

Driving Student Success

USING MULTIPLE MEASURES OF
STUDENT ACHIEVEMENT TO
ANALYZE PERFORMANCE

A COMPANION TO
THE 2001 RESULTS CARD

StandardsWork[®]

About StandardsWork

StandardsWork[®], Inc., www.standardswork.org, is a nonprofit education consultancy that has worked hand-in-hand with states and communities throughout the country to improve student performance through the development and implementation of grade-by-grade standards, results-based evaluation systems, and other quality tools and processes. It was the lead consultant assisting Arizona and California in the development of their highly regarded state standards. Its best-selling book and CD-ROM, *Raising the Standard*, which now include a chapter on charter schools, are being used to implement standards in districts across the country. Recently, StandardsWork launched a new executive search project, HireStandards[™], to find and place achievement-driven district superintendents and charter principals.

StandardsWork has created the Results Card[®], an academic accountability process that identifies key data elements that public education systems can monitor to accurately report school progress over time. The Results Card features a more complex set of indicators than do other existing or proposed report cards, and it allows for a more multidimensional analysis of those indicators than do other evaluation systems.

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Results Card Indicators of Student Achievement

The Results Card[®] helps policymakers and educators focus on whether schools and students are making academic progress — or not. The Results Card collects and reports 60-plus key indicators. It rejects a focus on one high-stakes test or score and instead provides a multidimensional look at results. The Results Card presents many views of the data to deepen understanding of what is working and what is not. It analyzes multiple measures in many ways, and it places test results in context with other indicators that help explain the reasons for state, district or school performance. The indicators were selected from generally accepted research and were refined with the help of education policymakers and practitioners.

TEST INDICATORS

These indicators are based on student performance on state tests, the National Assessment of Educational Progress, SAT/ACT tests and college remediation rates. The data are disaggregated by race, socioeconomic level and proficiency level.

- Reading achievement
- Writing achievement
- Math achievement

NONTEST INDICATORS

- Student readiness for grade 1 or kindergarten (or both)
- Chronic student absenteeism
- Student course-taking patterns
- Graduation rates
- College enrollment/remediation
- Subject-matter competence of teachers
- Targeted professional development
- Chronic teacher absenteeism

Preface

For more than four years, we have wrestled with the notion that standards-based reform might be deemed a failure. It's not that we don't believe in it; we do. But too many educators are trapped inside school systems that emphasize complying with rules and implementing policies — without putting in place a rigorous monitoring system that would tell them more about what they need to do to get improved results for our students. Without this monitoring system, many educators just keep doing essentially what they always have done, getting the same results they always have gotten.

As professionals with more than two decades of experience in education reform, we think this lack of improvement is unacceptable. So, StandardsWork[®] joined with a number of states to develop a system by which they can fully and clearly evaluate student performance: the Results Card[®].

We set out to construct a **diagnostic tool** that gets inside test data to uncover policies and practices that influence student achievement. This tool also diagnoses a system's likelihood for improved performance. Rather than a “report card” that often is used to report on “where a school, system or state is at this moment,” we envisioned something radically different. Our goal was to identify a set of research-based indicators that schools, districts and states could monitor, analyze and report to know whether students or groups of students — and at some level, teachers and schools — were performing at “proficient” levels. These performance levels would be evaluated for a specific period and over time. Perhaps most important, the tool would help shed light on the reasons for the deficiencies. Essentially, we wanted to create a blueprint for intervention and continuous improvement.

We had our own ideas about what the indicators should be, including test scores

analyzed from numerous vantage points and disaggregated by proficiency level, race and socioeconomic group. But, based on work we had conducted with other practitioners in the field, we also wanted to examine many other indicators of student achievement, not just tests. To realize the full power of this multilayered report, we needed data to create a graphic display of the results.

DIAGNOSTIC TOOL: A way to tell why something is happening, as well as what's happening.

In 1999, seven states — all members of the Education Leaders Council — agreed to provide StandardsWork with the essential data for creating a prototype Results Card. In 2000, three states joined six of the original group. These leaders — Arizona, Colorado, Florida, Georgia, Maryland, Ohio, Pennsylvania, Texas and Virginia — agreed to provide their state data so that StandardsWork could offer a national audience this important step toward improving results and accountability. The administrative staffs of these states performed yeoman service. Collecting the

information we needed proved to be a large and cumbersome task because we asked that it be delivered in nontraditional ways, ways that unmask policy barriers and undermining behaviors.

We wanted to know, for example, not average daily attendance but the percent of students who are chronically absent. And we wanted to know this about teachers, too. Most states do not collect these data in this way. We wanted to know about higher-level course-taking because study after study demonstrates that this one multilevel variable may be the difference for disadvantaged and minority children. While most states don't monitor these data currently, schools do, and districts and states can aggregate the information to better understand their results — or the lack thereof.

The states that participated in the Results Card are genuine pioneers, and they have our heartfelt thanks. We hope they aren't finished. We hope they will join us in the

next step of this journey — building a consensus for evaluating multiple measures in ways that will provide a blueprint for success for all levels of our education system. We hope other advocates of improved student achievement will take up the mantle for using research to guide our actions and using these indicators to drive us toward improved results.

At the dawn of a new year, we present this companion to the 2001 Results Card, with hope that next year, the “achievement drivers” and other nontest indicator data will be significantly more complete. We have accomplished much in a relatively short period time. We have much more to do.

Our work continues.



Leslye A. Arsht and Susan Pimentel
Co-Founders
StandardsWork

Overview

The culture of education is changing. The past decade, which focused on standards-based curricula reforms, is giving way to a higher level of expectations and accountability. Students, teachers and administrators at all levels will have to produce results. No excuses.

Nowhere is this more evident than in the recent Elementary and Secondary Education Act (ESEA). The legislation provides states 12 years to bring all students to the **“proficient”** level in the core subjects of reading and mathematics. And the states will be required to show that all students are proficient.

Starting in the 2002–03 school year, states will have to begin systematically reporting academic results to the public. The new legislation wisely and courageously requires states and school districts to measure and report test results in many ways — including by school, by race and socioeconomic class, and by gender. No longer can districts hide behind averages to report their progress. No longer can schools that are performing well overall neglect their students who are not performing as well. These new requirements for measuring and reporting test results represent a very positive first step.

Reviewing and analyzing test scores is absolutely necessary for improving performance, but it’s not enough. States and districts also will want to examine other measures of student success. Graduation rates (which many states already measure, but with many different formulas) and levels of college remediation (which few states measure) are worthy indicators that should be included in any data set. But even this broader set of achievement measures is insufficient.

If the goal is for all students to be proficient, states and school districts need to know what must be done to lift achievement. Which interventions work best? Test scores and other outcome data can tell you whether you’re successful, but they cannot tell you *what to do* to become successful. A richer data set is needed — data that can be used to help educators determine what changes in

PROFICIENT: The level at which students are “passing” or “meeting an acceptable standard of performance” on the state test. Every state sets this level differently.

instruction are needed to help more children learn at these higher levels. This means that states and districts also need to look closely at key data (what we call “achievement drivers”) if they want to achieve the outcomes so nobly embodied in the new ESEA bill.

We believe that states and districts should collect two main kinds of data. These sets of data serve different purposes. Both are important.

- **Achievement results** include test scores, graduation rates, college enrollments and college remediation rates.

- **Achievement drivers** include both student-oriented drivers (school readiness, higher-level course enrollments and chronic student absenteeism) and teacher-oriented drivers (teacher preparedness, professional training and chronic teacher absenteeism).

For each indicator, this report draws on the experiences of the nine states that are participating in the 2001 Results Card, a powerful tool that we have developed that provides a systematic way to monitor and report crucial indicators of student achievement. In 2000, the Results Card covered seven states: Arizona, Colorado, Florida, Georgia, Michigan, Pennsylvania and Virginia. The 2001 Results Card (available in March 2002) covers nine states: Arizona, Colorado, Florida, Georgia, Maryland, Ohio, Pennsylvania, Texas and Virginia.

Even though many of these states still are not collecting and using all of the most

meaningful data, they are making great progress, as the following document demonstrates. We applaud their national leadership — and their willingness to strengthen their data-collection and analyses systems as a means of improving student achievement.

This report's final section documents how the states making the most use of these indicators (Texas and Virginia) are showing the most progress in many areas and are having the most success in raising student achievement. As the adage says, you get what you measure. The final section also profiles the kinds of effective school-level interventions that are possible when teachers and administrators have timely access to the right kinds of information.

There has been a lot of recent rhetoric about the need for “multiple measures.” The Results Card is transforming this rhetoric into reality.

Achievement Results

Student achievement can be measured in many ways — and monitoring scores on national assessments and state proficiency tests is one method. But absolute scores are not the only way to examine this information. To fully understand what the data show, states need to collect information on student performance each year and over time. The data should be disaggregated by **proficiency level** (at or above passing/proficient, highest proficiency, lowest proficiency) and by race and socioeconomic level.

Analyzing information about the performance of students on each of the indicators for every year is important, but looking at one year of data in one state or district is not enough. Teachers and other educators can target instruction and professional training to areas of weakness by examining sub-test scores and grade-level variations at the district and school levels; the percentages of students who are scoring in the lowest and highest quartiles or proficiency levels; and whether the state, district or school is improving over time.

However, results in states such as Colorado and Texas show that once the information is in front of people, they can begin to correct the attitudes and behaviors that lead to poor performance. In 2000, for example, reading scores for black and Hispanic students on the state proficiency test rose significantly in all grades tested in Texas, and in Colorado, scores for minority students have been improving steadily over the last two to three years. Both states credit their focus on minority achievement — by disaggregating the data and setting specific

Disaggregating Data by Race and Socioeconomic Level

As ESEA recognizes and requires, a crucial way to examine student performance is to disaggregate data based on race and socioeconomic level. This is the area where we have seen the most improvement in data collection, at least with respect to race. For too long, people have worried that disaggregating data by race and poverty level would create negative stereotypes — that the information would be used as a weapon against minority and low-income students rather than as a tool for improvement. Until this year, in fact, Ohio state law prevented racial data from being included on the state academic report cards.

PROFICIENCY LEVELS: The Results Card shows what percentage of students are in the various proficiency levels (e.g., lowest and highest) to evaluate how students are performing currently and also to look at the performance trends over two or more years. Is the percentage of students in the lowest level going down? Is the percentage in the highest level going up?

Who Is Collecting Disaggregated Data?*

	Yes	No
Arizona	✓	
Colorado	✓	
Florida	✓	
Georgia	✓	
Maryland	✓	
Ohio	✓	
Pennsylvania	✓	
Texas	✓	
Virginia	✓	

*While none of the states collect data for all of the indicators in the Results Card, all states collect at least some data disaggregated by race. Texas consistently disaggregates data for every indicator it measures. Georgia and Virginia disaggregate data for most of the indicators they measure.

minority achievement goals — with sparking improvements.

But most states still do not disaggregate data by socioeconomic status, and the emphasis on collecting and reporting this information remains too shallow to illuminate the opportunities for improvement revealed by the data. This will change as states prepare for the ESEA requirements to take hold in 12 years.

States also need to examine performance on the SAT and/or ACT tests each year and over time. They should analyze average scores on the subtests, average scores of the top 10 percent of students, percentages of students scoring 1200 or higher on the SAT and 26 or higher on the ACT, and percentages of graduates taking the tests.

Graduation Rates

High school graduation rates are a measure of the effectiveness of the public school sys-

tem: Students who fail to graduate from high school are more likely to face hardship in the form of reduced earnings, bleaker employment prospects — even prison. But inconsistencies in what to collect, how to define terms and what to report serve as major barriers to understanding what graduation rate data really show.

One obstacle to fully understanding these data is the way annual dropout rates currently are reported. As normally calculated, the dropout rate represents the percentage of students who leave school in a given year, not the percentage of students who eventually will drop out between eighth and 12th grades. The dropout rate captures only one year of what is usually a five- or six-year span in which students leave school. Researcher Jay P. Greene, Ph.D., of the Manhattan Institute for Policy Research says it is akin to calculating a credit card interest rate as a monthly percentage instead of an annual percentage. The rate sounds low, but it compounds over a longer period of time. Greene gives an example of one district with a graduation rate of 52 percent but an annual dropout rate of only 1.3 percent. Even if the dropout rate were compounded, the two numbers have no relation.

Calculating and reporting reliable and straightforward public high school graduation rates and then disaggregating the data by race is not being done currently. Several states report percentages that are significantly different from those of credible third-party data compilers, including Greene in his most recent study, *High School Graduation Rates in the United States*, prepared for the Black Alliance for Educational Options (for more information, see page 8). The data from Colorado, Georgia and Texas differ dramatically from Greene's (differences range from 13 to 14 percentage points). On the other hand, numbers from Florida, Maryland,

Ohio and Virginia are much more in line with the third-party data.

College Remediation

Remediation is what happens on the college campus after a poorly prepared high school graduate is admitted. Data on college remediation rates tell us the extent to which elementary and secondary schools are doing their jobs.

Colleges across the nation are reporting increasing numbers of students requiring remedial math courses. Nationally, estimates state that close to one-third of students (29 percent) who make it to college are being required to take remedial courses in one or more subjects — most notably, mathematics and English language arts — based on college placement tests (*The Extent and Cost of Remediation in Higher Education*, Brookings Papers on Education Policy, 1998).

Providing remediation has many ramifications; essentially, it means that the same instruction is given twice. The annual budgetary cost of college remedial programs is estimated to be around \$1 billion, according to researchers David W. Breneman and William N. Haarlow. As their report notes, gathering data proved difficult. Many states had little or no information that was useful, either because it was too general, it was too out of date or the state did not collect it. Indeed, some states denied that “remediation” even existed in their institutions.

Of the states participating in the Results Card, only Georgia could supply a remediation rate. In fact, Georgia has made remediation a major focus, enlisting the help of its university system to reduce the number of incoming freshmen who need remedial classes. The result: Georgia’s remediation rate stands at about one-fifth of its students

compared to the national average of close to one-third.

When data exist in other states, the information is collected idiosyncratically. Here is a sample of answers that researchers Breneman and Haarlow received to the question: “What are your enrollments in remedial courses?”

- In Maryland, nearly 60 percent of all new high school graduates who enter a two-year institution in Maryland require remediation.
- Of traditional-age freshmen in Ohio public colleges, 27 percent are enrolled in remedial courses.
- Between the 1988–89 biennium and the 1998–99 biennium, remedial enrollments in Texas increased by 44 percent in the universities and 37 percent in the community colleges. Some of this increase is attributable to mandatory statewide testing not fully implemented until after 1988–89.
- In Virginia, 24 percent of in-state freshmen need remediation — 50 percent of community college students and 10 percent of four-year college and university students.

Who Is Collecting College Remediation Rate Data?

	Yes	No
Arizona		✓
Colorado		✓
Florida		✓
Georgia	✓	
Maryland		✓
Ohio		✓
Pennsylvania		✓
Texas		✓
Virginia		✓

What Should We Do about Graduation Rates?

Typical Reporting Obscures the Challenge

Current research from various sources shows disturbing — and inconclusive — differences in how graduation rates are reported and interpreted. Yet the research does share one common theme: Much work remains to be done to ensure that all students graduate high school and have the chance to go on to college. And while states need to take action to improve overall graduation rates, they need to focus particularly on ensuring that minority students finish high school — in some states the lowest graduation rates for white students are close to the highest rates for black and Hispanic students.

The following information, taken from analyses by Jay P. Greene, Ph.D., of the Manhattan Institute for Policy Research and Harold Hodgkinson of the Institute for Educational Leadership, shows the variances in state high school graduation and college continuation rates.

- Arizona and Florida are not terribly effective at producing high school graduates (63 percent or less) and are even less effective at producing graduates who go on to college (50 percent or less). In Florida, only half of black students graduated in 1998. The overall rates from Texas are only slightly better.
- Colorado, Maryland, Ohio and Virginia are much more effective at producing high school graduates than at getting those students into college. Only Maryland's college continuation rate is above the national average (57 percent). When the results are disaggregated to

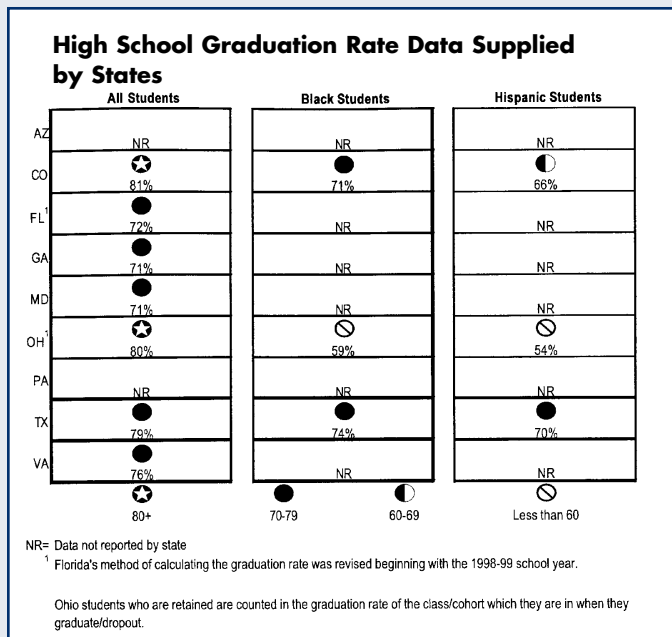
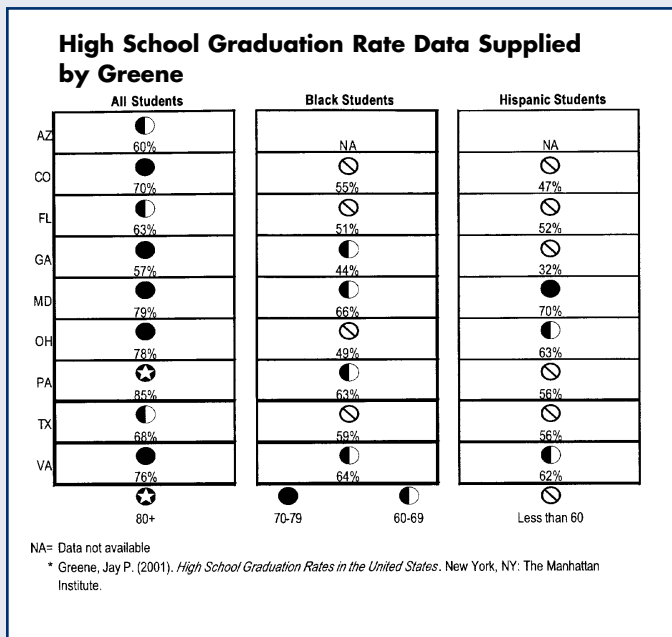
examine minority graduation rates, the data show that in Colorado less than half of Hispanic students graduated in 1998. In Ohio, fewer than half of black students in the class of 1998 graduated.

- Of the nine states, Pennsylvania ranks the highest on both overall graduation rates and college continuation measures; 85 percent of students graduate from high school and 62 percent go on to college. In other words, one has a better chance of graduating from high school and then continuing to college in Pennsylvania than in the other eight states.
- In Georgia, the problem is not access to college, it's completing high school; the state is last in the nation, with only 51 percent of students graduating from high school. Georgia also has one of the worst graduation rates in the nation for black students and the worst graduation rate for Hispanic students (only one-third in the class of 1998 graduated).

But there is hope. Relative to the other states, Maryland has a high Hispanic graduation rate, and so do Ohio and Virginia. Maryland and Virginia also have high black graduation rates, although they are still well below the rates for all students.

A correct assessment of graduation rates is likely to help us identify and then attack specific, underlying problems in schools that susceptible student populations face — things that otherwise are not analyzed, such as course-taking patterns and teacher competence.

Inconsistencies Hamper Analysis of Graduation Rate Data



How To Read the Results Card

Each indicator measured in the Results Card includes charts with icons that group individual schools, districts and states (all by grade level) into one of five categories:

- exemplary
- good
- moving in the right direction
- maintaining (*used for trend data only*)
- possible problem

At a glance you can tell whether the news is good or bad for a particular measure, area or level of schooling. For a deeper understanding of what the data show, the charts are accompanied by “Kudos,” “Alerts” and “Questions” sections that analyze key data — positive and negative — displayed on the charts and offer further lines of inquiry as well as possible policy and practice options for generating improvement.

As these answers show, there needs to be a national criterion for determining remediation rates for recent high school graduates. The policy implications are significant because the older the student, the less meaningful it is to connect the academic deficiency with the K–12 schools.

Over the past decade, nearly every state has set new expectations for what high school students should know and be able to do to graduate; in many cases, states have linked those standards to tests students must pass to earn a diploma. But few states have adopted their standards and tests with college success in mind, although about three-quarters of high school graduates enroll in some form of

postsecondary education within two years of getting their diplomas.

Also, many college administrators have pinpointed poor math performance as driving the need for remediation, yet there is practically no examination of the relationship between high school math course-taking and remediation rates. Until recently, most states did not require even algebra I for high school completion.

Cross-referencing state requirements and course-taking patterns with remediation rates could provide useful information, but jurisdictions will have to monitor both sets of data.

Student-Oriented Achievement Drivers

How do we know whether school-reform initiatives are working? In 2001, a number of studies added to a large body of research concluding that certain indicators, such as rates of enrollment in higher-level courses, are critical to improved student performance. Once the information about these indicators is collected, the results can be used to improve policy and practice.

School Readiness

Well-designed educational services in early childhood can have positive, lasting effects for disadvantaged children, according to new studies by the National Institutes of Health and the U.S. Department of Education. These reports support the findings of older studies, such as the Carolina Abecedarian Project and the High/Scope Perry Preschool Project. Children who were enrolled in a long-running preschool program are 40 percent less likely to be held back a grade, 41 percent less likely to be placed in special education classes, 33 percent less likely to be arrested and almost 30 percent more likely to complete high school (Linda Jacobson, “Preschool Study Finds Positive Effects for Poor Children,” *Education Week*, May 16, 2001). Other studies show that they are more likely to perform well on tests of intelligence, pursue higher education and postpone having children. And even if the lasting impact of solid prekindergarten programs is factored out, a recent review finds that state-funded preschools are giving young children the skills they need for a good start in school (Gillian and Zigler, *Early Childhood Research Quarterly*, March 28, 2001).

Yet this is an area where available data are slim. Colorado, Georgia, Maryland and

Texas all have subsidized prekindergarten programs.* But Florida is the only 2001 Results Card participant reporting the percentage of kindergarten students who attended prekindergarten, and Georgia is the only state reporting the percentage of students who attended preschool and are ready for kindergarten.

However, with renewed emphasis on early literacy, other states are beginning to monitor these data.

- Maryland is piloting a screen of its pre-kindergarten students, using the highly acclaimed Work Sampling System, which is employed nationally and internationally

	Yes	No
Arizona		✓
Colorado		✓
Florida	✓	
Georgia	✓	
Maryland		✓
Ohio		✓
Pennsylvania		✓
Texas		✓
Virginia		✓

*According to *Education Week's* “Quality Counts 2002,” Florida, Ohio and Virginia offer local districts some incentives or access to funding through block grants or other policies and programs, but the states did not report this subsidy to the Results Card.

to generate information on pupil readiness.

- Arizona is developing early childhood standards and planning to assess school readiness in its state-funded family-literacy preschools. Other public and private preschool programs also may choose to adopt the new standards and tests.

Higher-Level Course Enrollments

In 1999, Clifford Adelman, a senior researcher at the U.S. Department of Education, reported that taking challenging courses such as those in Advanced Placement (AP) and International Baccalaureate (IB) programs in high school was a better predictor of college completion than good high school grades or test scores.

HIGHER-LEVEL COURSE ENROLLMENTS: *Sometimes referred to as a college-bound curriculum, these courses include at least algebra I and II, geometry, some calculus, trigonometry, four years of English, and more than two years of foreign language or AP and IB classes.*

Yet time and again, we read about different groups of students — including minority students, “noncollege-bound” students and “disadvantaged” students — who take courses that are so different in quality that the students might as well be in different schools. Research tells us that there is a strong link between enrollments in higher-level courses

and higher academic performance, yet most states fail to monitor these enrollments systematically. Studies are more likely to “control” for the “education of the mother” than whether the student took algebra or some low-level math course.

Gene Bottoms, Ph.D., head of the Southern Regional Education Board’s High Schools that Work network, asserts that giving more students access to a demanding academic core curriculum is the single most powerful step schools can take to improve achievement. His belief that challenging courses is *it* is supported by the findings of several recent research studies.

- University of Wisconsin–Madison researchers found that all students, regardless of their prior mathematical skills, benefit from taking algebra. Specifically, 10th graders who took algebra scored higher on the national assessment and showed greater improvement (eight points versus four points) between eighth and 10th grades than those who did not take the subject. Data from NAEP at eighth grade show the same benefit.
- The Council of the Great City Schools reports that in city districts the achievement gap between minority students and their white classmates — which is large and persistent — reflects the national picture in course-taking patterns between these groups of students.
- A study by the University of California shows that failure to complete required courses was the main barrier to eligibility for admission. About three-quarters of African-American and Latino high school graduates were ineligible because of inadequate course backgrounds: They had

major course omissions or grade deficiencies, or they attended schools that did not have an approved college-prep curricula.

Of the states participating in the 2001 Results Card, only Georgia, Texas and Virginia are monitoring these data consistently. All three have admirable news to report, including that high percentages of students are enrolled in algebra and geometry; Texas and Virginia also have strong, positive trends (see “The Good News,” page 20).

Florida has gotten off to a good start. It measures the percentage of students studying a foreign language beyond the second year and participation in IB courses.

Arizona and Texas have instituted core course requirements for high school students that should help to address the bias minority students now face in accessing higher-level courses. In Arizona, the legislation was prompted by low rates of proficiency on the state math assessment and the fact that many students were choosing not to take algebra and geometry — two content areas central to doing well on the state tests.

None of the nine participating states is monitoring AP participation fully. The only AP data we are able to report for participating states is the percentage of students who pass the AP tests, earning a score of 3 or better. This is significant information since students who do so are qualified to skip equivalent courses in college, which can mean an average savings of \$3,000 per course. Some colleges even allow students who pass a sufficient number of AP tests to enter as sophomores.

While we know that students who participate in AP courses outperform other students, few states seem to be collecting data on how many high school students actually enroll in such courses. In addition, few states

are able to tell us the percentage of students who take the courses and then take the tests.

One source of information in this area is the “Challenge Index,” published annually in *The Washington Post* since 1998. Education columnist Jay Mathews created the index for Washington, D.C.-area schools — including those in suburban Maryland and Virginia — to measure how the region’s 145 public high schools prepare students for college. [*Newsweek* publishes a national survey less frequently.] Mathews prepares his index by

Who Is Collecting Higher-Level Course Enrollment Data?*

	Yes	No
Arizona		✓
Colorado		✓
Florida		✓
Georgia	✓	
Maryland		✓
Ohio		✓
Pennsylvania		✓
Texas	✓	
Virginia	✓	

*Georgia, Texas and Virginia collect higher-level course data (such as algebra, geometry, etc.). No state has provided sufficient AP data.

taking the number of AP or IB tests at each school (for all grades) and dividing the sum by the number of graduating seniors. While his statistical measure is a rough gauge, it does begin to fill the information void. According to Mathews’ national research, only about 1 percent of U.S. high schools had a 1.0 rating — meaning those schools had the same number of AP or IB tests as they did graduates. In 1999, Virginia, Florida and Texas ranked third, fourth and fifth in the nation, respectively, behind New York and California.

Nationwide, the most immediate interventions occur when underenrollment in AP courses and/or poor performance on AP tests is uncovered. To encourage more students to participate, many jurisdictions only have to remove policy and scheduling barriers. Money is less of an obstacle because about half the states in the nation help schools cover exam-fee payments, grants for professional development, instructional materials and other incentives. The College Board has begun to offer pre-AP workshops for teachers of students as young as fifth grade.

Chronic Student Absenteeism

“Ninety percent of life is just showing up,” according to Woody Allen. And as important as it is to focus educators on raising academic standards, upgrading curricula and improving test scores, these efforts will not amount to much if students are not in school to receive the benefits. Common sense, backed by research, shows that attendance and achievement are linked — as are patterns of absenteeism (starting as early as second grade) and dropping out of school. Showing up matters; time on task counts.

The traditional reporting of average daily attendance makes absenteeism an easy indica-

tor to overlook. An average daily attendance rate of 93 percent rarely triggers alarm bells. But this rate translates into students missing, on the whole, about two-and-a-half weeks of class time. Even more troubling, many urban schools have attendance rates that are much lower than the national average — 85 percent or less in 1999–2000. That translates into 24 or more days missed (Hoachlander, Dykman, Godowsky, “Attending to Attendance,” *Education Week*, May 16, 2001). And these rates do not include excused absences such as field trips, sporting events, illnesses, doctor visits and almost anything that is explained by a written note from a parent.

CHRONIC STUDENT ABSENTEEISM: *StandardsWork* defines this as 18 or more days of unexcused absences per year (or 10 percent of the school year).

Four participating states — Florida, Georgia, Maryland and Texas — collect chronic absenteeism data. Maryland’s definition of what constitutes chronic absenteeism is liberal compared to that of the other states — more than 20 days versus 18 days. Florida, Georgia and Texas further disaggregate the data for black and Hispanic students.

Strategies to improve these rates include publishing attendance indicators and providing a mix of incentives (such as certificates of recognition and special field trips) and sanctions (such as mandatory parent meetings and withholding of course credit unless time is made up). Currently, Pennsylvania is the only state of the nine participants that reports offering incentive grants to schools that improve attendance rates.

Who Is Collecting Chronic Student Absenteeism Data?

	Yes	No
Arizona		✓
Colorado		✓
Florida	✓	
Georgia	✓	
Maryland	✓	
Ohio		✓
Pennsylvania		✓
Texas	✓	
Virginia		✓

Teacher-Oriented Achievement Drivers

The success of school-reform initiatives generally is assessed by student performance. Teacher quality is an integral part of that performance, so collecting teacher-oriented data is just as important as collecting student-oriented data. By reviewing both, we get a more complete sense of why some initiatives succeed — and why some do not.

Teacher Preparedness

Increasingly, research confirms that capable teachers are the essential link between public aspirations for high-quality schooling and solid student achievement. Recent research from the state of Tennessee and the cities of Dallas and Boston, for example, indicates that students placed with one bad teacher emerge a full year behind their peers who were taught by a good teacher. Three years of poor teachers is more than most students can overcome (Marguerite Roza, “The Challenge for Title I,” *Education Week*, April 4, 2001).

Not surprisingly, teacher quality emerged as one of the highest educational priorities — second only to school safety — in a 2000 public opinion poll conducted by Lou Harris and Associates. Almost 90 percent of respondents rated “ensuring a well-qualified teacher in every classroom” as a very important goal.

When predicting achievement levels, student demographics (such as poverty, minority status, language background and family education) and popular policies (such as reductions in class size and increases in overall spending and teacher salaries) pale in significance compared to teacher-quality variables, namely, holding full certification and a major degree in the field.

A recent Charles A. Dana Center report shows that Texas students did better on state exams when their instructors had degrees in their class subjects. Three-quarters of third graders taught by in-field instructors passed all sections of the 1997 Texas state assessment. The pass rate for Hispanic third graders jumped from 58.7 percent to 67.5 percent when their teachers held degrees in their class subjects.

According to the study:

- 20 percent of K–12 students in Texas were taught by out-of-field teachers.
- 49.2 percent of urban middle school mathematics classes in Texas were led by math teachers certified in their subject;

Who Is Collecting Teacher Preparedness Data?

	Yes	No
Arizona		✓
Colorado		✓
Florida		✓
Georgia		✓
Maryland		✓
Ohio		✓
Pennsylvania		✓
Texas		✓
Virginia		✓

that number rises to 70.2 percent in small towns and 65.3 percent statewide.

- 68.1 percent of urban high school algebra I courses were taught by trained math teachers; that number rises to 83.7 percent in small suburbs.

The 2000 NAEP results underscore these findings. NAEP reports that eighth graders whose teachers majored in math or math education scored higher on average in math than students whose teachers majored in other fields.

In addition, according to several analyses by Richard W. Ingersoll from the University of Georgia–Athens, U.S. Department of Education data indicate that the practice of assigning nondegreed teachers is most prevalent in poor and urban districts. In other words, the children who need expert teaching the most are getting it the least. While much public attention is paid to the gap in achievement between rich and poor and white and minority students, states continue policies that are certain to compound the problem.

Furthermore, certification in a field may not be the best indication of subject-matter

competence. For example, Ingersoll found that in one state only 8 percent of high school science teachers did not hold a science certificate, yet 18 percent lacked a science major or minor; 44 percent of certified high school teachers teaching physical science classes did not hold even a college minor in the field. Which students have the benefit of the highest-qualified teachers? Who has out-of-field teachers? Which students get the new teachers, and which get the experienced teachers? Do certification requirements promote subject-matter competence or not? Asking these questions (and monitoring these data) will help connect policy with practice and change those things producing unsatisfactory results.

Despite the critical nature of these data, no state was able to supply us with 2000 data on teacher subject-matter competence. Only national data are available — and what those data say is alarming.

Professional Training for Teachers

For students to reach high standards, teachers need to deepen their subject knowledge, sharpen their teaching skills and stay current with developments in their fields. It is not surprising that the *Education Week* “Quality Counts 2001” survey found that although teachers are told to teach to the standards, most do not believe they are given the tools and training for the job. The great majority of teachers received five hours or less of training on standards, tests and how to interpret results; data show it takes double that time to make even a dent in understanding. The same survey reports that when teachers receive 11 or more hours of training in state standards, most modify the classroom curriculum “a great deal” to reflect the standards — twice as often as teachers who

Who Is Collecting Teacher Training Data?

	Yes	No
Arizona		✓
Colorado		✓
Florida		✓
Georgia	✓	
Maryland		✓
Ohio		✓
Pennsylvania	✓	
Texas		✓
Virginia		✓

receive little or no training. Also, when they receive the same amount of training in interpreting test results, those teachers tend to use the results “a great deal” (twice as often as teachers who receive no such training) to diagnose individual student needs and adjust instruction accordingly.

CHRONIC TEACHER ABSENTEEISM:
StandardsWork defines this as six days of unexcused absences, not including professional development.

The absence of targeted professional development — designed to improve curriculum, instruction and assessment — is undermining standards-driven reform and implementation. Teachers rally against state standards and tests, saying that both stifle their creativity when, very often, they simply have no idea how to change their teaching practice to reflect higher-level instruction. No corporate enterprise would try to change its culture without a major retraining effort; if it did, as with nearly a decade of school-reform activities, it would fail.

Despite the importance of teacher professional development, only Georgia and Pennsylvania currently monitor the number of days of professional training teachers receive that is targeted at improving student achievement.

Chronic Teacher Absenteeism

A student who attends public school from kindergarten through 12th grade will have a substitute teacher for the equivalent of a full

year, reports Lance Tomei of the University of Central Florida. Tomei, an expert on substitute teaching, cited this piece of data, based on current teacher absentee rates, when speaking to a National Substitute Teachers Alliance meeting in Florida in July 2001. This statistic means that the quality of substitute teachers — or, put another way, the problem of teacher absenteeism — is at least one-twelfth of the teacher-quality equation, but it rarely receives that much attention.

Schools collect this information, but rarely do they aggregate or correlate it to student achievement. Yet, chronic teacher absenteeism seems to be linked with chronic student absenteeism, and many educators feel it is a growing problem nationally.

No states participating in the Results Card are collecting or monitoring this indicator, yet student learning likely is suffering when teachers are absent regularly.

Who Is Collecting Chronic Teacher Absenteeism Data?

	Yes	No
Arizona		✓
Colorado		✓
Florida		✓
Georgia		✓
Maryland		✓
Ohio		✓
Pennsylvania		✓
Texas		✓
Virginia		✓

Highlights from the 2001 Results Card

ARIZONA

- Performance in the early grades consistently is stronger than in the high school grades — as much as three times as strong in writing and math — indicating that reforms seem to be having a positive impact in the elementary grades.

COLORADO

- Colorado is a standout in reading performance, according to all indicators. The state registered the strongest and most consistent showing in absolute scores and trends over time for all groups of students when state proficiency test results are reviewed in concert with national assessment results, especially at grade four.

FLORIDA

- Ninety-eight percent of Florida's high school students take a college entrance exam. (Florida's tests and much of its data collection efforts have been overhauled recently, so data and analysis are limited.)

GEORGIA

- Large numbers of students are scoring satisfactory or above on the state's newly implemented reading and writing tests, although this success is not reflected yet on the national assessments.
- Georgia's data collection efforts are the most improved of the nine participating states. While Georgia has little trend data to report yet, it has baseline data for 2000 on almost every indicator the Results Card monitors except teacher subject-matter competence and chronic teacher absenteeism.

MARYLAND

- Hispanic students in Maryland have made large achievement gains. Although the Hispanic population is small, gains are strong on both the state and national reading tests. These students also showed significant improvement at grade eight in writing on the state proficiency test and in math on the national assessment.
- Relative to other states, Maryland is showing strength on the national assessments in reading and math, particularly at grade eight.
- Seventy-two percent of secondary teachers in the state hold a degree in the subject they teach*, a substantially higher percentage than in most of the other states participating in the Results Card.

*National Education Goals Panel report (1999)

OHIO

- Ohio registered strong gains in math on the national assessment, particularly at the eighth grade and for Hispanic students. Scores for Hispanic students rose 16 percentage points at grade eight between 1992 and 2000. Hispanic students also showed achievement gains in reading and writing, though not in all grades.

PENNSYLVANIA

- Pennsylvania ranks high in the nation in terms of the percentage of students who graduate from high school and the percentage of graduates who go on to college. In other words, students have a better chance of graduating from high school and then continuing on to college if they go to school in Pennsylvania than they do in most other states in the nation, including the other eight states participating in the Results Card.
- Like the teaching force in Maryland, 72 percent of secondary teachers in Pennsylvania hold a degree in the subject they teach*, a substantially higher percentage than in most of the other states participating in the Results Card.


TEXAS

- Texas is having sustained and steady success in all content areas and at all grades — both in absolute terms and in improvement over time — on its state proficiency tests. These findings are confirmed by results on the national assessments.
- Only a handful of percentage points separates the scores for minority students and students overall on the state proficiency tests in all three subjects.
- Texas has instituted all but one of the state policies that available research tell us make a difference in student achievement.

VIRGINIA

- Virginia's public school children continue to improve significantly in virtually all areas of the state's assessments, especially in math and writing — results confirmed by the national assessments. While a gap in achievement remains, black student gains in these two areas are particularly impressive.

The Good News: Data Make a Difference

 ver the years that we have been working on the Results Card, we have seen the impact that collecting — and making constructive use of — the right data can have on student performance. Consider the following evidence from the 2001 Results Card.

Texas and Virginia Are Showing Consistent Gains

Across the board, Texas and Virginia have done the best job of systematically collecting and examining the broadest set of indicators. Not coincidentally, students in those two states continue to make sustained and steady improvement; when compared with other states, Texas and Virginia are the most consistent in terms of improving across grade levels and content areas.

In the 2001 report, Texas students performed well at all grade levels tested on both the state and national reading and writing assessments. In mathematics, Texas students showed strong scores — and large improvements over time. Notably, only a handful of percentage points separate the scores for minority students and students overall on the state proficiency test in all three subjects.

Virginia students performed well on both the state and national assessments for writing — with particularly large improvements on the eighth-grade and end-of-course tests. Only a small gap exists between the minority student score and the score for students overall on the state writing proficiency test. Math performance also is strong among Virginia students.

Georgia deserves an honorable mention here. We do not yet know whether improvements will be forthcoming — the state has

little trend data to report — but Georgia has baseline data for 2000 on every Results Card indicator except teacher subject-matter competence and chronic teacher absenteeism.

Multiple Measures Analysis Enables Districts To Address Issues

We also have encouraging examples from our work with local school districts. Consider the Massachusetts elementary school where boys recently were earning lower test scores overall than girls. Based on that data alone, school leaders were preparing to hire more male teachers, buy more books appealing to boys and structure more classroom activities around boys' interests — all to encourage achievement among those male students.

But an examination of additional measures, including school-readiness data, found the true culprit. Boys and girls who had participated in academic preschool programs performed roughly equally at this all-Hispanic school. In general, more boys than girls lacked this preparation. It was those boys who had not participated in academic preschool who were underperforming and, thus, pulling down males' average scores. Acknowledging the problem, school leaders started talking about ways to address it. They also started talking about the larger lesson learned: the value of considering a

broader spectrum of data before jumping to conclusions.

Sometimes the problems — and the answers — are more complex. For instance, one South Carolina school district traditionally had reported only systemwide average test scores by grade — a typical practice for school districts. The information had been useful in showing how the district compared with other districts, at least in general, but it had proved virtually useless for shedding light on policy or practice. Conventional wisdom had long linked the poor performance of some students with the low incomes of their parents. Based on this assumption, school leaders were pursuing a common intervention strategy, grouping children of different achievement levels together in the same class.

Again, to help add critical depth and complexity to the district's picture of student performance, we analyzed multiple measures from multiple perspectives, disaggregating data by school, grade, students' socioeconomic status and students' race. The analysis revealed that in 19 of the 25 elementary classrooms examined, the most important variable in performance was not socioeconomic status but race. Poor white children consistently outperformed middle-class black children. Black children from families of all income levels were falling behind.

Facing the real reasons for the system's lack of improvement, district leaders used the school-by-school analysis to pinpoint the one school in the system that was bucking the trend — educating black students to the same high levels as their white peers. Principals from across the district visited the school to observe, identify and adapt effective strategies to eliminate the racial achievement gaps in their schools. The main strategies were setting

high expectations and making no excuses — for students and staff alike. Students were required to learn first-grade material before moving on to second-grade material, learn second-grade material before moving on to third-grade material and so on. Rather than grouping students heterogeneously (the district norm), educators grouped children of similar achievement levels within particular subject areas. Students who needed extra tutoring got it. Homework was a staple. Parent visits became commonplace. And as a result of these targeted interventions, student achievement started climbing.

Challenges Ahead Require Effective Use of Data

We all can agree on one thing: Our students must succeed. But their success depends on sound policy, strong curricula and a supportive environment at state, district and school levels. None of these can be achieved without solid data collected on a complete range of indicators.

Unfortunately, many states still are only slowly edging toward a comprehensive review of the data. In some cases, the data is being collected, but it is flawed or not being processed or analyzed in ways that can inform decisionmaking. In other cases, the data simply are not being collected. Until states, districts and schools are able to collect and analyze these data, school-reform initiatives will not be as effective as they can be, and student achievement will continue to suffer.



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