

# Good Data, Bad Data, No Data

## A critical challenge facing Arizona's Public Schools

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*"If you cannot measure it, you cannot manage it."*  
– Popular business adage

*Why Johnny Can't Read*, the title of a 1950s book, became a common phrase — usually posed as a question—in debates over American public education. But if asked today about an individual student, Arizona education officials might well draw a blank. Indeed, the Arizona Department of Education (ADE) could not necessarily say for sure how well Johnny has progressed in his reading, which if any special reading programs he's taking, how well his teacher is performing or even who his teacher is.

If Johnny has recently moved among school districts or has a last name with a tricky spelling, ADE might have trouble finding him at all.

The key problem, Arizona education experts agree, is an antiquated, patched-together state education data system that is seldom able to provide the reliable, real-time information that parents and educators need to determine which programs are working for which students, and which are not. In fact, Arizona is entering its second decade of multi-million-dollar efforts to develop a statewide data system; virtually all other states are also engaged in a national campaign to improve accountability, efficiency and quality in the nation's public schools. By one common national measure, Arizona ranks among the lower half of states in this effort.

### **A Troubled Track Record**

"The gathering and reporting of education data in Arizona has historically been driven by disparate needs, conducted in an ad hoc manner, and performed by separate operating units using a variety of hardware and software. There had been no standard data definition or organization. For these reasons, it has not been possible to track the effect various factors have upon education, over time."

– **2007 ADE Grant Application**

It is not a high-profile political issue. Immigration, abortion, gun rights and other topics tend to grab headlines — and shape political careers. But experts say Arizona’s difficulties in developing a statewide educational data system are thwarting its efforts to improve its public school performance. These difficulties also reflect challenges that often confront complex public projects, including:

- The struggle to arouse enthusiastic political support to address “technical” infrastructure issues
- The challenges in supporting long-term projects that require sustained attention through several election cycles
- The reluctance of political leaders to approve large upfront capital investments whose payoffs could take years to surface
- Tension between the central authority (in this case, ADE), and Arizonans’ historic preference for local control
- Conflicts between those who want to have the system built and managed by a private contractor and those who want ADE to retain more control
- Philosophical disagreements among educators, lawmakers and others about the specific purposes that an enhanced data system should serve
- The seeming disconnect among many Arizonans between improving public education and furthering economic prosperity

No one seems to dispute the key role of quality data in bettering Arizona’s educational performance and economic competitiveness. Earlier this year, Superintendent of Public Instruction John Huppenthal said: “Without this [data system], schools will not be able to reduce their administrative costs, teachers will not have information they need, and we can’t even begin competing on a national or international level.”

In a recent interview, Huppenthal called ADE’s existing data-handling process “a cancer on the school system” that wastes millions of dollars in time and effort and still often fails to provide educators the information they need when they need it. “If you’re at a football game,” he said, “you want to know the score while the game still going on. Not months later.”

In its 2011 *Arizona Educational Reform Plan*, Governor Jan Brewer’s P-20 Coordinating Council cited a “high-quality data system” as one of the “four pillars” of educational reform. The council concluded that “the use of data to drive instruction must become a cultural given within our schools and inform all of our reform efforts.” An effective system, the Council added, “needs to be ready in time for, if not ahead of, the needs of the other priority areas.”

But there is also general agreement that Arizona’s data system is far from ready. The Data Quality Campaign (DQC), a national coalition of groups promoting development of state data systems, in November issued a report that ranks Arizona in the bottom half of states in its progress.

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– **State Sen. Richard Crandall, R-Mesa, former chairman of the Senate Education Committee**

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Huppenthal, himself a former legislator, said the state's system has been neglected for years, and consists of hundreds of disjointed programs that force schools to manually input the same data over and over again. "It is a mark of shame for me that I was chairman of Education and on the Appropriations Committee for so many years, and this situation was allowed to deteriorate to this extent," he said earlier this year. "It would be a mark of shame on all of us [lawmakers] if we are still in this situation eight years from now."

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#### ***A decade of starts and stops***

Arizona's efforts to develop a statewide education data system date back from the early 2000s and the administration of Superintendent of Public Instruction Lisa Graham Keegan. The federal No Child Left Behind Act of 2001 had required states to establish accountability systems to evaluate public school performance. Also in 2001, Arizona voters approved Proposition 301, which included a requirement for an Arizona public school accountability system. The data system developed by ADE was the Student Accountability Information System (SAIS), which still functions today.

But SAIS has never functioned very well, according to officials both inside and outside of ADE. For example, a 2006 state audit found many problems, including: "Approximately 29 percent of SAIS users who auditors surveyed reported that they were not confident that the data in SAIS was accurate when it was needed for final reporting or funding purposes, and in 2005 the Arizona School Administrators adopted a formal position that data within SAIS is unreliable."

The Data Quality Campaign's "10 State Actions" provide a roadmap to a culture that collects and uses quality data. The four actions in **bold** are those Arizona has achieved:

1. Link data systems across the P-20 /workforce spectrum
2. **Ensure state budgetary investment for the maintenance and growth of statewide P-20/W longitudinal data systems**
3. **Establish a strong data governance structure**
4. **Create data warehouses or repositories that allow data that have been traditionally stored in different silos to be linked and /or integrated**
5. Ensure all stakeholders have appropriate access to longitudinal data
6. Create progress reports using student-level longitudinal data
7. Create reports on school, district and state performance using aggregate-level longitudinal data
8. **Encourage the development of strategic partnerships with universities, researchers, and intermediary groups to help establish a robust research agenda**
9. Train educators on how to access, analyze, and interpret data, and require educators seeking certification and upgrades to show competence in data analysis, interpretation and use
10. Promote training on data use for parents, students, policy makers and community members

The 2011 Data Governance Committee report noted that “the SAIS system was down for repairs 26 weeks in 2010, costing the department and Arizona schools substantial losses in time and money.” And in its 2012 application for federal funds, ADE acknowledged that, while the department possesses much useful data, it can’t yet make it available to those who need it: “... the current systems cannot effectively support increasing demands for timely, transparent, accessible, and actionable data across the K-12 continuum. Despite the depth of student data collected, Arizona is only able to provide a limited amount of actionable data back to stakeholders.”

This means, for example, that teachers often don’t know enough about new students’ needs and backgrounds to direct their efforts where the students most need it. Parents often can’t obtain the data they need to monitor their child’s progress — and to stay involved in the education process. Principals, superintendents and school boards can’t keep track of student performance so as to evaluate teachers and teacher-education programs. The system, experts say, remains less a “system” than an assemblage of disconnected parts. And some core needs remain works-in-progress. For example, one ADE official noted that the department has a list of all the state’s students and a list of all the teachers. In many cases, however, “this department has no idea which teachers are teaching which students.”

The early development of SAIS occurred during an era of other significant changes in Arizona’s education system. One was open enrollment, which permits students to cross district lines to attend schools they prefer. Another was the authorization of charter schools, which quickly proliferated. These developments transformed the state K-12 system from 200-plus districts whose students remained within defined boundaries to one in which students crossed district boundaries and left districts to attend 500-plus charters. “It blew the lid off the way ADE was doing business,” one official said.

The 2000s brought a heightened national concern with school accountability — and thus with the systems and technology necessary to measure it. The national Data Quality Campaign launched in 2005, promoting “10 essential elements” and “10 state actions” that would spur improvement in data systems. In 2010, federal stimulus money and the national “Race to the Top” competition required participating states to pledge to implement the 10 essential elements.

These demands, experts agree, have been too much for SAIS, which was established primarily to track the state funding linked to individual students. As students move among schools or districts, the funding that supports them goes along too; this includes not only the basic amount allotted per student, but also funding for special programs the student may be involved in, such as special education, free/reduced lunch eligibility, English Language Learning and others. And despite SAIS’ difficulties in performing those duties, education officials say, it has been repeatedly asked to take on more functions that range well beyond its capabilities. Compounding the problem is that SAIS has been modified so many times over the years that a dwindling number of ADE staffers remain who are skilled in operating it.

As a result, experts say, there is too much that Arizona educators simply don’t know:

- How much of Johnny’s reading progress is due to a particular teacher or aide or program?
- Do students eligible for free/reduced lunches all do poorly on social studies tests?
- How can we set up an “early warning system” to identify students at risk of dropping out?
- Do teachers with certain credentials tend to perform better than others?
- How can I work better with my child’s teachers to help her with homework?
- How can we best help Johnny make the transition from arithmetic to algebra?

These are the types of questions, educators say, that must be asked and answered — answered quickly and reliably — if Arizona is to make real progress in improving teacher and student performance. Much

of the needed data do exist, they say. But the data are scattered among districts and various computer “repositories” that make finding, extracting, matching and “crunching” the data time-consuming and expensive, when not simply impossible. In fact, the years of delays in achieving a functioning statewide system have prompted school districts in Mesa, Scottsdale and elsewhere to buy or build their own systems — which don’t necessarily “talk” to each other.

### ***The search for SLDS***

The goal — for Arizona as well as for other states — is the development of a Statewide Longitudinal Data System (SLDS), a unified, searchable, continually updated database that would enable officials, teachers and parents to track the performance of students, teachers and programs throughout a child’s school career and even into the workforce. Some states are well along in this complex and expensive undertaking — Florida and Georgia are often cited as models, and the Data Quality Campaign’s November report listed 10 states that had achieved eight or nine of the recommended “10 state actions;” Arizona has achieved four (*see box*), placing it among 17 states that have achieved four or fewer actions. An indication of the difficulty of this undertaking is that only five states have so far ensured that their data can be accessed, analyzed, and used by stakeholders, according to the DQC’s November report, *Data for Action 2012*.

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But the report also cites some promising developments. Delaware’s state education agency works with its Department of Labor to analyze data to learn about students’ transitions across the education pipeline and to inform the types of skills training offered by the state. Indiana’s education agency has developed a web-based portal that, among other things, provides learning management tools for teachers, a means for teachers to securely access achievement data for their students and a common platform for collaborating with other teachers across the state.

Ohio’s teacher-student data link helps the state generate teacher performance data to share with teacher preparation programs, while including a process through which teachers and teacher preparation programs could participate in ensuring the accuracy of their data.

ADE officials stress that while major challenges remain, the department has made significant strides in the right direction. The department, they say, is transforming its technology division into a “centralized IT service organization,” and has developed a “data warehouse” with a federal grant received in 2007. With another \$5 million federal grant in hand this year, officials say, ADE will continue to “stabilize” SAIS so it is a useable tool for school districts, while also building a new and larger “umbrella” system called the Arizona Education Learning Accountability System (AELAS).

The department is also launching a pilot project in the Vail school district near Tucson that will bring historical assessment data on students to one teacher in the district. This “minimal phased approach” will help to ADE learn more about data-sharing and inform state officials if this is the kind of data districts and teachers want.

Huppenthal is seeking more than \$20 million in this year’s budget for work on the data system, with an additional \$11 million sought for next year. Officials in Governor Brewer’s administration — which had agreed to spend about \$6 million annually over four years on data system improvements — say no decision has been made yet on the ADE request.

“We’re trying in as careful a manner as possible to make the Legislature understand that fixing this data system is imperative,” Huppenthal said, “that we can’t continue to be wasting thousands of hours feeding the system over and over again, and that we can’t just wish this problem away magically.” He added that ADE “must also develop a sense of trust [on the part of lawmakers and districts] that we will be able to deliver the goods. And we’ve been doing that so far.” He and other ADE officials said that the department is making a point of reaching out to educators and districts to ensure that the evolving AELAS system truly meets their needs.

Meanwhile, two national developments further underscore the need for reliable student and teacher performance data. Arizona joined with 46 other states to create new “Common Core” standards in English language arts and mathematics for K-12 students. These standards are supposed to provide a consistent framework to prepare students for success in college and/or the 21st century workplace. Secondly, Arizona is also a member of the national Partnership for Assessment of Readiness for College and Careers (PARCC), which is devising new assessment tests for grades three through high school aimed at creating a clearer pathway to college and career readiness. These PARCC assessments are scheduled to replace Arizona’s AIMS test in the 2014-2015 school year.

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– **Andrew Morrill, president of the Arizona Education Association**

Still, not everyone views the state’s data-system campaign without reservations. Andrew Morrill, president of the Arizona Education Association, said he welcomes the PARCC assessments and agrees that an enhanced statewide data system is a critical need. Still, Morrill said, he is wary of some lawmakers’ intentions, fearing that some are actually seeking “another way to heap pressure on our educators, who are already collapsing under the weight of well-intentioned assessments.”

As important as data, he said, is the philosophy directing their use. “I’m afraid in Arizona that we’ve put an awful lot of stock in a data system without deciding upon what we want the data for,” Morrill said. “You don’t automatically have the right vision just because you have the data.”

Many Arizona education officials and lawmakers seem to question whether the state has either.

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