

SOUTH CAROLINA SCHOOL GROWTH SCORES

TECHNICAL SUMMARY

To truly understand student learning, it is important to take into consideration the progress students are making in their academic learning each year, in addition to their performance level at the end of each school year. Unlike academic achievement where we designate students into four performance categories, academic growth considers improvement in student scores even when an individual student has not reached academic standards for a particular performance category set by the state. Additionally, student academic growth data can improve instruction in K–12 schools by helping schools to spotlight growth with specific groups of students, discuss effective approaches to teaching, and build upon challenges and areas for improvement.

OVERVIEW

The school growth model in South Carolina accounts for students' prior test history, or starting point, in English Language Arts (ELA) and math, as well as the average prior achievement of the students in the same grade in their school. Including average prior achievement ensures we are considering whether individual students are in a classroom similar to their own academic level. Student academic growth data from the SC READY assessment taken in third through eighth grades are used in a value-added regression model that estimates the effects of schools on student growth.

STUDENT TEST SCORES

The test scores used are from the 2016-17, 2017-18 and 2018-19 SC READY assessments. The value-added model produces school-level measures for grades 4 through 8 in ELA and math based on performance on the 2018-19 SC READY. The 2018-19 value-added models use the 2018-19 ELA and math scores as the posttest while the 2016-17 and 2017-18 scores are used as pretests. ELA and math are both used as pretests when available.

MODEL SPECIFICATIONS

School enrollment

Only students that have continuous enrollment status at a single school are included in that school's value-added estimate. Continuous enrollment is defined as students who were enrolled in the same school on the 45th day of the school year and on the 160th day of the school year, with no break in enrollment.





Value-added regression model

The value-added model is estimated using a least-squares regression approach, which finds the line of best fit between prior achievement and current achievement while correcting for measurement error inherent in the pretest assessments. Each student gets a customized prediction based on the growth of students with similar SC READY scores in previous school years, as well as the average prior achievement in their school by grade and subject. The model then determines the extent to which students did or did not meet their prediction, which is called a residual. The student-level residuals are averaged to the school level for an overall estimate of a school's positive or negative growth, or "value added."

Aggregation to multiple-grade value-added

The value-added regression to obtain school value-added is performed separately for each grade and subject combination. For schools that have results for more than one grade level, these estimates are averaged across grades (using the number of students attributed to the grade within the school as weights) to produce multiple-grade value-added estimates.

Differential effects

Value-added estimates are also produced for student sub-groups defined by certain demographic characteristics. Specifically, differential value-added effects are calculated for economically disadvantaged students, students with disabilities, English learners, and based on racial categories (including African American, Asian/Pacific Islander, Hispanic, Native American, and White students).

A version of differential effects is also run for a sub-group of students based on their performance on SC READY in 2017-18. For each grade within each school, a separate differential effects model is run for students in the lowest quintile of prior performance in ELA and math within their school (i.e., the lowest performing 20% of the students by school, grade, and subject). These estimates are reported separately and factor into the final school scores described below.

USE IN SOUTH CAROLINA REPORT CARDS

Conversion to 0-40 scale

The school value-added estimates tend to fall in the -3 to 3 range. In order to convert to scores that are more easily understood, as well as aligned with the state's report cards, the following steps are taken:

1. Average the raw value-added scores for ELA and math to create a combined value-added score
2. Multiply the combined value-added score by 20/2.25
3. Add 20
4. Truncate scores to a 0 to 40 range (if necessary)

Reporting final school growth scores

Each school receives a 0-40 value for all students in the school and a separate 0-40 value for the lowest performing quintile of students in the school. The two values are averaged for a final score on a 0-40 scale (or on a 0-35 scale for schools with an English Language Proficiency [ELP] indicator).

