendly solutions for manipulating the data, strategies for identifying individual learning needs, and tools for addressing those needs through innovative, individualized approaches.

Each grantee will address the need for a process to analyze and disseminate best practices, strategies, and approaches regarding pedagogical advancement that will leverage the data system for the expressed purpose of enhancing teaching & learning.

Assessment/Evaluation of Success

The NCEA's Essential Elements for Data Systems listed below should be the framework for a grant evaluation as well as the state's performance against time lines and the implementation plan complete with the elements above set forth.

1. A unique statewide student identifier
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
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 PreK–12 and higher education systems
10. A state data audit system assessing data quality, validity and reliability

Grant Process for Funding

The funds will be distributed to all states based upon a per-pupil formula where each participating state is required to match at least 25% of the federal funding received for the purpose of developing and/or enhancing the statewide data system.

Those small states that may have more extensive development needs would be candidates for a grant administered under a competitive basis similar to the current IES State Longitudinal Grant.

Proposed Data System Questions

1. Does your student information system align to corresponding teacher information?
 - a) If so, do you have systems in place to ensure the data is being shared with teachers, schools and/or districts for professional development purposes?
2. Does your data system track teacher certifications?



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3. Is your assessment data related to your state's curriculum standards?
4. Does your data system align student information records with state assessment data related to his/her attainment of standards?
5. Is your assessment data distributed to schools & administrators?
6. What is the average time in which the data is distributed to schools after it is collected?
7. Do you have policies in place for the disaggregation of data?
 - a) At the district level?
 - b) At the school level?
 - c) At the teacher level?
 - d) At the parent level?
 - e) At the student level?
8. If you have a state virtual learning system and/or courseware offerings, is the course information and/or related standards addressed in the statewide data system at the student level?
9. Does your state provide training for the interpretation of data in the form of professional development for teachers and administrators? Does your state provide software and/or hardware tools to assist teachers/administrators in the interpretation of data?
10. What plans or current practices do you have in place to build skills and practices to foster the development of effective intervention strategies that fully leverage the use of data findings to inform instruction at the teacher, student, and parent levels in order to increase student achievement?
11. How are you planning to communicate the proper use and need for this data to:
 - a) Federal and State policy makers
 - b) School leaders
 - c) Teachers
 - d) Parents
 - e) Students

Case Studies

(Download at Using Data for School Reform > Case Studies)

<http://www.setda.org/NLIToolkit2006/data/index.htm>

- Virginia
- Utah
- Ohio
- Maine



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**STATEWIDE DATA SYSTEMS:
Student Data Matters and Here's Why!**

There is a growing body of research about the value of data-guided decision making in the educational arena. Within the accountability context established by the No Child Left Behind Act, it is essential that educators have the information they need to make informed decisions – from the classroom practice to boardroom policy. While this approach - often called D3M, for data-driven decision making – has its roots within the business world, it has been increasingly touted in the educational literature over the past decade or so as educators try to implement structures and processes that will improve educational effectiveness.

So how do we know what have learned? How do we define and determine “educational effectiveness”? And what does the educational literature say about the processes and values of data-guided decision making within the educational context? Is there both educational and economic value in building state, district, school, and classroom systems to collect, organize, and analyze student data?

To start with, we must be able to quantify student learning in meaningful ways – for teachers, for administrators, for legislatures and government agencies, for funders, for parents, for the broader community, and, of course, for the students themselves. What have students learned? Are they achieving our standards – what we believe they should know and be able to do over the course of their educational careers? Are they learning what they need to have a full range of opportunities as they leave our educational systems? Then, we need to be able to use this information about student learning to make decisions about the next educational steps for each student, and about the programs and practices within our schools that will best meet students’ needs. For students who are struggling to reach the standards, we need to be able to hone in on their specific learning needs and target teaching accordingly. For students who are successfully achieving the standards, we need to be able to expand and enrich their knowledge and skills.

The first four references in the Annotated Bibliography provide discussion on some of these critical questions.

1. The first set of articles, by Paul Black and Dylan Wiliam (with others), clearly illustrates the tremendous value of ongoing formative assessment as part of day-to-day classroom instruction. It is critical for teachers to know what students are learning and what they have not, and to use that “data” to make the next instructional decision for each student. Their research provides evidence of significant learning gains when formative assessment is a part of the teachers’ instructional repertoire.
- The article by James Popham reinforces the importance of making classroom decisions based on data from the right kinds of assessments. He argues that only instructionally beneficial data – from instructionally useful tests that provide “per-standard” reporting of results – have real value for improving teaching and learning of standards.



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- In his article and book, Robert Marzano notes that data-driven decision making within our schools follows the best advice from both the business and educational worlds. He cautions, however, that schools must first use data from assessment measures that are sensitive to the actual teaching and learning going on in the classroom; and secondly they must have a plan or system in place to ensure that teachers actually know how to improve once they have good data on student learning.
- The report from the American Association of School Administrators shares strategies to help schools and their leadership teams effectively build cultures of inquiry around using high-quality data on student learning. Superintendents from across the country contributed to the report, and shared their own stories of the challenges and successes associated with the effective use of data to improve instruction.

After we have collected, analyzed, and acted upon this critical information about student learning in our classrooms and schools, we need to be able to tell our communities about the return they are getting for their investment in education. How do we best measure and report on student growth and school progress? Are we effectively using all of our resources (fiscal and human) to maximize student learning of the rigorous standards established in each state? Are our educational institutions productive – that is, are we getting the most “bang for our buck” in terms of student academic outcomes in relation to the various resource inputs?

The other four references in the Annotated Bibliography discuss aspects of system-level data analysis and reporting.

- Stephen Raudebush discusses two approaches to using test data to judge student growth and school improvement – snapshots of average proficiency (such as the methodology used for Adequate Yearly Progress under the No Child Left Behind Act), and value-added processes (such as those used by some state accountability systems). He notes that, whatever the methods of analysis, the amount and quality of data must be aligned with how the data will be used decision making.
- In his report, Richard Coley looked specifically at the concept of cohort growth, analyzing two sets of results from the National Assessment of Educational Progress (NAEP): scores from the fourth grade cohort in 1996 and the eighth grade cohort in 2000. He argues that this approach gets us closer to measuring what actually happens in school that impacts student learning.
- The article by Grissmer, Flanagan, Kawata, and Williamson carries data-driven decision making from the classroom and school level to the system and policy level. They used data from the National Assessment of Educational Progress to not only illustrate student academic gains but associate those gains with resource allocations.
- The final article, by David Grissmer, further discusses the need to connect data on student achievement with information about the allocation of resources. He challenges us to think about the productivity of our educational enterprise – are we using our educational resources in a cost-effective manner in order? What additional learning could be achieved with additional resources? He comments that research in



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this area of educational productivity can better inform the debate about public education and play a key role in restoring trust between educators and policymakers, and between the research community and the American people who fund education.

Following are synopses of these selected references that clearly support the need for and value of student-level data in directly improving academic achievement as well as determining the effectiveness of our investments in educational practices.



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ANNOTATED BIBLIOGRAPHY

Black, P. & Wiliam, D. (1998). Inside the black box: Raising standards through classroom assessment. *Phi Delta Kappan*, 80 (2), 139-148.

Black, P., Harrison, C., Lee, C., Marshall, B., & Wiliam, D. (2004). Working inside the black box: Assessment for learning in the classroom. *Phi Delta Kappan*, 86 (1), 9-21.

Paul Black and Dylan Wiliam conducted a meta-analysis of studies on academic innovations and identified more than 40 showing that strategies that include strengthening the practice of formative assessment in the classroom produce significant and often substantial learning gains. They use the general term assessment to refer to all the activities undertaken by teachers – and by their students in assessing themselves – that provide information to be used as feedback to modify teaching and learning activities. Such assessment becomes formative assessment when the evidence is actually used to adapt the teaching to meet student needs.” Typical effect sizes of the formative assessment experiments were between 0.4 and 0.7 – larger than most of those found for educational interventions. Gains of this magnitude represent significant learning – an effect size of 0.4, for example, would mean that the average pupil involved in a particular learning experience would record the same achievement as a pupil in the top 35% of those not so involved. An effect size gain of 0.7 in the recent international comparative studies in mathematics would have raised the score of a nation in the middle of the pack of 41 countries (e.g., the US) to one of the top five. Thus it is critical for teachers to know what students are learning and what they have not, and use that “data” to make the next instructional decision for each student. Black and Wiliam promote school- and classroom-based teacher professional development to build teacher skills and school cultures around formative assessment.

Paul Black is a professor emeritus from the Department of Education and Professional Studies at King's College in London. Dylan Wiliam is the director of the Learning and Teaching Research Center at the Educational Testing Service in Princeton, New Jersey. Both have worked extensively with teachers, in England and the United States, around classroom-based assessment.



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Popham, J. (2003). The seductive allure of data. *Educational Leadership*, 60 (5), 48-51.

James Popham, from UCLA, states that the most important data in the United States these days are test data – particularly data describing student performance on achievement tests. But he argues that only instructionally beneficial data – from instructionally useful tests – have real value for improving teaching and learning. Instructionally useful tests are those that measure student attainment of a worthwhile curricular aim; measure something teachable; are based on clear descriptions of the skills and knowledge being measured; yield specific results that can inform teachers about the effectiveness of their instruction; and don't take too long to administer. He argues that, if we have instructionally useful tests that provide “per-standard” reporting of results to teachers, then teachers have powerful tools to use to focus instruction and improve student learning of standards.

James Popham is a professor emeritus at the University of California, Los Angeles. He has written and spoken extensively on the topic of educational assessment. He is considered a leading expert in the field of instructionally sensitive/instructionally beneficial assessment.



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Marzano, R. J. (2003). Using data: Two wrongs and a right. *Educational Leadership*, 60 (5), 56-60.

Marzano, R. J. (2003). *What works in schools: Translating research into action*. Alexandria, VA: ASCD.

Robert Marzano, from the Mid-continent Research for Education and Learning (McREL), comments that, “schools that use data to make decisions are following some of the best advice from both the world of business and the world of education.” He cautions, however, that schools and districts frequently make two key errors in their efforts to be data driven. First, they often use indirect measures of learning – that is, measures that are not sensitive to the actual teaching and learning occurring in the classroom. Second, they often have no plan or system for interpreting and using the data – that is, there is no accompanying explanation of how to improve. This article identifies 11 school, teacher, and student factors that are the primary determinants of student achievement; and thus, those on which we need to collect and analyze data. The research and rationale behind these factors are provided in his book on *What Works in Schools: Translating Research into Action*.

Robert J. Marzano is a senior scholar at Mid-continent Research for Education and Learning (McRel) in Aurora, Colorado and an Associate Professor at Cardinal Stritch University in Milwaukee, Wisconsin. He has conducted extensive study in the area of “what works in schools and classrooms.” He has developed programs and practices used in K-12 schools and classrooms that translate current research and theory on cognition into instructional and leadership methodology.



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American Association of School Administrators. (2002). *Using data to improve schools: What's working*. Washington DC: Office of Educational Research and Improvement.

This report is available from the American Association of School Administrators at: <http://aasa.files.cms-plus.com/PDFs/Publications/UsingDataToImproveSchools.pdf>

With advances in technology and the increased demand for assessing student learning, an unprecedented amount of data is available to educators. In the Foreword to this guide, Paul Houston, Executive Director of AASA, writes, “as educators shift their focus from simply reporting test results to using the data to improve instruction, data become essential ingredients in school improvement. Educators know that the effective use of data can measure student progress, evaluate program and instructional effectiveness, guide curriculum development and resource allocation, promote accountability and, most importantly, ensure that every child learns.” This document was prepared as an easy-to-read guide to using data to drive school improvement. It provides strategies for building school and district cultures of inquiry, and also describes challenges and successes of educators from a variety of districts.

This report was produced by the American Association of School Administrators with funds from the Office of Educational Research and Improvement. A team of superintendents from across the United States contributed to development of the report. AASA, founded in 1865, is the professional organization for educational leaders across the US and in other countries. Its mission is to support and develop effective school system leaders who are dedicated to the highest quality public education for all children.



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Raudebush, S. (2004). *Schooling, statistics, and poverty: Can we measure school improvement?* William H. Angoff Memorial Lecture. Princeton: Educational Testing Service.

This report is available for download or purchase from the Educational Testing Service at:

<http://www.ets.org/research/researcher/PIC-ANG9.html>

Raudebush discussed two way of using available test data to judge school effectiveness and improvement – snapshots of average proficiency and value-added systems. He noted that “recent events have revealed the dependence of our financial system on a flow of accurate information to corporate stockholders. Accuracy of the data flowing from school accountability systems is no less essential to sustain current strategies for educational improvement.” He addressed a four-part investigation: (1) What questions are accountability systems implicitly designed to answer, and what questions can they answer? (2) Does the debate over approaches matter? Do systems based on value added give substantially different results from those based on mean proficiency? (3) Can we measure school quality and school improvement with adequate reliability? (4) What are the implications of the answers to these questions for collecting, reporting, and using school accountability data? He concludes that, “when high-stakes decisions are based on statistical evidence, it is sensible to scrutinize the quality of the evidence with great care. Holding educators accountable for their contributions to student learning is a laudable goal and one potentially powerful lever for school improvement. But the amount and quality of data must be reasonably aligned with the uses of data in decision making if the accountability initiative is to earn lasting credibility.”

Stephen Raudebush is a professor of education and statistics, and a senior research scientist for the Institute for Social Research at the University of Michigan. He has made an impressive career of bringing advanced evaluative methods to issues of great social import, studying teaching quality, school effectiveness, child development, marital relationships, and criminal behavior. The William H. Angoff Memorial Lecture Series was established by ETS in 1994 to honor the life and work of Bill Angoff. For more than 50 years, he made major contributions to educational and psychological measurement. In line with his interests, this lecture series is devoted to relatively nontechnical discussions of important public interest issues related to educational measurement.



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Coley, R. J. (2003). *Growth in school revisited: Achievement gains from the fourth to the eighth grade*. ETS Policy Information Report. Princeton: Educational Testing Service.

This report is available for download or purchase from the Educational Testing Service at: <http://www.ets.org/research/researcher/PIC-GROWTH2.html>

In this analysis, Richard Coley used data from the National Assessment of Educational Progress to track the performance of students from varying demographic groups and different states to concurrently examine the achievement gap as well as the academic attainment of these groups over time. Specifically, he compared NAEP Reading and Mathematics results from the Grade 4 cohort tested in 1996 to the Grade 8 cohort tested in 2000. He found that the growth in average scores between the fourth and eighth grades is about the same for all student subgroups except Black students; that subgroup gained more scale points than did White and Asian, with the difference equivalent to roughly one year in school. He also found that, while students attending nonpublic schools score higher, on average, than those in public schools, both groups add about the same value between the fourth and eighth grade. He believes that “the view of achievement provided by looking at cohort growth gets us closer to measuring what really happens in school.”

Richard Coley worked as an Education Policy Analyst for the Policy Information Center at the Educational Testing Services in Princeton, New Jersey. He has conducted research in a variety of areas within the educational arena, including student achievement gains, indicators of school readiness, teacher preparation, and the status of technology in US schools.



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Grissmer, D., Flanagan, A., Kawata, J., & Williamson, S. (2000). *Improving student achievement: What state NAEP test scores tell us*. Santa Monica, CA: RAND.

This report is available for purchase or download from Rand Corporation at

http://www.rand.org/pubs/monograph_reports/MR924/

This study used state-level NAEP data to estimate score gains nationally and by state, the effects of varying levels and uses of per-pupil expenditures on student achievement, and the cost-effectiveness of the major alternatives for utilizing educational resources. The report noted that, “overall, the results paint a more positive picture of American public education than is commonly portrayed, especially with respect to the effective allocation of resources.” Both the level of expenditure per pupil and its allocation affected student achievement. They concluded that differences in score increases across the states also cannot be explained by resource changes alone, which may provide initial evidence that educational reform is working. Findings include:

- Public elementary students across states in the sample showed statistically significant gains (about 1 percentile point) in mathematics.
- Some states are making significantly more progress than others. The math gains across states showed that a few made gains of around 2 percentile points a year, while others had almost no gains.
- There were statistically significant differences – as large as 11 to 12 percentile points – among students with similar family characteristics across states.
- Both the level of expenditure per pupil and, more importantly, its allocation affected student achievement – particularly for states with disproportionately higher numbers of minority and less-advantaged students.
- Some educational expenditures are much more cost-effective than others.

David Grissmer, Ann Flanagan, Jennifer Kawata, and Stephanie Williamson worked at Rand Corporation at the time this research was conducted. Individually and collectively they have conducted educational research in areas such as teacher supply and demand, and the analysis of national test scores to determine the causes of changing trends.



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Grissmer, D. W. (1998). *Education Productivity*. Washington, DC: NEKIA Communications *This document is available for download from the Educational Resources Information Center (ERIC) at:*
http://www.eric.ed.gov/ERICDocs/data/ericdocs2/content_storage_01/0000000b/80/25/6e/b1.pdf

If often appears, from what we hear and read, that the massive infusion of resources into public education has done nothing to bolster student achievement scores and that American students' scores on international assessments rank far below the scores of students from other countries. This report examines those perceptions through the lens of “education productivity.” Grissmer attempts to define productivity within the educational context and asks whether it is a useful concept to employ in evaluating educational outcomes and communicating with corporate America as well as with the general public. He cites challenges to the more traditional concept of *school* productivity, including the need for comprehensive tests that measure both depth and breadth of knowledge; and the issue of separating the contribution that schools make to student learning from that of families, communities, and other sources of education. He proposes instead to measure *education* productivity, which would include all sources of learning and supports for learning. The report concludes by noting that productivity research could yield the most important information for policymakers in education, specifically – how to use limited resources the most cost-effectively and what additional outputs would be achieved with additional resources. Grissmer also comments that such research can better inform the debate about public education, writing that “research on productivity can play a key role in restoring trust between educators and policymakers, and between the research community and the American people, who fund education.”

David Grissmer is a senior management scientist at RAND. His education research includes teacher supply and demand, teacher compensation and attrition patterns, analysis of national test scores to determine the causes of changing trends, analyzing state test scores to determine causes of state differences and effects of class size reductions.



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County, State & Federal Policy Makers

The printer friendly documents to your right have been developed as a starting point for SETDA members and other educational leaders to share with county, state, and federal policy makers emphasizing the necessity for robust statewide data systems to ensure proper NCLB compliance, but more importantly to improve teacher quality and individualize instruction for all learners.

Goal

To become a consistent resource and advocate on the potential of statewide data systems to address:

- Economic Development & Jobs
- Student Achievement & Teacher Effectiveness
- Global Competitiveness
- Closing the Gap: Access for All
- NCLB Compliance

Strategies & Audiences

Collect the names, titles, addresses, phone numbers and email addresses of each of the following audiences within your state. Reaching out to them consistently with agency news articles, facts, press releases, and progress is critical to becoming a data source for them as they make policy decisions.

State Contact List

- Education Policy Contacts in State Legislative Offices
- Education Policy Contacts in Governor's Offices
- State Board of Education
- Colleagues in the State Department of Education
 - MIS Professionals
 - Curriculum Professionals
 - Virtual Learning Professionals
 - Assistant Superintendent or Equivalent
 - Professional Development Professionals
 - Assessment Professionals

County Contact List

- Elected County Supervisors or Executives
- Elected County Legislators
- County Boards of Education

Federal Contact List

- Education Policy Contacts in Federal House Offices
- Education Policy Contacts in Federal Senate Offices
- Federal Liaisons in the State Superintendent's Offices



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Letter to State Legislators

Dear State Legislator:

I am providing you today you with information about the benefits of implementing a statewide educational information system in <<INSERT STATE>>. Many states around the nation including Virginia, Washington, Wisconsin, Ohio, and Maine are collecting quality data that is being used by teachers, principals and school district administrators to improve teaching practices and monitor individual student progress for proper enrichment or interventions.

The Need

As you probably know, <<INSERT STATE>> does not currently have a centralized or systemic approach to data systems that tracks the performance and progress of each student and/or teacher. There are efforts being taken that can be viewed at the National Center for Education Accountability's Website at http://www.dataqualitycampaign.org/activities/state_of_nation.cfm.

To date, some districts within our state have data systems but each one defines their "data identifiers" (the data they choose to collect) differently. Without a systemic approach to data, the vast potential for individualized instruction will be lost and the result of status quo is:

- Decentralized systems
- Lack of standardization
- No statewide student identifier
- Questionable data quality

The federal No Child Left Behind (NCLB) reporting requirements illustrate the need for a statewide data system in <<INSERT STATE>>, but the legislation does not provide funding for this effort. Our state must invest in its educational infrastructure just as business has done successfully over the last 25 years.

The Benefit

Reporting requirements are one thing – But a centralized educational information system will increase <<INSERT STATE>>'s ability to positively effect teaching & learning with:

- Analysis to close achievement gaps
- Real-time feedback on teacher performance & quality
- Disaggregated student data
- Complex school ratings and comparisons
- Annual online testing
- Redirection of time toward instruction
- Monitoring of individual student progress and the increased possibility for intervention and/or enrichment

As a state legislator tasked with providing a quality education for each of the students in <<INSERT STATE>>, this will help you do your job better providing you with access to:

- Timely information
- Simplified reporting



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- Cost efficiencies
- Improved data quality and trend analysis
- Assurance that state and federal reporting requirements are being met
- Ability to monitor more effectively your state's progress toward educational goals

Upon your request, I would be happy to provide you with the contact information of those state level educators who can provide you with more information on this approach including potential costs and ideas on implementation. I welcome the opportunity to meet with you in person to discuss the benefits of this approach and provide you with any information you need. I can be reached via email at XXXXXXXX or by phone at XXXXXXXX and could meet during any of the following times:

<<INSERT TIMES AVAILABLE HERE>>

Sincerely,

YOUR NAME
YOUR TITLE
YOUR ORGANIZATION



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Teachers & Administrators

The printer friendly documents to your right have been developed as a starting point for SETDA members and other educational leaders to persuade teachers and administrators within your state about the necessity for robust statewide data systems to ensure proper NCLB compliance, but more importantly to improve teacher quality and individualize instruction for all learners.

Goal

To become a data source on the potential of statewide data systems to address:

- Student Achievement
- State Requirements & Standards
- Using Data as a Tool – Professionalize the Teaching Trade
- Empowering Students & Teachers with good data
- Engage students in their own learning
- Show results in Formative Assessment

Strategies & Audiences

Collect the names, titles, addresses, phone numbers and email addresses of each of the following audiences within your state. Reaching out to them consistently with pertinent news articles, facts, and agency press releases is critical to making your case the practitioners.

National Organizations

- International Society for Technology Education (ISTE) and Consortium of School Networkers (CoSN) Affiliates
- Teacher Unions
- Professional Development Organizations

State, Regional and District Organizations

- Regional Training Centers
- School Board
- District Officials
- District Administration Employees
- Teacher Colleges & Universities

School Building Contacts

- Teachers
- Media Specialists & Tech Training Leaders
- School Office Employees
- Principals and Vice Principals



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Letter to Teachers & Administrators

Dear Teachers & Administrators:

I urge you to contact your state officials regarding the importance of implementing a statewide educational information system in <<INSERT STATE>>. Many states around the nation including Virginia, Washington, Wisconsin, Ohio, and Maine are collecting quality data that is being used by teachers, principals and school district administrators to improve teaching practices and monitor individual student progress for proper enrichment or interventions.

The Need

As you probably know, <<INSERT STATE>> does not currently have a centralized or systemic approach to educational data systems. To date, each district has developed separate systems and “data identifiers” that they have chosen to collect for each student. Although we want to ensure input and appropriate control of data at the district level, there are solid benefits to a systemic approach. Our state’s reporting requirements help drive some of the data being collected, but the result of the status quo is:

- Decentralized systems that rarely align to one another
- Lack of standardization for transferability across the state
- No statewide student identifier
- Questionable data quality

The federal No Child Left Behind (NCLB) reporting requirements illustrate the need for a statewide data system in <<INSERT STATE>>, but the legislation does not provide funding for this effort. Our state must invest in its educational infrastructure to ensure student and teacher success.

The Benefit

Reporting requirements are one thing – But a centralized educational information system will increase your ability to positively effect teaching & learning with:

- Analysis and trends to help close achievement gaps
- Real-time feedback on teacher performance & quality
- Empowerment of teachers and students with timely and good data
- Engagement of the student in the development of his/her own learning path
- Monitoring of individual student progress and the increased possibility for intervention and/or enrichment
- Complex school ratings for comparison
- Redirection of teacher time toward instruction

As a <<teacher and/or administrator>>, you have the power to persuade state legislators of the need for this investment in student success. With a systemic statewide approach to collecting data, you will have:



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- Access to timely information about each student's progress
- The ability to provide simple reports to parents as a communication tool
- Achieve cost efficiencies by "tapping into" one statewide data system instead of building & maintaining your own system
- The opportunity to provide information regarding educational trends to community leaders and members of the press quickly and efficiently
- Improved data quality that is transferable statewide
- Assurance that state and federal reporting requirements are being met
- The power to analyze progress toward educational goals for the school with timely, high-quality data from a single source in a meaningful format

I urge you take the following action:

- Collect the contact information for your state delegates AND your state senators at <<INSERT STATE LEGISTURE URL HERE>>,
- Tailor the attached sample letter to suit your school's needs,
- Sign and send the letter,
- Encourage your colleagues to do the same!

Upon your request, I would be happy to provide you with the contact information of those state level educators who can provide you with more information. XXXXincluding district and school input and feedback loops, potential costs as well as ideas on program implementation. I can be reached via email at XXXXXXXX or by phone at XXXXXXXX and could meet during any of the following times:

<<INSERT TIMES AVAILABLE HERE>>

Sincerely,

YOUR NAME
YOUR TITLE
YOUR ORGANIZATION



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Parents & Community Leaders

The printer friendly documents to your right have been developed as a starting point for SETDA members. The material highlights strategies and language that can be used to persuade parent and community leaders within your state that there is a necessity for robust statewide data systems. Each one is easily tailored to suit your own needs – the common thread being the need to ensure proper NCLB compliance, but more importantly using statewide data systems to improve teacher quality and individualize instruction for all learners.

Goal

To become a data source on the potential of statewide data systems to address:
Analyzing information about schools for comparison
Using leadership skills to improve schools with data
Informing the community of strengths and weaknesses of schools
Sharing this data with elected officials for the purpose of school improvement

Strategies & Audiences

Collect the names, titles, addresses, phone numbers and email addresses of each of the following audiences within your state. Reaching out to them consistently with pertinent news articles, facts, invitations to events, and agency press releases is critical to making your case the practitioners.

Contact Lists to Build

Business & Community

- Business Leaders
- Mayors
- City Council Members

Parents

- Parents
- Grandparents
- Parent Teacher Organizations

Education Special Interests

- After School Programs
- 21st Century Community Learning Center Grantees
- Community Advocate Groups
- Gifted & Talented
- Special Education
- Minority Groups



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Sample Community Action Letter

Dear Parents & Community Leaders:

I urge you to contact your state officials regarding the importance of implementing a statewide educational information system in <<INSERT STATE>>. Many states around the nation including Virginia, Washington, Wisconsin, Ohio, and Maine are collecting quality data that is being used by teachers, principals and school district administrators to improve teaching practices and monitor individual student progress for proper enrichment or interventions.

The Need

As you probably know, <<INSERT STATE>> does not currently have a centralized or systemic approach to educational data systems. To date, each district has developed separate systems and “data identifiers” that they have chosen to collect for each student. Often times the teacher is not included in the same system, thus teacher performance is not aligned to student performance. Our state’s reporting requirements help drive some of the data being collected, but the result of the status quo is:

- Decentralized systems
- Lack of standardization
- No statewide student identifier
- Questionable data quality

The federal No Child Left Behind (NCLB) reporting requirements illustrate the need for a statewide data system in <<INSERT STATE>>, but the legislation does not provide funding for this effort. Our state must invest in its educational infrastructure just as business has done successfully over the last 25 years.

The Benefit

Reporting requirements are one thing – But a centralized educational information system will increase <<INSERT STATE>>’s ability to positively effect teaching & learning with:

- Analysis and trends to help close achievement gaps
- Real-time feedback on teacher performance & quality
- Monitoring of individual student progress and the increased possibility for intervention and/or enrichment
- Complex school ratings for comparisons among neighborhoods and communities
- Redirection of teacher time toward instruction



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As a community leader, you have a responsibility to provide an opportunity for each student to receive a quality education within your community. With a systemic statewide approach to collecting data, your teachers and principals will have:

- Access to timely information about each student's progress
- The ability to provide simple reports to parents as a communication tool
- Achieve cost efficiencies by "tapping into" one statewide data system instead of building & maintaining their own systems
- The opportunity to provide educational trends to community leaders and members of the press quickly and efficiently
- Improved data quality that is transferable statewide
- Assurance that state and federal reporting requirements are being met
- The power to analyze progress toward educational goals for the school with timely, high-quality data from a single source in a meaningful format

I urge you take the following action:

- Collect the contact information for your state delegates AND your state senators at <<INSERT STATE LEGISTURE URL HERE>>,
- Tailor the attached sample letter to suit your school and community needs,
- Sign and send the letter,
- Encourage members within your community to do the same!

Upon your request, I would be happy to provide you with the contact information of those state level educators who can provide you with more information on this approach including potential costs and ideas on implementation. I can be reached via email at XXXXXXXX or by phone at XXXXXXXX and could meet during any of the following times:

<<INSERT TIMES AVAILABLE HERE>>

Sincerely,

YOUR NAME
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Next Steps

- SETDA will work with ETS to promote the use of this toolkit to stakeholders at the school, district, state and federal levels of leadership.
- SETDA will provide these tools to its members from all fifty states plus DC and the American Samoa.
- SETDA will garner more input from its Data Collection Committee to further develop possible legislative language for state and federal policy makers.
- SETDA will disseminate the NCEA survey to our SETDA members.
- SETDA will share the NCLB policy recommendations with key Congressional Leaders on Capitol Hill.
- SETDA will provide the NCLB policy recommendations to the US Department of Education and appropriate White House officials.
- SETDA will work with national organizations like SIF, CCSSO, NCES, and NCEA to support the goals of this material.

Toolkit Participants

Direction Setting Working Group – An in-depth in-person meeting during our Leadership Summit in 2005 where the following SETDA members and data experts discussed the most advantageous and effective tools to come from the coming months' work.

<i>SETDA Members</i>	<i>Field Experts</i>
Melanie Bradford, Arkansas	Jeff Angle, ETS
Cathy Poplin, Arizona ***	Peter Robertson, ETS
Julie Baltazar, California	Sally Bennett-Schmidt, ETS***
Kate Kemker, Florida	Stacy Allen, ETS***
Joyce Winzurk, Georgia	Larry Fruth, SIF
Melinda Stanley, Kansas	Tim Magner, CCSSO (Now with USDOE)
Jay Bansbach, Maryland	Sara Dexter, University of Virginia***
Susan Hargrave, Massachusetts	Aimee Guidera, NCEA***
Louis Burgess, Michigan	Nancy Smith, NCEA ***
Deborah Sutton, Missouri	



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<i>SETDA Members</i>	<i>Field Experts</i>
Larry Cocco, New Jersey***	
Mary Lou Daily, North Carolina	
Jeanette "Nette" Meade, South Dakota	
Kathleen Webb, Utah	
Jason Ellis, Virginia	
Joe Egan, Washington	
Stuart Ciske, Wisconsin***	
Clementina Jimenez, Wyoming	

*** Special Thanks!

SETDA would like to thank ETS for their support of this effort as well as the SETDA Members who drove and led the development of these tools during monthly conference calls.