DATA QUALITY CAMPAIGN
Using Data To Improve Student Achievement
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in partnership with
National Association of Secondary School PRINCIPALS

Tapping into the Power of Longitudinal Data

A GUIDE FOR SCHOOL LEADERS

January 2008

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10 Essential Elements of a Comprehensive Longitudinal Data System

Although each state's P–12 education system is unique, 10 essential elements are critical to a longitudinal data system:

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

Acknowledgments

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The report was authored by Elizabeth Laird of the DQC. Other DQC staff members whose help was critical to bringing this report to publication were Aimee Guidera, Nancy Smith and Chrys Dougherty.

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Introduction

The momentum behind building high-quality data systems to harvest better information about student, school and district performance has never been stronger. To meet the goal of improving student achievement, policymakers and educators need longitudinal data systems capable of providing timely, valid and relevant data. Although *collecting* better data is essential, knowing how to *analyze and apply this information* is just as important. With this knowledge and access to longitudinal data:

- **Teachers** can tailor instruction to help each student improve;
- **Administrators** can manage more effectively and efficiently; and
- **Policymakers** can evaluate which policy initiatives show the best evidence of increasing student achievement.

Although the immediate focus of the Data Quality Campaign (DQC) is to assist states in the development of quality longitudinal data systems, the campaign's ultimate goal is to improve student achievement by promoting effective data use. In this guide for school leaders, we look at ways teachers and principals can use longitudinal data to meet students' individual needs and improve performance, including:

- The power of using **longitudinal data** (data on individual students collected over time) in conjunction with **snapshot data** (aggregate information collected at a moment in time).
- How **snapshot data** answer questions such as:
  - Are my students meeting the state's proficiency standard? Which ones are not?
  - What proportion of students are not tested, and why?
  - How do I find promising programs?
- How **longitudinal data** answer questions such as:
  - How are my students doing academically after they leave my classroom or school? Are they improving over time?
  - What is the average academic growth of my students over time? By subgroup?
  - Based on P–8 preparation, how can high schools better target supports and interventions to improve educational outcomes?

This is part of a series of guides that demonstrate the power of longitudinal data for specific audiences. To ensure relevance to teachers and principals, the DQC worked with the National Association of Secondary School Principals (NASSP) to identify the most pressing questions facing school leaders today. This guide for school leaders answers these questions with graphs and explanations based on simulated grades created from actual snapshot and longitudinal data from Texas, as well as an example from a "breakthrough" high school in New York. The DQC found a limited number of states that could answer questions based on longitudinal data — a situation that underscores the need to continue investing in the development and use of these data systems, including providing professional development for educators on how to use longitudinal data.

State longitudinal data systems can present different levels of information for different audiences, so this paper explores how teachers and principals throughout the P–12 continuum use data to improve student outcomes. Although the type and breadth of data needed vary by stakeholder and school level, each question and corresponding explanation in this paper are relevant to all school leaders at all levels because postsecondary success cannot be achieved in any one grade or school level. Leaders across the P–20 pipeline must work together to achieve college readiness for all.

The Power of Longitudinal Data

How can longitudinal data enhance the information I currently receive?

At present, most states rely on **snapshot data** to document changes in academic achievement among students and schools.[1] Snapshot data — information based on aggregated data at a moment in time — often are used to present results of student performance on annual assessments and allow teachers and principals to identify groups of students who are struggling or excelling at meeting a given standard at a particular point in time. Usually, educators and policymakers look at aggregate snapshot statistics, such as percentage of students who reach the proficiency level on the statewide assessment or percentage of English language learners who take the statewide exam. However, snapshot statistics do not provide information on the progress of individual students.

Longitudinal data — which follow the performance of individual students over time — enhance snapshot data and provide an opportunity for greater mining of information. Longitudinal data systems make it possible to compile an academic history for each student, often including but not limited to such indicators as the courses a student has taken, grades, assessment results and enrollment information. Rather than relying on student achievement results at a single moment in time, longitudinal data follow students and trends over time, which enables more robust analyses. Ideally, teachers and principals could employ multiple types of information — including snapshot data and formative

Six Key Uses of Longitudinal Data

Using formative assessments with other longitudinal data leads to richer and more robust analyses to improve performance at the student, school and district levels. In addition to helping educators identify opportunities for improvement, longitudinal data can equip them with information about how to improve student achievement. Specifically, the data allow teachers and principals to answer the following types of questions to differentiate instruction and improve student achievement:[2]

1. Progress Monitoring

- Which students who started the year academically behind are progressing rapidly enough that they are likely to catch up to grade level in the next two years?
- Are middle school students progressing at a rate that puts them on track to succeed in challenging high school courses?

2. Diagnosis and Prescription

- Which students' difficulties in mathematics appear to be based on concepts not learned in previous years?
- When and where did this student first encounter difficulty reading grade-level material?

3. Internal Benchmarking

- Which teachers have been most successful with students who have had trouble with mathematics in prior years?
- Which schools have experienced the greatest success in improving students' reading skills between 2nd and 4th grade?

4. External Benchmarking

- Which schools across the state have been most effective in teaching Algebra I to students who were at the basic level or below in 7th grade mathematics?
- Which high schools have been most successful in improving the success of students who entered the school with poor reading skills?

5. Predictive Analysis

- What early indicators help identify the students at greatest risk of not graduating from high school?
- What proficiency levels in 8th and 11th grades ensure that a student most likely will not need remediation when he or she enters college?

6. Evaluation

- How does student academic growth in classrooms randomly selected to try a new reading program compare with growth in classrooms still using the old reading program?
- Do the students of teachers and schools found to be better implementers of the district's new writing strategies show greater improvement on the district's writing rubrics?

[1]MPR Associates/National Center for Educational Accountability, *Judging Student Achievement: Why Getting the Right Data Matters*, September 2005. www.DataQualityCampaign.org/files/Tools-Judging_Student_Achievement.pdf.

[2]National Center for Educational Accountability, *Six Key Uses of Longitudinal Data*, accessed May 21, 2007. www.DataQualityCampaign.org/files/Publications-Six_Key_Uses_of_Longitudinal_Data_021307.pdf.

Longitudinal data — which follow the performance of individual students over time — enhance snapshot data and provide an opportunity for greater mining of information.

assessment scores — in addition to longitudinal data to differentiate instruction and monitor overall school progress.

However, due to a lack of data infrastructure at the local or state level, teachers and principals have sometimes been forced to create time-consuming mechanisms to house and use student data, such as manually entering student information into a spreadsheet, tracking student progress by hand, or repeatedly updating their own graphs and analyses. Although some districts have created their own data warehouses to track students within the district, many districts lack the resources or capacity to do so. Statewide longitudinal data warehouses can ensure greater efficiencies, as well as facilitate the sharing of data across districts when a student transfers.

How can I use longitudinal and snapshot data now?

Many educators harbor negative perceptions of data because, in the past, the data have been incomprehensible, unhelpful or used solely for compliance purposes. However, using data to inform instructional and management decisions has long been a characteristic of high-performing, high-achieving schools.

In these schools, school leaders employ data differently to meet their collective goal of improving student outcomes. **Teachers** use the information formatively to adjust instruction in real time with a focus on individual student learning. While **principals** take this approach as well, they also analyze data on the entire school to monitor progress and develop a schoolwide vision and action plan with strategies that all teachers can adopt to address areas in need of improvement. Although the type and granularity of data used to make educational decisions differ between teachers and principals, they both use the data to target interventions and meet the vision for the school.

Similarly, high schools and middle schools use data differently from elementary schools because they are structured differently. For the most part, middle and high school teachers teach more classes and, consequently, have more students for a shorter period of time than elementary school teachers. Based on the grade level they teach, teachers may need to analyze anywhere from 25 to 150 academic histories, and for principals, the chasm is even greater. Although the strategies employed to analyze and use data may vary by school level, all school leaders can benefit from the information in this paper. College readiness for all simply cannot be achieved in high school alone; rather, it must be addressed throughout the P–12 continuum by all teachers and principals.

Application of Snapshot and Longitudinal Data

Policy Questions Answered by Snapshot Data

Are my students meeting the state's proficiency standard? Which ones are not?

Since the reauthorization of the No Child Left Behind (NCLB) law, which requires all students to reach proficiency by 2014, the expectation that teachers and principals will ensure that all students pass statewide annual assessments is higher than ever. Teachers and principals alike are being held accountable for student performance, so they must know both the percentage of students achieving proficiency and which students are not performing at that level.

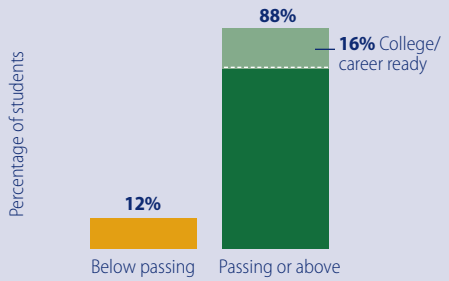
The information displayed in Figure 1 is an example of snapshot data that educators and policymakers are used to seeing. It shows the performance of a cohort of students at a moment in time. Overall, teachers in this grade achieved commendable results as 88 percent of the tested students passed and met the minimum requirements for performing at grade level; however, just 16 percent are projected to graduate high school ready for college and highly skilled careers. These results indicate that either the teachers or the curriculum may have focused on meeting the passing standard on the test rather than the college and career readiness standard. However, because the academic histories of the students are not known, individual teachers and their principal can infer very little from Figure 1 without internally benchmarking their results with the performance of other teachers' students. Therefore, this grade profile is best used in teams consisting of grade-level teachers with the support of the principal.

Grade-level teachers can collectively disaggregate this information to determine if some teachers achieved different distributions of assessment scores. If the performance of some teachers' students varied significantly, teachers should collaborate with each other to explore best practices. For example, if a 3rd grade teacher's students achieved 65 percent passing with 30 percent college and career ready, this teacher should work with others in that grade to identify instructional tools and techniques to increase the percentage passing and college and career ready.

Principals can make use of this information to decide where to direct professional development resources and facilitate collaboration if teachers with students of similar demographics are producing better or worse results. Moreover, if the distribution of assessment scores is consistent across teachers, these data provide fodder for a principal to further investigate overall school programs and policies. For example, does professional development or curriculum aim for the passing standard in lieu of college readiness? If so, the principal should adjust resources accordingly to improve the performance of other students in that grade.

Snapshot data provide important information that principals can use to monitor overall school

Figure 1. Snapshot Data on Grade 3 Mathematics Assessment Results (n=50)



Source: Simulated grade(s) based on actual 3rd grade snapshot data.

Snapshot data *show the performance of a cohort of students at a moment in time.*

performance and teachers can use to inform instruction. But both **teachers** and **principals** can benefit from even more information if they have access to the longitudinal histories of students and the ability to benchmark against other schools with similar demographics. This access could be given through a state data warehouse that provides information in a format tailored to teachers and principals. If a state and/or district does not have its own data warehouse with timely and informative reporting tools, teachers and principals who want to use data in their daily planning activities may be forced to invest excessive amounts of time inputting and analyzing data. Statewide longitudinal data systems offer school leaders greater efficiencies and improved information that can facilitate identifying best practices through comparisons within and across schools.

What proportion of students are not tested, and why?

NCLB requires that 95 percent of all students participate in the state's annual assessment to satisfy one of the requirements for adequate yearly progress (AYP). In addition to increased pressure to meet AYP, school leaders also must be concerned with knowing which students are not assessed and why.

Figure 2. Grade 8 Mathematics Participation (n=143)

Testing status	Frequency	Percentage of class
Limited English proficiency exemption	11	8%
Other (illness, cheating, etc.)	22	15%
Not tested on regular state assessment, tested on the alternate test	2	1%
Tested with valid score	108	76%

Source: Simulated grade(s) based on actual 8th grade snapshot data.

Decisions are only as good as the data on which they are based, so the data in Figure 2 must be as accurate and complete as possible. Although 108 students took the 8th grade statewide assessment in mathematics, this school actually has 143 students in 8th grade. However, there are legitimate reasons why students may be excluded from assessments, so understanding why students were not tested is imperative to determine the subsequent follow-up required of teachers and principals.

For both **teachers** and **principals,** it is important to be sure that any group of students is not systematically excluded and that the achievement of untested students is monitored and considered in other ways for **teachers** to be able to follow the progress of individual students and for **principals** to have data on all students when monitoring overall grade and school performance. The two students who participated in an alternate test in Figure 2 were assessed, and their progress was tracked. However, although the students who were exempted for limited English proficiency may have been justifiably excluded per NCLB, the teacher and principal need to ensure those students' progress is being monitored in another manner. Similarly, school leaders need to ensure the progress of the 22 students not tested for "other" reasons are monitored by another means. Finally, a principal can evaluate these data as well as aggregate data across all grades to determine if there is any exclusion bias in 8th grade or schoolwide and, if so, why.

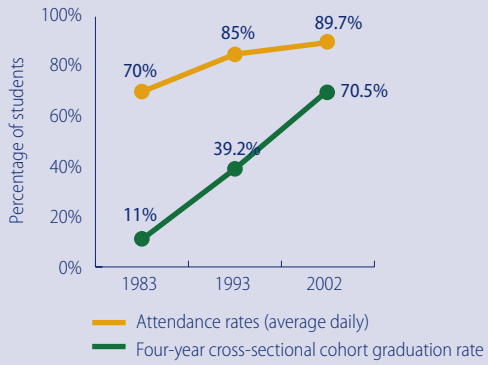
How do I find promising programs?

Just as expectations for improving student achievement have never been greater, the demand for tools and resources that teachers and principals can use to increase student progress also has grown. When the central office and the state are evaluating which programs to fund, data on student progress can validate the need for specific initiatives. Although longitudinal data are essential to definitively determine the effects of a program, in their absence, snapshot data, including trend analyses, can offer strong indications of improved student achievement.

*Although **longitudinal data** are essential to determine the effects of a program, **snapshot data** can offer indications of improved student achievement.*

DeWitt Clinton High School in the Bronx in New York City serves as a helpful case study to examine this concept a bit further.[3] In 1983, DeWitt Clinton was an all-boys school on the brink of closing. Enrollment was low, the attendance rate was just 70 percent and only 11 percent of the students graduated in four years. Then the school became coeducational and began the task of improving student achievement. A restructuring team researched reform models and chose a "house" model with a dual emphasis on instructional rigor and strong guidance support. It broke the school into nine smaller learning communities, or houses, to personalize learning for students within this large school. Each of DeWitt Clinton's nine houses is led by an assistant principal working closely with the faculty, as well as a team of guidance counselors and social workers, including a family assistant who makes home visits. In 2002, this high school had an enrollment of 4,500 students and boasted an 89.7 percent attendance rate and a 70.5 percent graduation rate. Additionally, each of the last two years, 10,000 families applied for the 1,000 seats available for 9th graders at DeWitt Clinton High School, which is open for application to any Bronx student who wants to attend.

Figure 3. Attendance and Graduation Rates for Three Separate Cohorts of Students at DeWitt Clinton High School (1983–2002)



Source: National Association of Secondary School Principals, Breakthrough High Schools: You Can Do It Too!, *Volume 1, 2004.*

High schools are not static entities; rather, students move in and out of schools over time. Without a student-level longitudinal data system, students cannot be followed in and out of the school system across years, and it often is hard to track where they have gone. The data in Figure 3 are based on snapshot aggregates, so this **principal** is limited to comparing the scores of different cohorts of children. Similarly, **teachers** do not have information on the progress of individual students over time, and as they are the leaders dealing directly with students, knowing which students to target with interventions, especially dropout prevention, is crucial to ensuring graduation and attendance rates continue to increase. Until meaningful, comparative longitudinal data are available, each school must be examined within the context of its district and state. DeWitt's cohort graduation rate in 2002 was 70.5 percent, compared to 62.3 percent for similar schools and 54.8 percent for all city schools, which further suggests that DeWitt has implemented a promising program that merits further study.

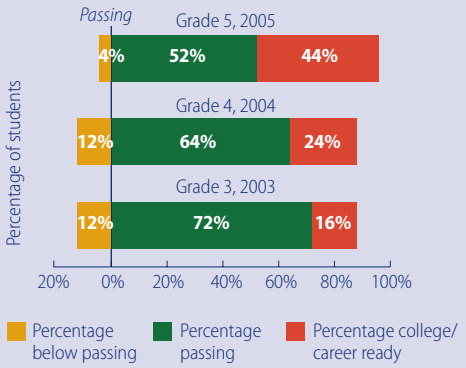
Policy Questions Answered with Student-Level Longitudinal Data

How are my students doing academically after they leave my classroom or school? Are they improving over time?

A student's educational experience is not a series of discrete school years with success redefined each year. Rather, students should continue progressing over time until they graduate ready for college and work, and if students are not on track to succeed after high school graduation, adjustments and interventions should be made to address any

[3]National Association of Secondary School Principals, *Breakthrough High Schools: You Can Do It Too!*, Volume 1, 2004.

Figure 4. Longitudinal Data on Student Performance on Mathematics Assessment (n=50)



Source: Simulated grade(s) based on actual 3rd through 5th grade longitudinal data.

learning deficiencies. However, student performance over time cannot be analyzed without longitudinal data, and if teachers and principals do not have the information to identify individual student needs, instructional services cannot be efficiently and effectively rendered to ensure all students are college and work ready.

The power of longitudinal data is made clear in Figure 4. With these data, **teachers** and **principals** can follow the academic growth of these students and evaluate their performance over time. In this example, 3rd grade teachers concluded the school year with the majority (88 percent) of their students passing mathematics; unfortunately, just 16 percent were on track to college and career readiness — the goal of a public education system. However, when the 3rd grade teachers evaluate the later success of the same 50 students, they can see that more students graduate 4th grade on the path to postsecondary success (24 percent college and career ready).

Finally, in 5th grade, the number of students on target for college and highly skilled careers nearly doubles to 44 percent, while the percentage of students below passing also decreases to 4 percent.

Overall, the performance of this group of students is improving over time. Although the students were taught by different teachers and possibly even at different schools, they continued to make academic gains, which indicates the 3rd grade teachers prepared their students to succeed; the subsequent teachers compensated for the students' previous deficiencies; or the building or central office staff achieved systemic success because the students achieved across teachers, schools and grades. The 4th and 5th grade teachers were afforded information about their incoming students courtesy of longitudinal student-level data, so they could use this information before the school year even began to assess individual student learning needs and tailor instruction. When teachers and principals use these longitudinal data, they can contribute to the student progress seen in Figure 4.

To evaluate the value-added of the teachers, school and district, **principals** should internally and externally benchmark themselves against other schools and districts with similar demographics to investigate the role of the school and the district in preparing students for postsecondary success. Often, teachers and principals have access to student-level longitudinal data that are personally identifiable. Although these analyses are not included in this resource, the student-level data can provide fodder for additional analyses, such as examining if the 16 percent of college- and career-ready students in 3rd grade stayed college ready through 5th grade and, similarly, if the 4 percent of students scoring below passing in 5th grade also were among the 12 percent who scored below passing in 3rd grade.

By tracking student performance over time, **principals** can evaluate the overall performance of the building or system; however, all **teachers** and **principals** still need to address any shortcomings in the instruction that could potentially inhibit the remaining 56 percent of students in 5th grade from reaching college and career readiness. Therefore, the data need to be disaggregated over time to see if certain subgroups of students are struggling more than others.

What is the average academic growth of my students over time? By subgroup?

Shortly after NCLB was enacted, concerns were expressed that determining AYP by comparing snapshot data for one cohort to a different cohort of students may not be the most accurate means of judging the performance of a school or district.

*Analyzing the **growth of students' academic proficiency** over time reveals the successes and areas for improvement of subgroups of students as well as individual learners.*

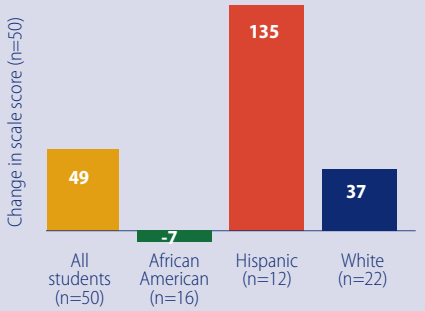
With access to longitudinal data, **teachers** and **principals** can follow the academic progress of individual students across grades and even school systems. Recognizing the value of analyzing academic growth over time, in November 2005, U.S. Secretary of Education Margaret Spellings announced a pilot program for qualified states to use growth-based accountability models in lieu of AYP calculations. Since then, eight states' models have been fully approved.[4] Measuring academic growth over time also equips **teachers** and **principals** with richer information about how their students are progressing toward college and work readiness. Student-level longitudinal assessments are the only means by which academic growth of individual students can be calculated, and just 34 states[5] have the data systems needed to calculate academic growth over time.[6]

As illustrated in Figure 4, student performance is increasing from grade 3 to grade 4. Figure 5, which shows the average growth of students from grade 3 to grade 4, supports this conclusion because the average scale score of all students on the statewide assessment increased by almost 50 points. However, as NCLB makes clear, while analyzing overall performance is very important, evaluating the progress, or lack thereof, among subgroups also is critical. **Teachers** and **principals** need to understand which groups are struggling so that resources and instruction can be directed accordingly. For example, although the overall performance of this group of students improved, the gains were not consistent across ethnicities. Specifically, the academic growth of African American students actually decreased from grade 3 to grade 4. Conversely, Hispanic students experienced the highest academic growth (135 points).

Analyzing the growth of students' academic proficiency over time reveals the successes and areas for improvement of subgroups of students as well as individual learners. When formulating strategies to help certain populations, disaggregating student growth by teacher, with proper use of these sensitive data ensured by the principal, also would be tremendously helpful because it would allow for the identification and dissemination of instructional best practices. For example, another 3rd grade teacher in the same school may have a similar demographic distribution but produce exceptional growth of African American students and negative growth of Hispanic students. With this information, **teachers** can collaborate and share their instructional strategies to assist struggling students.

Principals can use these data to direct professional development resources based on the disaggregated teacher data. Moreover, they can identify subgroups consistently struggling or excelling. They also can create a schoolwide vision to help all teachers meet the individual learning needs of

Figure 5. Average Academic Growth in Mathematics of Students from Grade 3 to Grade 4 (n=50)[7]



Source: Simulated grade(s) based on actual 3rd and 4th grade longitudinal data.

[4]Alaska, Arizona, Arkansas, Delaware, Florida, Iowa, North Carolina and Tennessee received full approval from the U.S. Department of Education to use growth models for determining AYP. Ohio received conditional approval.

[5]North Carolina can calculate academic growth but does not meet the DQC's criteria for having a unique statewide student identifier.

[6]Data Quality Campaign, *Results of 2007 NCEA Survey of State Data Collection Issues Related to Longitudinal Analysis*, accessed October 26, 2007. www.DataQualityCampaign.org/survey_results.

[7]The data in Figure 5 follow the same simulated cohort of students in Figure 4.

a diverse population and consequently improve achievement across all subgroups of students.

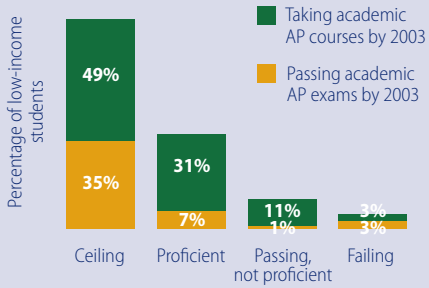
Based on P–8 preparation, how can high schools better target supports and interventions to improve educational outcomes?

Student success in rigorous high school courses depends on their level of academic preparation prior to entering high school. This is especially true for the most advanced courses. Figure 6 shows the percentage of students in four 8th grade achievement categories who later took academic Advanced Placement (AP) courses and passed academic AP exams.[8] Students in the highest ("Ceiling") category scored at or close to the top of the state test in 8th grade in both subjects; this was the only group with the majority of its members completing AP courses and as many as a third of its students taking and passing academic AP exams. Fewer than 7 percent of the next highest group ("Proficient"), and very few members of the other two groups, were able to take and pass any of these exams.

This example shows the importance of aligning the work of elementary, middle and high schools to prepare students, including disadvantaged students, for success in college-preparatory, dual-credit and AP courses. Teams of educators must work vertically across grade levels to define the standards and level of work needed to prepare students. Specifically, these data provide high school **principals** fodder to collaborate with principals of the middle and elementary schools to discuss and strategize how to better align and improve the P–12 educational experience so that more students can be prepared to participate in and pass AP exams. Meeting the goal of college readiness for the majority of disadvantaged students by the end of high school requires early intervention — ideally in elementary school and earlier — to place students on the right path.[9]

Once these 8th graders reach high school, teachers and principals can better target interventions based on the information in Figure 6. Therefore, these data allow **principals** to target interventions that specifically encourage groups of students to enroll in AP classes as well as simultaneously empower teachers to provide additional supports and interventions to increase the number of students taking and passing AP exams.

Figure 6. The Relationship between 8th Grade Proficiency and High School AP



Source: Chrys Dougherty and Lynn Mellor, Preparing Students for Advanced Placement: It's a P–12 Issue, *September 2007.*

Matching the student data longitudinally provides information on the connection between earlier student performance and later student success. Students who enter middle or high school less well prepared will need more intensive interventions; high school **teachers** need good data on their entering students to plan these interventions. With a longitudinal data system, information follows the students as they transition from elementary to middle school and from middle to high school.

[8]This analysis is taken from Chrys Dougherty and Lynn Mellor, "Preparing Students for Advanced Placement: It's a P–12 Issue," September 2007, unpublished. The analysis focused on the percentage of an entire student cohort taking and passing at least one AP exam in at least one of the four academic subject areas of English, mathematics, science and social studies. The authors wanted to develop a measure that did not include AP Spanish exams taken by native Spanish speakers. They also distinguish these population passing rates from exam-taker passing rates, or the percentage of AP exam takers passing exams.

[9]Dougherty, Mellor and Smith, 2006, *Identifying Appropriate College-Readiness Standards for All Students*, www.just4kids.org/en/research_policy/college_career_readiness/.

Action Steps for School Leaders To Build and Use Longitudinal Data Systems

Educators often have access to various summative and formative assessment results; however, leaders at all levels of school systems need to demand, understand and use longitudinal data to improve instruction and management. Accordingly, educators should consider the following actions:

1. Advocate for the 10 essential elements of state longitudinal data systems.

Since the launch of the DQC, annual surveys have captured the development of state longitudinal data systems and have shown that the number of states reported to have each of the 10 essential elements has increased from the year 2005 to 2007.[10] However, much work still needs to be done to continue building these systems and to provide user-friendly access and training to teachers and principals who make daily decisions that directly affect student achievement.

Recommended actions for school leaders:

- Advocate to state leaders the importance of investing in longitudinal data systems to give school leaders the information they need to do their jobs.
- Use longitudinal data in conjunction with other types of information to make decisions because data use drives data quality.

RESOURCES:

Data Quality Campaign, *Building and Using Statewide Longitudinal Data Systems: Implications for Policy.* www.DataQualityCampaign.org/files/Publication-Building_&_Using_Statewide_Longitudinal_Data_Systems-Implications_for_Policy-040107.pdf.

U.S. Department of Education, National Education Technology Plan. www.ed.gov/about/offices/list/os/technology/plan/2004/site/edlite-actionsteps.html.

The Commission on No Child Left Behind, *Beyond NCLB: Fulfilling the Promise to Our Nation's Children.* www.aspeninstitute.org/site/c.huLWJeMRKpH/b.938015/k.40DA/Commission_on_No_Child_Left_Behind.htm.

2. Support leadership efforts to provide timely and user-friendly access to longitudinal data.

Student- and teacher-level longitudinal data systems maintained at the state level are imperative to maximize economies of scale and accommodate high student mobility. For teachers and principals, these data can be translated into information to make informed decisions only if the data are of high quality, can be understood and are timely, all of which can be accomplished only through supportive and strong leadership at all levels.

Recommended actions for school leaders:

- Ensure that teachers have regular opportunities to access and use data individually and in teams to review and gauge student learning and alter their instruction accordingly.
- Review and ensure the quality of data being reported on students.

RESOURCES:

National Association of Secondary School Principals, *Breaking Ranks II.* www.nassp.org/s_nassp/sec.asp?CID=563&DID=48223.

State Educational Technology Directors Association Leadership Summit Toolkit 2006, www.setda.org/web/guest/toolkits.

3. Encourage a culture change so that teachers and principals use data as a school improvement tool.

Education data coming from a state education agency historically have not been very timely, user friendly or helpful to educators. However, as states are making progress toward creating longitudinal data systems designed for the end user, a change in culture is required so that data are viewed not as a hammer, but as a flashlight to illuminate areas of success and improvement.

Recommended actions for school leaders:

- Establish a culture of trust among all who access and use the data by clearly defining the use of the information and demonstrating that the data are accurate and relevant.
- Organize monthly meetings during which data are reviewed in a collaborative environment to identify areas of success and areas that need improvement for students, teachers and principals.

[10]Data Quality Campaign, *Results of 2007 NCEA Survey of State Data Collection Issues Related to Longitudinal Analysis,* accessed October 26, 2007. www.DataQualityCampaign.org/survey_results.

RESOURCES:

IBM, Reinventing Education Change Toolkit. http://reinventingeducation.org/RE3Web.

Gainesville City Schools, *Making Achievement Gains in the Classroom (MAGIC).* www.gcssk12.net.

Baldrige National Quality Program (BNQP), National Institute of Standards and Technology, www.baldrige.nist.gov.

4. Participate in and provide professional development on using data to improve student achievement.

As the culture surrounding data use evolves, professional development and teacher training also must change. There is no shortage of research demonstrating the importance of teacher preparation for improving student achievement, so as data become an increasingly important tool for educators, professional development on using the information to tailor instructional and management decisions is crucial.

Recommended actions for school leaders:

- Prioritize ongoing professional development provided to and attended by teachers and principals on how to use data as a tool to improve instruction and management decisions.
- Submit feedback to stakeholders at all levels when designing longitudinal data systems and accompanying professional development so that they are as relevant to your work as possible.

RESOURCES:

TERC, Using Data Project (UDP), http://usingdata.terc.edu.

Data Quality Campaign, *Data Use Drives School and District Improvement.* www.DataQualityCampaign.org/files/Meetings-DQC_Quarterly_Issue_Brief_092506.pdf.

5. Seek and share best practices as identified through longitudinal data analysis.

One of the principal values of longitudinal data is the ability to follow trends over time because school comparisons that take students' prior achievement and length of enrollment into account are more informative. They account for random fluctuations over time and are more likely to pinpoint best practices than are comparisons of disparate cohorts of students.

Recommended actions for school leaders:

- Compare student achievement results by skill and subject with the results of other teachers in the building to identify and share instructional techniques that increase student achievement.
- Use data and comparisons with other schools with similar demographics to identify the school's stronger and weaker areas.

RESOURCES:

National Center for Educational Accountability (NCEA), NCEA's Best Practice Framework of High-Performing Schools. www.just4kids.org/bestpractice.

National Association of Secondary School Principals, Breakthrough High Schools. www.principals.org.

APQC, Process Improvement and Implementation in Education (PIIE). www.apqc.org/PIIE.

6. Incorporate data into the education process to improve student achievement.

Data only become information when they are used to make better decisions. Many high-performing schools have discovered and embraced the value of longitudinal data to make improved decisions and have reaped the benefits as illustrated by increased student performance.

Recommended actions for school leaders:

- Tailor instructional decisions for individual students based on results of both formative and annual student-level assessments, disaggregating data by content area and standard.
- Base school improvement plans on this analysis, and ensure data are used to determine areas of focus and resource allocation.

RESOURCES:

Data Quality Campaign, *Data Use Drives School and District Improvement.* www.DataQualityCampaign.org/files/Meetings-DQC_Quarterly_Issue_Brief_092506.pdf.

National Association of Secondary School Principals, *Making the Mathematics Curriculum Count: A Guide for Middle and High School Principals.* www.principals.org/s_nassp/sec.asp?CID=1338&DID=56265.

Consortium of School Networking, Data-driven Decision Making Initiative: Vision to Know and Do. www.3d2know.org.

The Broad Prize for Urban Education, District Award Finalists, www.broadfoundation.org/flagship/prize.shtml.

DATA QUALITY CAMPAIGN
Using Data To Improve Student Achievement
www.DataQualityCampaign.org

in partnership with
National Association of Secondary School PRINCIPALS

The Data Quality Campaign is a national, collaborative effort to encourage and support state policymakers to improve the collection, availability and use of high-quality education data and to implement state longitudinal data systems to improve student achievement. The campaign aims to provide tools and resources that will assist state development of quality longitudinal data systems, while providing a national forum for reducing duplication of effort and promoting greater coordination and consensus among the organizations focusing on improving data quality, access and use.

Managing partners of the Data Quality Campaign include:

- Achieve, Inc.
- Alliance for Excellent Education
- Council of Chief State School Officers
- Education Commission of the States
- The Education Trust
- National Association of State Boards of Education
- National Association of System Heads
- National Center for Educational Accountability
- National Center for Higher Education Management Systems
- National Governors Association Center for Best Practices
- Schools Interoperability Framework Association
- Standard & Poor's School Evaluation Services
- State Educational Technology Directors Association
- State Higher Education Executive Officers

Endorsing partners of the Data Quality Campaign include:

- ACT
- Alliance for Quality Teaching
- American Association of Colleges for Teacher Education
- American Association of State Colleges and Universities
- American Board for Certification of Teacher Excellence
- American Youth Policy Forum
- APQC
- Business-Higher Education Forum
- Center for Teaching Quality
- College Summit
- Consortium for School Networking
- Educational Policy Institute
- ETS
- GreatSchools
- Institute for a Competitive Workforce
- Institute for Educational Leadership
- Jobs for the Future
- Knowledge Alliance
- League of Education Voters Foundation
- Learning Point Associates
- Midwestern Higher Education Compact
- National Alliance for Public Charter Schools
- National Association of Secondary School Principals
- The National Center for Public Policy and Higher Education
- National Council for Accreditation of Teacher Education
- Pathways to College Network
- Postsecondary Electronic Standards Council
- Roads to Success
- Southern Regional Education Board
- Western Interstate Commission for Higher Education

The campaign is managed by the National Center for Educational Accountability. The Bill & Melinda Gates Foundation is the founding funder; additional support has been provided by the Casey Family Programs and the Lumina Foundation for Education.

For more information about the Data Quality Campaign, please visit www.DataQualityCampaign.org.

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