PASS READING: A FIRST LOOK AT STUDENT PROGRESS FOR A MATCHED COHORT

SC EDUCATION
OVERSIGHT COMMITTEE

PO Box 11867 | 227 Blatt Building | Columbia SC 29211 | WWW.SCEOC.ORG

INTRODUCTION

The acquisition of reading skills by grade three is an important benchmark in a child's educational development. The Annie E. Casey Foundation report, *Early Warning: Why Reading by the End of Third Grade Matters*, states that:

> Reading proficiently by the end of third grade is a crucial marker in a child's educational development. Failure to read proficiently is linked to higher rates of school dropout, which suppresses individual earning potential as well as the nation's competitiveness and general productivity.[1]

Also reported by the Annie E. Casey Foundation in the report, *Double Jeopardy: How Third-Grade Reading Skills and Poverty Influence High School Graduation*, "one in six children who are not reading proficiently in third grade do not graduate from high school on time, a rate four times greater than that for proficient readers."[2]

South Carolina has addressed reading proficiency through efforts to provide for teachers' professional development on state standards, the provision of funds to enable the use of formative assessments, and the South Carolina Reading Initiative (SCRI) and subsequent initiatives, including South Carolina Reading First. Professional development on the state standards is provided by the South Carolina State Department of Education. State monies have been appropriated to support schools in utilizing formative assessments such as Computerized Assessments and Learning (CAL), Northwest Evaluation Association's (NWEA) Measures of Academic Progress, and STAR Reading and STAR Math. Most school districts in South Carolina utilize Northwest Evaluation Association's (NWEA) Measures of Academic Progress (MAP) assessment. The MAP assessments can be administered multiple times each year, with teachers receiving information regarding student progress the day following administration of the assessment. NWEA also provides support materials to enable teachers to create targets of performance for future MAP administrations for each student in each subject area. Started in 2000, the South Carolina Reading Initiative was a three-way partnership among the South Carolina State Department of Education, the National Council of Teachers of English, and the University of South Carolina which provided teachers and administrators access to literacy coaches, who worked with teachers and administrators in a school to ensure that best practices in literacy education were incorporated into teaching practices within the school.

In order for children to obtain early reading skills, the National Academy of Sciences, in *Preventing Reading Difficulties in Young Children* indicates that children should have a variety of reading experiences. They should:

- use reading to obtain meaning from print,
- have frequent and intensive opportunities to read,
- be exposed to frequent, regular spelling-sound relationship,

[1] Annie E. Casey Foundation. *Early Warning: Why Reading by the End of Third Grade Matters.* (Baltimore, Maryland, 2008.)

[2] Annie E. Casey Foundation. *Double Jeopardy: How Third-Grade Reading Skills and Poverty Influence High School Graduation.* (University of Albany, State University of New York, New York. 2011.)

- learn about the nature of the alphabetic writing system, and
- understand the structure of spoken words.[3]

Additionally, the National Academy of Sciences identified the ability of students to progress in learning beyond early reading skills as dependent on students' having:

- a working understanding of how sounds are represented alphabetically,
- sufficient practice in reading to achieve fluency with different kinds of texts,
- sufficient background knowledge and vocabulary to render written texts meaningful and interesting,
- control over procedures for monitoring comprehension and repairing misunderstandings, and
- continued interest and motivation to read for a variety of purposes.

The National Reading Panel (2000) furthered this research by examining in greater detail practices that are central to alphabetics, fluency, and comprehension. The report published by the National Reading Panel, *Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction* concluded that research validates the importance of skill development in five critical areas: phonemic awareness, phonics, fluency, vocabulary development, and comprehension.[4] Instruction in phonics is an important part reading instruction, with special emphasis on its role as a tool to understand letter-sound relations, which enable students to work toward the goal of understanding reading and writing. Repeated use of guided oral reading (with teachers, parents, or peers) was found to be substantially more effective than having students engage in independent silent reading in the development of fluency. To obtain fluency, students must understand the structure of words and text, which is critical to reading comprehension. Reading comprehension is the ultimate goal of reading instruction, which allows students to acquire new information in academic and life-long settings from a variety of sources. For students to develop the skills of comprehension they must expand their vocabulary and improve their reading comprehension. Expansion of a student's vocabulary is best accomplished through challenging students with developmentally appropriate words. The skills of reading comprehension are best obtained by explicit practice of a variety of cognitive strategies. Teachers should model strategies of reading a variety of text formats, demonstrating to students where to look for key pieces of information in the text, and how to assimilate and coordinate the various pieces of information in the text.

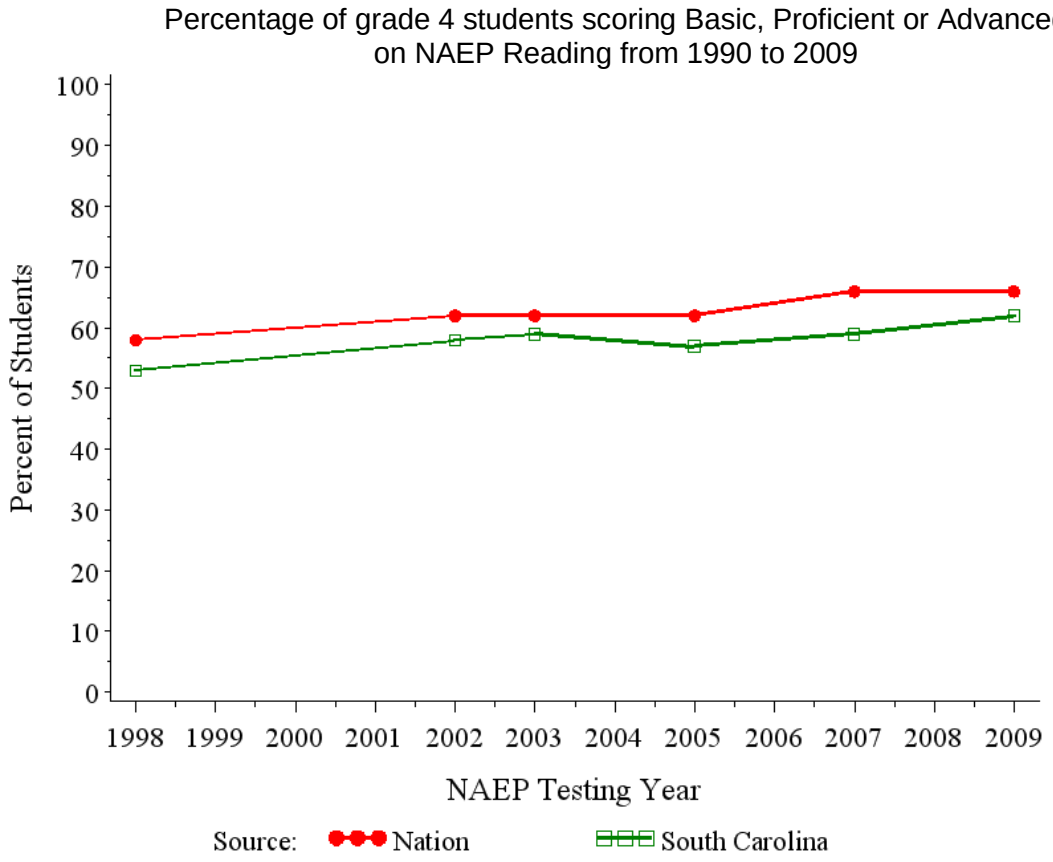
The *South Carolina Academic Standards for English Language Arts (2008)* for kindergarten through grade 3 addresses these topics through five strands: Using and Understanding Literary Texts, Using and Understanding Informational Texts, Reading, Writing, and Researching.[5] Alphabetics is addressed most explicitly through the reading standards, while fluency and comprehension are addressed throughout the standards, as students are expected to read and

[3] National Academy of Sciences. *Preventing Reading Difficulties in Young Children*. (Washington, DC, 1998.)
[4] National Reading Panel, *Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction*. (Washington, DC, 2000.)
[5] SC State Department of Education. *SC Academic Standards for English Language Arts*. (Columbia, SC, 2008.)

comprehend a variety of texts and to communicate their ideas to a variety of audiences through developmentally appropriate communication modes. Considering the grade three standards as targets for learning from kindergarten through grade 3, the standards expect students to be able to assimilate information from a variety of text formats, to have developed a vocabulary sufficient to understand those texts or to be able to obtain word meaning from context clues, to be able to organize ideas for written presentation, and to express those ideas in complete paragraphs with correct grammar.

Figure 1 presents the percentages of grade 4 students in South Carolina and in the nation who scored basic, proficient, or advanced on the NAEP Reading assessment between 1990 and 2009. The progress of South Carolina students roughly parallels that of students nationally. In 2009, however, only approximately 60 percent of South Carolina students scored basic or higher, proficient, or advanced while approximately 65 percent of students nationally scored at this level.

Figure 1.



Figures 2 and 3 present the performance of South Carolina grade 3 students on the Palmetto Assessment of State Standards (PASS) Reading and Research assessment, which has been administered in 2009 and 2010. Students who are economically disadvantaged are achieving at substantially lower levels than are students who are not economically disadvantaged. White students appear to be performing better than either African-American or Hispanic students, with

the latter two groups performing similarly. The achievement levels demonstrated by these groups suggest that many students will continue to be at risk for not graduating from high school. Although achievement levels appear to be improving over time, the improvement appears to be incremental rather than dramatic.

Figure 2.

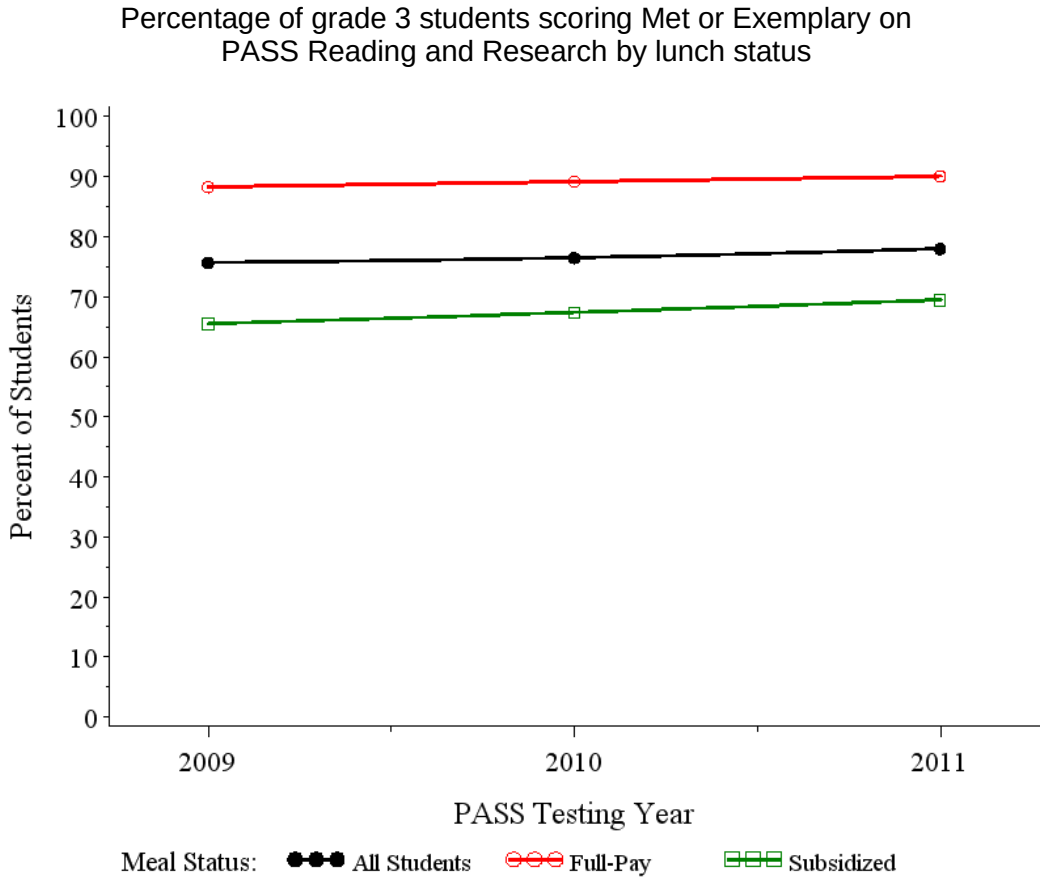
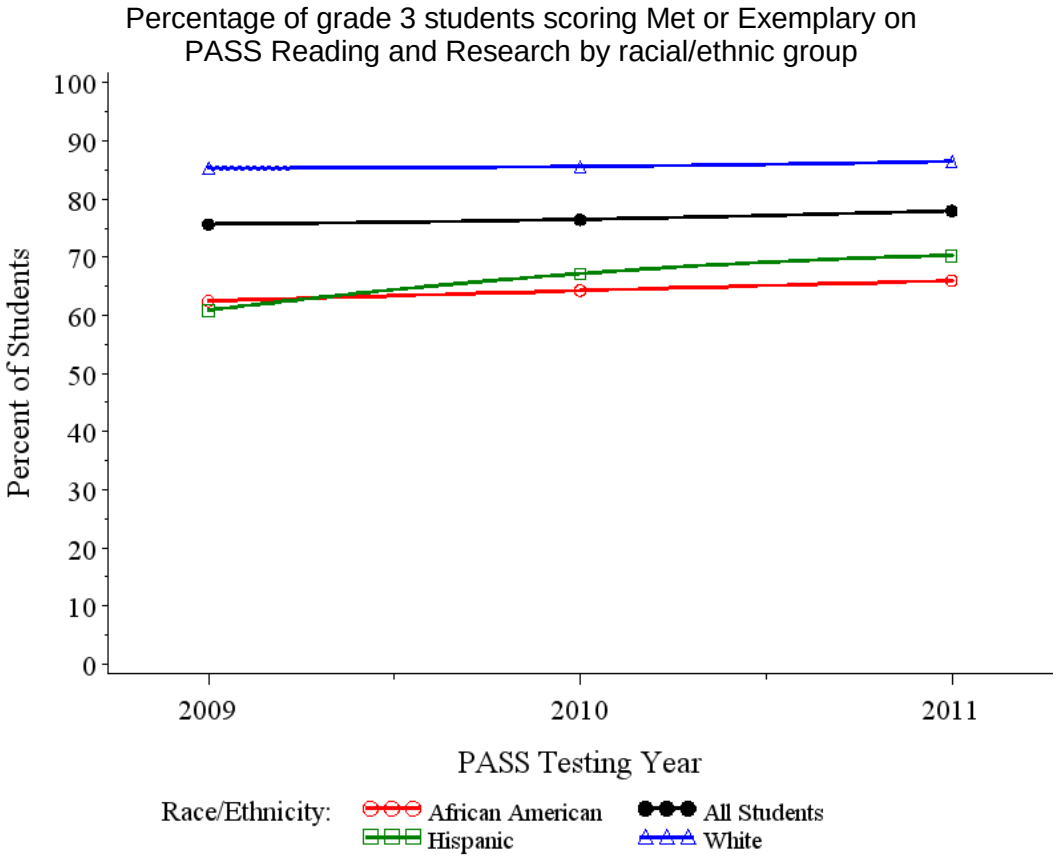


Figure 3.



Previous work of the Education Oversight Committee, *Reaching Higher Levels of Achievement in Reading* examined the performance of South Carolina schools by identifying schools as high or low in their academic status, and high or low in their academic growth.[6] Schools that were identified as both low status and high growth were surveyed to determine commonalities in their instructional practices. These schools described their efforts with students as "explicit," "direct,", and "relentless." Several specific academic initiatives were noted by these schools as substantial elements of their efforts to improve student achievement. First, the schools made significant efforts to improve the academic outcomes obtained in kindergarten through grade two. Second, the schools made concentrated efforts to differentiate instruction for their students. Information regarding levels of student achievement was obtained using MAP assessments or other appropriate assessments, with supplementary instruction provided students by a certified teacher. Class sizes were generally small (18-20 students), and supplemental instruction limited to groups of six students. Third, several schools described substantial efforts directed toward the professional development of teachers, especially in the area of reading, and the restructuring of daily schedules to enable teachers to plan cooperatively. Finally, schools indicated that they utilized community resources for support and

[6] SC Education Oversight Committee. Reaching Higher Levels of Achievement in Reading. (Columbia, SC, 2010)

provided extended learning time for students. Most importantly, instructional programs and supports were designed with the needs of each student as paramount.

RESEARCH QUESTIONS

This study focused on the reading performance of students as measured by the PASS Reading and Research test; of specific interest were the changes in performance of student groups and whether the changes in performance differed among student groups. The following questions were asked regarding both the level of performance and the changes in performance from Spring 2009 to Spring 2010. Did student achievement differ:

1) between students identified as gifted and talented and students not identified as gifted and talented?
2) between students with non-speech disabilities and students with no disabilities?
3) between students by economic status as measured by the federal school lunch program?
4) among students by racial/ethnic group?
5) by students' transiency status, either at the district or the school level (same school/district or different school/district in each year)?
6) among students by state report card absolute report rating of the school (did students in schools with "Excellent" ratings perform differently than students in schools with "At Risk" ratings)?
7) among students by state report card improvement rating of the school?

DATA

These analyses were performed using a matched sample made up of students who took the PASS Reading and Research test as grade 3 students in the Spring of 2009 and as grade 4 students in the Spring of 2010. Associated with each testing record is information that can identify each student as participating in a gifted and talented program, eligible for free or reduced price meals, their racial/ethnic status, and the school/district they were enrolled in at the time of testing. To be included in this study, the testing record for each PASS year must contain information regarding each of these variables. A total of 51,773 students were tested in both years and contained complete information in their testing records.

Students may not have had the same demographic information within both testing records. Their gifted and talented status may have changed due to re-evaluation, their status with respect to the federal school lunch program may have changed, and reasons for receiving special education services may have changed from one year to another. For most analyses, students were considered to be in a specific student group only if the same group status was indicated within both testing records. For example, a student was identified as receiving free lunch if they were identified as receiving free lunch in both the 2009 and 2010 testing records. With this classification criterion, groups being compared were as distinct as possible.

Associated with each testing record is an identifier of the district and school the student was enrolled in at the time of testing. Using his information, students were identified as being enrolled (1) in the same school, (2) in the same district but not the same school, and (3) different districts for testing in both years.

Scores from the PASS assessments are associated with five levels, Not Met 1, Not Met 2, Met, Exemplary 4, and Exemplary 5. To be used in calculations of school ratings for school report cards, scores of 1 through 5 are assigned to these categories; these scores are referred to as report card weights. Each student's change in reading performance was quantified by subtracting the report card weight a student received in grade 3 from the report card weight a student received in grade 4. A student who received the same report card weight in both grade 3 and grade 4 would have a change of 0, and is judged to have performed similarly in both years. Students who received a higher report card weight in grade 4 would have made positive change in performance, and students who received a lower report card weight in grade 4 would have a negative change in performance.

Scores Used for Data Analysis	
PASS Level	**Score (Report Card Weight)**
Exemplary 5	5
Exemplary 4	4
Met	3
Not Met 2	2
Not Met 1	1

RESULTS

All Students

An overall view of the change in performance of students from 2009 to 2010 for the matched sample is presented in Table 1. Approximately 51 percent of students obtained the same score in both 2009 and 2010. Unfortunately, a larger percentage of students decreased their achievement by one level (22.22 percent) than increased their achievement by one level (12.81 percent). A larger percentage of students also decreased their performance by 2 levels (9.94 percent) than increased their performance by two levels (3.21). Approximately 33 percent of students decreased their performance, and approximately 16 percent of students increased their performance. The mean difference between students' 2009 performance and 2010 performance for the matched sample is -0.24.

Table 1.

Changes in Reading and Research performance for students in the 2009/2010 matched data

	Change (Grade 4 – Grade 3)	Number of Students	Percent of Students
Increase in Performance	4	5	Less than 0.1
	3	73	0.1
	2	1,663	3.2
	1	6,634	12.8
No Change	0	26,462	51.1
Decrease in Performance	-1	11,511	22.2
	-2	5,149	9.9
	-3	250	0.5
	-4	44	0.1

Students served in gifted and talented programs

Census screening of students for initial enrollment in gifted and talented programs occurs in grade 2; however students may be re-assessed for entry into the program or choose not to participate in the program at any time. As a result, many more students were identified as gifted and talented in their grade 4 testing record than are identified as gifted and talented in their grade 3 testing record, and some students who were identified as gifted and talented in grade 3 were not identified as gifted and talented in grade 4. The numbers of students identified in each gifted and talented category for each year are identified in Table 2. The categories within each year are: academically gifted, artistically gifted, both (academically and artistically gifted), and not gifted. More students were identified in each gifted category in 2010 than in 2009. Students who were identified as gifted in 2009 were usually identified as gifted in 2010, although the type of gifted identification may change. Within any specific type of gifted identification, only a small percentage of students that were identified as gifted in 2009 were not identified as gifted in 2010. The number of academically gifted students increased by 2,963, the number of artistically gifted students increased by 812, and the number of students identified as both academically and artistically talented increased by 386. Because the 2010 gifted and talented status applies to the 2009-2010 academic year, summary information is presented for students based on their 2010 categorization of giftedness (Table 3).

Table 2.

Numbers of students with each gifted identification in 2009 and 2010

		2010 Identification				
		Not Gifted	Academic	Artistic	Both	Total
2009 Identification	Not Gifted	43,688	2,059	904	104	46,755
	Academic	113	4,239	5	294	4,651
	Artistic	69	14	170	15	268
	Both	4	22	1	72	99
	Total	43,874	6,334	1,080	485	51,773

Students not identified as gifted scored lowest initially, with a mean 2009 performance of 3.33, artistically talented students scored higher (3.96) and academically gifted students scored nearly identically to students identified as both academically and artistically gifted (4.86 and 4.87, respectively). The initial mean performance for artistically talented students is nearly at the Exemplary 2 level.

Each gifted and talented group declined in their performance from 2009 to 2010. The smallest decline occurred for students who were identified as both artistically and academically gifted (-0.11). The change in performance for students not identified as gifted is identical to the change in performance for the complete matched sample (-0.24). Although the change in performance for academically gifted students (-0.22) and artistically gifted students (-0.27) differ from that of the entire matched sample, these differences are small enough that neither of these groups can be regarded as differing from the entire matched samples. Academically gifted, artistically gifted, and not gifted students can be regarded as having the same change in performance as the matched sample. Because only 485 students were identified as both artistically and academically gifted, the apparent difference in change in performance for this group should not be over-interpreted.

Table 3.

Reading and Research performance by Spring 2010 gifted and talented status

Gifted and Talented Status	N	Mean Performance 2009	Mean Performance 2010	Change in Performance (2010-2009)
Academic	6,334	4.86	4.64	-0.22
Artistic	1,080	3.95	3.67	-0.27
Both	485	4.87	4.76	-0.11
Not Gifted	43,874	3.33	3.08	-0.24

Students with disabilities

To be sure to compare students who have a non-speech disability to students who have no disabilities, students were identified with each category only if their testing record indicated the same categorization for both years. A total of 4,376 of the matched sample students (8 percent) were identified as having a non-speech disability in both 2009 and 2010, and 46,285 of the matched sample students (89 percent) were identified as having no disability in both 2009 and 2010.

Students with no disabilities clearly scored higher initially, with a mean performance (3.70) that is closer to “Exemplary 1” than it is to “Met”, and students with a non-speech disability initially scoring slightly above the “Not Met 2” category (2.24). Students with no disabilities have the same change in performance as the entire matched sample (-0.24). More importantly, it does appear that students with non-speech disabilities have decreased in their performance (-0.33) more than have students with no disability (-0.24).

Table 4.

Reading and Research performance by non-speech disability status

Disability Status	N	Mean Performance 2009	Mean Performance 2010	Change in Performance (2010-2009)
Not Disabled	46,285	3.70	3.46	-0.24
Non-speech Disability	4,376	2.24	1.91	-0.33

Student race/ethnicity

Table 5 presents results for analyses of students by race/ethnicity. White students make up the largest group of students, and their initial mean performance (3.89) is nearly at the "Exemplary 1" level, while the initial performance of African-American (3.09) and Hispanic (3.16) students is substantially lower, nearer to "Met". The differences among these initial performance levels are large enough to state that these groups are different. The differences in change of performance, however, are not large enough to state that these groups differ. The mean differences are the same for white and Hispanic students (-0.23), and only slightly larger for African-American students (-0.27).

Table 5.

Reading and Research performance by racial/ethnic group

Race/Ethnicity	N	Mean Performance 2009	Mean Performance 2010	Change in Performance (2010-2009)
African-American	19,744	3.09	2.82	-0.27
Hispanic	2,947	3.16	2.93	-0.23
Other	1,246	3.92	3.74	-0.18
White	27,595	3.89	3.66	-0.23

Student eligibility for free or reduced price lunch

There are clearly differences among the initial performance levels of students based on their participation in the federal student lunch program (Table 6). Students eligible for free lunch have the lowest initial performance (3.07), which corresponds approximately to the "Met" category. Students who are not eligible for any lunch subsidy have the highest initial performance (4.13), which corresponds approximately to the "Exemplary 1" level. Students who are eligible for a reduced price lunch are very nearly half way between these two groups in their initial performance (3.58), and are also a small group by number. The differences in performance change (-0.25 compared to -0.24) are minimal, they are not large enough to claim that these groups differ in their changes in performance.

Table 6.

Reading and Research performance by federal lunch program status

Student Group	N	Mean Performance 2009	Mean Performance 2010	Change in Performance (2010-2009)
Free Lunch	23,334	3.07	2.83	-0.24
Reduced Price	1,890	3.58	3.32	-0.25
Full Pay	19,338	4.13	3.89	-0.24

Student mobility across districts

Each year of testing had two different PASS administrations, a March administration of Writing and a May administration of all other tests. For a specific year, each student was associated with a district when they were tested in the same district for both the March and May administrations. Students who changed districts between the March and May administrations were not associated with any district for that administration. Students were then identified as either testing in the same district for both the 2009 and 2010 PASS administrations, or testing in different districts.

Results presented in Table 7 present a clear picture; students who changed districts score on average 0.3 points lower than do students who remain in the same district. For both 2009, and in 2010, the initial mean performance of students who changed districts was 0.3 lower than the initial mean performance of students who remained in the same district. Their changes in performance are the same with both groups decreasing by 0.24 points.

Table 7.

Reading and Research performance by student mobility across districts.

District Mobility	N	Mean Performance 2009	Mean Performance 2010	Change in Performance (2010-2009)
Changed District	2500	3.25	3.01	-0.24
Same District	49,220	3.55	3.31	-0.24

Further analyses were performed to determine whether student economic status as reflected by federal school lunch program status might shed more light on how student mobility affects differences in student performance. Students were identified as receiving free or reduced lunch if they received either free or reduced lunch in both 2009 and 2010, and as receiving no subsidies if they received no subsidies for either year. Results are presented in Table 8. The first difference to note is that while only 2.0% of students who pay for meals changed districts, 5.5% of students receiving subsidized meals changed districts from 2009 to 2010; students with lower economic status appear to be more mobile. With respect to changes in performance from 2009 to 2010, however, there are no differences between students based on their federal school

lunch program status. Among students who changed districts, the change in performance was -0.23 for students receiving subsidized meals, and -0.25 points for full-pay students. Among students who remained in the same district, the change in performance was -0.25 for students receiving subsidized meals, and -0.24 points for full-pay students. These differences are not large enough to assert that student performance has changed differently for students based on their lunch program status.

Table 8.
Reading and Research performance by student mobility across districts and federal lunch program status

Lunch Status	District Status	N	Mean Performance 2009	Mean Performance 2010	Change in Performance (2010-2009)
Free/Reduced	Changed District	1,547	3.05	2.82	-0.23
	Same District	26,510	3.14	2.90	-0.25
Full Pay	Changed District	396	3.94	3.69	-0.25
	Same District	18,912	4.14	3.90	-0.24

Student mobility across schools within the same district

Analyses were performed on the PASS Reading and Research scores that compared students who changed schools but remained in the same district from 2009 to 2010 to students who remained in the same school for both academic years. Students were associated with a school for each year if they tested in the same school for both March and May PASS for that year. Students were identified as attending the same school if their testing record indicated they attended the same school in both 2009 and 2010. For five school districts (Bamberg 1, Barnwell 45, Clarendon 2, Dillon 2, and Greenwood 51), no schools served students in both grade 3 and grade 4; students in these districts could not remain in the same school for both years. Because mobility could not be determined for students in these five districts, they were not included in this analysis.

A larger percentage of students changed schools from 2009 to 2010 than changed districts (13.4% vs. 4.8%, respectively). Table 9 presents summary information of the changes in performance by school mobility. The initial performance for students who remained in the same school and district is 0.21 points higher than students who changed schools districts. For students who changed schools the change in performance is -0.26 points, which differs only slightly from the change in performance who remained in the same school (-0.24).

Table 9.

Reading and Research performance by student mobility across schools

School Mobility	N	Mean Performance 2009	Mean Performance 2010	Change in Performance (2010-2009)
Changed School	6,486	3.38	3.12	-0.26
Same School	41,947	3.59	3.35	-0.24

Student enrollment in schools by absolute report card rating

The initial performance of students decreases as the school rating decreases; the initial performance of students in schools with an absolute rating of Excellent is 4.09 which corresponds to a rating of "Exemplary 1", and the initial performance of students in schools with an absolute rating of At Risk is 2.68 which corresponds to a rating below "Not Met 2". For all absolute report ratings, however, the change in performance is close to the change in performance for the entire matched sample (-0.24). The largest difference is for students in Below Average schools, with a change in performance of -0.22, which is not large enough to make any claim that these students' change in performance differs from the entire matched sample. There also is no pattern that the change in performance increases or decreases with absolute school rating.

Table 10.

Reading and Research performance by absolute school rating

Absolute Rating	N	Mean Performance 2009	Mean Performance 2010	Change in Performance (2010-2009)
Excellent	11,520	4.09	3.85	-0.25
Good	9,431	3.75	3.49	-0.26
Average	23,968	3.38	3.14	-0.24
Below Average	5,061	2.99	2.77	-0.22
At Risk	1,777	2.68	2.43	-0.25

Student enrollment in schools by improvement rating

The change in performance being investigated can be viewed as a variation of the process used to determine school improvement ratings. The current process differs in that it utilizes only the Reading and Research scores of the PASS test, and only looks at changes from grade 3 to grade 4. Nevertheless, we should see the largest changes in performance for students in schools with an Excellent improvement rating, and successively decreasing changes in performance as a school's improvement rating decreases.

Similar to the pattern for absolute ratings, the initial performance of students decreases as the school rating tends to decrease as improvement rating decreases, though the lowest initial

performance for students in schools with Below Average and At Risk improvement ratings is not as low as for students in schools with Below Average and At Risk absolute ratings. The initial performance of students in schools rating Excellent is 4.06 which corresponds to a rating of "Exemplary 1," and the initial performance of students in schools rated Below Average is 3.13 which corresponds to a rating of "Average." The initial performance of students in schools with At Risk ratings (3.26) is slightly higher than for schools with Below Average ratings.

For four of the improvement ratings, the change in performance is within .02 of the entire matched sample change in performance (-0.24). Only students in At Risk schools differ by an amount (-0,29) that may appear to differ from that of the entire matched sample. Because only 4,085 students are in these schools, however, these students also cannot be judged to differ from the entire matched sample in their change in performance.

There is very modest evidence that students in schools with higher improvement ratings have larger changes in performance, as the change in performance declines less as improvement rating increases.

Table 11.

Reading and Research performance by improvement rating

Improvement Rating	N	Mean Performance 2009	Mean Performance 2010	Change in Performance (2010-2009)
Excellent	6,796	4.06	3.82	-0.23
Good	11,238	3.79	3.55	-0.23
Average	26,596	3.40	3.16	-0.24
Below Average	2,923	3.13	2.87	-0.26
At Risk	4,085	3.26	2.98	-0.29