

Student Achievement

Quick Definition

The ultimate goal of any instructional strategy, curriculum, or education reform initiative is to raise student achievement—to boost individuals' knowledge and increase children's preparedness for future endeavors. As the standards-based education movement has taken hold in recent decades, measuring and reporting student achievement has become an even more critical component of public education. State and federal accountability systems have raised the bar for school performance and have led to an increased reliance on standardized tests of student achievement.

Assessments at the state, national, and international levels are used frequently to evaluate student achievement in core subjects. The results of these assessments reveal where students are achieving proficiency and where much work remains to be done. Further, these results are used to compare student performance in different countries and among various states. Analysis of student achievement can bring about significant controversy, as it often reveals different levels of performance between males and females, between urban, suburban, and rural students, and among various ethnic or racial groups. The following sections will look at the differences in performance internationally, nationally, and locally. For the sake of brevity, local Georgia data will only consider the differences in performance among racial groups and income levels.

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Relevancy to Georgia

Overview

The true test of any educational reform initiative, teacher training program, or new curriculum is the impact it has on student success. In this era of increased scrutiny of public education, Georgia boasts a record of progressive action over recent years that has resulted in notable gains in our student achievement. Yet our work is far from done. By carefully studying educational data at the national, state, and local levels, we can make strategic decisions about how to invest resources and plan interventions within our public schools to improve the outcomes for all students.

Gaps in Student Achievement

In order to fully understand how the schools and students in our country and in Georgia are performing, policymakers must examine data at the aggregate and disaggregate levels. In order to affect positive educational change, leaders must study the general trends of all students on various standardized tests. Yet perhaps more importantly, they must explore and question the persistent gaps in achievement among student subgroups.

The importance of understanding and correcting achievement gaps is critical as the United States grows more diverse. Southern states in particular have been significantly impacted by changing demographics as migration patterns have led to a greater percentage of Hispanic and African-American residents in the South. Georgia is a prime example of a state experiencing a historical demographic shift. Today, black and Hispanic students in Georgia public schools comprise approximately 48 percent of student enrollment. Additionally, Georgia's free/reduced lunch eligible population has increased annually over the last three years and stands now at 57 percent.¹ Unfortunately, the state's low-income, black, and Hispanic students lag significantly behind the performance of their white, Asian, and more advantaged peers. The future economic vitality and productivity of Georgia and of the nation will depend on the academic preparation and support *all* students receive in Georgia's public schools today.

Georgia Measures of Student Achievement

At the state level, Georgia conducts several annual assessments that measure educational performance. The results of these tests can provide information to districts, schools, teachers, and parents about needed classroom interventions or the effectiveness of a curricular program. One of the most commonly used measures of student achievement in Georgia is the Criterion Referenced Competency Tests (CRCT).

Criterion Referenced Competency Tests (CRCT)

Each spring, the Criterion-Referenced Competency Tests (CRCTs) are administered to students in reading, English/language arts, mathematics, science, and social studies in grades 3-8. Scores below a specified level of performance on the CRCT indicate that a student does not meet the standard in that subject area. Students performing at this level may need additional instructional support. For Georgia's students in grades 3, 5, and 8, performance on the state CRCT carries increased weight, as an insufficient score in these critical grades can result in retention. Students in the 3rd grade who score below grade level in reading and students in the 5th and 8th grades who score below grade level in

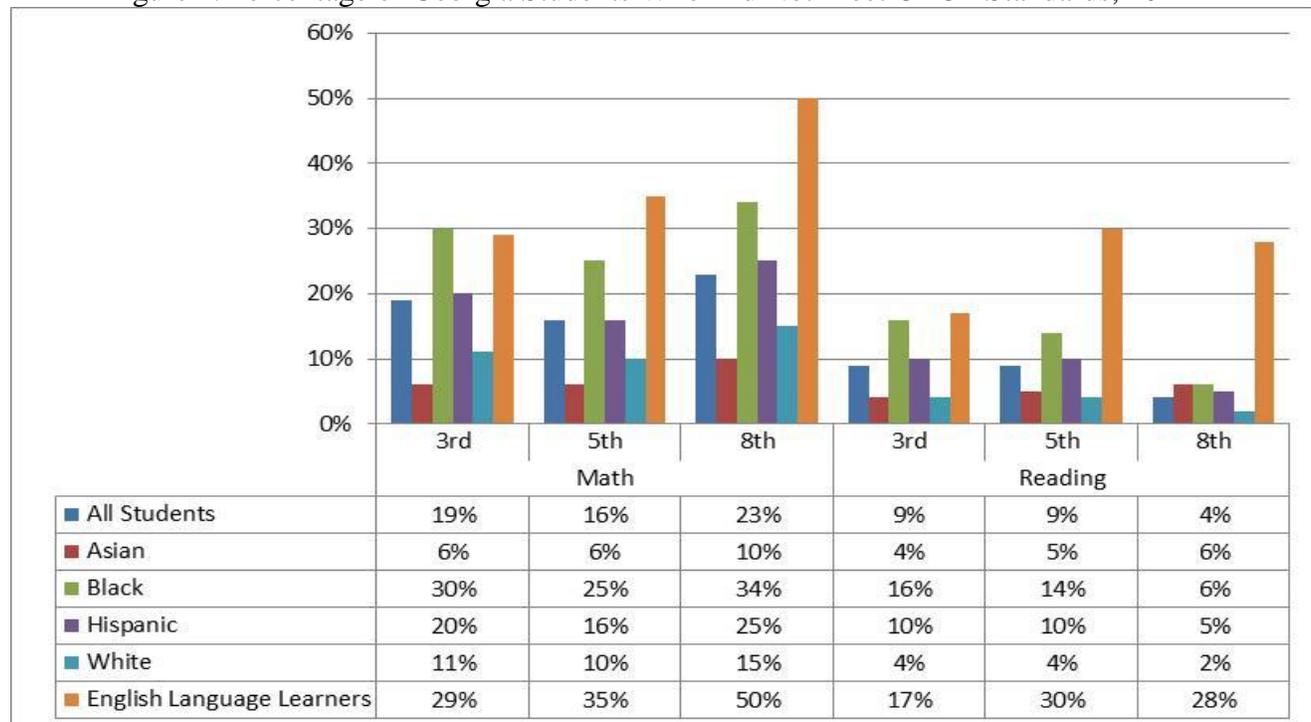
¹Georgia Department of Education. Report Card 2010-2011. Retrieved from <http://www.doe.k12.ga.us>.

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reading and/or mathematics must be provided additional instruction and subsequently retested. Georgia law mandates that if a student scores below grade level again on the retest, he or she must be retained.² Insufficient grade-level success serves as a predictor of student retention and non-completion of high school. Specifically, a student who does not meet the major milestones of early literacy and numeracy will be less likely to graduate from high school and succeed in postsecondary education.

Figure 1 shows the percent of children in Georgia who did not meet expectations at select grade and subject level CRCT assessments in 2012

Figure 1. Percentage of Georgia Students Who Did Not Meet CRCT Standards, 2012



Source: Georgia Department of Education

Insufficient grade-level success serves as a predictor of student retention and non-completion of high school. Specifically, a student who does not meet the major milestones of early literacy and numeracy will be less likely to graduate from high school and succeed in postsecondary education. Research has shown that students who are not reading on grade level by the end of 3rd grade are much less likely to graduate from high school.³ Similarly, children who are not calculating geometry and algebra on grade level by the end of 8th grade are less likely to be successful in post-secondary education.⁴ Comparing changes from 2011 to 2012 for all students, there was a one percent increase of students not meeting standards in 8th grade math as well as a three percent increase in 5th grade math; there was no change in 3rd grade math and reading, 5th grade reading, or 8th grade reading.⁵

² A team comprised of the parent, a teacher, and an administrator can unanimously promote the student to the next grade level despite CRCT performance. Source: Georgia Department of Education Promotion and Retention Guidance, www.gadoe.org.

³ Education Commission of the States. "P-16 Quick Facts." Retrieved from <http://www.ecs.org>

⁴ Closing the Achievement Gap Advisory Council. "Closing the Achievement Gap: Definition and Approach." November 13, 2002.

⁵ Georgia Department of Education. CRCT Testing Brief. 2012

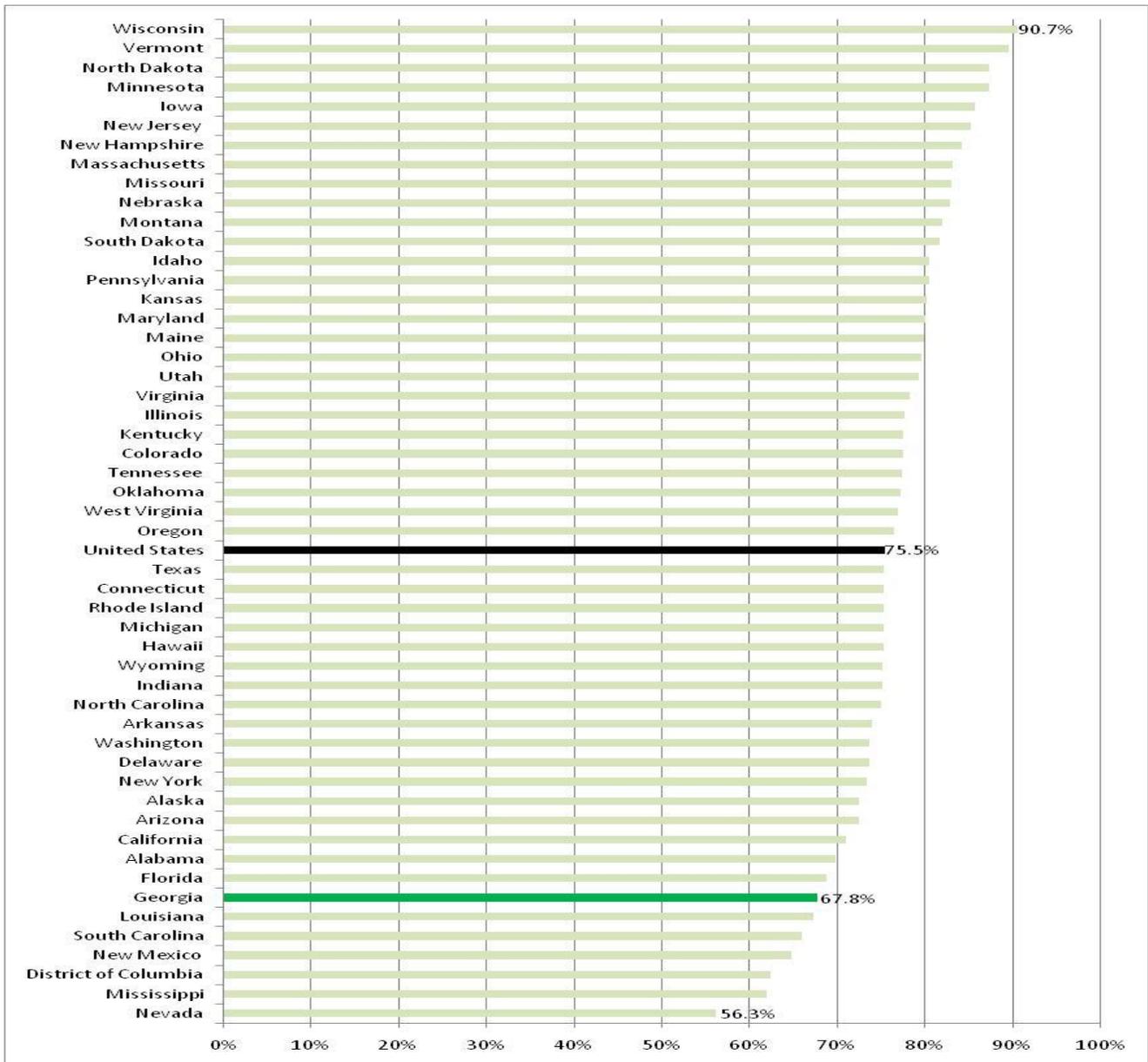
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While Georgia has made commendable progress from year to year, the gaps that persist among student subgroups are indicators that not all students in our state are being adequately prepared to achieve academic success.

Graduation Rates

The social and economic viability of a community strongly correlates with the number of high school graduates it produces. The most recent data from the National Center for Education Statistics ranks Georgia among the poorest performing states in the nation for public high school graduation rates.

Figure 2. Averaged High School Graduation Rate by State, 2008-09



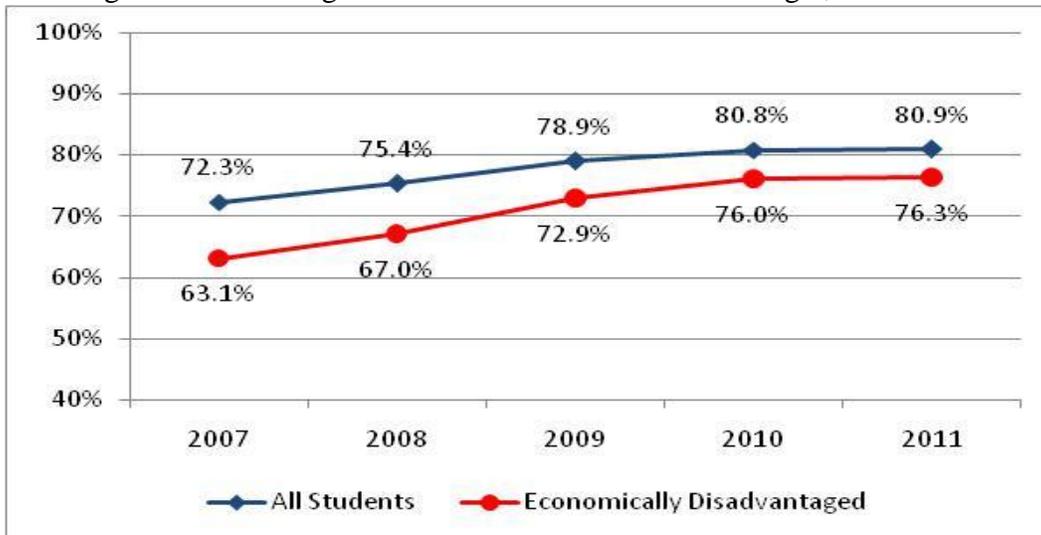
Source: Stillwell, R. (2009). Public School Graduates and Dropouts From the Common Core of Data: School Year 2008-09 (NCES 2011-312). National Center for Education Statistics, 2011.

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It is important to note that many states use different formulas when calculating their high school graduation rates. In order to compare the graduation rates across all states, it is necessary to use research from a national database that employs common methodology for all calculations. The National Center for Education Statistics (NCES) provides this data; however, because of the time required to collect and analyze the data, the most current graduation rates available from NCES are typically a few years dated.

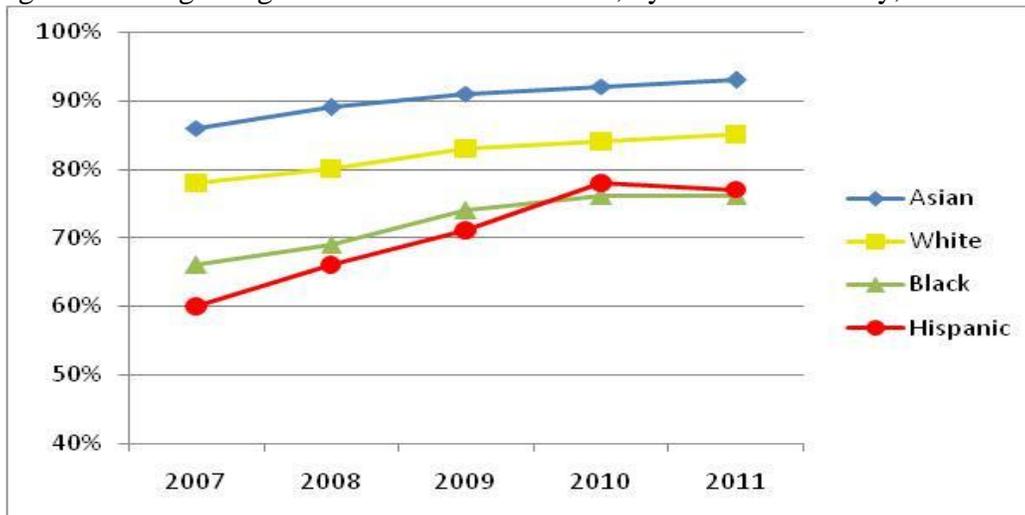
The remaining comparisons of graduation rates use data from the Georgia Department of Education. Over recent years, Georgia has successfully increased the public high school graduation rate. However, despite the rise in graduate rates over past years, Georgia still has large disparities in the graduation rate across ethnic and socioeconomic groups, as illustrated in figures 3 and 4.

Figure 3. Public High School Graduation Rates in Georgia, 2007-2011



Source: Georgia Department of Education State Report Cards.

Figure 4. Georgia High School Graduation Rates, by Student Ethnicity, 2007-2011



Source: Georgia Governor's Office of Student Achievement State Report Cards.

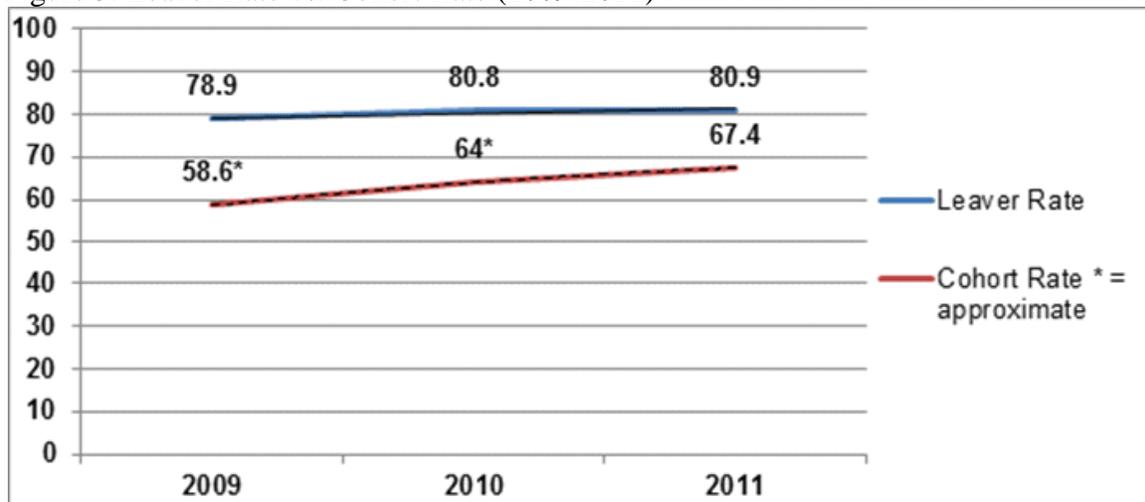
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Since 2006, all groups have made significant improvements. Hopefully these numbers continue to rise for all students. However, the gaps suggest that Georgia's educators and policymakers have much work to do to ensure that all students are prepared for success in college, careers, and life.

In an attempt at uniformity across the states, the US DOE has required that all states adhere to a common graduation rate formula. This new formula is called the Adjusted Cohort Rate. This new measurement shows that Georgia's four-year public high school graduation rate in 2011 was 67.4%. This is lower than the old measure, which showed a 80.9% graduation rate for 2011. Officials were quick to point out this change wasn't a result of poorer performance, just a more accurate portrayal the reality. A GaDOE press release offers an explanation:

"The primary difference in calculating the new graduation rate from the state's current method is in the definition of the cohort. The new "four-year adjusted cohort graduation rate" defines the cohort based on when a student first becomes a freshman. The rate is calculated using the number of students who graduate within four years and includes adjustments for student transfers. In contrast, Georgia's current graduation rate calculation defines the cohort upon graduation, which may include students who take more than four years to graduate from high school."⁶ Figure 5 shows the comparison between the old and new measures when looking at graduation rates.

Figure 5. Leaver Rate vs. Cohort Rate (2009-2011)



Source: Georgia Department of Education

⁵ Cardoza, Matt. GaDOE Press Release: "Georgia Releases New Four-year High School Graduation Rate." April 10, 2012.

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The National Perspective

A close examination of student performance on national and state standardized assessments almost always reveals alarming disparities in academic achievement across lines of race and socioeconomic status. Since the passage of the No Child Left Behind (NCLB) Act, which included federal accountability mandates, greater attention has been given to achievement gaps across the country. NCLB holds schools accountable for the academic progress of every child, regardless of race, ethnicity, or income level, and therefore, the legislation has made closing achievement gaps a national priority. Additionally, this component of NCLB has brought greater transparency to state reported data, as annual report cards on states' education systems must present disaggregated data that clearly describe the performance of all student subgroups.

Students in all states are often assessed using the same national tests. By examining the data from these national achievement measures, policymakers and educators can begin to compare the educational status of different states and regions. National measures of student achievement include the National Assessment of Educational Progress (NAEP) and high school graduation rates.

NCLB was due to be reauthorized in 2008. However, that reauthorization has stalemated in Washington D.C. With the process in limbo, President Obama instructed Education Secretary Arne Duncan to allow states to apply for a waiver from many regulations of the current law. One of the most controversial regulations was the "requirement that all students be deemed "proficient" in reading and math by the end of the 2013-14 school year."⁷ Many schools are not on pace to meet these goals, which would result in severe penalties.

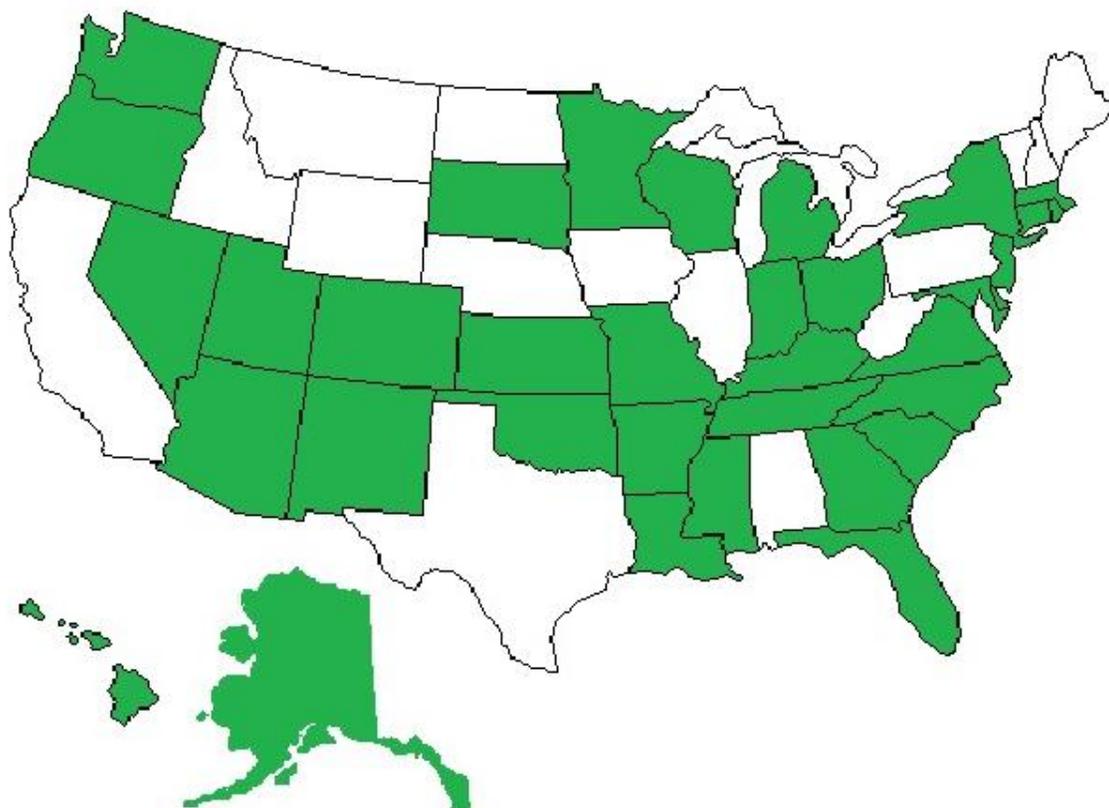
In order to obtain a waiver, states must put forth a plan that shows they are serious about improving their standards. These plans must include "college and career ready" guidelines, new evaluation mechanisms to assess teachers and principals, and improve upon NCLB's strategies to help the advancement of low-performing schools.

Thirty-three states, including Georgia, were approved for a waiver during the first two rounds of waiver applications. There will be other opportunities in the future for the remaining states to apply for the waiver. Figure 6 shows the states that have received a waiver highlighted in green.

⁷Cavanagh, Sean; Klein, Alyson. "Broad Changes Ahead as NCLB Waivers Roll Out." Retrieved from www.edweek.com on March 7, 2012.

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Figure 6



The 2012-2013 school year will serve as a study and refinement year for these new policies.⁸ Under the waiver system in Georgia, schools will no longer pass or fail based on AYP standards. A new College and Career Ready Performance Index (CCRPI) will be used to measure the effectiveness of schools. Using the CCRPI framework, the state will target schools that are in need of improving student achievement.

Title 1 schools fall into three categories: Reward, Priority, or Focus depending on their achievement levels. These results are based on a 2011 composite score which includes all subjects of the CRCT, CRCT-M, GAA, and EOCT. The Reward schools include the top 5 percent of schools when measuring highest performance and the top 10 percent when measuring highest progress over the course of three years. Priority schools are the poorest performing schools—the lowest 5 percent. They are identified by meeting one of three criteria: receiving a School Improvement Grant (SIG), a graduation rate less than 60 percent over two years, and a lack of progress on achievement over three years. Focus schools are identified by having a graduation rate less than 60 percent over two years and having the largest within-school gaps between highest achieving subgroup and the lowest achieving subgroup.⁹

⁸U.S. Department of Education. ESEA Flexibility Request. February 6, 2012.

⁹Georgia Department of Education. Press Release, February 9, 2012.

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These three categories were required to receive a waiver, but Georgia took another step to ensure that achievement gaps will be closed: Alert Schools. Alert schools are identified when a subgroup (race, SES) falls three standard deviations below the mean of the subgroup's state score. There are three types of alerts: graduation rate, overall achievement, and subject achievement. Both Title 1 and non-Title 1 schools will be measured so that schools will be able to target the weakest areas. Priority, Focus, and Alert schools will be identified in April 2012 and support and interventions will begin in June 2012. Also included in the waiver is permission to set Performance Targets to replace the Annual Measurable Objectives (AMOs) under AYP and authorize districts to provide Flexible Learning Programs (FLPs) in place of Supplemental Education Services (SES) providers.¹⁰

National Assessment of Educational Progress (NAEP)

Commonly known as the "Nation's Report Card," the National Assessment of Education Progress (NAEP) is a congressionally mandated project of the U.S. Department of Education's National Center for Education Statistics (NCES). The purpose of the national assessment is to gather information that will aid educators, legislators, and others in improving the educational experience of youth in our country. Its primary goals are to measure the current status of the educational attainments of young Americans and to report changes and long-term trends in those attainments.

NAEP is administered every two years in reading and mathematics in grades 4, 8, and 12. The assessment is given to statistically representative samples of students from each state, and results are commonly used to compare student performance from state to state. Shown in Figures 5-8 is the performance of Georgia's students in comparison with that of the southeast and national average on four tests: 4th grade mathematics; 4th grade reading; 8th grade mathematics; and 8th grade reading.¹¹

Figure 5

¹⁰ Ibid.

¹¹ Numbers found at U.S. Department of Education, National Center for Education Statistics, NAEP State Profile, 2011.

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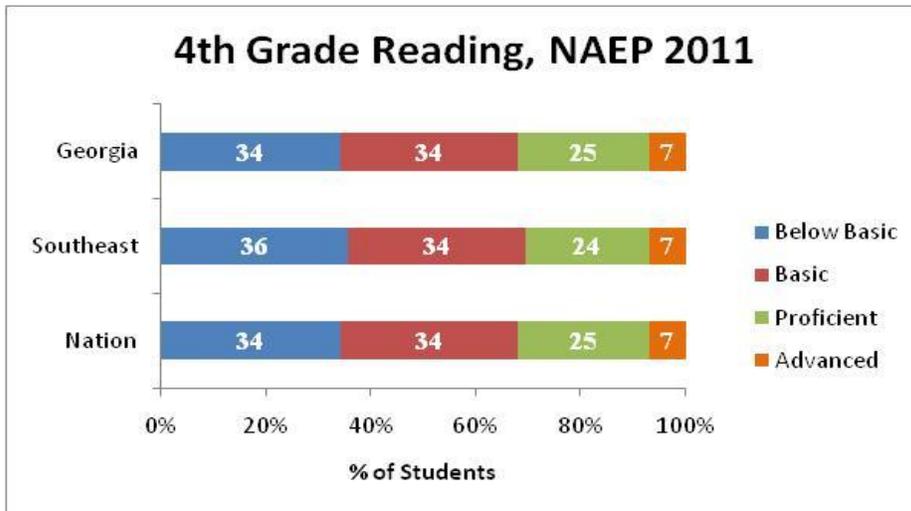


Figure 6

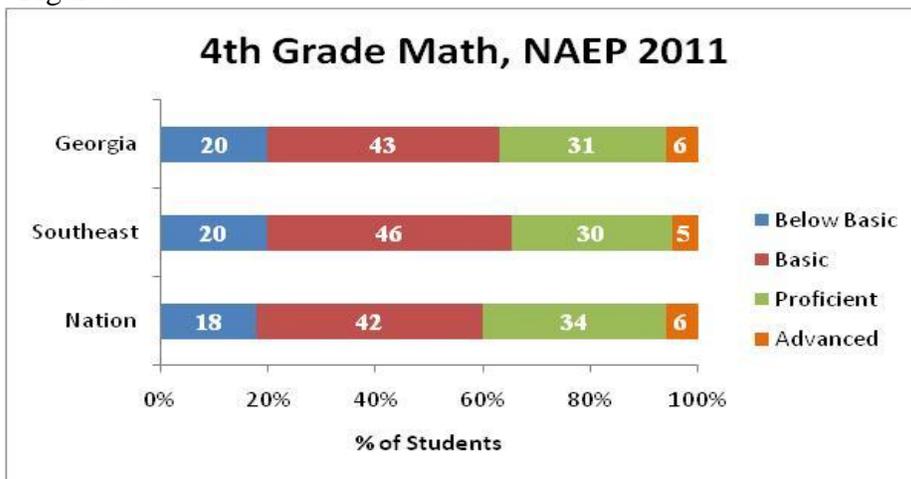


Figure 7

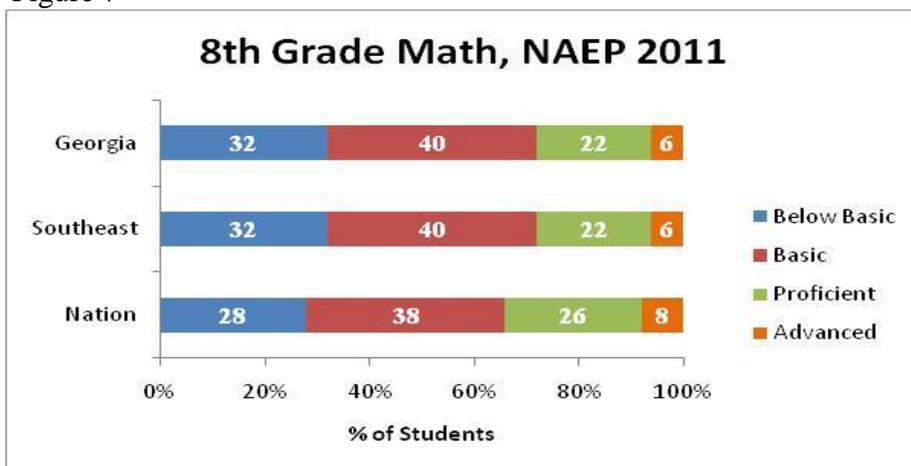
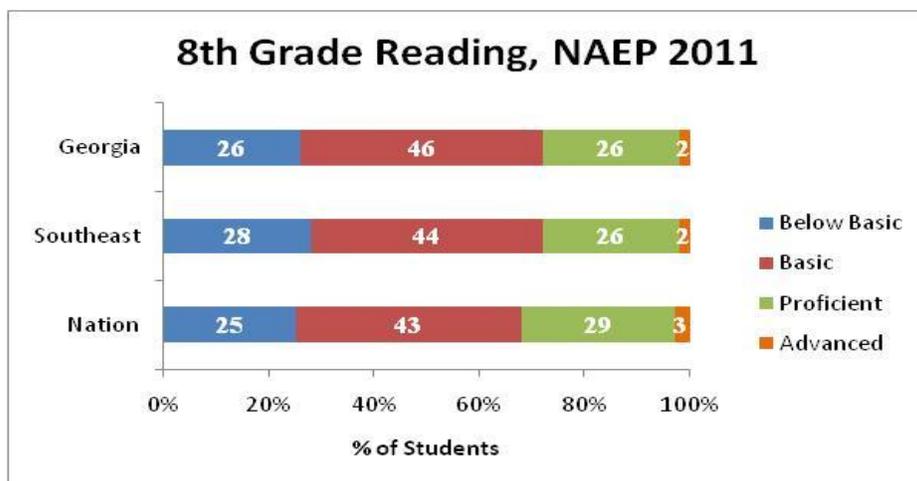


Figure 8

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When looking at trend data, Georgia has made great strides in reducing the achievement gap and improving outcomes for all students. Over the past 11 years, Georgia has cut in half the number of fourth graders who failed to meet the basic levels of math proficiency. Moreover in 2011, Georgia was one of only 16 states that made progress on closing the achievement gap for fourth grade math students between white students and African-American students.

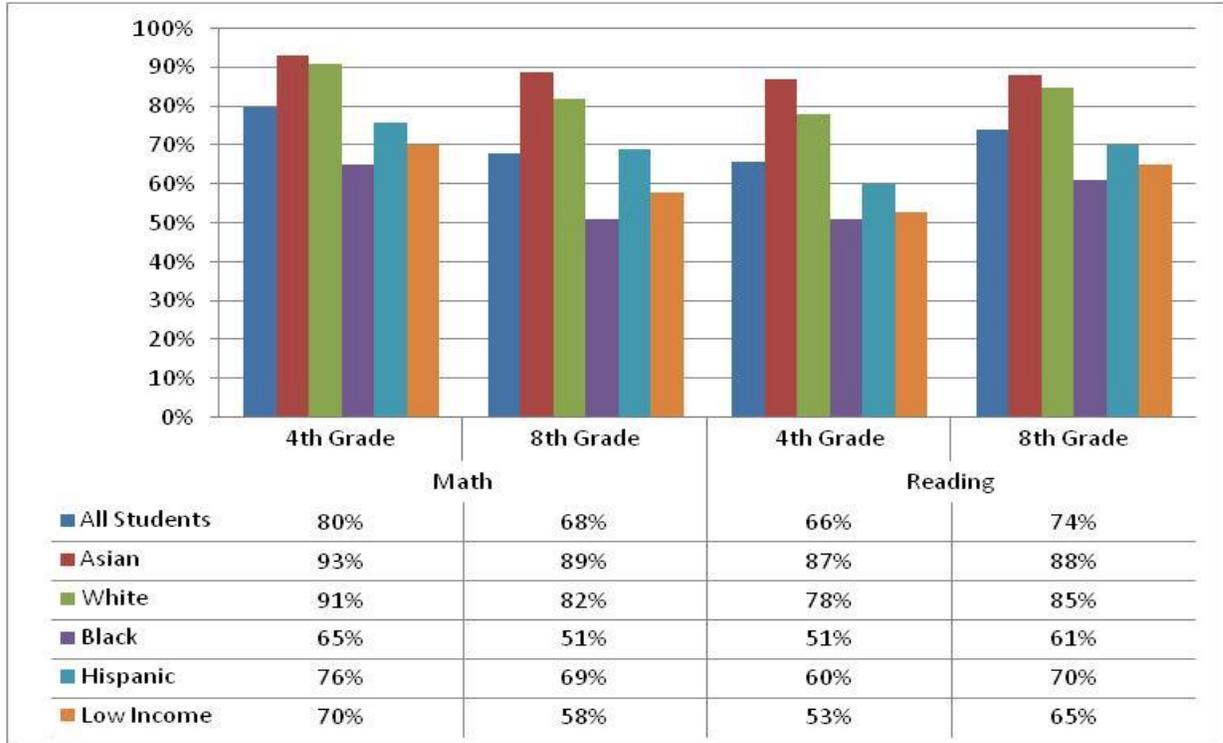
The story is similar for eighth graders. While the 2011 scores remained relatively flat from 2009, the percent of students who did not meet the basic levels of proficiency had been cut from a high of 48 percent in 2000 to 32 percent in 2011. One of only 16 states to do so, Georgia closed the gap between lower and higher income students.

Georgia's ability to close the achievement gap for low-income students extends to reading as well. Low-income eighth graders in Georgia slightly outperformed counterparts nationwide in reading in 2011.

However, it is important to note the 2011 results of the NAEP also show that in Georgia, while gains have been made, the gaps do persist in the achievement of students in different racial and socioeconomic subgroups. There is clearly more work that needs to be done. Figure 6 illustrates the discrepancies in Georgia's student performance on the 2011 NAEP.

Figure 6. Georgia Performance on the 2011 NAEP, Percent of Student Groups At or Above Basic Level of Proficiency

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Source: U.S. Department of Education, National Center for Education Statistics. NAEP State Profile, 2011.
U.S. Student Achievement Compared Internationally

The increasing globalization of the world economy has heightened the focus of business, political, and educational leaders on the competitiveness of the American workforce. There is growing recognition that the educational performance of students has significant implications for any country's economic vitality. To compare the achievement of students across the globe and gauge the country's economic potential, many nations participate in international assessments of student achievement. Two such measures, in which the United States takes part, are the Programme for International Student Assessment and the Trends in International Mathematics and Science Study.

Programme for International Student Assessment (PISA)

The Programme for International Student Assessment (PISA) is a triennial survey of the knowledge and skills of 15-year-olds. It is the product of collaboration between participating countries and economies through the Organisation for Economic Co-operation and Development (OECD), and draws on leading international expertise to develop valid comparisons across countries and cultures.

The 2009 survey was the fourth conducted. The three previous versions took place in 2000, 2003 and 2006, focusing primarily on reading, mathematics and science, respectively. The 2009 survey will once again focus more in depth on reading. All 34 OECD member countries participated in the 2009 assessment. Another 31 partner countries and economies partook, bringing the total to 65 participants, up from 57 three years ago. Since the first administration of the PISA in 2000, the United States has lost

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ground among other participating OECD countries. In both science and mathematics, the United States' rankings have fallen over the years. On the 2009 assessment,

- The average math score for U.S. students was higher than 29 educational systems and lower than 23 educational systems.
- The average reading score for U.S. students was higher than 39 educational systems and lower than 9 educational systems.
- The average science score for U.S. students was higher than 33 educational systems and lower than 18 educational systems.
- There was no significant change between the average score of U.S. students in reading literacy from 2000 to 2009.¹²

Trends in International Mathematics and Science Study (TIMSS)

The Trends in International Mathematics and Science Study (TIMSS) provides reliable and timely data on the mathematics and science achievement of U.S. students compared to that of students in other countries. TIMSS is organized by the International Association for the Evaluation of Educational Achievement (IEA) in Amsterdam the Netherlands. In the United States, TIMSS is supported by the U.S. Department of Education's National Center for Education Statistics (NCES).

Each participating country is required to draw random samples of schools. In the U.S., a national probability sample is drawn for each study that resulted in over 20,000 students from both public and private schools participating in 2007. Each TIMSS assessment is administered to 4th and 8th graders in the areas of mathematics and science. TIMSS data has been collected in 1995, 1999, 2003, and 2007.

Following are highlights from the performance of U.S. students on the 2007 TIMSS:

- In mathematics, U.S. fourth-graders outperformed their peers in 23 of the other 35 participating countries, and scored lower than 8 countries.
- U.S. eighth-graders scored higher in mathematics than 37 other countries and lower than 5 countries.
- In science, U.S. fourth-graders scored better than 25 countries and lower than 4 countries.
- U.S. eighth-graders outperformed 35 countries in science and scored lower than 9 countries.

Results for the 2011 study will be released in December 2012.

Research Tells Us

¹² Fleischman, Howard L.; Hopstock, Paul J.; Pelczar, Marisa P.; and Shelley, Brooke E. "Highlights from PISA 2009: Performance of U.S. 15-Year-Old Students in Science and Mathematics Literacy in an International Context." U.S. Department of Education, National Center for Education Statistics, December 2010. These comparisons do not include the number of systems that did not have a statistically significant difference in math or science scores compared to the U.S.

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Student achievement levels are an important measure—they illustrate how well the youth of a country are being educated. These measures are also useful because they provide data that can be used to develop new ways to increase student achievement. For instance, comparing test scores with the results of teaching assessments could shine some light on which methods are most effective.¹³ There are efforts being made in several school districts across the nation to produce and make available detailed data to teachers and administrators in the district. Researchers with The Achievement Gap Initiative at Harvard University recommend that a “school district publicize strategic goals for raising achievement levels...and track progress in visible ways” then “administrators [can] identify, examine, and...emulate practices from successful schools.”¹⁴

On the other hand, there are negative consequences of putting too much of an emphasis on measuring student achievement.¹⁵ Outcome measures influence what curricula a district will use. For instance, a district may focus on helping kids pass state exams so that they can graduate. This is a positive effort, but if other valuable learning did not take place because of this focus, then a disservice has been done to the students. Achievement measures must take into account whether students are acquiring the knowledge to help them succeed in college and beyond, not just to pass a standardized test.¹⁶ Dr. Duncan Chaplin warns that good teachers may be reluctant to teach in schools where students have historically performed poorly, for fear of being blamed for the low scores.¹⁷

Closing the achievement gaps among Black, Hispanic, and low-income Georgians is a necessary goal. The gap, at least between blacks and whites appears before children enter kindergarten and it persists into adulthood.¹⁸ Many variables such as family income, education of the parents, and marital status of the parents influence these outcomes, but it is clear that school environment and procedures do make a difference.¹⁹ The gap between black and white student achievement has fluctuated over the years. Significant narrowing of the gap occurred during the 1980s, but these improvements did not last. Attempts were made to identify what worked in the 80s, but no definitive conclusions could be drawn.²⁰ There have been several proactive approaches to this problem, including one in Montgomery County, Maryland. Education leaders from Montgomery presented their strategies and results at the AGI conference. By targeting high minority

¹³Payzant, Tom. (As cited in “Raising Achievement and Closing Gaps in Whole School Systems: Recent Advances in Research and Practice.” 2008. *The Achievement Gap Initiative at Harvard University*).

¹⁴The Achievement Initiative at Harvard University. “Raising Achievement and Closing Gaps in Whole School Systems: Recent Advances in Research and Practice.” 2008.

¹⁵The Achievement Initiative at Harvard University. “Raising Achievement and Closing Gaps in Whole School Systems: Recent Advances in Research and Practice.” 2008.

¹⁶Murnane, Richard. (As cited in “Raising Achievement and Closing Gaps in Whole School Systems: Recent Advances in Research and Practice.” 2008. *The Achievement Gap Initiative at Harvard University*).

¹⁷The Achievement Initiative at Harvard University. “Raising Achievement and Closing Gaps in Whole School Systems: Recent Advances in Research and Practice.” 2008.

¹⁸Jencks, Christopher; Phillips, Meredith. “The Black-White Test Score Gap: Why It Persists and What Can Be Done.” 1998. *The Brookings Review*, Vol. 16, No. 2, pp. 24-27

¹⁹David Grissmer, Sheila Nataraj Kirby, Mark Berends, and Stephanie Williamson, *Student Achievement and the Changing American Family*, Santa Monica, CA: Rand, 1994

²⁰Barton, Paul E.; Coley, Richard J. “The Black-White Achievement Gap: When Progress Stopped.” 2010. Retrieved from: ets.org

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schools for reforms which included cutting class sizes by 50 percent, making Kindergarten classes a full instead of half-day, and challenging students to meet higher standards, real progress was made. Comparing 2002 to 2007 reading rates, Hispanic and Black Kindergartners saw an increase of 45 and 38 percentage points respectively. PSAT and AP course participation rates have increased among Blacks and Hispanics as well, almost reaching the rate of whites. Montgomery County is a model for the nation.

A society needs a skilled and educated workforce to enable economic progress.²¹ The TIMMS and PISA surveys put into perspective these seemingly domestic concerns. Fostering academic success for all students in the U.S. is vital if we are to continue to remain competitive around the world.

For More Information

²¹Barrow, Robert J.; Lee, Jong-Wha. "International Data on Educational Attainment Updates and Implications." Oxford University Press. Volume 53, Number 3, 1 July 2001 , pp. 541-563

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- **The Governor’s Office of Student Achievement – www.gaosa.org**

Education stakeholders can access school and system accountability profiles as well as education performance data from the website of the Governor’s Office of Student Achievement.

- **National Assessment of Educational Progress, The Nation’s Report Card – <http://nationsreportcard.gov>**

The Nation’s Report Card communicates the findings of the National Assessment of Educational Progress (NAEP)—an assessment of the academic achievement of elementary and secondary U.S. students.

- **National Center for Education Statistics – <http://nces.ed.gov>**

The National Center for Education Statistics is the primary federal entity for collecting and analyzing education data in the U.S. and internationally. The NAEP is one of several projects for which this organization is responsible.