



Achievement in Context

**How South Carolina Students Fare
Against Their
National and International Competition**

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Senior Fellow in Education Policy, The South Carolina Policy
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Executive Summary

One of parents' chief educational goals is to ensure that their children are prepared for success in the workforce. In an era of low-cost travel, instantaneous communication, and the outsourcing of jobs overseas, that means being able to compete effectively not only nationally but internationally. The present study investigates how well South Carolina's schools are preparing young people for that global competition.

To address the question as comprehensively as possible, South Carolina's performance is first placed in a national context, and then U.S. performance is in turn placed in a global context. This two-stage approach makes it possible to gauge the achievement of South Carolina students with respect to that of their peers in other nations.

With surprising consistency, disadvantaged and minority students in South Carolina perform better relative to their demographic peers in other states than do advantaged and white students. With just a single exception, this pattern is manifested on every test, in every subject, and at every grade level examined (though the margins are not always large or statistically significant).

In other words, South Carolina students who are white, wealthy, high-income, have well-educated parents, or get good grades do worse with respect to their demographic peers in other states than students who are minority, low-income, non-English speaking, low-achieving, or who have minimally-educated parents do with respect to theirs.

But the fact that South Carolina's minority and disadvantaged students do better *relative to their own national peers* than advantaged and white students do with respect to theirs *does not mean that they do well*. In fact, by the end of high-school, black, white, high-income, and low-income South Carolina students *all* consistently score below the national averages of their peer groups on every measure available. It's just that advantaged and white students happen to be *even further behind* their own peer groups, in most cases, than are disadvantaged and minority students.

Though racial achievement gaps are somewhat smaller in South Carolina than in other states, they are still very large in absolute terms.

What makes the persistence of these disparities particularly tragic is that we know they are, to a significant degree, preventable. In private schools, the 12th grade black/white reading gap is only half as large as the 4th grade gap. In fact, the 12th grade racial achievement gaps in the private sector are smaller than their corresponding 4th grade gaps in math, science, and writing as well. This is not true in the public sector, where the 12th grade gaps are actually larger in two of those four subjects. The evidence also suggests that graduation rates of minority and low-income students are substantially higher in the private than in the public sector.

Another pattern that emerges from this study is that South Carolina's performance relative to the nation at large deteriorates at the high-school level. At the 4th and 8th grades, South Carolina is usually close to the national average when results are broken down by demographic groups. By the end of high-school, however, South Carolina's college-bound seniors have fallen to last place on the SAT and 2nd to last place on the ACT – a drop that cannot be explained away by differences in participation rates. South Carolina also ranks between 3rd from last and dead last in graduation rates.

Of particular concern in this era of global competition is the finding that, *as South Carolina's students are falling to the bottom of the national heap, so, too, is the United States falling to the bottom of the international heap*. American students perform at about the average of industrialized nations at the 4th grade, consistently below average at the 8th grade, and at or near the bottom by the 12th grade. Thus, in order for South Carolina's young people to be truly prepared to compete in the global economy, they would have to far surpass the average achievement of America's high-school seniors. They do the opposite.

Nor can it be said that America's poor overall performance at the end of high-school is due to a large contingent of low-achieving students. *In reality, there is no subject, no test, and indeed no*

grade, on which America's best students are the world's best students. At the 12th grade, America's top students place dead last when compared to top students in other countries – implying that South Carolina's highest achieving high-school seniors are, in reality, among the worst of the worst.

For South Carolina, the news contained in this report is not good. Nevertheless, it will hopefully be of use to the State's citizens in deciding what kind and degree of reform is necessary to bring educational excellence (and hence real economic competitiveness) to the children of the Palmetto State.

South Carolina In a National Context

There are five main sources of education data that allow meaningful comparisons of national and state-level performance: The National Assessment of Educational Progress (NAEP), the Advanced Placement examinations (AP), the Scholastic Assessment Test (SAT), the American College Test (ACT), and graduation rates. Each of these is examined below.

National Assessment of Educational Progress

The NAEP is a series of tests in different subjects that are administered every few years to random samples of students around the country. The core subjects are reading, writing, mathematics, and science. Not every subject is tested in the same year, so the most recent years for which data are available vary from one subject to the another. The most recent data for reading and mathematics were collected in 2003, for science were collected in 2000, and for writing were collected in 2002 (results are usually published in the year following collection). These are the data used in the present analysis, unless otherwise specified.

Between the early 1990s (the first years for which state-level data are available) and the mid 1990s, South Carolina students lost ground on the NAEP tests overall with respect to students in other states. Subsequently, South Carolina's performance rebounded, recouping the earlier loss and surpassing its earlier performance vis-à-vis the national average. The state's current standing based on the most recent NAEP results is as follows:

In mathematics, South Carolina students performed at the national average at both the 4th and 8th grades.¹ They scored 236 in 4th grade math compared to a national average of 234 (a statistically insignificant difference), beating such states as Georgia, Arizona, and Rhode Island.² South Carolina students scored 277 in 8th grade math compared to a national average of 276 (a statistically insignificant difference), beating Florida, Nevada, and Oklahoma, among others.³

Though parents are arguably most concerned with the knowledge and skills their children take away at the end of high-school, state-level NAEP data are currently available only for the 4th and 8th grades.

In reading, South Carolina students were average performers at the 4th grade but slightly below average at the 8th grade. They scored 215 at the 4th grade, one point behind the national average and in a statistical tie with Texas, Georgia, Arkansas, and Oklahoma. South Carolina scored 258 in 8th grade reading, three points behind the national average (a statistically significant deficit). This placed it behind Georgia, Oklahoma, and North Carolina.

In science, the State was below average at both grades. South Carolina students were 7 points below the national 4th grade average of 148, and 7 points below the 8th grade average of 149. Fourth graders in South Carolina had the sixth lowest score in the nation, significantly behind such states as Texas, Tennessee, Rhode Island, Kentucky, and West Virginia. Eighth graders had the 7th lowest score in the nation, behind roughly the same group of states.⁴

In writing, South Carolina was below average at both grades. Its students scored 8 points below the national average of 153 at the 4th grade and 6 points below the national average of 152 at the 8th grade. South Carolina was tied for seventh-from-last place with Nevada and Utah at the 4th grade, and placed 12th from last at the 8th grade – beating Nevada and Utah, but behind Kentucky and far behind North Carolina.

The most helpful piece of information for parents would be to know how their own children performed on the NAEP tests, but only a fraction of students are tested and individual results are not reported. The next best thing is to break the results down by socio-economic subgroup, since family income, English language proficiency, student race/ethnicity, and mother’s level of education are all strongly correlated with test scores.

To that end, the following tables compare the scores of South Carolina students with their national sub-group peers.

Table 1. NAEP Scores by Family Income

| | S.C. Low Income* | U.S. Low Income | S.C. Not Low Income | U.S. Not Low Income |
|-------------------------------|------------------------|-----------------------|---------------------------|---------------------------|
| 4 th Grade Math | 226 | 222 | 247 | 244 |
| 8 th Grade Math | 263 | 258 | 289 | 287 |
| 4 th Grade Reading | 202 | 201 | 228 | 229 |
| 8 th Grade Reading | 247 | 246 | 268 | 271 |
| 4 th Grade Science | 128 | 129 | 157 | 159 |
| 8 th Grade Science | 126 | 127 | 155 | 160 |
| 4 th Grade Writing | 136 | 141 | 155 | 163 |
| 8 th Grade Writing | 134 | 136 | 157 | 161 |

Data Source: NCES website, NAEP Data Tool.
<http://nces.ed.gov/nationsreportcard/naepdata/>

*Defined as eligibility for the federal free/reduced-price lunch program

As Table 1 makes evident, low-income South Carolina students consistently do better with respect to low-income students nationally than middle- and high-income South Carolina students do with respect to middle- and high-income students nationally. Averaged across subjects and grades, low-income students in South Carolina do about as well as their national counterparts while middle- and high-income students in South Carolina score slightly behind their national counterparts. These differences are not always large or statistically significant, but they invariably favor the low-income students.

Table 2. NAEP Scores by English Language Proficiency

| | S.C. Limited Proficiency | U.S. Limited Proficiency | S.C. Not Limited Proficiency | U.S. Not Limited Proficiency |
|-------------------------------|--------------------------------|--------------------------------|------------------------------------|------------------------------------|
| 4 th Grade Math | --* | 214 | 236 | 236 |
| 8 th Grade Math | --* | 241 | 277 | 278 |
| 4 th Grade Reading | --* | 186 | 215 | 219 |
| 8 th Grade Reading | --* | 222 | 258 | 263 |
| 4 th Grade Writing | --* | 127 | 145 | 155 |
| 8 th Grade Writing | --* | 115 | 146 | 153 |

Data Source: NCES website, NAEP Data Tool. <http://nces.ed.gov/nationsreportcard/naepdata/>

*There are too few students in this category (roughly 1% of the total) for their scores to be accurately measured. Data not available for science test.

The first thing that becomes apparent in looking at Table 2 is that the scores for English proficient students in South Carolina are the same as the state’s overall average scores listed earlier. That is because students who don’t have English as a native language are extremely rare in South Carolina (about 1 percent of all the population). The same is not true for the United States as a whole, since many states have large populations of immigrant children with limited English proficiency.

The result is inevitable: when we compare apples to apples – English proficient students in South Carolina to English proficient students nationwide – South Carolina’s relative performance suffers.

Table 3. NAEP Scores by Race/Ethnicity

| | S.C. White | U.S. White | S.C. Black | U.S. Black | S.C. Hispanic | U.S. Hispanic |
|-------------------------------|---------------|---------------|---------------|---------------|------------------|------------------|
| 4 th Grade Math | 247 | 243 | 223 | 217 | 232 | 222 |
| 8 th Grade Math | 292 | 288 | 258 | 252 | ---* | 259 |
| 4 th Grade Reading | 228 | 228 | 200 | 199 | 205 | 200 |
| 8 th Grade Reading | 270 | 272 | 244 | 243 | ---* | 245 |
| 4 th Grade Science | 157 | 159 | 123 | 124 | 128 | 127 |
| 8 th Grade Science | 155 | 160 | 122 | 121 | 123 | 127 |
| 4 th Grade Writing | 154 | 161 | 137 | 141 | ---* | 141 |
| 8 th Grade Writing | 155 | 160 | 135 | 135 | ---* | 137 |

Data Source: NCES website, NAEP Data Tool.
<http://nces.ed.gov/nationsreportcard/naepdata/>

*There are too few students in this category (2% or less of the total) for their scores to be accurately measured.

Table 3 shows that minority students in South Carolina do better with respect to minority students nationally than non-Hispanic whites do compared to their own national counterparts. Here again, the differences are not always large or statistically significant. They are, however, consistent across grades and subjects.

Another, regrettably familiar, pattern is that non-Asian minority students consistently score far below their white counterparts in all grades and subjects, both nationally and in South Carolina. South Carolina’s achievement gap is somewhat smaller than the national gap, though that difference pales in comparison to the magnitude of both gaps.

The persistence and apparent universality of the minority/white achievement gap is rightly seen as one of the nation’s gravest educational problems. It is useful, therefore, to explore how the gap varies across different school types. In particular, the NAEP database makes it possible to compare the size of the racial achievement gap in public versus private schools, across grades and subjects.

Table 4. White/Black NAEP Achievement Differences for Public and Private Schools⁵

| NAEP Test Subject | Data Year | 4th Grade | | 12th Grade | | Percent Difference* Between the 4 th and 12 th Grade Gaps (Public) | Percent Difference* Between the 4 th and 12 th Grade Gaps (Private) |
|-------------------|-----------|--------------|---------------|--------------|---------------|--|---|
| | | Gap (Public) | Gap (Private) | Gap (Public) | Gap (Private) | | |
| Reading | 2002 | 29 | 27 | 25 | 14 | -13.8 | -48.1 |
| Writing | 2002 | 20 | 22 | 23 | 18 | 15.0 | -18.2 |
| Math | 2000 | 30 | 28 | 33 | 23 | 10.0 | -17.9 |
| Science | 2001 | 35 | 27 | 31 | 20 | -11.4 | -25.9 |

Data Source: NAEP Data Tool, NCES website: <http://nces.ed.gov/nationsreportcard/naepdata/>
 * Negative numbers indicate a 12th grade black/white score gap that is smaller than its corresponding 4th grade gap.

As can be seen in Table 4, the private sector racial achievement gap is narrower at the 12th grade than at the 4th grade in all of the core NAEP subjects. Public schools actually see a larger race gap in both writing and mathematics at the 12th grade than at the 4th. Averaged across subjects, the public school racial achievement gap is virtually the same at the 4th and 12th grades. By contrast, the gap in private schools is an average of 27.5 percent smaller at the 12th grade than at the 4th. Most notably, the 12th grade private school reading gap is only half as large as the 4th grade gap.

Table 5. NAEP Scores by Mother’s Level of Education

| | S.C. | | U.S. | | S.C. | | U.S. | |
|-------------------------------|-----------------|-----------------|--------------|--------------|-----------------|-----------------|-----------------|-----------------|
| | No H.S. Diploma | No H.S. Diploma | H.S. Diploma | H.S. Diploma | College Diploma | College Diploma | College Diploma | College Diploma |
| 8 th Grade* Math | 268 | 260 | 272 | 273 | 284 | 288 | | |
| 8 th Grade Reading | 254 | 248 | 252 | 258 | 264 | 272 | | |
| 8 th Grade Science | 130 | 130 | 135 | 144 | 150 | 161 | | |
| 8 th Grade Writing | 136 | 139 | 142 | 148 | 155 | 164 | | |

Data Source: NCES website, NAEP Data Tool.
<http://nces.ed.gov/nationsreportcard/naepdata/>
 * Data available only for 8th graders.

From Table 5 we can conclude that the more educated a South Carolina student’s mother happens to be, the further he is likely to be behind students in other states whose mothers have the same level of education. Specifically, South Carolina students whose mothers lack high school diplomas perform slightly better than the average American student whose mother also lacks a high school diploma. By contrast, South Carolina students whose mothers have college degrees perform significantly worse than students in other states whose mothers have college degrees.

Graduation Rates

When comparing the performance of state school systems, it is important to keep graduation rates in mind, for two reasons: first, dropouts are at a significant disadvantage in the job market

and hence a system's ability to keep students in school is a key measure of its effectiveness; and second, the dropout rate affects a state's test scores at the high-school senior level. Dropouts tend to be academically low-achieving students, and so the test scores of the students who complete their senior year of high-school are likely to be an inflated measure of their entire age cohort. That is to say: if you only test the higher-achieving students who remain in school through their senior year (and hence eliminate from consideration the low-achieving dropouts), you will form a distorted impression of the academic ability of their age group as a whole. Since dropout rates vary from state to state, those with higher dropout rates are likely to have an unfair test score advantage over those with lower dropout rates.

Unfortunately, official dropout and graduation statistics are generally inaccurate and unhelpful. As Jay Greene and Marcus Winters observed in their 2002 study of the subject:

Official graduation statistics are too often based upon definitions or allow exemptions that prevent the results from conforming to our common-sense understanding of what a graduation rate should be. Most people consider any student that finishes high school with a regular high school diploma to be a graduate and students who fail to do so as dropouts. Too often official graduation statistics fail to meet this criterion. For example, in Washington State *only students who have completed the paper work necessary to be officially considered dropouts are reported as such*. Students who did not fill out the necessary paperwork but are no longer in school are considered "unknown", though the state admits that many of them are in fact dropouts.⁶

The Greene method, by contrast, is specifically designed to estimate a state's graduation rate as it is conceived of by the public: the percentage of an entering high-school freshmen class who go on to satisfactorily complete graduation standards.

For the class of 2000, Greene and Winters estimated the nationwide graduation rate to be 69 percent. Their estimate for South Carolina was 59 percent – putting the Palmetto State in a tie (with Arizona) for the third lowest graduation rate in the country.

Independently of Greene and Winters, Christopher Swanson of the Urban Institute undertook his own nationwide investigation of graduation rates for the class of 2001. Using his own Urban Institute method, Swanson estimated that year's nationwide graduation rate at 68 percent – very close to the estimate arrived at by Greene and Winters for the preceding class. Swanson's figure for South Carolina was considerably lower, however: 50.7 percent – the lowest graduation rate in the nation.⁷

In a separate study, Swanson and co-investigator Duncan Chaplin applied both the Greene method and the Urban Institute method to a data set for the 2000 graduating class and estimated the South Carolina graduation rate at 52.7 percent (Greene method) and 48.4 percent (Urban Institute method). This compared to a national average graduation rate of 69 percent (Greene) and 68 percent (Urban Institute).⁸

Across statistical methods, graduating classes, and data sets, South Carolina places between last and third-to-last in the nation in its ability to see students through to high-school completion.

Turning to racial differences in graduation rates, the Urban Institute method finds that majority white school districts have a 74.5 percent graduation rate nationwide while majority minority⁹ districts have a 56.4 percent graduation rate. The same method applied to South Carolina indicates that majority white districts in the state have a 54.5 percent graduation rate, compared to a 44.5 percent graduation rate for majority minority districts. The Palmetto state thus has a smaller graduation gap, but unfortunately it does not achieve that end by improving

the graduation rate of minority students, but rather by having a white graduation rate that is a staggering 20 points worse than the national average. The 10 point gap between South Carolina's white and minority graduation rates is still substantial.

As with the racial achievement gaps, it is useful to compare racial graduation gaps between the public and private sectors to determine how much of the gap might be due to systemic problems of public schools. As it happens, there is strong evidence that graduation rates are much higher in the private sector, especially for minority students. Economist Derek Neal has found that black students attending urban private schooling are vastly more likely to complete high-school, gain admission to college, and complete college than socially-economically similar black students in urban public schools.¹⁰

In a 2004 study comparing Milwaukee public school graduation rates with those of low-income participants in the city's private school voucher program, Jay Greene found that the voucher students were nearly twice as likely to graduate as the public school students.¹¹ More remarkable still, Greene found that voucher students were more than one-and-a-half times as likely to graduate as students attending Milwaukee's elite group of 6 academically selective public schools.

Advanced Placement Exams

The Advanced Placement (AP) program provides an opportunity for students to earn college-level credit for classes taken in the later years of high-school. Most colleges award such credits to any student who scores a 3 or better on the 5 point AP exam grading scale.

Though only a fraction of students take AP exams, that fraction happens to be almost identical between South Carolina (15.2%) and the nation as a whole (15.1%).

Nationwide, the average AP exam score for public school students was 2.90, compared to 2.78 in South Carolina. The only demographic or socio-economic breakdowns available for these scores are by race/ethnicity. Whites in South Carolina scored 2.87 while whites nationwide scored 2.99. Blacks in South Carolina scored 2.02, compared to a score of 2.08 for blacks in other states. Among Hispanics, the average score in South Carolina was 2.96 compared to a national average of 2.63.¹²

Nationally, the percentage of white students scoring a 4 or better overall on their AP exams was 35.0. In South Carolina, the percentage of white students scoring at that level was 31.4. The national percentage of blacks scoring 4 or higher was 11.4, while in South Carolina is was 10.3.

Scholastic Assessment Test

In South Carolina, 62 percent of high-school seniors took the SAT in 2004, compared to 48 percent nationwide. On the surface, this suggests that a significantly higher proportion of low-achieving children are likely to have taken the test in South Carolina. If we factor in relative graduation rates, however, the picture changes. Using the overall averages for the graduation rates calculated by Swanson and Greene, we come up with a nationwide average of 68.5 percent compared to a state average of 52.7 percent. To estimate the actual percentages of the total high-school-senior-aged cohort that took the SAT, we must multiply these graduation rates by their respective test taking rates. Doing so, we find that 32.7 percent of South Carolina's senior-aged population took the SAT, compared to 32.9 percent of senior-aged Americans – an almost identical SAT participation rate.

Even if we use the highest of the four South Carolina graduation estimates mentioned above (Greene’s 59 percent figure for the graduating class of 2000), and its corresponding national graduation rate (69 percent), it suggests that 36.6 percent of South Carolina high-school-senior-aged citizens took the SAT compared to 33.1 percent nationally – not a dramatic difference in SAT participation.

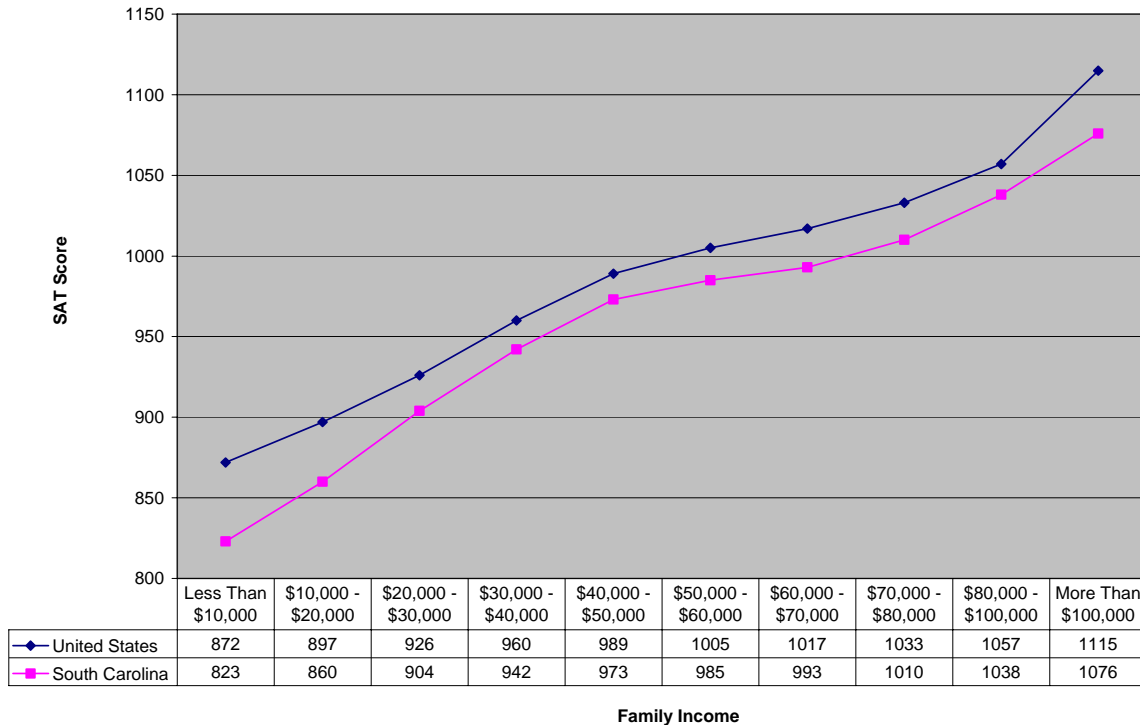
Given these fairly comparable net participation rates, it is not unfair to compare South Carolina’s SAT performance directly with the corresponding national averages.

Over the past generation, South Carolina has generally placed last in the nation by overall SAT score, occasionally rising to second-to-last place, behind Georgia (as in 2003). South Carolina fell back to last place again in 2004. The Palmetto State is currently 40 points behind the national average on the combined mathematical and verbal portions of the test.¹⁵

Understanding South Carolina’s SAT Deficit

As with the NAEP, a variety of demographic, academic, and socio-economic subgroup breakdowns are available. These subgroup scores are charted below.

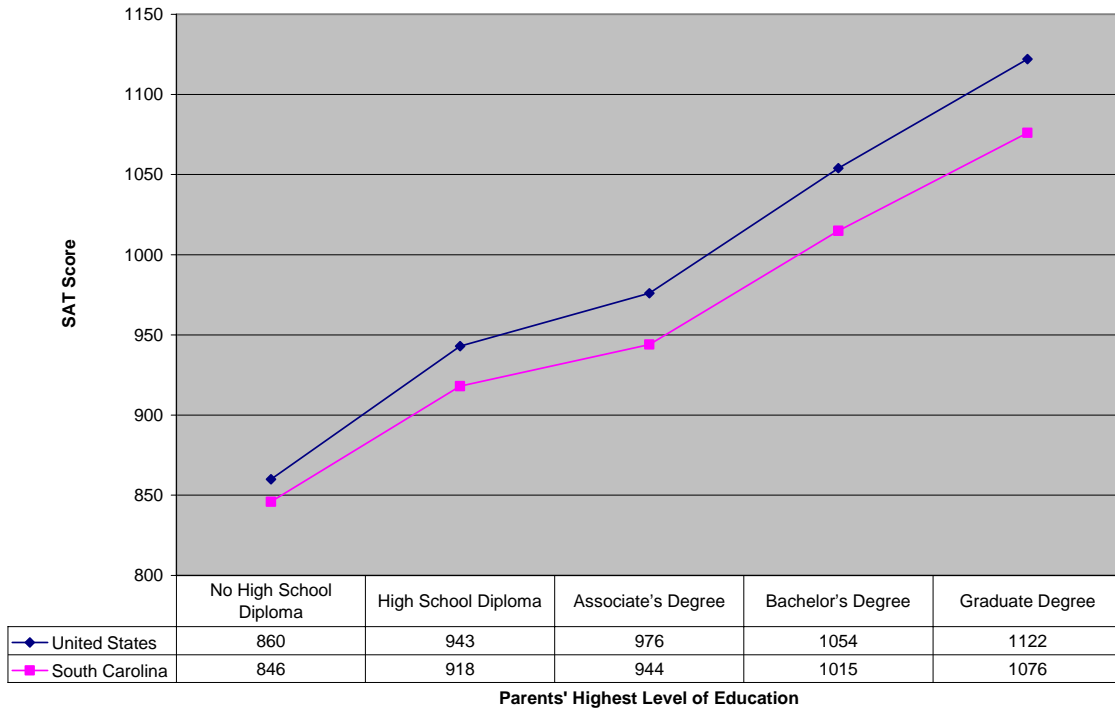
Chart 1. 2004 SAT Scores by Family Income



Data Source: The College Board, “2004 College-Bound Seniors. A Profile of SAT Program Test-Takers,” “Total Group Report” and “South Carolina Report,” The College Board, 2004.

As can be seen in Chart 1, South Carolina’s SAT deficit is smallest for families earning \$40,000 to \$50,000 per year, and greatest for families at the economic extremes. The largest gap (49 points) is to be found among families earning less than \$10,000, and the second largest gap (39 points) is to be found among those earning more than \$100,000. South Carolina’s richest and poorest families are thus the furthest behind their economic peers elsewhere in the United States.

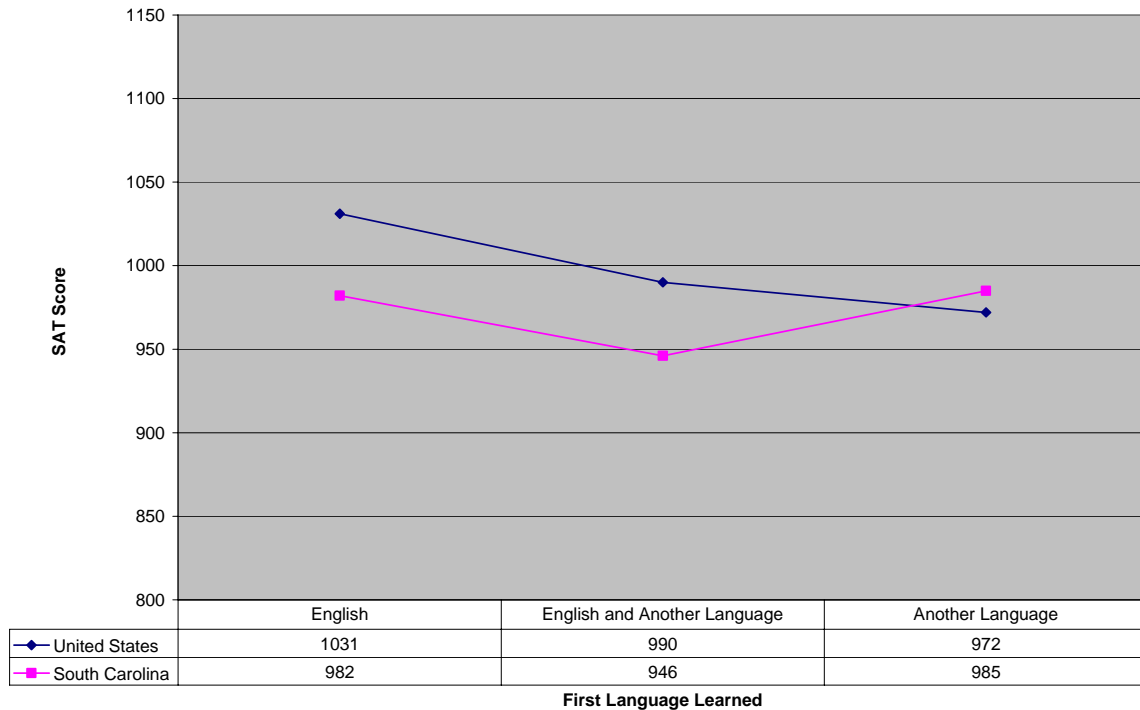
Chart 2. 2004 SAT Scores by Parents' Highest Level of Education



Data Source: The College Board, "2004 College-Bound Seniors. A Profile of SAT Program Test-Takers," "Total Group Report" and "South Carolina Report," The College Board, 2004.

Chart 2 reveals that the better educated South Carolina parents are, the worse their children score on the SAT compared to those of similarly-educated parents in other states. Students whose parents have only a high-school diploma are nearly twice as far behind their national peers as students whose parents lack such a diploma. Students whose parents have a graduate degree are, in turn, nearly twice as far behind their national peers as students whose parents have only a high-school diploma.

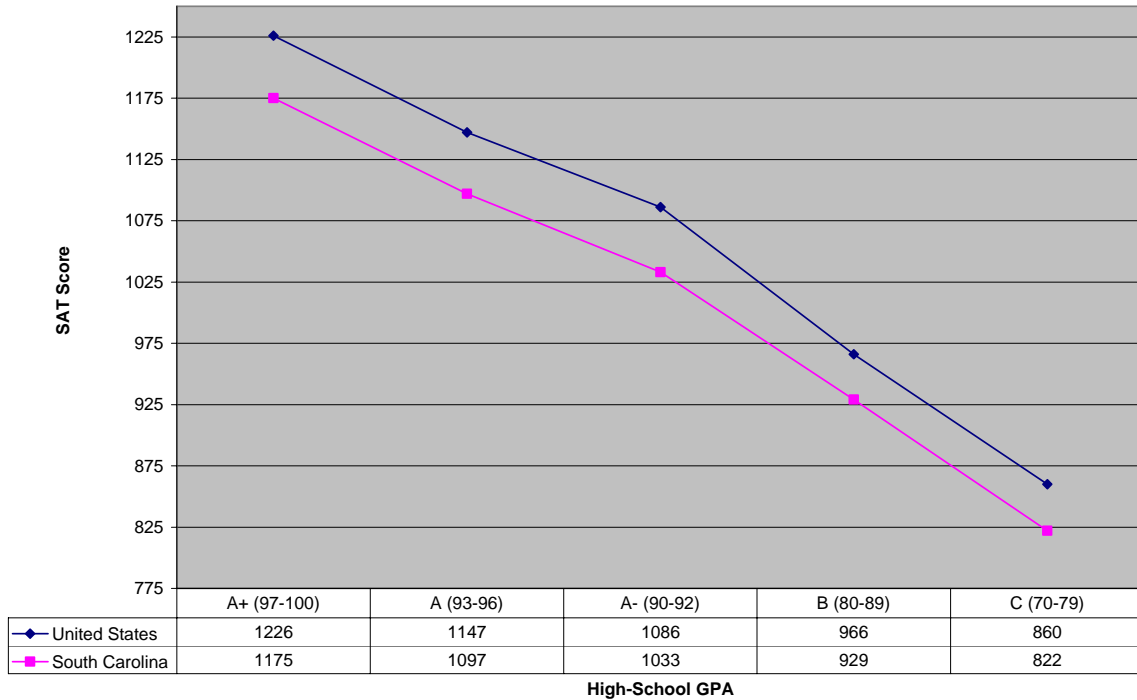
Chart 3. 2004 SAT Scores by First Language Learned



Data Source: The College Board, "2004 College-Bound Seniors. A Profile of SAT Program Test-Takers," "Total Group Report" and "South Carolina Report," The College Board, 2004.

As can be seen in Chart 3, South Carolina students who did not have English as a first language perform somewhat better, on average, than their national counterparts. South Carolina Students for whom English was a first language scored far behind their U.S. peers, and those for whom English was their only mother tongue performed the worst when compared to their national peers.

Chart 4. 2004 SAT Scores by High-School GPA*



Data Source: The College Board, "2004 College-Bound Seniors. A Profile of SAT Program Test-Takers," "Total Group Report" and "South Carolina Report," The College Board, 2004.
 *Approximately 0 percent of test takers received grades below C, and so that category was omitted.

Chart 4 indicates that South Carolina students with A grades are substantially further behind their national peers than students with B and C grades. A-, A, and A+ students are 53, 50, and 51 points below students with the same grades in other states. B and C students are, respectively, 37 and 38 points behind their national peers.

These score differences cannot be attributed to disparate grading patterns between South Carolina and the nation as a whole. The percentage of students receiving a given grade in South Carolina never differs by more than 1 percent from the national percentage of students receiving that same grade.

Chart 5. 2004 SAT Scores by Race/Ethnicity

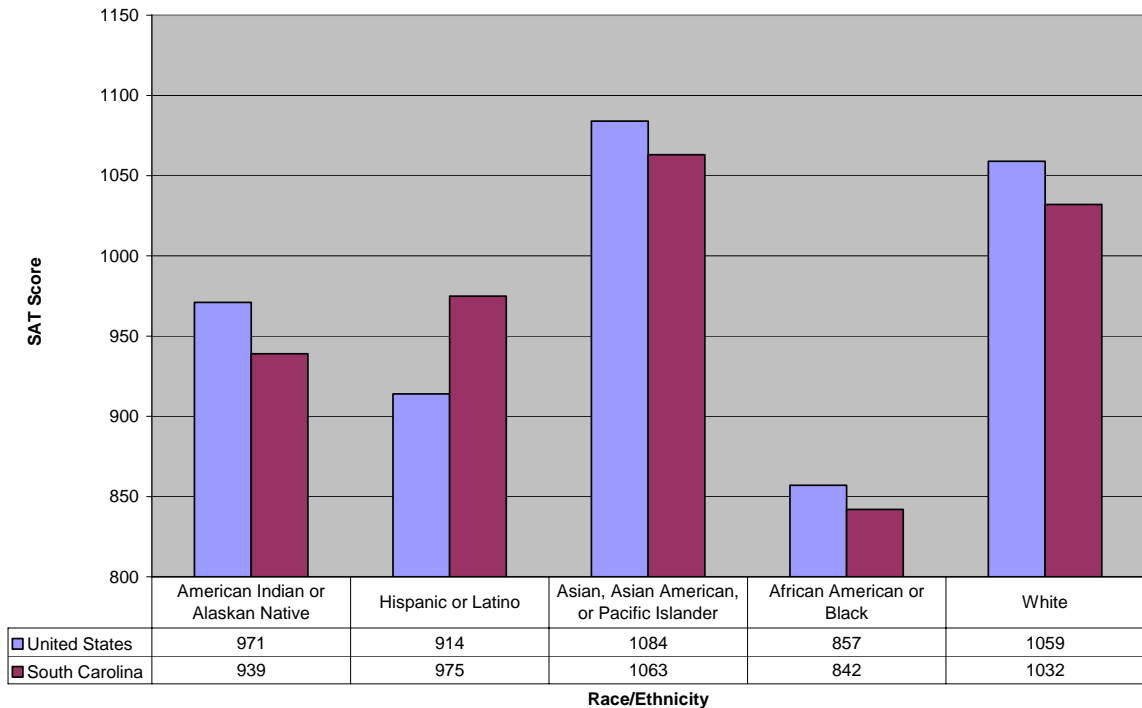


Chart 5 reveals that all South Carolina racial and ethnic groups except for Hispanics/Latinos (who make up only 2 percent of the state’s SAT-taking population) are behind their corresponding groups in other states. Whites in South Carolina are more than twice as far behind white students nationally as blacks in South Carolina are behind black students nationally.

In 2004, the highest-scoring district in South Carolina was Lexington 5,¹⁴ which had a composite SAT average of 1078. Sixty-two percent of the district's 963 seniors took the test. By comparison, the highest scoring district in North Carolina (excluding charter schools) was Chapel Hill-Carrboro, which scored 1184.¹⁵ Ninety-one percent of the district's 700 seniors took the test. Despite the somewhat smaller size of Chapel Hill-Carrboro, more students actually took the SAT there than did so in Lexington 5, due to its higher participation rate.

In 2002-2003 (the most recent year for which data are available), the race/ethnicity breakdown of Lexington 5 was 71.2 percent white, 24.9 percent African American, and 3.9 percent other groups.¹⁶ The corresponding 2003-2004 breakdown for Chapel Hill-Carrboro was 62.4 percent white, 15.3 percent African American, 10.4 percent Asian, 7.4 percent Hispanic, and 4.5 percent other groups.¹⁷

The school districts with the most SAT takers in North and South Carolina were, respectively, Wake County and Greenville. In Wake County, 4,655 seniors were tested in 2004 (76.2 percent of the district's senior population), and they received an average score of 1063. In Greenville, 2,167 seniors were tested in 2004 (62 percent of the senior population), and they scored 1005 overall. . The percentage of 2002 high-school completers intending to go on to a 2 or 4 year college was 72.5 in Greenville¹⁸ and 87.5 in Wake County.¹⁹

Demographically, the two districts are quite similar. In 2001-2002, Wake County was 61.6 percent white, 26.3 percent African American, and 12.1 percent of other races/ethnicities. In 2002-2003, Greenville was 64.7 percent white, 28.2 percent African American, and 7.1 percent of other races/ethnicities.

As further context, the state-wide average SAT score for Oregon was 1055, for Washington, 1059, and for Massachusetts, 1041. Their participation rates were 56, 52, and 85 percent, respectively (ignoring relative graduation rates).

ACT

About 36 percent of South Carolina high-school seniors took the ACT in 2004, compared to a national participation rate of 40 percent. Considering South Carolina's substantially higher-than-average dropout rate, this four point difference probably understates the true gap between its participation rate and that of the nation as a whole.

Overall, South Carolina's average ACT score was 19.3 in 2004, compared to a national average of 20.9. This placed South Carolina second to last in the nation, ahead of Mississippi. To put Mississippi's score of 18.8 in context, however, it had the third highest participation rate in the nation: 91 percent. Elsewhere in the South East, Louisiana scored 19.8 and Tennessee scored 20.5, despite both having participation rates of 87 percent. Kentucky scored 20.3 with a 75 percent participation rate.

Broken down by race/ethnicity, blacks in South Carolina scored .6 points behind blacks in the rest of the nation while whites in South Carolina scored .7 points behind whites in other states (no other racial/ethnic breakdowns were provided for South Carolina).²⁰

South Carolina and The United States in a Global Context

All of the domestic comparisons presented above include data for every state in the union. It is thus possible to obtain a complete picture of South Carolina's place in the nation. That same level of comprehensiveness is unattainable at the international level. For any given international study of student achievement, participation is spotty at best even among the wealthy industrialized nations. Consequently, the pool of countries taking part in any given testing program has a significant impact on America's place in the resultant rankings.

Consider, for instance, the latest results for the Trends in International Mathematics and Science Study (TIMSS 2003) released in December of last year. None of the following nations participated: Canada, Finland, France, Germany, Iceland, Ireland, Poland, and Switzerland. All of these nations did participate in the contemporaneous Program on International Student Achievement (PISA 2003), which tested the same subjects at one of the same grade levels. Every one of them also outscored the United States in both mathematics and science on that test. It seems likely, therefore, that if they had also participated in TIMSS 2003, the U.S.'s international ranking on the TIMSS would have suffered considerably.

Another important consideration in evaluating international test results is the wealth of the participating countries. Just as high-income Americans consistently out-score low-income Americans, so too do wealthy nations consistently out-score poor ones. Excluding small tax havens like Luxemburg and Bermuda, the U.S. is consistently one of the world's top-two richest nations (the other is oil-rich Norway) in terms of per-capita Gross National Income (GNI). It

thus makes sense to compare wealthy industrialized nations amongst themselves to see how the U.S. compares to its economic and technological peers.

An obvious peer group to use for this benchmark is the OECD's list of 29 industrialized nations. That has problems, however. In particular, major Asian economic powers such as Japan and Hong Kong are not OECD members. A better system is to simply look at the top-40 countries by GNI per capita adjusted for domestic purchasing power (i.e., using Purchasing Power Parity, or PPP).²¹ Looking at these top-40 countries equates to excluding nations with a PPP-adjusted GNI per capita below \$20,000 per year. Currently, the U.S.'s corresponding figure is about \$37,000 per year. This appears to be a reasonable cut-off. If it were any lower, it would include Cyprus and Slovenia, which are not typically considered to be in the same economic league with the major industrialized nations. If the cut-off were any higher, it would exclude New Zealand, which is generally thought of as an advanced industrialized nation.

A final issue to consider in weighing the results of international tests is the potential for the results to be skewed by differential participation rates. If only the best students are tested in some countries, but a representative sample of all students are tested in other countries, the nations with the more representative student samples will receive misleadingly low scores.

Fortunately, this is not a problem with the testing programs discussed here. Both TIMSS and PISA, particularly in their 2003 incarnations, set very clear participation guidelines to ensure that the samples of students tested were randomly selected and nationally representative. Indeed, if there ever was a time when the U.S. had a significantly higher participation rate than other nations on international tests, that time has passed. On the TIMSS 2003, America's combined student/school participation rate was the third lowest of all the participating nations, though still within the accepted participation guidelines.²²

Low participation rates were somewhat more common on the TIMSS 1998 test of high-school seniors, but the researchers in charge of that study pointed out that "contrary to some previous international studies, ... the higher-performing countries tended to have better coverage [i.e., participation rates] than the lower-performing countries." They also concluded that differing levels of test participation were not a major factor affecting national results.

What the TIMSS 1998 researchers appear not to have considered is the effect of differential dropout rates on international test scores. Nations with lower dropout rates are arguably at a test score disadvantage when compared to nations with higher dropout rates, for reasons already described in the preceding section of this paper. To explore whether or not this may have affected the ranking of the United States, we can refer to graduation rates for the period in question. Based on Table 6, below, it appears that the United States had, if anything, an unfair advantage in this regard – a graduation rate well below the average of top-40 industrialized nations.

Table 6. Holders of high school diplomas
as a proportion of the total population of typical graduation age, 1998

| | |
|---------------------------------------|-----------|
| New Zealand | 97 |
| Austria | 96 |
| Japan | 96 |
| Germany | 93 |
| Netherlands | 93 |
| Iceland | 92 |
| Hungary | 90 |
| Finland | 89 |
| France | 87 |
| Ireland | 87 |
| Belgium (Flemish) | 84 |
| Switzerland | 84 |
| Avg. of Industrialized Nations | 83 |
| Sweden | 79 |
| United States | 74 |
| Canada | 72 |
| Spain | 67 |
| Luxembourg | 62 |
| Portugal | 56 |

Data Source: Ministère de l'Éducation du Québec, "Graduation Rates in Québec and the OECD Countries," *Education Statistics Bulletin*, no. 21, January 2001, p. 7.
http://www.meq.gouv.qc.ca/stat/Bulletin/bulletin_21an.pdf

So, with these considerations in mind, we can now proceed with an examination of the international student achievement evidence.

The IEA Studies

Perhaps the best place to start is with the testing programs of the International Association for the Evaluation of Educational Achievement (rather stingily abbreviated as IEA). The IEA is responsible for the TIMSS 2003 mentioned above, as well as the earlier Third International Mathematics and Science Studies (TIMSS 1998) and the TIMSS 1999 Benchmarking Study (TIMSS 1999-B).

TIMSS 1999 Benchmarking Study

Among all international testing programs, the TIMSS 1999-B is unique in that it broke out the results for several states, including South Carolina, so that they could be directly compared to the average scores of the participating nations. TIMSS 1999-B tested 8th grade mathematics and science achievement.

In math, South Carolina tied the United States for fourth-from-last place among the 14 participating wealthy nations. Its score of 502 was well below the wealthy nation average of 535. In science, South Carolina tied the United States and New Zealand for second-to-last place. Its score of 511 was also significantly below the wealthy-nation average of 534. These results appear in tables 7 and 8.

Table 7. TIMSS 1999 Benchmarking Study - Mathematics
Results for Top-40 Industrialized Nations

| | |
|---------------------------------------|------------|
| Singapore | 604 |
| Chinese Taipei (Taiwan) | 585 |
| Hong Kong, SAR | 582 |
| Japan | 579 |
| Belgium (Flemish) | 558 |
| Netherlands | 540 |
| Avg. of Industrialized Nations | 535 |
| Canada | 531 |
| Australia | 525 |
| Finland | 520 |
| United States | 502 |
| South Carolina | 502 |
| England | 496 |
| New Zealand | 491 |
| Italy | 479 |

Data Source: Ina V.S. Mullis, Michael O. Martin, Eugenio J. Gonzalez, Kathleen M. O'Connor, Steven J. Chrostowski, Kelvin D. Gregory, Robert A. Garden, and Teresa A. Smith, *Mathematics Benchmarking Report: TIMSS 1999 – Eighth Grade* (Boston, International Study Center, Lynch School of Education, Boston College: 2001)

Table 8. TIMSS 1999 Benchmarking Study - Science
Results for Top-40 Industrialized Nations

| | |
|---------------------------------------|------------|
| Chinese Taipei (Taiwan) | 569 |
| Singapore | 568 |
| Japan | 550 |
| Netherlands | 545 |
| Australia | 540 |
| England | 538 |
| Belgium (Flemish) | 535 |
| Finland | 535 |
| Avg. of Industrialized Nations | 534 |
| Canada | 533 |
| Hong Kong, SAR | 530 |
| United States | 515 |
| South Carolina | 511 |
| New Zealand | 510 |
| Italy | 493 |

Data Source: Michael O. Martin, Ina V.S. Mullis, Eugenio J. Gonzalez, Kathleen M. O'Connor, Steven J. Chrostowski, Kelvin D. Gregory, Robert A. Garden, and Teresa A. Smith, *Science Benchmarking Report: TIMSS 1999 – Eighth Grade* (Boston, International Study Center, Lynch School of Education, Boston College: 2001)

Interestingly, many of the nations that participated in TIMSS 1999-B, and that beat both South Carolina and the United States as a whole, were not among the world's top-40 wealthiest nations. Of these low-income high-achievers, the Slovak Republic, Hungary, Slovenia, the

Russian Federation, the Czech Republic, and Bulgaria all beat the U.S. and the Palmetto State in both mathematics and science.

It should also be noted that the following nations that have outperformed the United States in other tests of mathematics and science did not participate the benchmarking study: Ireland, France, Germany, Switzerland, Iceland, and Poland.

TIMSS 2003

The next data source of interest is the TIMSS 2003 study of mathematics and science achievement at the 4th and 8th grades, released in December of 2004. U.S. performance on these tests is presented in Tables 9 through 12.

Table 9. TIMSS 2003 4th Grade - Science
Results for Top-40 Industrialized Nations

| | |
|-----------------------------|------------|
| Singapore | 565 |
| Chinese Taipei | 551 |
| Japan | 543 |
| † Hong Kong, SAR | 542 |
| † England | 540 |
| † United States | 536 |
| Avg. of Ind. Nations | 527 |
| † Netherlands | 525 |
| † Australia | 521 |
| New Zealand | 520 |
| Belgium (Flemish) | 518 |
| Italy | 516 |
| † Scotland | 502 |
| Norway | 466 |

Data Source: Michael O. Martin, Ina V.S. Mullis, Eugenio J. Gonzalez, Steven J. Chrostowski, *TIMSS 2003 International Science Report* (Boston, TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College: 2004), p. 37.

† Met IEA guidelines for sample participation rates after replacement schools were included. See Exhibit A.9 of the source publication for details.

Table 10. TIMSS 2003 4th Grade - Mathematics
Results for Top-40 Industrialized Nations

| | |
|-----------------------------|------------|
| Singapore | 594 |
| † Hong Kong, SAR | 575 |
| Japan | 565 |
| Chinese Taipei (Taiwan) | 564 |
| Belgium (Flemish) | 551 |
| † Netherlands | 540 |
| † England | 531 |
| Avg. of Ind. Nations | 529 |
| † United States | 518 |
| Italy | 503 |
| † Australia | 499 |
| New Zealand | 493 |
| Scotland | 490 |
| Norway | 451 |

Data Source: Ina V.S. Mullis, Michael O. Martin, Eugenio J. Gonzalez, Steven J. Chrostowski, *TIMSS 2003 International Mathematics Report* (Boston, TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College: 2004), p. 35.

† Met IEA guidelines for sample participation rates after replacement schools were included. See Exhibit A.9 of the source publication for details.

Table 11. TIMSS 2003 8th Grade - Science
Results for Top-40 Industrialized Nations

| | |
|-----------------------------|------------|
| Singapore | 578 |
| Chinese Taipei (Taiwan) | 571 |
| † Hong Kong, SAR | 556 |
| Japan | 552 |
| † Netherlands | 536 |
| Avg. of Ind. Nations | 531 |
| ‡ United States | 527 |
| Australia | 527 |
| Sweden | 524 |
| New Zealand | 520 |
| Belgium (Flemish) | 516 |
| † Scotland | 512 |
| Norway | 494 |
| Italy | 491 |

Data Source: Michael O. Martin, Ina V.S. Mullis, Eugenio J. Gonzalez, Steven J. Chrostowski, *TIMSS 2003 International Science Report* (Boston, TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College: 2004), p. 36.

† Met IEA guidelines for sample participation rates after replacement schools were included.

‡ Nearly satisfied IEA guidelines for sample participation rates after replacement schools were included. See Exhibit A.9 of the source publication for details.

Table 12. TIMSS 2003 8th Grade - Mathematics
Results for Top-40 Industrialized Nations

| | |
|-----------------------------|------------|
| Singapore | 605 |
| † Hong Kong, SAR | 586 |
| Chinese Taipei (Taiwan) | 585 |
| Japan | 570 |
| Belgium (Flemish) | 537 |
| † Netherlands | 536 |
| Avg. of Ind. Nations | 528 |
| Australia | 505 |
| ‡ United States | 504 |
| Sweden | 499 |
| † Scotland | 498 |
| New Zealand | 494 |
| Italy | 484 |
| Norway | 461 |

Data Source: Ina V.S. Mullis, Michael O. Martin, Eugenio J. Gonzalez, Steven J. Chrostowski, *TIMSS 2003 International Mathematics Report* (Boston, TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College: 2004), p. 34.

† Met IEA guidelines for sample participation rates after replacement schools were included.

‡ Nearly satisfied IEA guidelines for sample participation rates after replacement schools were included. See Exhibit A.9 of the source publication for details.

Overall, the United States performs at the average of industrialized nations at the 4th grade (9 points ahead in science, 11 behind in math) and below the average at the 8th grade (4 points behind in science, 24 behind in math).

The elimination of less-wealthy countries from consideration did not simply remove the lowest scorers. On the 8th grade science test, South Korea, Estonia, and Hungary scored 30, 25, and 16 points better than the United States, respectively. In 8th grade math, the following non-Top-40 nations beat the United States: the Slovak Republic, the Russian Federation, Latvia, Malaysia, Hungary, Estonia, and South Korea.

As noted in the introduction to this section, many countries that outperform the U.S. did not participate in TIMSS 2003 study, including: France, Germany, Canada, Ireland, Finland, Switzerland, Iceland, and Poland. All of the above outperformed the United States on the PISA test described below.

An interesting feature of the TIMSS 2003 results is that they are broken out by percentile ranking groups. In other words, it is possible to tell how the very best students in each country compare to each other. Among the top 5% of 4th graders in top-40 industrialized countries, the overall average was 644 and the U.S. average was 650. The industrialized country average for top-scoring 8th graders was 649, while the U.S. average was 644.²³ Once again, many major industrialized nations that generally match or exceed U.S. performance did not participate in the TIMSS 2003, and so are not factored in to these results.

TIMSS 1998

TIMSS 1998 provides us with the most recent evidence on the relative mathematics and science achievement of high-school seniors from around the world. The results are presented in Tables 13 and 14.

Table 13. TIMSS 1998 12th Grade - Mathematics
Results for Top-40 Industrialized Nations

| | |
|-----------------------------|------------|
| Netherlands ² | 560 |
| Sweden | 552 |
| Denmark | 547 |
| Switzerland | 540 |
| Iceland | 534 |
| Norway | 528 |
| France | 523 |
| † New Zealand | 522 |
| Australia | 522 |
| Avg. of Ind. Nations | 521 |
| Canada | 519 |
| Austria ² | 518 |
| † Germany | 495 |
| Italy ¹ | 476 |
| United States | 461 |

Data Source: Ina V.S. Mullis, Michael O. Martin, Albert E. Beaton, Eugenio J. Gonzalez, Dana L. Kelly, and Teresa A. Smith, *Mathematics and Science Achievement in the Final Year of Secondary School: IEA's Third International Mathematics and Science Study* (Boston: Center for the Study of Testing, Evaluation, and Educational Policy, Boston College, 1998), 46.

† Met IEA guidelines for sample participation rates after replacement schools were included.

See Appendix B of the source publication for details.

1 National Desired Population does not cover all of International Desired Population (see Table B.4 of source publication for details).

2 National Defined Population covers less than 90 percent of National Desired Population (see Table B.4 of source publication for details).

Table 14. TIMSS 1998 12th Grade - Science
Results for Top-40 Industrialized Nations

| | |
|-----------------------------|------------|
| Sweden | 559 |
| Netherlands ² | 558 |
| Iceland | 549 |
| Norway | 544 |
| Canada | 532 |
| † New Zealand | 529 |
| Australia | 527 |
| Switzerland | 523 |
| Avg. of Ind. Nations | 521 |
| Austria ² | 520 |
| Denmark | 509 |
| † Germany | 497 |
| France | 487 |
| United States | 480 |
| Italy ¹ | 475 |

Data Source: Ina V.S. Mullis, Michael O. Martin, Albert E. Beaton, Eugenio J. Gonzalez, Dana L. Kelly, and Teresa A. Smith, *Mathematics and Science Achievement in the Final Year of Secondary School: IEA's Third International Mathematics and Science Study* (Boston: Center for the Study of Testing, Evaluation, and Educational Policy, Boston College, 1998), 48.

† Met IEA guidelines for sample participation rates after replacement schools were included.

See Appendix B of the source publication for details.

1 National Desired Population does not cover all of International Desired Population (see Table B.4 of source publication for details).

2 National Defined Population covers less than 90 percent of National Desired Population (see Table B.4 of source publication for details).

Combining the results of these two tests, U.S. high-school seniors placed last among the participating industrialized nations, with an overall score of 471 (the overall average of industrialized nations was 521). Note that none of the 5 Asian “education tigers,” Singapore, Hong Kong, Taiwan, South Korea, and Japan, participated in TIMSS 1998. Given their mathematics and science performance on other tests, it is highly likely that all would have surpassed the United States on TIMSS 1998 as well, which would have placed the United States at the bottom of an even larger heap.

Seven less-wealthy nations participated in TIMSS 1998: Slovenia, Hungary, the Russian Federation, Lithuania, the Czech Republic, Cyprus, and South Africa. In science, the United States tied the Russian Federation, but came in behind Slovenia and the Czech Republic. In mathematics, the United States beat only Cyprus and South Africa.

In a comparison of the top 10 percent of students from industrialized nations, the U.S. performance was substantially similar. In mathematics, the best American students placed last with an average score of 485, 68 points behind their high-achieving peers in other industrialized nations. That is a greater gap than the one between the average U.S. student and his peers in industrialized nations.

In physics (the only science discipline for which top 10 percent data were given), the top American students scored 451 while their counterparts in other wealthy nations scored 526. This

75 point gap was nearly twice as large as the gap in average science achievement between American and foreign students from wealthy nations.

It should be noted that for both of these comparisons of top-scoring students, data were not available for all nations. Nevertheless, even though several less-wealthy nations participated, the top 10 percent of American students still placed last overall: tying the Czech Republic in mathematics and trailing the Czech Republic, Slovenia, and Greece in physics.

The Program on International Student Assessment 2003

PISA 2003, the results for which were released in December of 2004, tested 8th grade students in mathematics, reading, and science. These results are presented in Tables 15 through 17.

Table 15. PISA 2003 - Mathematics
Results for Top-40 Industrialized Nations

| | |
|-----------------------------|------------|
| Hong Kong-China | 550 |
| Finland | 544 |
| Netherlands | 538 |
| Liechtenstein | 536 |
| Japan | 534 |
| Canada | 532 |
| Belgium | 529 |
| Macao-China | 527 |
| Switzerland | 527 |
| Australia | 524 |
| New Zealand | 523 |
| Iceland | 515 |
| Denmark | 514 |
| Avg. of Ind. Nations | 513 |
| France | 511 |
| Sweden | 509 |
| Austria | 506 |
| Germany | 503 |
| Ireland | 503 |
| Norway | 495 |
| Luxembourg | 493 |
| Spain | 485 |
| United States | 483 |
| Portugal | 466 |
| Italy | 466 |

Data Source: Organization for Economic Cooperation and Development (OECD), *Learning for Tomorrow's World First Results from PISA 2003* (Paris: OECD Publications, 2004), p. 92.

In mathematics, the United States tied Spain for 3rd to last place among of the 24 participating wealthy industrialized nations, scoring 30 points below the average of those nations. Recently-war-torn Serbia scored 46 points behind the United States, while the U.S. scored 55 points behind the Netherlands.

A test score breakdown by students' percentile ranking within their own countries²⁴ makes it possible to compare how both strong and weak performers compare across nations. In particular, average scores are available for students falling in the top and bottom 5 percent, 10 percent, and 25 percent of their nation's test takers. In each of these six categories, U.S. students came in second-from-last, third-from-last, or fourth-from-last when compared to their foreign peers. The top 5 percent of American students scored 24 points behind the top 5 percent of students in other wealthy industrialized countries in mathematics.

In an effort to take wealth disparities between nations into account, PISA 2003 also provides a series of adjusted scores that estimate how the participating nations would perform if they were all equally wealthy. Among industrialized nations, the United States placed last in this adjusted ranking.²⁵

Table 16. PISA 2003 - Reading
Results for Top-40 Industrialized Nations

| | |
|-----------------------------|------------|
| Finland | 543 |
| Canada | 528 |
| Australia | 525 |
| Liechtenstein | 525 |
| New Zealand | 522 |
| Ireland | 515 |
| Sweden | 514 |
| Netherlands | 513 |
| Hong Kong-China | 510 |
| Belgium | 507 |
| Avg. of Ind. Nations | 503 |
| Norway | 500 |
| Switzerland | 499 |
| Japan | 498 |
| Macao-China | 498 |
| France | 496 |
| United States | 495 |
| Denmark | 492 |
| Iceland | 492 |
| Germany | 491 |
| Austria | 491 |
| Spain | 481 |
| Luxembourg | 479 |
| Portugal | 478 |
| Italy | 476 |

Data Source: Organization for Economic Cooperation and Development (OECD), *Learning for Tomorrow's World First Results from PISA 2003* (Paris: OECD Publications, 2004), p. 281.

In 8th grade reading, the United States tied with 5 other nations for 13th place. Broken down by student performance groups, the top 5 percent of U.S. students scored slightly (5 points) above the average of their foreign peers, while every other performance group scored roughly the same as or below their foreign peers.

It is perhaps worth noting that reading is different from the other disciplines tested in that it is the only one commonly practiced outside of school as a leisure activity. It is arguably, therefore, the discipline in which non-school factors play the biggest role in student achievement.

Table 17. PISA 2003 - Science
Results for Top-40 Industrialized Nations

| | |
|-----------------------------|------------|
| Finland | 548 |
| Japan | 548 |
| Hong Kong-China | 539 |
| Liechtenstein | 525 |
| Australia | 525 |
| Macao-China | 525 |
| Netherlands | 524 |
| New Zealand | 521 |
| Canada | 519 |
| Switzerland | 513 |
| France | 511 |
| Belgium | 509 |
| Avg. of Ind. Nations | 508 |
| Sweden | 506 |
| Ireland | 505 |
| Germany | 502 |
| Iceland | 495 |
| United States | 491 |
| Austria | 491 |
| Spain | 487 |
| Italy | 486 |
| Norway | 484 |
| Luxembourg | 483 |
| Denmark | 475 |
| Portugal | 468 |

Data Source: Organization for Economic Cooperation and Development (OECD), *Learning for Tomorrow's World First Results from PISA 2003* (Paris: OECD Publications, 2004), p. 294.

In Science, American students tied Austria for 17th place. American students from every point on the achievement spectrum, from the bottom 5 percent to the top 5 percent of achievers, scored between 12 and 19 points below the international average of their peers.

The International Adult Literacy Survey

The 2001 International Literacy Survey (IALS) reported literacy scores collected between 1992 and 1998. These scores are unique in that they reflect the performance not specifically of school-aged children but of the entire population aged 16 and up. Of particular interest in evaluating school effectiveness are the sub-group results for 16-to-25 year-olds – recent graduates and students in their last years of high-school.²⁶

The United States placed 11th overall out of the 15 industrialized nations tested, significantly below the average of those nations on each of the three sub-tests (“prose,” “document,” and

“literacy”) from which the overall literacy score was derived. The top 5 percent of American young people did better, coming out 3rd overall, behind the top 5 percent of students in Sweden and Canada. It should be noted that no Asian nations participated in this survey.

Conclusion: South Carolina’s Place in the Nation and the World

Perhaps the most interesting and previously underreported pattern to emerge from this study is the contrasting performance of South Carolina’s demographic and socio-economic groups relative to their national counterparts. With astonishing consistency, disadvantaged and minority students in South Carolina perform better vis-à-vis their peers in other states than do advantaged and white students. With just a single exception, this pattern is manifested on every test, in every subject, and at every grade level examined (though the margins are not always large or statistically significant).

In other words, black and Hispanic students in South Carolina universally do better with respect to blacks and Hispanics nationwide than non-Hispanic whites in South Carolina do with respect to their national counterparts. South Carolina students who do not have English as a first language consistently do better with respect to their national peers than do South Carolina’s whose mother tongue is English. The better-educated a South Carolina student’s parents happen to be, the further he scores behind students in other states whose parents have the same level of education. On the SAT, students with A grades in South Carolina score further behind A students nationally than South Carolina’s B and C students score behind their own national counterparts. Lower-income South Carolina students fare better vis-à-vis their national economic peers on the NAEP than do upper-income South Carolina students. On the SAT, the highest-scoring South Carolina school district is 106 points behind the highest-scoring district in North Carolina, while the Palmetto State as a whole is only 20 points behind North Carolina’s average.

The single exception to this overwhelming pattern is that, on the SAT, middle-income South Carolina students do relatively better than either low-income or high-income South Carolina students. All the other statements above hold for the SAT as well as for the other tests reviewed here.

There are two crucial caveats to keep in mind when reflecting on these results. First, the fact that South Carolina’s African American and low-income students do better *relative to their national peers* than do whites does not mean that they do *well*. In fact, by the end of high-school, *both black and low-income South Carolina students consistently score below the national averages of their peer groups on every measure available*. It’s just that wealthy and white students happen to be *even further* behind their own peer groups in most cases.

The second caveat, one that should rivet the attention of every citizen in the nation, is that America’s public schools are, as a whole, abjectly failing low-income and minority students. Even if South Carolina were doing marginally better than other states in educating these children (and it is not), it would still be performing abysmally. As I wrote in a previous publication:

If you are wealthy in America, you have a one-in-a-hundred chance of being functionally illiterate. If you are in the bottom fifth of wage earners or have no income at all, you have a *less-than-even chance of being able to read a newspaper or write a resume*. Wealth and literacy are positively linked in most nations, but nowhere more so than in the United States. Poor Americans academically underperform their fellow citizens by a wider margin than is to be found in *any* of the 26 other countries belonging to the Organization for Economic Cooperation and Development.²⁷

The link between race and academic achievement is equally striking. In South Carolina as in the nation at large, African American students score more than 220 points below whites on the SAT. According to the NAEP, two thirds of black 12th graders lack even a basic understanding of science, compared to only a fifth of white students. Nearly half of African American 12th graders lack a basic understanding of reading according to the NAEP, compared to only a fifth of whites.

What makes the persistence of these vast disparities particularly tragic is that they are, to a significant degree, preventable. In private schools, the 12th grade black/white reading gap is only half as large as the 4th grade gap. All the other 12th grade gaps are also smaller than their corresponding 4th grade gaps in the private sector. This is not true for public schools, which actually see larger gaps at the 12th grade in two of the four core NAEP subjects. The example of the private sector proves that the racial achievement gap is not set in stone, and in so doing it offers an indictment of our current system of public education.

Finally, the evidence that black students attending private schools are substantially more likely to complete high-school, gain admission to college, and complete college than similar black students in public schools further dramatizes the inter-sectoral differences in achievement. If private schools are retaining more minority students through to graduation, and are doing a better job of reducing the academic achievement gap nonetheless, it suggests that their margin of instructional superiority over public schools is even greater than the raw gap differences would suggest (if more low-achieving students have dropped out of the public schools, this artificially inflates the average of the remaining students).

Another pattern of note is that South Carolina's performance relative to the nation at large deteriorates at the high-school level. At the 4th and 8th grades, South Carolina is at or somewhat below the national average. Its average rank across NAEP 4th and 8th grade tests is 13th from last in the nation. By the senior year of high-school, South Carolina falls to last place on the SAT and second from last place on the ACT.

It is not reasonable to attribute this drop in the state rankings to test participation rates. Sixteen states had higher SAT participation rates than South Carolina. All beat it, some by significant margins (Virginia by 38 points and Connecticut and Massachusetts by even larger margins). On the ACT, half of all the states had higher participation rates and all but one of them beat South Carolina. The sole exception, Mississippi, had a participation rate of 91 percent.

Broken out by race, whites and blacks in South Carolina go from being tied with their respective national averages in elementary and middle school (whites insignificantly below it, blacks insignificantly above it), to both being below the national averages on the SAT and ACT in their final year of high-school. While SAT and ACT participants are not representative of their entire age cohort, they are in fact a more academically elite subset of that group – those who intend to go on to college. For that self-selected, academically-oriented group to have fallen behind their peers in other states should be of great concern.

Finally, it should be re-emphasized that South Carolina has one of the highest, or even the highest (depending on the method of calculation), dropout rate in the nation. As a result, the

already unflattering performance of its high-school seniors likely exaggerates the actual academic abilities of their age cohort, relative to other states.

An even greater concern in this era of global competition is that, as South Carolina's students are falling to the bottom of the national heap, so, too, is the United States falling to the bottom of the international heap. In fact, the nation's academic performance on the world stage mirrors that of South Carolina on the American stage. American students perform at about the average of industrialized nations at the 4th grade, consistently below average at the 8th grade, and at or near the bottom by the 12th grade. Thus, in order for South Carolina's young people to be truly prepared to compete in the global economy, they would have to far surpass the average achievement of America's high-school seniors. Regrettably, they do the opposite.

Nor can it be said that America's poor overall performance at the end of high-school is due to a large contingent of low-achieving students. In reality, there is no subject, no test, and indeed no grade, on which America's best students are the world's best students. On the contrary, top U.S. students rarely even meet the average of their high-performing foreign peers after the 4th grade. At the 12th grade, the top students in the United States are outperformed by the top students in every other industrialized nation for which data are available. And recall that South Carolina's A-students perform well *below* the national average for A-students.

For South Carolina, the news contained in this report is not good. Nevertheless, it will hopefully be of use to the state's citizens in deciding what kind and degree of reform is necessary to bring educational excellence to the children of the Palmetto State.

-End-

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- ¹ All NAEP figures given here are for public school students only. NAEP data are drawn from: National Center for Education Statistics (NCES), "State Profiles: South Carolina," NCES website (most recently updated April 12th, 2004).
<http://nces.ed.gov/nationsreportcard/states/profile.asp>
- ² State rankings for 4th grade math are given on the NCES website at
<http://nces.ed.gov/nationsreportcard/mathematics/results2003/stateavgscale-g4.asp>
- ³ State rankings for 8th grade math are given on the NCES website at
<http://nces.ed.gov/nationsreportcard/mathematics/results2003/stateavgscale-g8.asp>
- ⁴ State rankings for 4th and 8th grade science are given on the NCES website at
<http://nces.ed.gov/nationsreportcard/science/results/stateavgscale-g4.asp> and
<http://nces.ed.gov/nationsreportcard/science/results/stateavgscale-g8.asp>
- ⁵ The ideal comparison of this sort would be to follow a single group of black and white students through the grades, noting their achievement gap each time they were tested. That is unfortunately not possible using NAEP data because the sample of students to whom the test is administered differs from one year to the next. In the absence of that ideal data series, I have opted to examine scores across grades in a single year (whichever year happens to be the most recent for which both 4th and 12th grade results are available for the given subject).
- ⁶ Jay P. Greene and Marcus A. Winters, "Public School Graduation Rates in the United States," Manhattan Institute, Civic Report No. 31, November 2002.
- ⁷ Christopher B. Swanson, "Who Graduates? Who Doesn't? A Statistical Portrait of Public High School Graduation, Class of 2001," Education Policy Center of The Urban Institute, 2003.
- ⁸ Christopher B. Swanson and Duncan Chaplin, "Counting High School Graduates when Graduates Count: Measuring Graduation Rates under the High Stakes of NCLB," Education Policy Center of The Urban Institute, Original: January 3, 2003 Revised: February 25, 2003.
- ⁹ Here "minority" is defined as non-white, non-Hispanic.
- ¹⁰ Derek Neal, "The Effects of Catholic Secondary Schooling on Educational Achievement," *Journal of Labor Economics*, vol. 15, no. 1 (1997), pp. 98-123.
- ¹¹ Jay P. Greene, "Graduation Rates for Choice and Public School Students in Milwaukee," School Choice Wisconsin, September 28, 2004. http://www.schoolchoiceinfo.org/data/research/grad_rate.pdf
- ¹² The College Board, "National Summary: AP Grade Distributions by Total and Ethnic Group, Public School Students," for tests administered May 2004, <http://apcentral.collegeboard.com/members/article/1,3046,152-171-0-39036,00.html>. Free website registration required.
And:
The College Board, "South Carolina Summary: AP Grade Distributions by Total and Ethnic Group, Public School Students," for tests administered May 2004, <http://apcentral.collegeboard.com/members/article/1,3046,152-171-0-39036,00.html>. Free website registration required.
- ¹³ National Center for Education Statistics (NCES), *Digest of Education Statistics 2002* (Washington, D.C.: NCES, 2003), table 136.
<http://nces.ed.gov/programs/digest/d02/tables/dt136.asp>
And:
The College Board, "2004 College-Bound Seniors. A Profile of SAT Program Test-Takers. South Carolina Report," The College Board, 2004.
- ¹⁴ South Carolina Department of Education website, "South Carolina 2004 SAT Scores by District,"
http://www.myscschools.com/tracks/testscores/sat/2004/Appendix_C-Districts04.xls
- ¹⁵ North Carolina Department of Education website, "Table 6. Mean SAT Scores for North Carolina's Public School Systems and Schools, 2002-2004," <http://www.dpi.state.nc.us/accountability/reporting/sat/2004/SAT04.xls>
- ¹⁶ South Carolina Department of Education website, "District Profiles 2003,"
<http://myscschools.com/offices/research/getpage.cfm?id=1451>
- ¹⁷ Chapel Hill-Carrboro City Schools website, "2003-2004 Enrollment Totals, by Gender/Ethnicity, Month One,"
<http://www.chccs.k12.nc.us/itd/itd/01222004gsr1.xls>
- ¹⁸ South Carolina Department of Education website, "District Profiles 2003,"
<http://myscschools.com/offices/research/getpage.cfm?id=1451>
- ¹⁹ Wake County Public School System website, "Basic Facts," http://www.wcpss.net/basic_facts.html
- ²⁰ American College Testing Program, "2004 National Score Report: Data Tables," ACT website:
<http://www.act.org/news/data/04/data.html>
And:
Bunny Mack and David Burnett, "2004 Results of the ACT Assessment," South Carolina Department of Education, Office of Research. <http://www.myscschools.com/reports/act/2004/ACT2004.PDF>
- ²¹ The World Bank publication "GNI per capita 2003, Atlas method and PPP," World Development Indicators database, September 2004, lists the following 30 nations as being among the top-40 wealthiest in the world by PPP-adjusted 2003 GNI per-capita: Luxembourg, Bermuda, United States, Norway, Liechtenstein, Channel Islands, Switzerland, Denmark, Ireland, Iceland, Canada, Austria, San Marino, Cayman Islands, Belgium, Hong Kong, Japan, Netherlands, Monaco, Australia, United Kingdom, France, Germany, Finland, Italy, Sweden, Singapore, Macao, Spain, United Arab Emirates, New Zealand.

Note that the rankings are estimates and the list is not comprehensive due to the incompleteness of the World Bank economic data series. Based on an alternate source (Hutchinson's Country Facts:

<http://www.tiscali.co.uk/reference/encyclopaedia/countryfacts/taiwan.html>), Taiwan (Chinese Taipei) appears to also be among the top-40, with a 2002 PPP-adjusted per-capita GNI of \$22,650. Hutchinson's 2002 PPP figures are generally within \$1,000 or \$2,000 of the 2003 World Bank figures, and the top-40 nation cut-off for the World Bank figures is roughly \$20,000.

²² Ina V.S. Mullis, Michael O. Martin, Eugenio J. Gonzalez, Steven J. Chrostowski, *TIMSS 2003 International Mathematics Report* (Boston, TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College: 2004), p. 358-359.

²³ Calculated from: Ina V.S. Mullis, Michael O. Martin, Eugenio J. Gonzalez, Steven J. Chrostowski, *TIMSS 2003 International Mathematics Report* (Boston, TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College: 2004), p. 410-411.

And:

Michael O. Martin, Ina V.S. Mullis, Eugenio J. Gonzalez, Steven J. Chrostowski, *TIMSS 2003 International Science Report* (Boston, TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College: 2004), p. 424-425.

²⁴ Organization for Economic Cooperation and Development (OECD), *Learning for Tomorrow's World. First Results from PISA 2003* (Paris: OECD Publications, 2004), p. 356.

²⁵ Organization for Economic Cooperation and Development (OECD), *Learning for Tomorrow's World. First Results from PISA 2003* (Paris: OECD Publications, 2004), p. 358.

²⁶ OECD and Statistics Canada, "International Adult Literacy Survey - January 2001, ANNEX A — National Scores and Standard Errors," <http://www11.sdc.gc.ca/en/cs/sp/arb/publications/2001-002538/page10.shtml>.

²⁷ Andrew J. Coulson, "Fulfilling A Promise: A Plan for Bringing Educational Freedom to All Oklahomans," in: Brandon Dutcher (ed.), *Oklahoma Policy Blueprint* (Oklahoma City: Oklahoma Council of Public Affairs, 2002), p. 151-186. Full text with data source citations available at http://www.schoolchoices.org/roo/Fulfilling_a_Promise.pdf. First emphasis added. Note: The OECD has expanded from 27 to 29 countries since the publication of this book.