

## Using Data to Improve Schools: The Education Data Manager's Role

by  
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Accountability is a major theme of the federal initiative to "Leave No Child Behind," (NCLB) a call to engage the country in ensuring that all children receive the kind of quality education that will prepare them for life and work in the 21st century. To support this goal, there is a clear need to identify promising policies, programs, and best practices in education, to systematically capture reliable information on educational accountability and student performance, and to translate this research into models and resources that can help improve schools.

To comply with new federal laws, each state is encouraged to create longitudinal student data systems that link student test score, enrollment, and graduation records over time. Collecting the right kind of data will help states meet the federal requirements and ultimately improve academic performance for all students in the state.

The National Center for Educational Accountability (NCEA) has developed the Just for the Kids' school improvement model to help improve public education across the nation. This model is designed to collect the school testing data that is required by NCLB. The model also incorporates research on educational best practice and provides training to help educators replicate these proven strategies and practices. When states implement this model, they automatically collect the data required under NCLB.

### **Is the education data in your state and community organized to help schools improve?**

As a manager of education data, you are asked to provide lots of information to educators, parents, and the public in your state or community. Do they ever have trouble making sense of all the information?

As a supplier of information, you're interested in how the information can be used to improve schools:

- to help educators, parents, and community leaders find out what works and what doesn't.
- to evaluate the success of educational initiatives.
- to identify highly successful schools.
- to show what those schools are doing to achieve excellence.
- to provide that information to educators in less successful schools.

### **What information do educators and the public need?**

They need to be able to tell which schools and programs are successful and which ones are not, and where the educators in the less successful schools can go for help.

Until now, most student achievement information has consisted of "snapshot pictures" of the achievement of students at a moment in time. The pictures don't show where those same students came from, how long they've been around, and how well they were doing last year or three years ago.

In short, the information doesn't really tell educators and the public what they need to know:

- They need to know how well schools are doing with students who have been enrolled for a significant length of time. You wouldn't expect a student who has been in a school for three weeks to reflect the influence of that school. However, you would expect to see results in students who have been in the same school for three years.
- They need to be able to look at student academic progress over time.

- They need to be able to see whether a school is accomplishing results with students who walked in poorly prepared. They need to know how the same school does with students who came in well prepared.

To provide this information, it's necessary to follow students over time. Students who have been in the school for a period of time must be distinguished from those who haven't. One must be able to look backward to the academic success of students when they first enter the school, and forward to the success of the same students when they leave.

If we can follow students over time, we can determine the level of high school success that prepares students well for college; and the success level of students in third, fifth, and eighth grade that prepares them well for high school.

If we can follow students over time, we can find out which intervention programs have the best effects.

If we can follow students over time, we can find out which schools are best preparing students for later success.

Seeing the value of this information, some school districts have developed *longitudinal student data systems* that match individual student enrollment, program participation, test score, course completion, and graduation records over multiple years.

The most sensible, cost-effective approach is to develop such a data system statewide. Why?

- The fixed cost of developing the data system is spread out over many more students, leading to a much lower cost per student.
- The data system makes possible a statewide search for effective programs and strategies.

Until recently, this has not been possible in most states. That is now changing. More and more states are developing the ability to match individual student records over time

and across different databases. In those states, statewide data can be used to analyze what programs and strategies really work with students over time.

### **What questions can only be answered with longitudinal student data?**

1. How well do students do who have been enrolled in this school or program for more than one year?
2. How does the success of students enrolled in this school for three years or longer compare with that of students enrolled for three years in the highest-performing comparable schools?
3. How much academic progress do students make in the fourth grade?
4. How do the graduates of this elementary school do in middle school?
5. How well do the graduates of this high school do in college? How many of them go to college?
6. How well do students perform at the end of their enrollment in this school compared with how they were performing when they arrived?
7. How does this middle school perform with students who entered the school well prepared in mathematics? How does the same school perform with students who were poorly prepared?
8. How many students who were "average" when they entered the high school end up taking Advanced Placement courses?

### **How is longitudinal student data valuable to educators?**

Educators need to know what strategies and programs really work. Longitudinal data is the best way of providing that information.

Longitudinal data makes it possible to identify successful schools that serve similar or more challenging student populations.

Longitudinal data helps educators learn from each other.

Longitudinal data make it possible to honor the most successful educators.

### **Which states currently have the ability to match student records?**

Arkansas, Connecticut, Delaware, Florida, Georgia, Hawaii, Louisiana, Massachusetts, Minnesota, Mississippi, Oregon, South Dakota, Tennessee, Texas, and Vermont currently have a statewide student ID that can be used to match records over time.

### **How does the ability to match student records related to the new federal legislation, the No Child Left Behind (NCLB) Act of 2001?**

The No Child Left Behind Act of 2001 endorses, but does not require the use of longitudinal student data by states and school districts. The endorsement comes in Title I, Part A, Section 1111(b), subsection 3(B) on state plans, which states that

“Each state may incorporate the data from the assessments under this paragraph into a State-developed longitudinal data system that links student test scores, length of enrollment, and graduation records over time.”

Under the legislation, states are expected to test students every year in reading and mathematics in grades 3-8. A state that can match records of the same students from one test administration to the next is in a position to look at year-to-year student academic growth. The state can see how students’ performance when they enter a middle school compares with the performance of those same students when they leave. States that cannot match records do not have this advantage.

### **What can you do if you’re in a state that matches student records?**

The ability to match records and create longitudinal databases is just a first step. The next step is organizing the data to make it useful for school improvement and the identification of best practices.

Two kinds of data pictures can be developed in your state:

1. A public information system that compares each school with the highest-performing comparable schools in the state. The gap in performance relative to top schools shows each school’s demonstrated room for improvement. For example, the public report might show the school’s performance in 5<sup>th</sup> grade mathematics relative to the highest-performing comparable schools. The Just for the Kids’ website at [www.just4kids.org](http://www.just4kids.org) shows examples of these reports.

Separating out those students who have been in the school for at least two years and taking the number of untested students into account makes the system more accurate in selecting high-performing schools for the investigation of educational best practices.

2. An internal information system for educators that disaggregates the data down to the classroom and skill level. For example, the principal of the school might observe that students in Mrs. Jones’s classroom have had more success with objectives 3, 5, and 8 in the 5<sup>th</sup> grade mathematics curriculum than have students of Mr. Smith. Mr. Smith’s students, on the other hand, did better on objectives 1, 2, and 11. The principal can team up Jones and Smith to help share each other’s strengths.

By matching student records over time, the internal system can take into account the mathematics preparation of the students when they first entered Mrs. Jones and Mr. Smith’s 5<sup>th</sup> grade classrooms.

If you’re already involved in the development of these kinds of data systems, you can work with others in your state who are similarly involved. Visit the Just for the Kids’ website to find out about your colleagues who are working to develop statewide longitudinal data systems.

### **What can you do if you’re in a state that does not currently match student records?**

Your state will need to develop a statewide student ID system that can be used to match individual student records across

databases. The state education department will also need to collect information at the student level on state test scores, fall campus of enrollment (to determine continuous enrollment), free and reduced price lunch status, limited English proficiency status, and special education status. Individual student demographic and program participation should be collected in the fall, when the state flows money based on enrollment, and corrections made in the spring for students who change programs.

You can help by lending your own expertise to this effort, and by encouraging your professional colleagues to do likewise.

To assess where your state stands currently, you will need to:

- Find out how the state education agency collects information from schools. Are only aggregate statistics collected, or are individual student records collected? Can your state match these individual student records across databases using a student ID?
- Learn how other states assign student IDs. One website with this information is [www.EducationAdvisor.com](http://www.EducationAdvisor.com).
- Identify the state and federal laws and regulations that control the collection and use of individual student data and protect the privacy of student records.

Based on this information, your state will need to create a plan that phases in a statewide student ID system, identifies how the system will resolve questions about whether two records represent the same student, and addresses the protection of

student privacy under applicable state and federal laws. Depending on the laws of your state, this could be done through legislation, through a decision by a state board of education, or through administrative action by the state department of education.

### **How can educators address issues of student privacy and the protection of confidential student information?**

If your state currently collects student-level test score data, then it is already subject to all of the privacy rules that come with keeping student-level records confidential. Creating a statewide student ID and matching records across databases and years does not add any more rules or requirements.

Under the Federal Education Rights and Privacy Act (FERPA), educators and researchers may have access to student-level information in order to assist students and conduct research on how to improve schools. However, they cannot share the student-level data with unauthorized persons or produce reports on student groups where the "group" is only one or two students.

### **What is the likely cost of collecting additional student information in your state?**

Additional costs will depend on what you already have in place. Contact one of the states of similar size to yours that is collecting the data that you want to collect for an analysis of the likely cost of creating such a longitudinal student data system in your state.

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