Palmetto Business Forum

Palmetto Institute

South Carolina Chamber of Commerce

Benchmarking South Carolina's Educational Performance

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Executive Summary

This white paper seeks to provide an accurate benchmarking of South Carolina's educational performance, particularly with regards to the *quality* of student performance and the *quantity* of students going through the educational system.

Student Performance Quality: Standardized Test Scores

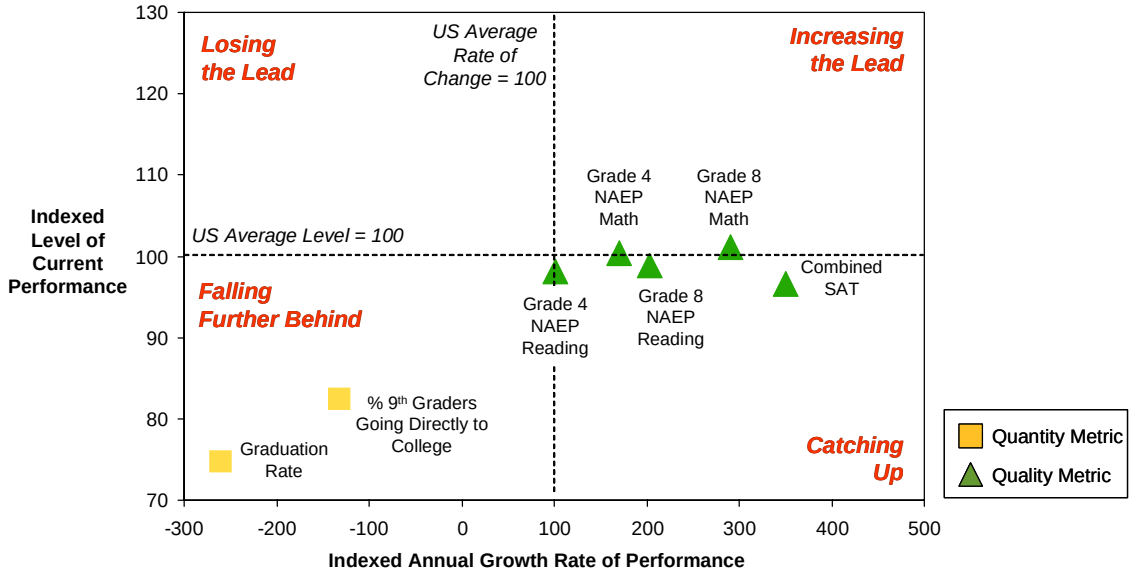
- South Carolina students score at about the U.S. average on most standardized tests
    - The exception is the SAT, where scores are clearly lower than the U.S. average
- Test scores are improving more rapidly than the U.S. average
    - South Carolina ranks number one in improvement rates on most tests

Student Quantity: High School Graduation Rates

- South Carolina's high school graduation rate typically ranks last, or very near to last, regardless of the method used to calculate that rate
- This ranking remains very low even after normalizing for the effects of factors such as:
    - Poverty, race, educational attainment of parents, teen pregnancy, etc.
    - Units to graduate, GED recipients, and Adult Education diploma recipients

The exhibit below uses data from a number of years to index many South Carolina "quantity" and "quality" metrics to the U.S. average. It shows that the quality of South Carolina student performance is on par with the U.S. average and improving more rapidly, whereas the quantity of students produced is well below the U.S. average, and falling further behind.

Exhibit 1: Index of South Carolina Education Performance to U.S. Averages[1]



[1] Further explained in the conclusion section

Introduction

This white paper provides a high level description of how South Carolina's K-12 public education system is doing relative to those in other U.S. states. Its purpose is not to provide a comprehensive analysis of public education in South Carolina, but rather to provide a factual data-driven grounding of educational performance to inform a healthy debate about education policy in the state.

Approach to Analysis

In order to assess South Carolina's educational performance with regards to the *quality* of student performance and the *quantity* of students going through the system, we selected appropriate performance metrics for "quality" and "quantity" analyses. The primary quantity metric analyzed is the High School graduation rate, and the primary quality metrics analyzed are standardized test scores. However, to better understand South Carolina's relative performance across these metrics, we ran statistical tests to normalize "quantity" and "quality" metrics by a host of other metrics that help assess the impact of factors:

- Internal to the educational system (e.g., teacher quality, graduation requirements, parental involvement, etc.)
- Characteristic of South Carolina's socio-economic, demographic, and student home environment (e.g., educational attainment of parents, ethnic makeup of student body, etc.)

For example, tougher graduation requirements and / or higher poverty levels may lead to lower graduation rates. While numerous variables can be used for these analyses,[2] the variables selected in this white paper were based on data which:

1. The education community regards as the *most credible* determinants of performance in public education
2. Has *comparability* across a broad range of U.S. states
3. Reflects the most *up-to-date* data on student / educational performance

Student Performance Quality: Standardized Test Scores

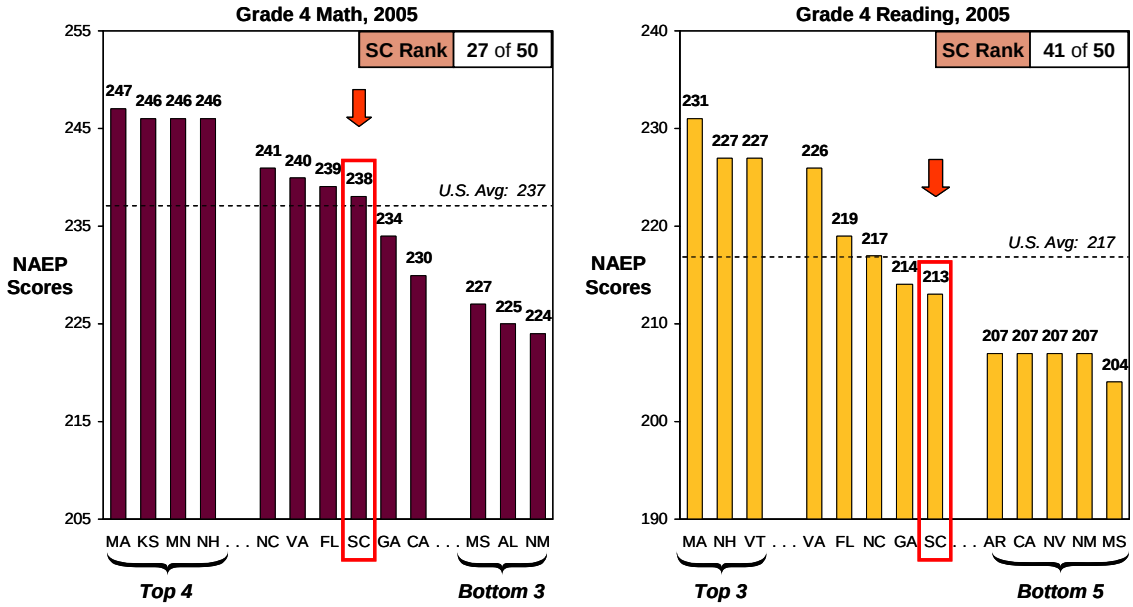
Elementary and Middle School

Standardized test scores are a common and credible method of assessing the quality of student performance. The National Assessment of Educational Progress (NAEP) test is periodically given to a representative sample of 4th and 8th grade students in each state,[3] and is generally considered the most reliable "quality" metric for comparisons of elementary and middle school

[2] While more variables were tested than are presented in this paper, we selected a few insightful ones for inclusion.
[3] To ensure representative sampling, while individual schools can opt not to participate, NCES requires that 85% of the originally selected schools in each state must participate. NAEP tests are also given in 12th grade but with a smaller student sample, and scores are only publicly reported for the nation level.

educational performance across states.[4] Tests used by individual states to measure the progress of their students over time (e.g., PACT in South Carolina) cannot be used for comparison across geographies, such as US states.

Exhibit 2: Grade 4 NAEP Results



Results from the 2005 NAEP tests in Reading and Mathematics show that South Carolina's 4th and 8th grade students are scoring at about the U.S. average:[5]

1. South Carolina's 4th graders scored 238 in Math, slightly **above the U.S.** average of 237, and ranked 27th out of 50 states (Exhibit 2)
2. South Carolina's 4th graders scored 213 in Reading, **below the U.S.** average of 217, and ranked 41st out of 50 states (Exhibit 2)
3. South Carolina's 8th graders scored 281 in Math, **above the U.S.** average of 278, and ranked 20th out of 50 states *(not shown)*
4. South Carolina's 8th graders scored 257 in Reading, **below the U.S.** average of 260, and ranked 39th out of 50 states *(not shown)*

High School

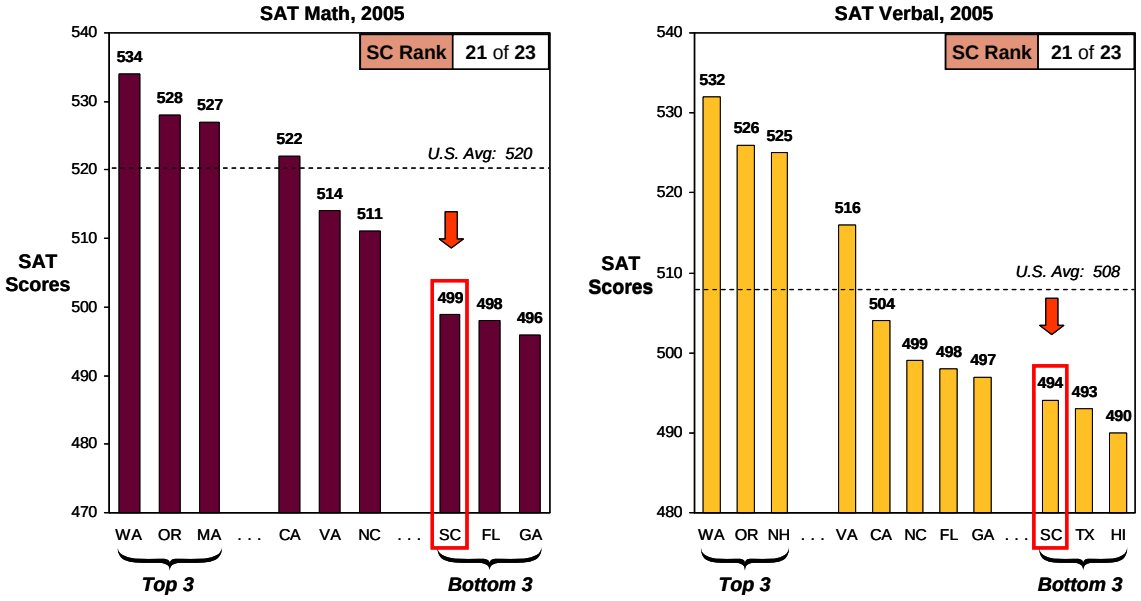
Unlike elementary and middle school testing, there is no widely respected, standardized test that enables the reliable comparison of high school student performance across states. The only

[4] Monitor interviews with educational experts (see Appendix). We focus our analysis on NAEP Math and Reading tests, for which current results are available for all states. NAEP tests have also been given in other subjects (Civics, Geography, U.S. History, Science, Writing), but have not been administered recently, and in many cases were given only at the national level.

[5] Nation's Report Card, 2005. Only results for 4th grade NAEP shown; 8th grade NAEP tests show similar results.

available standardized tests at this level are the SAT and ACT.[6] We use the SAT exam in this analysis as far more South Carolina students take the SAT than the ACT.[7]

Exhibit 3: SAT Results



As seen above, South Carolina's Math and Verbal SAT scores for the class of 2005 are considerably below the U.S. average:

1. South Carolina's students scored 499 on the SAT Math section, **well below the U.S.** average of 520, and ranked 21st out of 23 "SAT states" (Exhibit 3)[8]
2. South Carolina's students scored 494 on the SAT Verbal section, **well below the U.S.** average of 508, and ranked 21st out of 23 "SAT states" (Exhibit 3)

If we compare only public school performance, however, South Carolina scores higher, though still below the U.S. public school average:

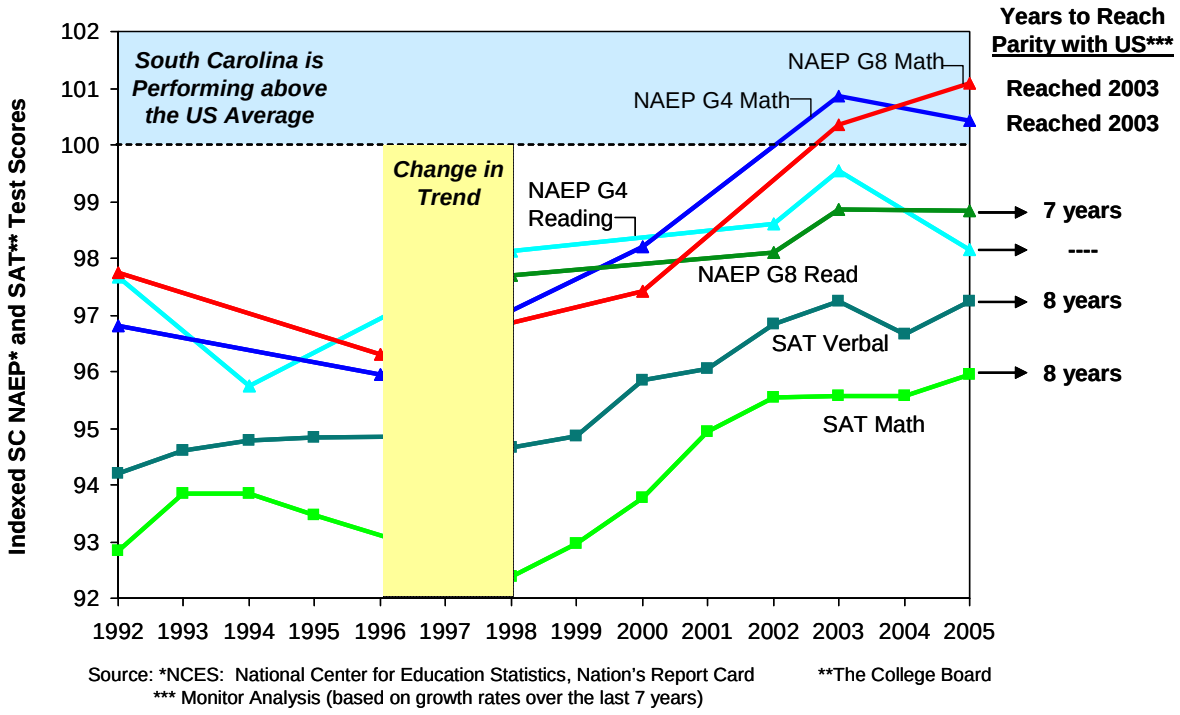
1. South Carolina's public school seniors scored 502 on the SAT Math section, **below the U.S.** public school average of 515, and ranked 17th out of 23 "SAT states"
2. South Carolina's public school seniors scored 495 on the SAT Verbal section, **below the U.S.** public school average of 505, and ranked 17th out of 23 "SAT states"

[6] The SAT and ACT remain imperfect metrics since they are taken by different percentages of students in different states, and do not represent broad state performance. Furthermore, while the SAT has recently been modified, it has been viewed by some as a measure of aptitude (i.e., intellectual agility) and its intent is to predict performance in college, not past learning in high school.
[7] South Carolina's SAT participation rate among the class of 2005 was 64% (College Board, 2005), while the ACT participation rate was 38% (ACT, 2005).
[8] The College Board, 2005; SAT states defined here as those states with SAT participation rates of 50% or higher.

Test Score Summary

Exhibit 4 summarizes South Carolina's "quality" metrics over the last 10 to 15 years. Test scores are indexed to the U.S. average, which is set at 100 for each test. South Carolina's 4th and 8th grade NAEP Math scores have overtaken the U.S. average in the last few years, and improvement rates have ranked first among U.S. states over the last nine years. NAEP Reading scores for the 4th and 8th grades remain below the U.S. average. *Assuming* that growth rates for South Carolina and the U.S. continue at the same pace as they have over the last 7 years, the 8th grade Reading score will reach the U.S. average in 7 years (4th grade scores have not improved relative to the U.S. since 1998). Improvement has been strong on both sections of the SAT as well. South Carolina's combined SAT score has risen more rapidly over the last 5 to 10 years than any other "SAT" state, and Math and Verbal scores will overtake the U.S. average in 8 years, *assuming* current South Carolina and U.S. growth rates.

Exhibit 4: Summary of Test Scores over Time



Source: *NCES: National Center for Education Statistics, Nation's Report Card **The College Board
*** Monitor Analysis (based on growth rates over the last 7 years)

Student Quantity: High School Graduation Rates

High school graduation rate is the principal "quantity" metric used to measure the number of students successfully passing through the educational system. While there are numerous methods for calculating graduation rates, which yield a wide range of reported figures (in the case of South Carolina, from 48% to 93%), **South Carolina typically ranks last or near to last** according to the vast majority of calculations (see Exhibit 5 below).

Exhibit 5: Methodologies for Measuring High School Graduation Rate

Organization	SC Rate**	U.S. Rate	SC Rank	Method
Higher Education Information Service	**48.0%**	**67.3%**	**50 of 50**	Cohort Survival Rate: Graduates who were 9th graders 4 years earlier
United Health Foundation	**49.4%**	**67.3%**	**50 of 50**	Cohort Survival Rate
Urban Institute	**50.7%**	**68.0%**	**51 of 51**	Cumulative Promotion Index (CPI)
National Board on Educational Testing and Public Policy	**51.0%**	**67.0%**	**50 of 50**	Number of graduates ÷ 9th grade enrollment 4 years earlier
Manhattan Institute	**53.0%***	**70.0%**	**50 of 50**	**Greene Method: # of grads ÷ average of 8th, 9th & 10th graders in same cohort**
National Board on Educational Testing and Public Policy	**62.0%**	**74.4%**	**49 of 50**	Number of graduates ÷ 8th grade enrollment 5 years earlier
SC Department of Education	**78.0%***	**N/A**	**N/A**	Number of graduates ÷ (9th grade enrollment 4 years earlier - transfers & adult education)
US Census Bureau†	**93%**	**92%**	**15 of 50**	Percentage of teens age 16-19 who are not high school dropouts

* Updates to original table produced in the Richard Young study; † As compiled by the Anne E. Casey Foundation, Kids Count
**All rates are for 2000/2001 School Year, except Manhattan Institute (01/02), SC Department of Education (02/03), and US Census Bureau (Calendar Yr 2003)
Source: Richard D. Young, The HS Crisis in the United States and South Carolina: Problems related to Dropouts and Recommended Solutions; SC Dept. of Ed.

We conducted subsequent high school graduation rate analyses using the Manhattan Institute methodology and data up until 2002, the year for which the latest data are publicly available.[9]

Understanding South Carolina's High School Graduation Rate

Socio-economic and Socio-demographic Factors

Many factors may impact South Carolina's high school graduation rate. For example, high levels of poverty are associated with poorer educational performance, and South Carolina has higher poverty rates than many states. Perhaps, then, the state's relatively low graduation rate is due to above average poverty levels? According to our analysis however, given South Carolina's percentage of children in poverty, its expected graduation rate in 2002 would be about 69%, rather than its actual rate of 53% (see Exhibit 6). In addition, eleven states[10] have a higher percentage of children in poverty than South Carolina, and yet still have higher high school graduation rates. Thus, even normalizing for poverty levels, South Carolina's graduation rate is relatively low.

[9] There has recently been emerging consensus that the Manhattan Institute method is the most accurate measure. It calculates *the percentage of first-time high school freshmen that successfully earn a high school diploma, adjusted for changes in population / migration*. The Manhattan Institute does not consider GED recipients, completion certificate recipients, and other non-HS diploma recipients as "graduates" in its calculations. Reasons include a generally accepted disparity between the socio-economic prospects of high school diploma recipients and other high school completers, as well as a disinclination to credit high schools for the successes of those who fail to pass through the educational system.

[10] These states are Alabama, Arizona, Arkansas, California, Kentucky, Louisiana, Mississippi, New Mexico, Tennessee, Texas and West Virginia.

Exhibit 6 summarizes similar findings for various socio-economic and socio-demographic factors that correlate well with graduation rates for the class of 2002. In almost all cases, South Carolina's graduation rate is relatively low, even after normalizing for a variety of factors. Only normalizing for suspension rates (which, like expulsion rates for South Carolina, are the highest in the country[11]) comes close to predicting the Manhattan Institute graduation rate.[12]

Exhibit 6: Summary of Graduation Rate Normalization Analyses

Factor Affecting Graduation Rate	Measurement of Factor (Proxy)	Strength of Correlation*	South Carolina	
			Expected Grad Rate	# of States Higher in *Factor & Grad Rate*
Poverty Level	Percent of Children in Poverty (at 100% level)	Medium	~69%	11
Educational Attainment of Parents	Percent of Children in Households where Head of Household is a High School Dropout	High	~69%	12
Single Parent Families	Percent of Children in Single-Parent Households	High	~65%	6
Ethnic / Racial Mix of Students	Percent of Minority Students	Medium	~68%	12
Parental Involvement	% 8th Graders in Schools that Report that Lack of Parent Involvement is More than a Minor Problem	High	~62%	3
Teen Pregnancy	Teen Births per 1000 Females, age 15-17	High	~68%	9
Suspension Rates	Suspensions as a % of Enrollment	Medium	~57%	0
Health Care Coverage	% Children under 18 without Health Insurance	Low	~74%	26

*Based on Pearson r-squared values: Low (<.25), Medium(.25-.34), High (>.34)

Source: Anne E. Casey Foundation / Kids Count (Poverty Level, Educational Attainment of Parents, Single Parent Families, Teen Pregnancy, Health Care Coverage), National Center for Education Statistics / Common Core of Data (Ethnic / Racial Mix of Students), Education Week Quality Counts (Parental Involvement), U.S. Department of Education / Office of Civil Rights (Suspension Rates)

High School Graduation Requirements

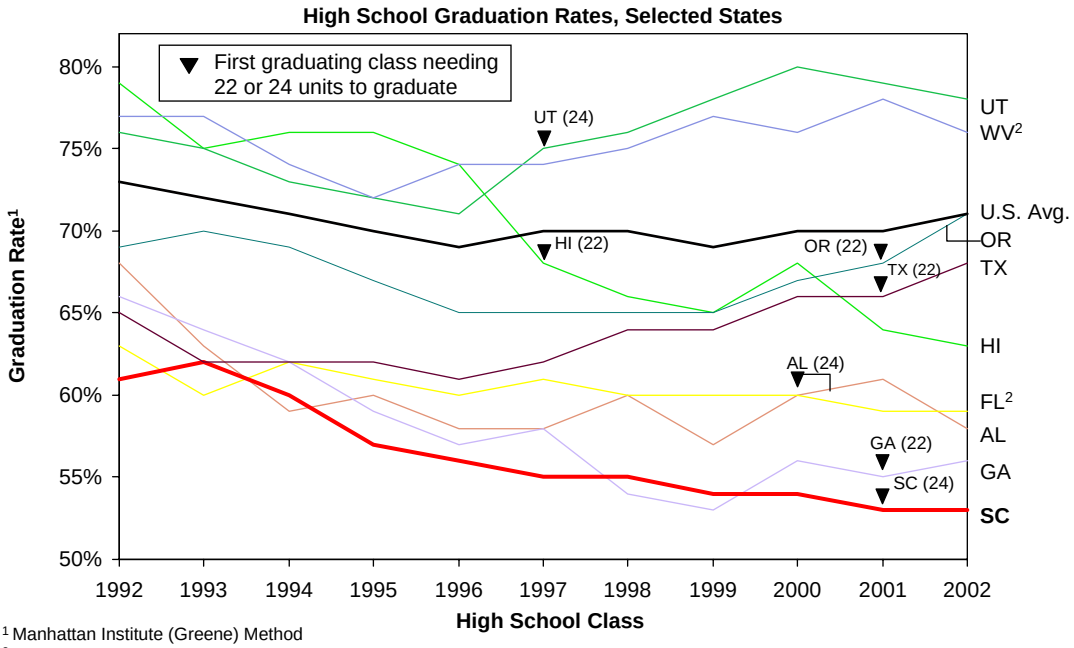
South Carolina's high school graduation requirements are another factor that may impact graduation rates. While South Carolina does require 24 Carnegie Units for high school graduation, Exhibit 7 shows that other states requiring comparable numbers of units to graduate have higher graduation rates. Moreover, South Carolina's graduation rates were declining since 1993, long before students had to earn 24 units to graduate.[13] Correlating *units required to graduate* and *high school graduation rates* also yields a negligible Pearson r-squared correlation coefficient, suggesting a limited relationship between the two.

[11] South Carolina's suspension and expulsion rates in 2000 were 14.6% and 0.64%, respectively (U.S. Department of Education, Office of Civil Rights). Suspension rates include multiple suspensions.

[12] It is also worth noting that, among the factors listed in Exhibit 6, suspension rates can be more readily influenced by education policy officials over the short term than most others.

[13] While high school exit exams are currently a graduation requirement in 27 states (CCSSO, 2004), these are generally not comparable across states, and their relatively low failure rates (e.g., only 3% of high school completers in South Carolina) are unlikely to significantly affect high school graduation rates.

Exhibit 7: Comparison of Credits Required to Graduate and Graduation Rates



[1] Manhattan Institute (Greene) Method
[2] 2003 is first graduating class where 24 credit grad requirement will come into effect
Note: Years shown reflect data for the class graduating that spring (e.g., class of 2002); Minnesota also requires 24 Units to graduate, however this is currently being implemented on a local district level

GED Accreditation and Adult Education

The availability of alternative routes to high school equivalency, such as GED accreditation or adult education, may also impact South Carolina's graduation rate. Perhaps more South Carolinians opt for these education alternatives than in other states? However, our analysis indicates that:

- 5.5% of South Carolina's entering high school students who would normally graduate in the Class of 2002 went on to receive GED accreditation by age 19.[14]
- ~4.3% of South Carolina's entering high school students who would normally graduate in the Class of 2002 went on to receive diplomas through adult education after withdrawing from high school.[15]

South Carolina still ranks last among states even when graduation and GED rates are combined to create a single high school completion rate. If South Carolina's adult education diploma

[14] GED Rate is based on the total number of GED recipients (age 16-19) that would typically have graduated in 2002; figures used are from the American Council on Education (GED numbers) and the National Center for Education Statistics (average grade 8-10 enrollment for class of 2002).
[15] The South Carolina Department of Education estimates that about 3,000 students per class withdraw from high school to enroll in adult education. This estimate is made with the assumption that 78% of these students complete the program and receive diplomas, in line with the South Carolina Department of Education's own graduation rate estimates.

recipients are included in this rate (but other states' rates are kept the same), South Carolina ties with two other states (Georgia and Alabama) but still ranks last.

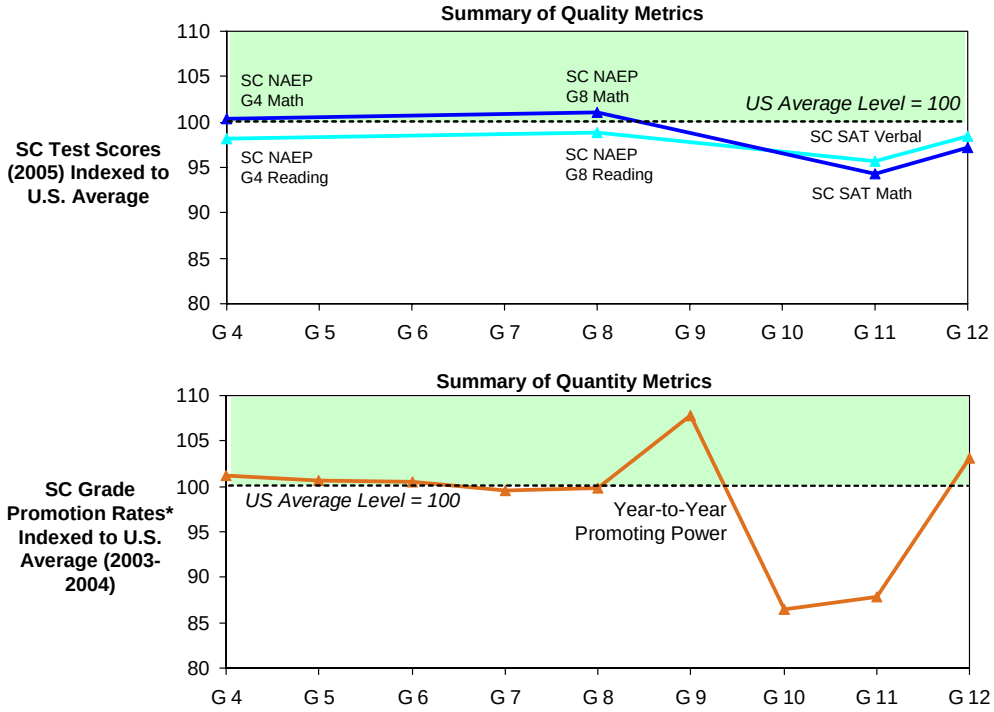
In short, even normalizing for a range of socio-economic and demographic factors, and even accounting for graduation requirements and alternative routes to high school completion, South Carolina's graduation rate ranks very low relative to other U.S. states.

Conclusion

Exhibit 8 below takes data from a single year, but from many grade levels, and indexes South Carolina "quality" and "quantity" metrics to the U.S. average.[16] When the solid line is in the green zone, South Carolina students in that grade outperformed U.S. students in that grade.

Through 8th grade, South Carolina's students score reasonably close to the U.S. average in English Language / Reading and Math tests, and as previously shown, strong improvements are being made. However, in high school, by junior and senior years, test scores fall relative to the U.S. average.[17] The drop in math performance during the high school years is particularly notable given math performance in elementary and middle school. Performance in reading and associated comprehension skills also dips in high school, albeit less dramatically.

Exhibit 8: South Carolina's Grade Level Performance Indexed to the U.S. Average



* Refers to students enrolled in current grade as a fraction of those enrolled in previous grade one year earlier; 2003-04 NCES figures are preliminary estimates
Sources: NCES (Promotion Rates, NAEP), Nation's Report Card (NAEP), The College Board (SAT)

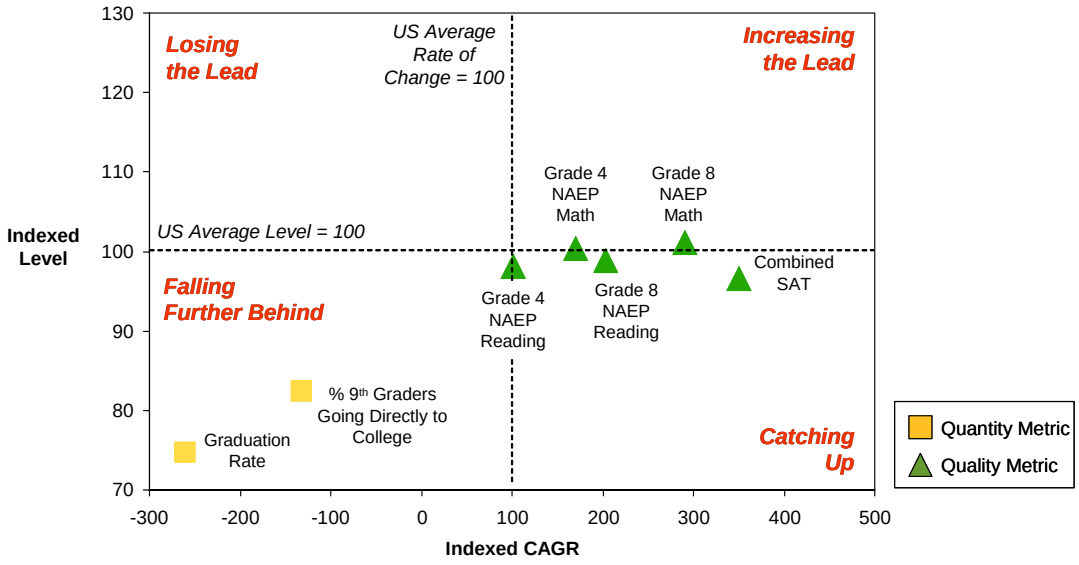
[16] Summarizing "quality" of students, we show a grade-by-grade analysis of comparable 2005 test scores in 4th and 8th grade (NAEP scores), and 11th / 12th grade (SAT scores). Summarizing the "quantity" of students, we have indexed South Carolina's grade-to-grade promotion rate (i.e., enrollment ratio) to show how many students have successfully reached a grade level relative to the U.S. average in 2003-2004.

[17] There is a similar story with ACT scores, however, a smaller percentage of students in the state take the ACT.

South Carolina's students progress through the system at the same rate as the U.S. average through the 8th grade, after which South Carolina's enrollment jumps due to a 9th grade bulge. This happens because more students in South Carolina repeat 9th grade than typically do in other states, further evident in the low promotion rate from 9th to 10th grade. Additionally, South Carolina's 10th graders have almost as difficult a time moving on to 11th grade, relative to the U.S. average. While South Carolina's promotion from 11th to 12th grade is above average, this is likely due to the lower number of students who are still in the system, and are presumably higher achievers than their counterparts who have already left.

Exhibit 9 below is another summary of performance index which uses data across a number of years to index many South Carolina "quantity" and "quality" metrics to the U.S. average. Any metric above the horizontal dotted line is one in which South Carolina is outperforming the U.S. average; any metric to the right of the vertical is one in which South Carolina is improving faster than the U.S. average. Ideally we would like to see metrics in the upper right quadrant (e.g., NAEP Math), which would mean South Carolina is scoring higher than the U.S. average, and increasing its lead. The least favorable quadrant is the lower left (e.g., graduation rates, and percent of 9th graders going directly to a 2yr or 4yr college), which means South Carolina is underperforming relative to the U.S. average *and* is falling further behind.

Exhibit 9: South Carolina's Educational Performance Indexed to the U.S. Average



Note: Standard SC index calculations can be misleading, since in some cases SC CAGR is positive while US CAGR is negative (NAEP G8 Reading), while in others SC and US CAGR are both negative (% Entering HS going directly to college); in these instances, a correction factor of -1 has been added for visual consistency; # years analyzed for CAGR: 5 (Grad Rate), 6 (% entering HS going directly to college), 7 (NAEP Reading), 8 (SAT), 9 (NAEP Math)
Source: NCES, Manhattan Institute, NCHEMS, College Board, Monitor Analysis

Contrary to widespread perception in South Carolina, the quality of student performance in the state is typically on par with the U.S. average, and rapidly improving. The principal issue is the quantity of students successfully passing through the system. Regardless of how high school completion rates are calculated, and which potentially mitigating factors are controlled for, South Carolina significantly lags the U.S. average high school graduation rate, and is falling further behind.

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Appendix – List of Individuals Interviewed

Type	Name*	Organization**	Name	Organization
South Carolina Education Community	Jo Anne Anderson	SC Education Oversight Committee	Jim Ray	Superintendent, Spartanburg 3
	David Burnett	SC Dept of Education, Head of Research	Janelle Rivers	SC Lexington District One
	Janie Davis	SC Commission for Minority Affairs	Jay Smink	Nat'l Center for Dropout Prevention
	Jim Foster	SC Dept of Education	Ellen Still	SC Dept of Education, Retired
	Grier Mullins	Alliance for Quality Education	Inez Tenenbaum	SC Department of Education
	Barbara Nielson	Former State Superintendent	Peggy Torrey	SC Chamber of Commerce
	Janice Poda	SC Dept of Education	Karen Woodward	SC Lexington District One
South Carolina Business & Government Leaders	Charmeka Bosket	Governor's Office	J.T. McLawhorn, Jr.	Columbia Urban League
	Clente Flemming	SC Community Bank	Ed McMullin Jr.	Policy Council, South Carolina
	Hayne Hipp	Liberty Corp	Kathy Olson	United Way of the Midlands
	E. Ashley Landis	Policy Council, South Carolina	Kaye Shaw	Midlands Educ. & Business Alliance
	Harrold Lightsey	BellSouth		
Education Experts (outside SC)	Willard Dagget	Intl. Center for Leadership in Education	Jim Koeninger	Jobs for American Graduates
	Kati Haycock	Education Trust	Marcus Winters	Manhattan Institute
	Thomas Houlihan	Council of Chief State School Offices		

Type	Name	Organization	Name	Organization
Expert Advisory Panel	Jo Anne Anderson	SC Education Oversight Committee	Gerrita Postlewait	Superintendent, Horry County
	Patricia Burns	Superintendent, Lancaster County	Richard Puffer	Byerly Foundation
	Don Herriott	Roche Carolina	Jim Reynolds	Total Comfort
	David Longshore	Superintendent, Orangeburg Co. 3	Minor Shaw	Palmetto Institute
	Diane Monrad	SC Educational Policy Center, USC		

* Betsy Carpentier, Harry Miley, and Teri Siskind were not interviewed, but participated in a briefing session at the South Carolina Department of Education.
** We've also spoken with individuals at the following organizations for specific data questions (not an exhaustive list) : NCES, Center for Social Org. of School (JHU), Manhattan Institute, National Council on Teacher Quality, Education Trust, Economic Research Service (U.S. Dept. of Agriculture), the BLS