

Striving Readers Study:

Targeted & Whole-School Interventions – Year 3

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Executive Summary of Findings: Year 3 Implementation and Impact

A. Project Overview

This report summarizes the results of the Newark, NJ, Striving Readers program for project years 1, 2, and 3. The Striving Readers Grant addresses the unmet needs of middle school students reading 2 or more years below grade level and provides professional development for teachers in all core content areas to help them learn about and use more effective literacy strategies. Nineteen middle schools in Newark are participating in the U.S. Department of Education Striving Readers study. Two components of the project are being evaluated: a targeted intervention and a whole-school intervention.

B. Targeted Intervention

Scholastic's READ 180 Enterprise Edition was chosen to be the targeted intervention and replaced the core language arts curriculum for targeted students in the treatment schools. READ 180 directly addresses the individual needs of adolescents reading below grade level by using adaptive and instructional software, high-interest literature, and direct instruction. Teachers received training on all aspects of the READ 180 curriculum, from preparation to implementation and evaluation. In addition, teachers received training on using student data for differentiated instruction and instruction on interpreting READ 180 data reports.

B.1 Description of Schools and Students in Targeted Intervention

The schools eligible to participate in the Striving Readers program were randomly assigned to either the treatment or a control condition in May 2006. No classroom- or student-level random assignment was involved. Eligible middle schools were identified based on the following criteria:

- Be Title I eligible
- Serve a minimum of two grades (from 6, 7, 8)
- Not already using READ 180

- Be categorized as “in need of improvement” under the No Child Left Behind Act
- Serve a minimum of 25 eligible students

These criteria ultimately resulted in a pool of 19 schools for randomization. Ten schools were assigned to the treatment group.

Students were identified as eligible based on their score on the reading subtest of the New Jersey Assessment of Skills and Knowledge (NJASK). In Year 3, 1,167 students participated in the intervention. Of those, 638 attended treatment schools and 529 attended control schools. Table B-1 shows the distribution of these students by select demographics and by treatment group.

Table B-1. Characteristics of students in the targeted intervention

Number (column %)	Students in treatment schools	Students in control schools	All students
Total number of students	638 (55%)	529 (45%)	1,167
Average no. of students per school	63.8	58.8	61.4
Grade			
6th grade	226 (35%)	183 (35%)	409 (35%)
7th grade	206 (32%)	157 (30%)	363 (31%)
8th grade	206 (32%)	189 (36%)	395 (34%)
Gender			
Male	379 (59%)	291 (55%)	670 (57%)
Female	258 (41%)	238 (45%)	496 (43%)
Status			
Economically disadvantaged	393 (62%)	306 (58%)	699 (60%)
English language learners (ELLs)	68 (11%)	49 (9%)	117 (10%)
Special education	308 (48%)	204 (39%)	512 (44%)
Race/ethnicity			
African American	345 (54%)	286 (54%)	631 (54%)
Hispanic	273 (43%)	230 (43%)	503 (43%)
Caucasian	4 (1%)	6 (1%)	10 (1%)
Other	16 (3%)	7 (1%)	23 (2%)

B.2 Summary of the Targeted Intervention Implementation Findings

To determine the degree of fidelity to READ 180, multiple components were evaluated for each READ 180 teacher. These components are training, class size, ongoing student assessments, and instructional software. An overall implementation summary score was developed for each school in Year 3.

Table B-2 provides each school’s score for the multiple components of the targeted intervention and an overall implementation score.

Table B-2. Average school-level summary scores for implementation in READ 180 intervention in Year 3

Treatment School	Professional Development*	Class size	Ongoing Student Assessment	Instructional Software Use	Average score	Summary Implementation scores
School 4	–	4	4	4	4	High
School 5	–	4	4	4	4	High
School 6	–	4	4	4	4	High
School 10	–	4	4	4	4	High
School 13	–	4	4	4	4	High
School 14	–	4	4	4	4	High
School 15	–	4	4	4	4	High
School 16	–	4	4	4	4	High
School 17	–	4	4	4	4	High
School 8	–	2.5	4	2.5	3	Moderate-to-High

*A summary score was not calculated for professional development due to a change in the model. Only 1 new teacher received professional development in Year 3.

Almost all of the schools received high fidelity in implementing the READ 180 intervention in Year 3. All of the schools fully implemented ongoing monitoring of student progress in reading comprehension.

B.3 Summary of the Targeted Intervention Impact Findings

Based on analyses from the first 3 years of Striving Readers data, READ 180 had an overall significant effect in some areas of literacy skill. Overall, students in treatment schools exhibited the same level of achievement as students in control schools after they had 1 year of exposure to READ 180. However, after 2 and 3 years of exposure to READ 180, significant findings were observed for students in the treatment group. Students with 2 years of intervention scored higher than their control counterparts in Comprehension and Vocabulary, whereas students with 3 years of intervention scored higher than their control counterparts in Comprehension and Language Arts. These findings suggest that struggling adolescent readers who are two or more years below grade level in reading may need at least two years of exposure to the intervention before significant impacts can be observed.

Significant effects were also found for subgroups of students, as shown in Table B-3. READ 180 appeared to be particularly effective for special education students. Special education students with 2 years of exposure to READ 180 scored significantly higher on the Vocabulary and Comprehension subtests of the Stanford Achievement Test, 10th Edition (SAT 10) than the control students. Special education students with 3 years of treatment scored higher than control students on all three subtests of the SAT10: Vocabulary, Comprehension, and Language Arts. This treatment effect is both statistically and practically significant, with effect sizes of 0.31, 0.39, and 0.33, respectively. These findings indicate that after 3 years, reading achievement among students with more complex educational needs is improving as a result of the program.

Another subgroup that appeared to substantially benefit from READ 180 was males. As reported, male students with 2 years of exposure scored significantly higher on the Comprehension subtest. In addition to these findings, male students with 3 years of exposure to READ 180 experienced statistically and practically significant effects in both Comprehension and Language Arts.

African-American students showed positive but irregular effects from READ 180 exposure. Among 6th, 7th, and 8th grade students with 1 year of READ180 exposure, a statistically significant effect was observed in the Language Arts subtest. Similarly, for 6th grade students with 1 year of exposure, a statistically and practically significant finding was observed for Language Arts with an effect size of 0.20. No effects were apparent for students after 2 years in the program, but, after 3 years of exposure to READ 180, Language Arts scores were higher than for control students at both the statistical and practical significance levels, with an effect size of 0.24.

Among Hispanic students, few effects were observed in the Year 3 analytic groups. In particular, for 6th grade students with 1 year of exposure, Hispanic students' Comprehension achievement was significantly higher than control students'. Hispanic students in 7th and 8th grades in the treatment group who had exposure to 2 years of READ 180 scored higher on the Language Arts subtest than Hispanic students in the control group, also at a statistically significant level. None of the other findings were either statistically or practically significant, including effects after 3 years of exposure to the program. From these findings, it appears that READ 180 has had limited effects on Hispanic student literacy. See Table B-3 for all subgroup findings.

Table B-3. Summary of analysis findings by subgroups

Analysis groups	Outcomes	Overall		Female		Male		African American		Hispanic		Special Education	
		ES	Sig	ES	Sig	ES	Sig	ES	Sig	ES	Sig	ES	Sig
1 (1 year of intervention; 6 th , 7 th , & 8 th grades)	Attendance												
	Vocabulary						✓						
	Comprehension				✓								
	Language Arts				✓				✓				
2 (1 year of intervention; 6 th grade only)	Attendance												
	Vocabulary											✓	
	Comprehension			✓	✓						✓	✓	
	Language Arts							✓	✓				
3 (2 years of intervention; 7 th grade only)	Attendance				✓*								
	Vocabulary											✓	✓
	Comprehension		✓			✓	✓	✓				✓	✓
	Language Arts												
4† (2 years of intervention; 8 th grade only)	Attendance				✓*								
	Vocabulary			✓*						✓			
	Comprehension									✓		✓	
	Language Arts					✓				✓	✓		
5 (2 years of intervention; 7 th & 8 th grade)	Attendance				✓*								
	Vocabulary		✓										✓
	Comprehension		✓			✓	✓					✓	✓
	Language Arts										✓		
6 (3 years of intervention; 8 th grade)	Attendance												
	Vocabulary				✓							✓	✓
	Comprehension		✓			✓	✓					✓	✓
	Language Arts		✓			✓	✓	✓	✓			✓	✓

✓* Negative at either $p < .05$ or effect size $> .20$

† Results from Year 2 analysis

✓ Positive at either $p < .05$ or effect size $> .20$

C. Whole-School Intervention

The goal of Newark Public Schools’s (NPS) whole-school intervention is to improve students’ ability to “read to learn” across multiple content areas. The whole-school intervention is thus designed to train teachers to better integrate different learning strategies within the district’s core literacy program for middle-grade students. To this end, the intervention provides professional development to bolster the literacy knowledge of teachers of grades 6, 7, and 8 in whole-group

settings and to provide direct coaching support during in-school visits. These professional development and support activities are conducted by experts from New Jersey City University (NJCU) and the National Urban Alliance (NUA). Using a train-the-trainers model, the RTCs support the implementation of both professional development approaches through their own whole-group training and site-based demonstration lessons and coaching.

C.1 Description of Schools and Students in Whole-School Intervention

The 19 schools participating in the targeted intervention are the same as those participating in the whole-school intervention. However, the whole-school intervention is not being evaluated with a randomized design, and so all eligible teachers in all 19 schools receive the intervention.

In Year 3, 337 teachers were eligible to receive professional development as part of the whole-school intervention. Of these, 137 were eligible for professional development provided by the NUA (teachers who taught only math, science, or social studies). Another 61 teachers were eligible for training from NJCU (teachers who taught only language arts). The remaining 139 teachers were eligible for both NUA and NJCU training. These teachers either taught both language arts and a content area subject (usually social studies), or they taught all subjects (usually special education or bilingual teachers).

Students in all 19 Striving Readers schools, across the 6th, 7th, and 8th grades, were exposed to the whole-school intervention.

C.2 Summary of the Whole-School Intervention Implementation Findings

The summary scale developed in Year 2 to describe how connected professional development inputs are involved in the whole-school intervention model was used again for Year 3. Table C-1 provides each school's score for the multiple components of the whole-school intervention professional development—the group training sessions and the in-school coaching visits—for the NUA and the NJCU intervention models. In addition, an overall implementation score and level of implementation are calculated for each school in the study.

Table C-1. School-level summary scores for participation in whole-school intervention in Year 3

School	Implementation scores by component					Summary Implementation scores
	NUA		NJCU		Average score	
	Whole group training	In-school coaching	Whole group training	In-school coaching		
School 5	4	4	4	4	4	High
School 1	3	4	2	4	3.25	Moderate-to-High
School 2	2	4	3	4	3.25	Moderate-to-High
School 3	2	4	2	4	3	Moderate-to-High
School 4	2	4	2	4	3	Moderate-to-High
School 6	3	4	3	4	3.5	Moderate-to-High
School 8	3	4	2	4	3.25	Moderate-to-High
School 9	2	4	3	3	3	Moderate-to-High
School 11	2	4	3	3	3	Moderate-to-High
School 12	2	4	2	4	3	Moderate-to-High
School 13	3	4	1	4	3	Moderate-to-High
School 14	3	4	2	4	3.25	Moderate-to-High
School 15	3	4	3	4	3.5	Moderate-to-High
School 16	3	4	1	4	3	Moderate-to-High
School 17	2	4	3	4	3.25	Moderate-to-High
School 7	1	4	2	4	2.75	Moderate
School 10	2	4	1	4	2.75	Moderate
School 18	1	4	1	4	2.5	Moderate
School 19	1	4	1	4	2.5	Moderate
Average	2.3	4	2.2	3.9	3.1	Moderate-to-High

One school achieved high implementation score for all four components of professional development in Year 3. A total of 74 percent (14 schools) of schools had Moderate-to-High levels of implementation for the whole-school intervention. The remaining four schools all had moderate levels of implementation, taking into account all components of the whole-school professional development.

It should be noted that the relatively high average levels of participation are related more to the high levels of whole-school coaching than to high levels of teacher participation in the group training. Although attendance at whole-group professional development training was poor, multiple in-school coaching visits were made to each individual school, offering teachers opportunities to learn the techniques taught at the whole-group training in an individualized way.

Introduction and Study Background

1

1.A District Overview

One of the oldest school systems in New Jersey, the Newark Public Schools (NPS) system dates back to 1676. Barringer High School in Newark’s North Ward is the third oldest public high school in the nation. With a student population of 40,500, NPS also is the largest school district in New Jersey. That population is diverse: approximately 58 percent African American, 33.5 percent Hispanic, 7.5 percent Caucasian, and 1 percent Asian or other heritage. Approximately 10 percent of the students are English language learners (ELL), and 14 percent receive special education services. Analysis of district achievement data reveal that students in the middle grades are struggling in the area of language arts. In the spring of 2008, only 28 percent of 6th graders, 40 percent of 7th graders, and 52 percent of 8th graders passed the state reading assessment.

The existing literacy curriculum for the middle grades uses the New Jersey Core Content Curriculum Standards for literacy instruction and incorporates research-based strategies from the National Reading Panel (2000) to bolster the acquisition of phonemic awareness, phonics, fluency, vocabulary, comprehension, and motivation. In the district’s existing curriculum, students have extended learning time; have the opportunity to read high interest, age-appropriate materials; and work in small groups to maximize cooperative learning. Daily reading instruction must be at least 90 minutes. For grades 6, 7, and 8, the literacy curriculum primarily emphasizes comprehension and vocabulary and uses the textbook, *The Language of Literature* (McDougal Littell, 2002). The curriculum also uses a number of supplementary materials, including the following:

- ***Bridges to Literature***—designed to maintain and build students’ comprehension through a reciprocal-teaching approach. The materials include a textbook, an assessment book, and a student workbook. The textbook contains a leveled reading series designed to meet the needs of delayed readers by providing them with accessible, high-interest, on-level instruction. The assessment book and *Bridges SkillBuilder* workbook provide assessments, writing prompts, and revising and editing activities to enhance students’ literacy skills.
- ***Classroom-Leveled Libraries***—provide students with continued opportunities to read high-interest and age-appropriate materials that build vocabulary, fluency, and comprehension.

The literacy curriculum is designed to ensure that students learn the essential skills of listening, reading, speaking, reading, writing, and spelling. Furthermore, the goal of the curriculum is to enable students to become contributing members of society by helping them develop and expand their view of themselves and the world, as well as obtain necessary skills such as critical thinking, problem solving, and creativity.

1.B Adolescent Literacy in Context

Numerous researchers have categorized the state of adolescent literacy in the United States as in a crisis (Fisher & Ivey, 2006; Jacobs, 2008; Kamil, 2003). Adolescent reading and writing skills are on the decline (Carnegie Corporation, *Time to ACT*, 2010) and recent data from the National Assessment of Educational Progress (NAEP) show that 26 percent of 8th grade students in the United States are reading below the basic level (Lee, Grigg, & Donahue, 2007). For Black and Hispanic students, the data are even more discouraging: 46 percent of Black students and 43 percent of Hispanic students have literacy skills below the basic level. Similarly, 42 percent of students from low-income families have literacy skills below the basic level (Lee et al., 2007). These data indicate that large numbers of middle schools students are at a significant disadvantage before reaching high school, placing these students at risk for poor academic outcomes. Moreover, students with poor literacy skills are more likely to drop out of high school or graduate without the basic skills needed to succeed in postsecondary education, succeed in the workforce, or act as an informed citizen (Carnegie Corporation, 2010).

This concern over the low literacy achievement of adolescents has focused the attention of educators, policymakers, and researchers on finding effective ways to intervene with struggling readers. Literacy intervention is often targeted at students in the early stages of schooling; however, when students reach middle school, reading gets more complex as they are expected to read expository text across a variety of content areas, to decipher complex passages, to synthesize information, and to form independent conclusions based on data (Carnegie Corporation, 2010). Recent testing shows that early performance and gains in literacy often dissipate as students move through middle school, indicating that early literacy intervention does not inoculate students against later literacy failure (Carnegie Corporation, 2010). These findings highlight a need to identify and implement effective, research-based interventions for improving the literacy skills of middle school students.

Currently, the research base evaluating adolescent literary interventions is limited, and there is little understanding of which interventions are likely to be effective (Slavin, Cheung, Groff, & Lake, 2008). However, two recent reviews have synthesized the research on adolescent literacy interventions to identify best practices and evaluate the research-base of specific interventions (Slavin et al., 2008; What Works Clearinghouse, 2008).

First, a panel of researchers with the What Works Clearinghouse reviewed evidence about specific practices in reading instruction to identify evidence-based instructional strategies that can impact student reading achievement (What Works Clearinghouse, 2008). Based on their review, the What Works Clearinghouse panel recommended five practices for adolescent literacy instruction that they determined had the strongest research support:

1. That literacy instruction includes explicit vocabulary instruction in reading and language arts classes as well as content area classes. Explicit vocabulary instruction helps students learn the meaning of new words and enhances their ability to independently construct the meaning of text.
2. That literacy instruction includes direct and explicit instruction in comprehension strategies. Comprehension strategies are routines and procedures that help readers make sense of texts, such as summarizing, asking and answering questions, and paraphrasing texts. Evidence suggests teaching comprehension strategies improves students' reading comprehension (What Works Clearinghouse, 2008).
3. That teachers provide opportunities for students to engage in discussions of the meaning and interpretation of texts to improve their reading comprehension.
4. That teachers use strategies to enhance students' motivation to read and engage in the literacy learning. Students' motivation may be enhanced by providing a supportive environment, encouraging self-determination, providing informational feedback, and making literacy experiences relevant to students' interests and everyday life.
5. That teachers make intensive and individualized interventions by trained specialists available to struggling readers.

Slavin and colleagues (2008) identified several literacy strategies that are effective for middle and high school students. First, effective literacy interventions involve cooperative learning where students work in small groups to help each other master reading skills. In addition, they found that interventions that involve specific strategy instruction, as well those that involve mixed-methods instruction models that combine large-group, small-group, and computer-assisted instruction were also effective. Despite identifying some potentially effective curricula and strategies, Slavin and

colleagues (2008) concluded that number of large, high-quality studies of adolescent literacy interventions is insufficient.

In response to the poor literacy achievement of middle school students as well as the dearth of high-quality research examining the effectiveness of middle and high school literacy programs, the U.S. Department of Education awarded eight Striving Readers grants in 2005. The goal of these grants is to improve the literacy skills and achievement of struggling readers in middle and high school and to build a scientific research base for interventions that improve adolescent literacy skills.

READ 180, the targeted intervention curriculum used in NPS’s Striving Readers program, is designed to enhance reading and comprehension skills of struggling readers in the upper elementary, middle, and high school years. READ 180 was one of four middle and high school literacy curricula identified by Slavin and colleagues’ (2008) as having “moderate evidence” of effectiveness. Furthermore, the curriculum includes several of the strategies identified as effective by Slavin and colleagues (2008) and the What Works Clearinghouse (2008), including explicit vocabulary instruction, comprehension strategy instruction, and the use of a mixed methods instructional mode.

1.C Description of the Intervention Models

1.C.1 Targeted Intervention

Scholastic’s READ 180 Enterprise Edition¹ was chosen to replace the district’s existing language arts curriculum for targeted intervention.² READ 180 directly addresses the individual needs of adolescents reading below grade level by using adaptive and instructional software, high-interest literature, and direct instruction. READ 180 also includes an assessment component: the Scholastic Achievement Manager (SAM), which collects and organizes student performance data for supporting data-driven instruction.

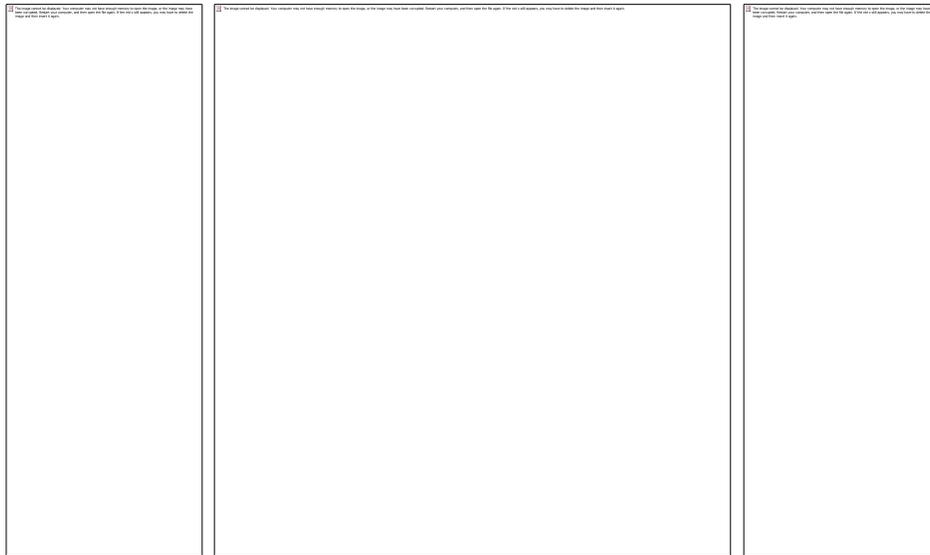
The READ 180 instructional model provides a straightforward way to organize instruction and classroom activity. The instructional model consists of a 90-minute literacy block that begins and ends with whole-group, teacher-directed instruction (20 and 10 minutes, respectively). During the 60

¹ READ 180 for NPS is a 3-year intervention. The instruction has remained the same for all three years of the study.

² A description of the existing district curriculum is provided in section 1.A.

minutes between the whole-group sessions, students break into three small groups that rotate among three stations (Figure 1).

Figure 1. READ 180 instructional model



During the first 20-minute session, the READ 180 teacher instructs the entire class of no more than 21 students. During the next 60 minutes, the students break into smaller groups of equal size, which proceed through the following three 20-minute rotations:

1. *Small-group instruction*—The teacher sits with this small group to provide direct and explicit instruction on reading comprehension strategies using the rBook.³
2. *Independent reading*:—Students enter a comfortable seating area where they read leveled paperbacks with the option of adding audio through headphones as modeled reading.
3. *Software use*—Nine topical CD-ROMs provide students with background knowledge and mental models through full-motion video. Students encounter a reading passage based on the video that is at the appropriate ability level of that student. After the video and passage, students proceed through three zones:
 - *Word zone*—Instruction for developing basic decoding skills
 - *Spelling zone*—Instruction in the acquisition and transfer of spelling patterns and sounds

³ In the commercial Scholastic model, the small group portion of the lesson is devoted to direct instruction using READ 180's rBooks only (see Appendix A for READ 180 pacing guide). However, in a modification to the standard curriculum, NPS has supplemented these rBooks with books from McDougal Littell. These materials are used for independent reading of leveled texts and for teaching the use of graphic organizers and specific vocabulary. The district opted to incorporate the McDougal Littell series in READ 180 classrooms as an additional resource for exposure to literature.

- *Success zone*—Assessment for comprehension, word recognition, and fluency

In the last 10 minutes of class, the teacher provides a whole-group wrap-up.

Teachers are provided with a planning guide that outlines each 3-week plan of instruction, with four stop points built in to analyze report data to determine differentiated instruction needs. The first 2 days of this time are spent on prereading activities, such as building a background in the subject area with anchor videos and previewing vocabulary. The next 6 days are spent on reading strategies, including teaching, practicing, and applying the main idea and details. Days 9 and 10 then are spent on reviewing and extending vocabulary, with Days 11–13 focusing on writing and grammar. Functional literacy is covered the last day before wrap-up.

1.C.1.1 Participating Schools, Teachers, and Students

For the targeted intervention, eligible middle level schools in NPS were identified based on the following criteria:

- Be Title I eligible
- Serve a minimum of two grades (6, 7, 8)
- Not already using READ 180
- Be categorized as “school in need of improvement” (SINI) under the No Child Left Behind Act
- Serve a minimum of 25 eligible students

Based on these criteria, 20 schools were eligible to participate in the targeted intervention. These schools then were randomly assigned to treatment and control groups, with the treatment schools slated to receive the READ 180 curriculum. After the random assignment had taken place, two schools in the control group merged, leaving 10 schools in the treatment group and 9 schools in the control group. The 19 participating schools serve predominately minority populations and almost half of the students (49 percent) are eligible to receive free and reduced meals. Table 1 shows demographic data from all grades at participating schools at the beginning of the first year of the Striving Readers intervention.

Table 1. Demographic characteristics of participating Striving Readers schools (2006–2007)

School	Grades served	No. of students	No. of teachers	% Asian	% African American	% Hispanic	% Caucasian	% Free & reduced lunch
School 1	K–8	506	44	0.2	96	3.8	0	70
School 2	K–8	319	30	0	97.5	2.2	0.3	32
School 3	PK–8	292	35	0	73.6	26	0.3	75
School 4	3–8	372	32	0	97.6	2.4	0	31.4
School 5	PK–8	446	45	0	78.5	21.5	0	68.6
School 6	K–8	602	48	0	47.7	52.2	0.2	44
School 7	K–8	790	66	1.6	30.8	65.7	1.9	39.7
School 8	PK–8	337	34	0	92.3	7.7	0	77.4
School 9	PK–8	594	49	0	45.1	43.9	10.9	49.2
School 10	K–8	349	31	0	95.1	4.9	0	37.8
School 11	5–8	753	50	0.9	21	77	0.8	56.7
School 12	K–8	572	56	0.2	97.7	2.1	0	45.5
School 13	PK–8	754	66	0.7	42.6	55.2	1.6	43.6
School 14	PK–8	515	45	0.2	46.4	53.2	0.2	48
School 15	PK–8	1041	71	8.74	70.2	13.6	6.6	28.5
School 16	PK–8	464	47	0	93.1	6.7	0.2	61.2
School 17	PK–8	776	56	0.12	29.6	68.4	1.8	38.8
School 18	K–8	776	56	3.5	11	83.6	1.9	31.4
School 19	PK–8	679	68	0	94.4	5.7	0.1	56.3
Average		575.6	48.9	0.8	66.3	31.4	1.4	49.2

READ 180 teachers in the treatment schools were selected based upon recommendations from school principals and in some cases, literacy coaches. When filling classroom positions in their schools, principals typically have control over whom they select for certain assignments. Thus, the principals selecting READ 180 teachers were following their typical placement procedures.

For students to be eligible for the targeted intervention in Year 1, they had to be enrolled in one of the eligible middle schools and be in grades 6, 7, or 8. Furthermore, students’ eligibility was based on their score on the reading subtest of the 2007 NJASK. In New Jersey, anyone scoring below a 200 is considered “partially proficient,” which is the lowest category possible. Scores from 200 to 249 are “proficient,” and scores above 249 are “advanced proficient.” The following cut-off scores for student eligibility were set by the district, based on one standard deviation from the norm:

- 6th grade = 198
- 7th grade = 186
- 8th grade = 192

In Years 2 and 3, additional 6th graders were added to the sample. As in Year 1, the cut-off score of 198 was applied to the new cohorts of 6th graders. Transfer students without an NJASK score were not eligible to participate in Striving Readers. Table 2 shows the number of students by program year and selected demographic characteristics.

Table 2. Characteristics of students in the evaluation of the targeted intervention

Number (column %)	Students in treatment schools			Students in control schools			All students		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Total number of students	708 (52%)	648 (53%)	638 (55%)	663 (48%)	584 (47%)	529 (45%)	1,371	1,232	1,167
Average no. of students per school	78.7	64.8	63.8	66.3	64.9	58.8	72.2	64.8	61.4
Grade									
6th grade	37%	35%	35%	36%	31%	35%	37%	33%	35%
7th grade	30%	36%*	32%*	35%	37%	30%	33%	36%	31%
8th grade	33%	29%*	32%+	28%	32%	35%	30%	31%	34%
Gender									
Male	57%	56%	59%	55%	51%	55%	56%	54%	57%
Female	43%	44%	41%	45%	49%	45%	44%	46%	43%
Status									
Economically disadvantaged	91%	59%	62%	84%	57%	58%	88%	58%	60%
ELLs	6%	8%	11%	8%	7%	9%	7%	8%	10%
Special education	39%	44%	48%	40%	40%	39%	39%	42%	44%
Race/ethnicity									
African American	57%	57%	54%	58%	54%	54%	58%	55%	54%
Hispanic	41%	41%	43%	41%	44%	43%	41%	43%	43%
Caucasian	<1%	1%	1%	1%	1%	1%	1%	1%	1%
Other	<1%	1%	3%	<1%	1%	1%	<1%	1%	2%

*Two years of exposure. +Three years of exposure.

1.C.1.2 Professional Development Model and Ongoing Support

Professional development and support of the targeted intervention are critical to implementation. Professional development has been offered to classroom teachers, literacy coaches, principals, technology coordinators, and Resource Teacher Coordinators (RTCs) to ensure all have a clear understanding of what is being taught and the strengths and challenges in the READ 180 program

implementation. Professional development is provided by Scholastic and is supported through in-school coaching visits.

Teachers

READ 180 teachers were offered 3 days (16.5 hours) in Year 1 and 2 days (8 hours) in Year 2 of whole-group training from Scholastic. Consultants gave teachers appropriate background information on READ 180 and the research supporting its development. Teachers had opportunities to gain hands-on experience using the READ 180 curriculum and were trained to use Scholastic's tools to aid the implementation of the curriculum and management of their classroom. In addition, READ 180 consultants trained teachers on how to use assessment results to inform instruction.

In Year 3, Scholastic offered 1 day (5.5 hours) of whole-group training. Only one READ 180 teacher (a teacher new to Striving Readers) attended this training. The other teachers new to READ 180 were not hired at the time of the training and, therefore, could not attend. Returning READ 180 teachers did not attend the training because the training is geared towards new teachers and they had attended in previous years.

In addition to the whole-group training, READ 180 teachers received ongoing classroom support provided by Scholastic and district RTCs. Representatives from Scholastic's READ 180 program conducted on-site support visits on an as-needed basis in Years 1 and 2. In Year 3, teachers only received additional support from district RTCs. These visits consisted of providing technical assistance to teachers, monitoring the program, and ensuring that the model is being implemented correctly. Each of the nine treatment schools was visited at least once by a consultant from Scholastic in Years 1 and 2.

Literacy Coaches

Literacy coaches are housed in each school in the district. In general, their role is to support classrooms teachers in all grades as they implement learned strategies. Because literacy coaches are not exclusive to the grades Striving Readers supports, they did not have additional roles specific to the grant. Literacy coaches in the Striving Reader's treatment schools were invited to receive the same training as the READ 180 teachers in Years 1 and 2. In Year 1, 20 percent of the coaches received the training, while none of the coaches attended the training in Years 2 and 3.

Principals

Each year, administrators periodically reviewed SAM reports and analyze the strengths and needs of students. Administrators were expected to observe READ 180 classrooms to help ensure fidelity. Administrators also were asked to communicate with the Office of Language Arts Literacy about any concerns they had with READ 180 or classroom instruction.

Principals received 2 hours of training from Scholastic on the READ 180 model in Years 1 and 2. This training included the structure and management of a READ 180 classroom, use of curriculum materials, and how to differentiate instruction based on data from Scholastic Reading Inventory (SRI) reports. Principals did not receive this training in Year 3. Principals continue to be updated regularly by the RTCs on READ 180 implementation.

Technology Coordinators

Each year, technology coordinators actively monitored the READ 180 equipment and troubleshoot technical issues as needed. They also were responsible for creating student passwords, inputting student information at the beginning of the year, activating student site licenses, and creating class rosters on SAM. In Years 1 and 2, all nine school technology coordinators received one-half day of training from Scholastic so that they could better support the installation and operation of the technology component of the curriculum. Year 3 did not have training for the technology coordinators. However, the district's systems analyst communicated regularly with the technology coordinators to provide ongoing technical training and support.

RTCs

Five RTCs were tasked with providing support to teachers for both the whole-school intervention and the targeted intervention. RTCs have attended teacher READ 180 trainings and visited all READ 180 classrooms to provide support to teachers via activities such as conducting needs assessments; providing demonstration lessons, in-class support, and coaching; assisting with instructional plans; conducting READ 180 articulation meetings; maintaining accurate records; interpreting student assessment data; and serving as liaisons with the district administration.

Overall, changes in the number of hours dedicated to training decreased from years 1 to 3 of the grant. See Table 3 for changes in professional development over the three years and reasons for changes.

Table 3. Changes to READ 180 professional development model

	READ180 PD Model			Reason for change
	Year 1	Year 2	Year 3	
Teacher training				
Whole group				
New teachers	3 days (16.5 hrs)	2 days (8 hrs)	1 day (5.5 hrs)	To build internal capacity, district RTCs played a larger role in supporting READ 180 teachers from years 1 to year 3 with in classroom support and less whole group training. To build internal capacity, district RTCs played a larger role in supporting READ 180 teachers from years 1 to year 3 with in classroom support and less whole group training.
Returning teachers	NA	2 days (8 hrs)	0 hrs	
Classroom support				
All teachers	District RTCs: as needed basis Observations by principals	District RTCs: as needed basis Observations by principals	District RTCs: as needed basis Observations by principals	No Change
Administrator support				
Training for principals on READ180	2 hrs	2 hrs	0 hrs	Communication between RTCs and administrators became stronger; RTCs met with administrators periodically to analyze SAM reports and fidelity to the model.
Technology support				
Training for technology coordinators	½ day	½ day	0 hrs	NPS continued to build internal capacity by having the systems analyst provide support in year 3.

1.C.2 Whole-School Intervention

The whole-school intervention is designed to support the effective implementation of the existing district curriculum. Its goal is to improve students’ ability to “read to learn” across multiple content areas. To this end, the intervention provides professional development to improve the literacy instruction of language arts and content area teachers. This professional development is provided through whole-group training and is supported by in-school coaching visits. Language arts teachers

and literacy coaches receive training from New Jersey City University (NJCU), and content area teachers receive instruction from the National Urban Alliance (NUA).

Language Arts Teachers

The professional development course for language arts teachers was designed by the literacy faculty from the NJCU School of Education. After receiving training, teachers are expected to implement the following strategies in their classrooms:

- Use graphic organizers, including flowcharts, webs, and tables (e.g., K-W-H-L-S) to build student reading comprehension skills
- Establish routines for effective oral and silent reading
- Use model text annotation, note taking, and post-reading reflection
- Use anticipation guides, the SQ3R (Survey, Question, Read, Recite, Review) method, and double-entry journals to build student writing, fluency, and reading comprehension skills
- Use small groups to target and differentiate instruction
- Use model context clues and personal dictionaries to enrich vocabulary and build linguistic competence
- Guide student discussion and use brainstorming techniques to facilitate students' exploration of the connections between reading and writing
- Review student work samples, including portfolios, journals, and notebooks to show the use of graphic organizers

NJCU provides in-school coaching visits during the school year. The visits are tailored to assist teachers through modeling and discussing classroom strategies learned at training. In alignment with the work of NJCU, the Striving Reader RTCs provided additional support to eligible language arts teachers with in-school visits throughout the school year, beginning in September and ending in June. During these visits, RTCs supported teachers on various aspects of the whole-school reform activities. This support consisted of offering classroom support, coaching, modeling; offering assistance with student work; and providing assistance by using student data to inform instruction. In addition, the RTCs assisted in preparing for the NJASK, the GEPA initiative, and standards-based lessons.

Content Area Teachers

Content area teachers in Striving Readers schools receive training and in-school support from NUA, a nonprofit professional development group known for its work in content literacy. The instructional strategies undertaken by language arts literacy teachers are expected to improve students' vocabulary, fluency, and reading comprehension skills. To build on these improved skills, math, social studies, and science teachers are expected to incorporate NUA-developed graphic organizers ("Thinking Maps"), including the following:

- Circle Maps for context description
- Double Bubble Maps to compare and contrast information
- Tree Maps for inductive and deductive classification
- Brace Maps to identify part-whole relationships
- Flowcharts to review sequential order
- Multiflow Maps to explicate cause and effect relationships
- Bridge Maps to interpret analogies and metaphorical concepts

Based on NUA professional development, math, social studies, and science teachers also use anticipation guides to model brainstorming and prewriting strategies, as well as use taxonomies to promote word study and vocabulary development. Additionally, NUA mentors provide in-school coaching visits during the school year. These visits are tailored to demonstrate (and provide coaching in) the application of the strategies presented during the large-group workshops. As with language arts teachers, the RTCs provided additional support to content area teachers in the form of in-school visits.

1.C.2.1 Professional Development

Language Arts Teachers

NJCU provided 4 half-days (16 hours) of large-group training conducted as a summer institute on August 11–14, 2008. Additionally, whole-group training sessions were held twice during the school year on October 22, 2008, and January 28, 2009 (each provided 5.5 hours of training). To support the district's core literacy program, NJCU's professional development was designed to introduce and

reinforce the use of instructional strategies that enhance vocabulary development, fluency, and reading comprehension, such as graphic organizers, flowcharts, etc.

A binder of materials that included the NPS document “Language Arts Literacy Policy and Practices for Elementary, Middle and Secondary Schools” and articles, strategies, graphic organizers, and sample activities on literacy strategies was distributed at each NJCU large group professional development event. Daily feedback surveys also were used to ascertain additional needs of participants; the workshop topics were revised based on the feedback. In addition to the whole-group training described, NJCU teachers received ongoing classroom support in the form of in-school coaching visits. NJCU coaches were expected to visit all 19 Striving Readers schools, starting in September 2008 and ending in May 2009. Each school was to be visited by a NJCU coach 12 times.⁴

Content Area Teachers

Math, science, and social studies teachers were to receive three half-day orientation sessions (12 hours total) during the summer institute on August 20–22, 2008, and two large-group workshops during the school year on October 22, 2008, and January 28, 2009 (each providing 6 hours of training). The summer institute and large-group workshops were designed to train teachers in cognitive strategies that focus on the teaching, learning, and assessment of advanced thinking; to break down school isolation; to build effective school teams; and to create a community of learners.

The primary content literacy skills addressed in the NUA’s professional development are vocabulary, fluency, and comprehension developed through defining in context, describing, comparing and contrasting, classifying, sequencing, cause and effect reasoning, part-whole relationships, and analogies. In addition to the whole-group training described, NUA teachers receive ongoing classroom support through in-school coaching visits. The plan was for NUA to visit all 19 Striving Readers schools in the 3rd year of the grant, starting in September 2008 and ending in June 2009. Each school was to be visited by a NUA mentor for 15 days.

Overall, only a few changes were made among years 1, 2, and 3 of the grant. See Table 4 for changes in professional development over the three years and reasons for changes.

⁴ As contracted through the Striving Readers grant, NJCU was expected to make five visits to Striving Readers schools in Year 3; however, Title 1 funds were used to subsidize the number of visits for a total 12 visits per school.

Table 4. Changes to professional development models

NJCU				
	Year 1	Year 2	Year 3	Reason for change
Whole Group Teacher Training	4 half days (16 hrs)	4 half days (16 hrs)	4 half days (16 hrs)	No change
Summer Institute				
School Year	0 days*	3 days (17.5 hrs)	2 days (12 hrs)	Days during the school year were added in year 2 to establish parity with NUA. Reduction from year 2 to year 3 was because of reduction in district-allocated professional development days
Classroom support	NJCU coach: Each school to receive 5 visits.	NJCU coach: Each school to receive 10 visits.	NJCU coach: Each school to receive 12 visits.	More visits were added to establish parity with NUA.
NUA				
	Year 1	Year 2	Year 3	Reason for change
Whole Group Teacher Training	3 half days (12 hrs)	3 half days (12 hrs)	3 half days (12 hrs)	No Change
Summer Institute				
School Year	2 days (11 hrs)	2 days (12 hrs)	2 days (12 hrs)	No change
Classroom support	NUA Mentor: Each school to receive 15 visits.	NUA Mentor: Each school to receive 15 visits.	NUA Mentor: Each school to receive 15 visits.	No Change
District RTCs				
	Year 1	Year 2	Year 3	Reason for change
Whole Group Teacher Training	4 days (22 hrs)	No RTC training provided	No RTC training provided	RTCs provided professional development in year 1 because NJCU did not provide large group training during the school year. As NJCU's involvement intensified (large-group training and increased number of site visits), it was no longer necessary to have RTCs present.
School Year				
Classroom support	District RTC: As needed basis	District RTC: As needed basis	District RTC: As needed basis	No Change

* Two make-up days were provided in September of year 1 for teachers who missed the summer training.

1.C.2.2 Participating Schools, Teachers, and Students

The 19 schools participating in the targeted intervention (see Section 1.C.1.1 for eligibility criteria) are also the schools participating in the whole-school intervention. However, the whole-school intervention is not being evaluated with a randomized design, so there are no treatment and control schools. For the whole-school intervention, all eligible teachers in all 19 schools receive the intervention.

In Year 3, 337 teachers were eligible to receive professional development as part of the whole-school intervention. Of these, 137 were eligible for professional development provided by the NUA (teachers who taught *only* math, science, or social studies). Sixty-one⁵ other teachers were eligible for training from NJCU (teachers who taught *only* language arts). In addition, 139 teachers were eligible for both NUA and NJCU training. These teachers either taught both language arts and a content area subject (usually social studies) or they taught all subjects (usually special education or bilingual teachers). Although these teachers could have attended both summer institutes, they were instructed to attend the NJCU training during the school year. Table 5 provides the number of teachers eligible for the professional development sessions for the two whole-school interventions, by subject areas taught.

Table 5. Distribution of teachers by subjects taught in Year 3

Teacher subject	NUA		NJCU	
	No. of teachers	No. of schools	No. of teachers	No. of schools
Content area only (NUA)	137	19	N/A	N/A
Language arts only (NJCU)	N/A	N/A	61	19
Content area & language arts	139*	19	139*	19
Total	276	19	200	19

* These teachers are counted in both categories.

Students in the whole-school intervention are from all 19 Striving Readers schools. All 6th, 7th, and 8th grade students from the participating Striving Readers schools are included.

⁵ Includes 19 literacy coaches.

1.D Logic Models

1.D.1 Targeted Intervention

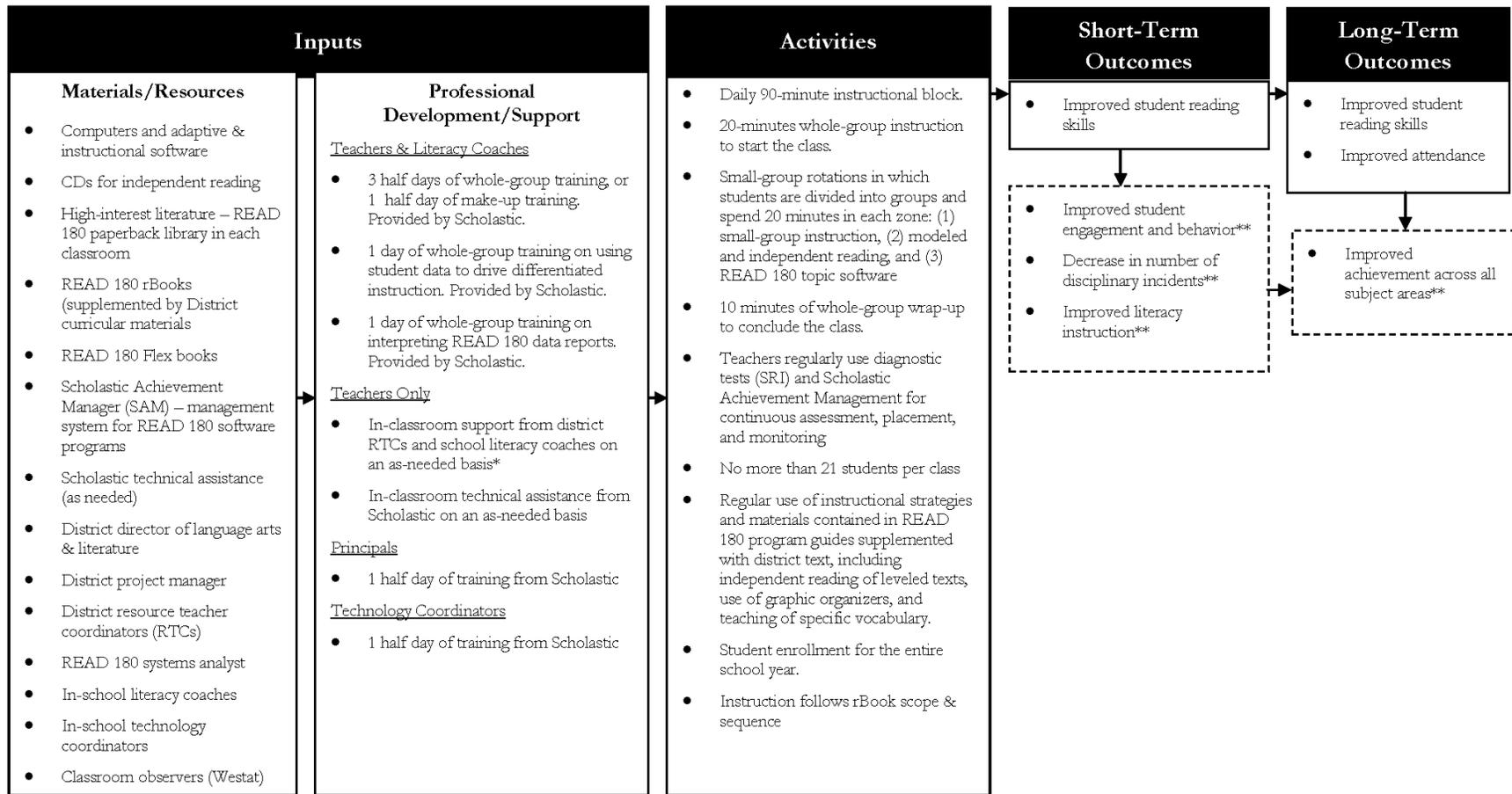
The targeted intervention provides language arts for middle school students through direct instruction, instructional software, and literature. It also replaces the regular language arts curriculum. The theory of change that underpins READ 180 is displayed in Figure 2. This theory of change provides the conceptual framework for the evaluation.

The first two columns in Figure 2 describe the resources necessary to implement the intervention. The first column lists the materials and resources that should be in place to support full implementation and use of READ 180. Materials include leveled library books, student eBooks, and Flex books, while the SAM database system allows teachers to periodically review and analyze the strengths and needs of students. The second column includes the professional development and support services⁶ necessary for implementation. Scholastic staff, RTCs, literacy coaches, and technology coordinators all support the intervention.

The third column describes the activities of the intervention and includes instructional strategies that are necessary for full implementation of the targeted curriculum. All READ 180 teachers are intended to receive whole-group training from Scholastic. Additionally, make-up training or in-school support is intended for those teachers who missed the summer session.

⁶ Professional development activities varied in Years 2 and 3 of the grant.

Figure 2. Targeted intervention logic model⁷



Contextual effects such as the characteristics of the school district, other instructional programs in use, and external events may also influence outcomes.

*The RTC school visits supported both the whole-school and targeted interventions of the Newark Striving Readers program.

**These outcomes are not directly measured under the Newark Striving Readers grant.

⁷ Logic model from year 1 of the study.

The last two columns of the logic model provide the short- and long-term outcomes that are anticipated. The theory of change posits that when all of the necessary resources are in place and the appropriate teaching and learning activities occur, students will first demonstrate improved reading skills and improved classroom behavior. The theory of change then suggests that these short-term outcomes will, in turn, result in longer term effects, reflected in improved achievement test results, increased school attendance, decreased discipline problems, and gains in student learning in all subject areas (White & Haslam, 2005).

The logic model reflects activities that occurred in Year 1 of the study. Specific changes made to the program model in year 3 can be found in Table 3.

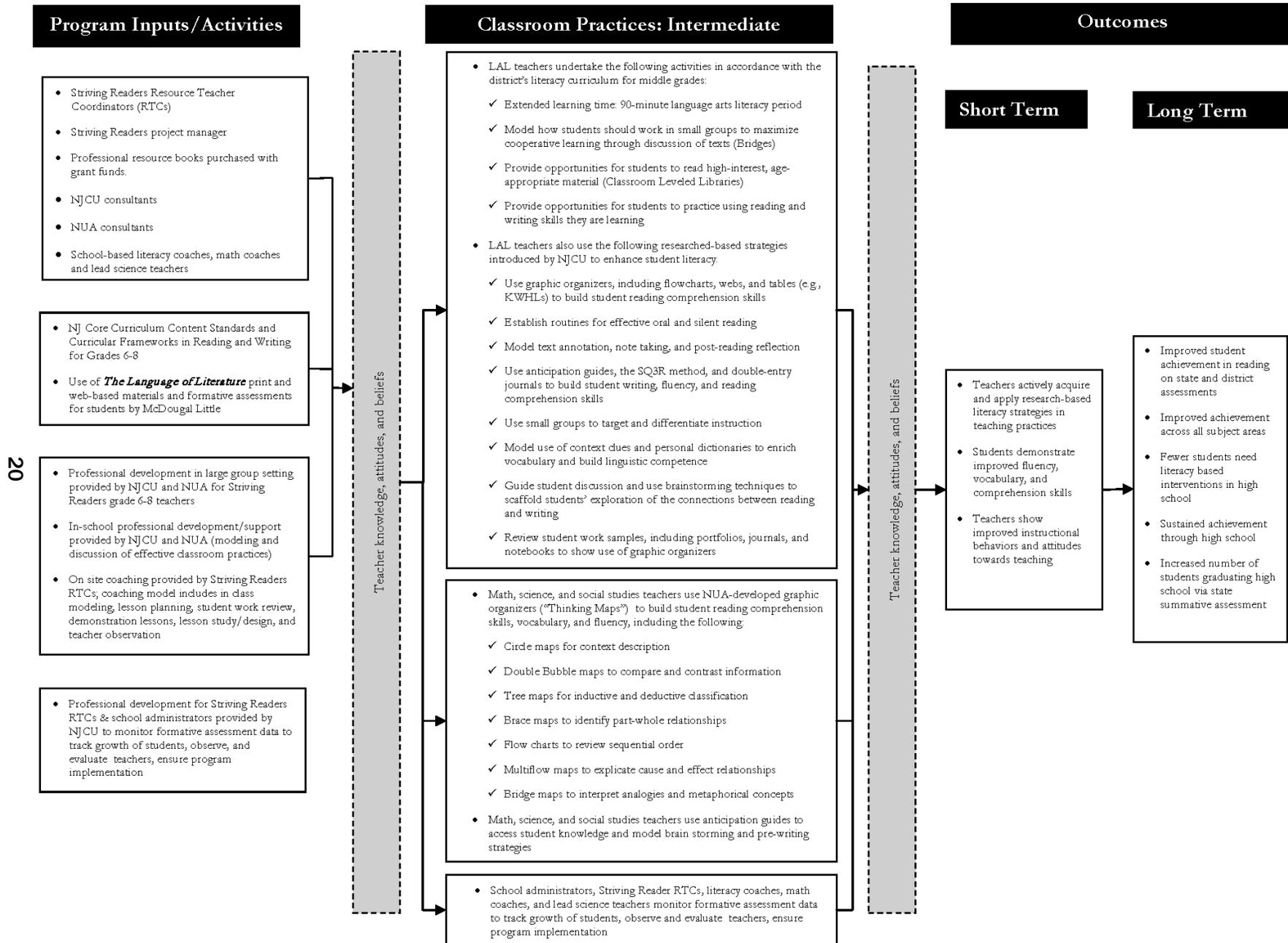
1.D.2 Whole-School Intervention

The theory of action driving the district's whole-school intervention is illustrated in Figure 3. According to this logic model, language arts literacy teachers (including literacy coaches) receive professional development from NJCU. NUA provides the professional development for mathematics, science, and social studies content area teachers. Striving Reader RTCs support the implementation of both NJCU and NUA professional development approaches through site-based demonstration lessons and coaching.

The first column in Figure 3 documents the basic resources needed to fully implement the intervention, including professional resource books; *The Language of Literature* print and web-based materials; and in-school support from RTCs, NUA, and NJCU consultants. The second column documents NUA and NJCU instructional strategies. These classroom practices incorporate what literacy experts and practitioners recommend to help middle school students master basic reading skills: direct, explicit instruction in comprehension; modeling of reading and thinking strategies for comprehension; cooperative learning and discussion of texts among students; self-selected reading at students' ability levels to build motivation; ongoing progress monitoring; writing; age-appropriate and diverse reading materials; and interdisciplinary, classroom-based efforts to focus on literacy.

The last two columns of the logic model provide the anticipated short- and long-term outcomes. As with the targeted intervention, the theory of change posits that when all required resources are in place and the described activities and classroom practices occur, students will demonstrate improvements in literacy, including fluency, vocabulary, and comprehensions. In addition, teachers

Figure 3. Whole-school intervention logic model



are expected to demonstrate improvements in instructional behaviors and attitudes toward teaching. Furthermore, as a result of these short-term outcomes, the theory of change suggests that longer-term effects will occur. The expected longer-term outcomes include improvements in student achievement test results, a reduction in the number of students needing literacy-based interventions in high school, sustained student achievement through high school, and increases in the number of students who graduate from high school. In addition, teachers are expected to continue to implement research-based strategies as part of their instructional repertoire.

1.E Brief Overview of Key Evaluation Design Features

1.E.1 Targeted Intervention

1.E.1.1 Key Research Questions

The theoretical model for READ 180 presents a series of short- and long-term outcomes. Short-term outcomes include improved reading skills and student behavior, while longer term outcomes include continued improvement in reading skills, increased school attendance and grade promotion, and decreased disciplinary incidents. Some of these claims will be tested with the research questions presented in this section.

The three primary research questions that motivate the study design for the targeted intervention are the following:

1. Does READ 180 significantly improve the reading skills of targeted students?
2. Does READ 180 significantly improve school attendance of targeted students?
3. Do different types of students benefit from READ 180 in different ways?

The evaluation will determine whether READ 180 has a demonstrable impact⁸ and if it works better for some students than for others. These questions will be addressed statistically by comparing students in treatment schools to students in control schools.

⁸ By impact the authors mean the difference between outcomes observed for students receiving the treatment and what *would have been observed for these same students had they not participated in READ 180*.

1.E.1.2 Unit of Random Assignment

The schools eligible to participate in the Striving Readers program were randomly assigned to either the intervention or a control condition in May 2006 (see Section 1.C.1.2 for school eligibility requirements). The targeted evaluation is, therefore, a randomized cluster design; no classroom- or student-level random assignment was involved. Although randomly assigning students would be the most statistically efficient design, it was not feasible for this study. One of the main constraints was the cost of implementation, which is largely determined by the number of participating schools. Additionally, there are contamination and spillover effects associated with student-level randomization. For example, teachers are likely to be aware that a colleague is delivering a special intervention, and this awareness may influence their behavior. Additionally, intervention and nonintervention students would interact, possibly closing the gap between their differences. In either case, the impact estimates would be biased toward zero.

Fairness is another factor that argued for implementing the intervention at the school level. Principals may resist cooperating if only some of their teachers are provided with special training and materials. Even if principals allowed differential treatment within a school, there may be pressure to allow some practices to spill over into control classrooms, thus biasing impact estimates. There also would likely be pressure to allow students who “deserve” intervention to transfer (cross over) to treatment classrooms, again biasing the impact estimates.

Accordingly, the authors opted for a design that would randomly assign schools to the intervention group or to the control group. As stated previously, this design eliminates many of the threats to the study’s feasibility and validity. Moreover, to increase the precision of the estimates, the authors used a randomized block design. The school-level variables used for blocking⁹ (in order of priority) were as follows:

1. Number of eligible students
2. Number of years school has been identified as “in need of improvement”
3. Number of eligible students whose home language is not English
4. Number of eligible students with an individual education plan (IEP).

⁹ Blocking variables will be included in the statistical model to estimate effects.

Using the number of eligible students as the primary blocking variable, schools were divided into three groups: large schools (more than 100 eligible students), medium schools (51–100 eligible students), and small schools (25–50 eligible students). Within these three strata, schools then were sorted by number of years in need of improvement under No Child Left Behind and then by home language and special education status. The baseline sample of schools was 20: 10 treatment and 10 control. The baseline sample became 19 when two of the control schools merged during the summer of 2006.

1.E.1.3 Key Measures for Student Outcomes

The key measures of student outcomes were the Reading and Language Arts subscales of the SAT 10¹⁰ and school attendance (see Table 6). The Reading and Language Arts portion of the SAT 10 comprises three subtests: Vocabulary, Reading Comprehension, and Language Arts. The SAT 10 is administered by Westat staff and school attendance is compiled from district administrative data.

Table 6. Key measures of student outcomes

Measures	Student
SAT 10	
Vocabulary	✓
Reading Comprehension	✓
Language Arts	✓
School Records (Attendance)	✓

The Vocabulary subtest assesses concepts such as synonyms, multiple-meaning words, and use of context clues to decipher the meaning of unknown words. The Reading Comprehension subtest assesses students’ reading achievement using text read for enjoyment (e.g., fiction, poetry), text read for informational or expository purposes (e.g., science, textbook material), and everyday functional text (e.g., directions, labels, forms). The items in this section consist of increasingly complex reading passages, along with multiple-choice questions associated with each passage. There are six to nine passages, depending on grade level.

The Language Arts subtest is divided into three sections. The first focuses on language mechanics, including capitalization, punctuation, and usage. The second focuses on language expression, including writing strategies and sentence structure knowledge. The final section of the language arts

¹⁰ Abbreviated battery.

subtest also focuses on language expression but on a higher level than the previous section. Students analyze written passages for the assessment of how well they recognize extraneous information and descriptive language and the combining of simple sentences.

Because READ 180 also claims to improve struggling readers attitudes toward school (Scholastic Research and Evaluation, 2008), the last student outcome is school attendance. Attendance was measured as the number of unexcused absences during the school year. This information is provided for each individual student from school administrative records.

1.E.2 Whole-School Implementation

1.E.2.1 Key Research Questions

There are two main goals for the whole-school evaluation. The primary goal is to determine the short-term effect of the professional development on teacher attitudes and instructional behavior. To collect these data, a series of teacher surveys was used. The secondary goal is to determine whether these potential changes in teacher attitude and behavior affect student achievement, using data from the New Jersey state reading assessment.

These two goals are reflected in the following three primary research questions for the whole-school evaluation:

1. Does participation in an ongoing literacy professional development program significantly improve the attitudes and instructional practices of middle school teachers?
2. Do different types of teachers benefit from on-going professional development in different ways?
3. Do changes in teacher instructional practices significantly improve the reading skills of middle school students?

1.E.2.2 Unit of Random Assignment

There was no random assignment for the whole-school intervention. All 6th, 7th, and 8th grade teachers from all 19 Striving Readers schools were eligible to receive the whole-school professional development and in-school coaching visits.

1.E.2.3 Key Measures for Student and Teacher Outcomes

The key measure of teacher outcomes is the teacher survey. The teacher survey measured basic demographic information and previous training experience of participating teachers. It also captured the degree to which the teacher felt supported by his or her institution as well as his or her job satisfaction. Teachers also had an opportunity to self-evaluate their effectiveness at delivering literacy concepts and to provide information on their instructional practices. This information also tapped into their attitudes about what is important and appropriate in the classroom. Finally, teachers provided information on how they used data on their students' assessments to tailor their classroom instruction. The pre-survey was administered before the teachers received any Striving Readers training. Multiple post-surveys then were administered during the course of 2 years to capture any change after receiving training.

The key measure for students' outcomes in the whole-school intervention is the state literacy assessment: the NJASK. Students in Grades 6 and 7 were assessed with the NJASK, while Grade 8 students were assessed with the NJASK8. More information on both of these assessments is provided in the following sections. Table 7 lists the key measures of student and teacher outcomes.

Table 7. Key measures of teacher and student outcome variables

Measures	Teacher	Student
Teacher Survey		
Perception of Institutional Support	✓	
Job Satisfaction	✓	
Self Evaluation of Effective Teaching	✓	
Classroom Instructional Practices	✓	
Student Assessment	✓	
Literacy Skills Assessment	✓	
NJASK (6th & 7th grade assessment)		✓
NJASK8 (8th grade assessment)		✓
School Records (Attendance)		✓

Grades 6 and 7: New Jersey Assessment of Skills and Knowledge

The language arts literacy portion of the NJASK for Grades 6 and 7 provides a variety of texts, illustrations and activities integrated in such a way that encourages students to think, communicate and create original work. The variety and sequence of the assessment tasks aim to engage and sustain

student interest and clearly measure what students know and can do. In each of the assessments, students write their own text and analyze text provided for them. Item types include performance-based writing tasks and multiple-choice and open-ended reading tasks. The NJASK focuses on the following content clusters:

- *Work with or interpreting text (reading)*—These tasks involve identifying main ideas or themes, identifying supporting details, following directions, paraphrasing, organizing text, and understanding the purposes for reading.
- *Analyzing or critiquing text (reading)*—These tasks involve enhancing understanding through questioning, clarifying, and predicting; predicting meanings; drawing conclusions; and forming opinions about text and author techniques. Students are asked to explain or identify fundamentals and nuances of textual conventions and literary elements.
- *Generating text (writing)*—These tasks involve the use of pictures or text to make decisions, solve a problem, or write a story, thereby generating original student work

NJASK data are reported as scale scores ranging from 100 to 300 and are broken down into three proficiency levels:

- Advanced Proficient 250–300
- Proficient 200–249
- Partially Proficient 100–199

The scores of students in the Partially Proficient category are considered to be below the state minimum for proficiency.

Grade 8: New Jersey Assessment of Skills and Knowledge Grade 8

The NJASK8 measures student ability in the areas of language arts literacy and is used to indicate progress students are making toward mastering skills they will need to pass the High School Proficiency Assessment. These skills are outlined in the state Language Arts Literacy Core Curriculum Content Standards and cover the content clusters in the NJASK. The assessment is designed to help students ask questions, speculate, explore new ideas, and form tentative opinions.

The language arts literacy portion of the assessment focuses on students' ability to construct meaning through text. It is an integrated, project-oriented unit through which students draw on their speaking, listening, writing, reading, and viewing experiences to think, learn, communicate, and

create original work. The language arts assessment provides a variety of texts, illustrations, and activities intended to engage and sustain student interest in the content and sequence of assessment topics and tasks. In the assessment, students alternate between generating their own text and analyzing text provided for them. This permits students to use and enrich their literacy experiences as they demonstrate their knowledge of and skills in language use in varied contexts of language arts literacy.

The NJASK8 uses various tasks to assess student performance, including performance-based tasks (speaking and writing) and multiple-choice and open-ended (reading, listening, and viewing). The assessment also includes audio and visual materials and formats to help students construct meaning as they speak, listen, write, read and view. Finally, students use information from a reading selection or selections to complete a writing project. Students are provided time to prepare notes and materials for their speaking presentations.

NJASK8 data are reported as scale scores ranging from 100 to 300 and are broken down into the same three proficiency levels as the NJASK for 6th and 7th graders:

- Advanced Proficient 250–300
- Proficient 200–249
- Partially Proficient 100–199

The scores of students in the Partially Proficient category are considered to be below the state minimum for proficiency.

Implementation of the Targeted Intervention: Years 1, 2, and 3

2

2.A Implementation Study Design

The extent to which treatment schools fully implemented the READ 180 curriculum was measured and summarized in Years 1, 2, and 3 of the targeted evaluation. In Year 1, fidelity was measured via classroom observations and administrative data from NPS. In Years 2 and 3, only administrative data from NPS were used to measure fidelity. In an effort to examine differences in fidelity from year to year, only fidelity subscores comparable for all three years will be discussed in this report.¹¹ These fidelity scores are provided in the following sections.

2.B Implementation Results

To determine the degree of fidelity to READ 180, multiple components were evaluated for each READ 180 teacher. Subscores were developed to measure the extent to which each component was implemented, which are reported in this section's tables. The following components were evaluated:

- Training
- Class size
- Ongoing student assessments
- Use of instructional software

Fidelity to the training component was measured by the number of trainings that teachers, literacy coaches, and staff attended. These data were based on attendance data from the trainings. Fidelity to the remaining three components was measured based on guidelines in Scholastic's READ 180 materials and used data provided from the SAM. Each of these fidelity components is discussed in more detail in the following sections.

¹¹ Classroom observation findings can be found in the Year 1 report.

2.B.1 Training

2.B.1.1 Teachers

In Year 3, new teachers were invited to attend a one day (5.5 hours) summer institute session provided on September 3, 2008. One teacher was eligible for training at the time. The other teachers new to READ 180 were unable to attend because they were brought on as staff after the training occurred. Returning teachers did not attend the training because it was a repeat of the training they received in Years 1 and 2. Make-up training was not offered in Year 3. NPS felt that the RTCs had become well versed with the READ 180 implementation and could offer the in-class support needed to offset the lack of additional training days. Levels of participation are outlined in Table 8. Table 9 provides the number and percentage of teachers at each of the levels of participation.

Table 8. Participation categories for READ 180 training in Year 3

Component	Full participation	No participation
Summer institute	1 day	0 day

Table 9. Number and percentage of teachers by level of participation in Year 3

	Number	%
Full participation	1	13
No participation	7	87
Total	8	100

2.B.1.2 Literacy Coaches

In Year 3, READ 180 training was not offered. Instead, READ 180 classrooms were heavily supported by RTCs who have had a larger role in scaffolding the implementation of the curriculum.

2.B.1.3 Other Staff

Trainings for principals and technology coordinators were not offered in Year 3. Instead, RTCs continued to work closely with principals in Year 3 to ensure fidelity to the instructional model,

analysis of reports, and using data to inform instruction. The NPS systems analyst communicated regularly with the technology coordinators to provide ongoing technical training and support.

2.B.1.4 RTC In-School Coaching

RTCs continued to support READ 180 teachers in year 3. Treatment schools received coaching visits from RTCs specifically about READ 180 between September 8, 2008 and June 25, 2009 on an as-needed basis. On average, treatment schools received 21.1 visits, ranging from 5 to 41 (see Table 10). As in Year 2, RTCs met primarily with teachers. They also met with literacy coaches, vice principals, and principals. Visits consisted of identifying READ 180 students, reviewing READ 180 lesson plans, using SRI data and the SAM, monitoring, coaching, and modeling lessons.

Table 10. Number of READ 180 RTC visits received by schools in Years 3

Treatment School	Number of Visits
School 4	41
School 5	22
School 6	19
School 8	25
School 10	20
School 13	30
School 14	5
School 15	12
School 16	10
School 17	27
Average	21.1

2.B.2 Class Size

Scholastic’s READ 180 materials indicate that no more than 21 students should be enrolled in a READ 180 classroom.¹² The data used to measure fidelity to this component were provided by the district from the SAM database.

¹² Scholastic states that “enrollment should not exceed 21 students, with 15-18 students representing an ideal class size” *READ 180 Enterprise Edition Research Protocol and Tools – Implementation Checklist* (Scholastic Research and Evaluation, 2007, p. 11)

Sixty four percent of READ 180 teachers teach more than one section of READ 180. Therefore, to determine fidelity to this component, the percentage of sections taught by the same teacher with fewer than 21 students is used (see Table 11). For example, if a teacher has three READ 180 sections, and all of them are of the correct size (fewer than 22 students), then 100 percent of the sections meet the criteria for this component and they would be classified as fully implemented. As Table 12 shows, nearly all teachers had class sizes that met READ 180 guidelines of 21 students or less.

Table 11. Criteria for measurement of fidelity to the class size requirements of the READ 180 curriculum

% of sections taught with < 22 students	Scale	Level
75-100%	4	High
50-74%	3	Moderate-to-High
25-49%	2	Low-to-Moderate
0-24%	1	Low

Table 12. Teacher-level summary scores for class size component by criteria

Treatment school	Classroom teacher	Fidelity component score	Fidelity level
School 4	A	4	High
School 4	B1/B2*	4	High
School 5	A	4	High
School 5	B1/B2*	4	High
School 6	A	4	High
School 6	B	4	High
School 6	C	4	High
School 8	A1/A2*	4	High
School 10	A	4	High
School 13	A1/A2*	4	High
School 13	B	4	High
School 13	C	4	High
School 13	D	4	High
School 14	A	4	High
School 15	A	4	High
School 16	A	4	High
School 16	B1/B2*	4	High
School 17	A	4	High
School 17	B1/B2*	4	High
School 17	C1/C2*	4	High
School 17	D	4	High
School 8	B1/B2*	1	Low

* Teachers co-taught in these classrooms.

2.B.3 Ongoing Student Assessment

Scholastic’s SRI Assessment allows teachers to monitor student progress by assessing comprehension reading growth. This assessment tool compares both individual and group scores, which allows administrators to make recommendations for regrouping students based on those scores. Scholastic stresses the importance of ongoing monitoring so that teachers can use the information to most effectively differentiate instruction and check progress. Scholastic recommends that teachers administer a minimum of three SRI assessments per year.¹³

The number of SRI assessments for all students were analyzed to determine fidelity. Criteria for fidelity scores are presented in Table 13 and SRI fidelity scores for each school are presented in Table 14. These data were provided by NPS from the SAM database.

Table 13. Criteria for measurement of fidelity to the READ 180 requirements for monitoring student progress

% of students with 3 or more SRIs	Scale	Level
75 – 100%	4	High
50 – 74%	3	Moderate-to-High
25 – 49%	2	Low-to-Moderate
0 – 24%	1	Low

It should be noted that the attendance of a student could affect the number of SRIs that student takes, with chronically absent students or mid-year transfer students being less likely to take the full complement of assessments. Despite this, all teachers assessed more than 75 percent of their students at least three times during the school year (see Table 14). On average, teachers administered 4.9 SRIs per student in Year 3.

¹³Scholastic states that regular assessment of student reading and writing proficiency is necessary through the “administration of the SRI (3-5 times per year)” *READ 180 Enterprise Edition Research Protocol and Tools – Implementation Checklist* (Scholastic Research and Evaluation, 2007, p. 11)

Table 14. Teacher-level summary score for assessment component by criteria

School	Classroom teacher	Fidelity component score	Fidelity level
School 4	A	4	High
School 4	B1/B2*	4	High
School 5	A	4	High
School 5	B1/B2*	4	High
School 6	A	4	High
School 6	B	4	High
School 6	C	4	High
School 8	A1/A2*	4	High
School 8	B1/B2*	4	High
School 10	A	4	High
School 13	A1/A2*	4	High
School 13	B	4	High
School 13	C	4	High
School 13	D	4	High
School 14	A	4	High
School 15	A	4	High
School 16	A	4	High
School 16	B1/B2*	4	High
School 17	A	4	High
School 17	B1/B2*	4	High
School 17	C1/C2*	4	High
School 17	D	4	High

* Teachers co-taught in these classrooms.

2.B.4 Instructional Software

Part of the READ instructional model consists of a 60-minute segment in which students break into three small groups that rotate among three stations: small group instruction, independent reading, and READ 180 software.

Scholastic recommends that students use the READ 180 software a minimum of three times a week and 15 minutes per session.¹⁴ The numbers of student sessions as well as the length of these sessions were provided by NPS from the SAM database. The percentage of students who received both a minimum of three sessions per week and a minimum of 15 minutes per session was used to determine fidelity to this component (see Table 15).

¹⁴ Scholastic states that “to receive the full benefits of READ 180, your students should use the topic software at least 15 minutes a day” *READ 180 Enterprise Edition Placement, Assessment, and Reporting Guide* (Scholastic Research and Validation, 2005, p. 81)

Table 15. Criteria for measurement of fidelity to the READ 180 requirements for student software use

% of students with adequate exposure to software	Scale	Level
75 - 100%	4	High
50 - 74%	3	Moderate-to-High
25 - 49%	2	Low-to-Moderate
0 - 24%	1	Low

To explore the possible reasons for the low percentage of teachers who ensured that their students had adequate levels of exposure, the two parts of this subscale (number of sessions and time per session) are examined separately in Table 16.

As can be seen from Table 16, the vast majority of teachers adhered to the recommended 15 minute length of session. However, fidelity to a minimum of three sessions per week appeared to be more of a challenge. RTCs have noted instances in which students did not log off of the computer properly, which may have led to an underestimate in software usage.

Table 16. Teacher-level summary score for time on instructional software by criteria

Treatment school	Classroom teacher	Instructional minutes score	Number of sessions score	Fidelity component score	Fidelity level
School 5	A	4	4	4	High
School 8	B1/B2*	4	4	4	High
School 13	B	4	4	4	High
School 13	C	4	4	4	High
School 4	A	4	3	3	Moderate-to-High
School 4	B1/B2*	4	3	3	Moderate-to-High
School 6	C	4	3	3	Moderate-to-High
School 10	A	3	3	3	Moderate-to-High
School 17	A	4	3	3	Moderate-to-High
School 17	B1/B2*	4	3	3	Moderate-to-High
School 17	D	4	3	3	Moderate-to-High
School 5	B1/B2*	4	2	2	Low-to-Moderate
School 6	B	4	2	2	Low-to-Moderate
School 13	D	4	2	2	Low-to-Moderate
School 15	A	4	2	2	Low-to-Moderate
School 16	B1/B2*	4	3	2	Low-to-Moderate
School 6	A	4	1	1	Low
School 8	A1/A2*	4	1	1	Low
School 13	A1/A2*	4	1	1	Low
School 14	A	4	1	1	Low
School 16	A	3	1	1	Low
School 17	C1/C2*	3	1	1	Low
Average		3.9	2.5	2.4	

* Teachers co-taught in these classrooms.

2.B.5 Participation Summary, Year 3

In Year 3, an overall school-level summary scale was developed to see how the different facets of fidelity have come together. Table 17 lists the definitions for the school-level implementation. Each school was assigned a level rating: Low, Low-to-Moderate, Moderate-to-High, or High (see Table 18). Ninety percent of schools achieved high implementation in all three components. The remaining school had moderate-to-high implementation.

Table 17. Criteria for fidelity to READ 180 implementation

Average score	Level
3.1-4	High
2.1-3	Moderate-to-High
1.1-2	Low-to-Moderate
0-1	Low

Table 18. Average school-level summary scores for implementation in READ 180 intervention in Year 3

Treatment School	Professional Development*	Class size	Ongoing Student Assessment	Instructional Software Use	Average score	Summary Implementation scores
School 4	–	4	4	4	4	High
School 5	–	4	4	4	4	High
School 6	–	4	4	4	4	High
School 10	–	4	4	4	4	High
School 13	–	4	4	4	4	High
School 14	–	4	4	4	4	High
School 15	–	4	4	4	4	High
School 16	–	4	4	4	4	High
School 17	–	4	4	4	4	High
School 8	–	2.5	4	2.5	3	Moderate-to-High

*A summary score was not calculated for professional development due to a change in the model. Only 1 new teacher received professional development in Year 3.

2.C Barriers to Targeted Implementation, Year 3

The greatest challenge in implementation of the targeted intervention in Year 3 has been students being “pulled” from READ 180 for a number of reasons. Students have been pulled from their READ 180 classrooms to attend other events in the schools (e.g., field trips, additional testing). Coordination and communication issues remain between the Office of Language Arts Literacy and the Office of Special Education. The Child Study Team continues to pose that READ 180 violates the individualized education programs (IEPs) of some students. As a whole, NPS has a larger enrollment of students in special education than the rest of the state (Newark Kids Counts, 2009); therefore, the inclusion of special needs students in READ 180 is reasonable. The district continues to ensure buy-in from the inclusion teachers as much as possible, but this has been difficult.

Teacher and principal turnover through the three years of the grant has been a small challenge, although yearly training keeps new and old teachers up to date on READ 180 techniques. However it should be noted that there were changes and principals across the first three years of the grant. In Year 1, there were 23 READ 180 teachers. Of those, 12 (53 percent) remained in Year 2. By Year 3, 10 (43 percent) of the original teachers remained. The largest turnover in teachers occurred between Years 1 and 2. From year 2 to year 3 19 teachers remained the same. Six teachers left but an additional nine teachers were added (see Table 19). During the course of 3 years, new teachers have been hired, transferred, or have changed positions. Table 20 illustrates teacher turnover for all 3 years.

Table 19. Teacher turnover from Year 2 to Year 3

Year 2 teacher	Year 3 teacher	Number of teachers	%
Yes	Yes	19	76%
Yes	No	6	24%
No	Yes	11	–

Table 20. Teacher turnover between Years 1, 2, and 3

Year 1 teacher	Year 2 teacher	Year 3 teacher	Number of teachers	%
Yes	Yes	Yes	10	43.5%
Yes	Yes	No	2	8.7%
Yes	No	No	9	39.1%
Yes	No	Yes	2	8.7%
No	Yes	Yes	9	–
No	No	Yes	9	–
No	Yes	No	4	–

The 9 treatment schools have had 15 principals during the 3 years. Four principals have remained constant between Years 1 and 3. The largest turnover occurred between Years 1 and 2, which was 44 percent. From year 2 to year 3, seven out of nine principals remained the same (see Table 21). Overall principal turnover for the first three years of Striving Readers is presented in Table 22.

Table 21. Principal turnover from Year 2 to Year 3

Year 2 principal	Year 3 principal	Number of principals	%
Yes	Yes	7	78%
Yes	No	2	22%
No	Yes	2	–

Table 22. Principal turnover between Years 1, 2, and 3

Year 1 principal	Year 2 principal	Year 3 principal	Number of principals	%
Yes	Yes	Yes	4	44%
Yes	Yes	No	1	11%
Yes	No	No	4	44%
No	Yes	Yes	3	-
No	No	Yes	2	-
No	Yes	No	1	-

2.D Years 1-3 Implementation Summary

2.D.1 Training , Years 1-3 Summary

Fifty-six percent of teachers received the full dosage of Scholastic’s READ 180 training in Year 1, whereas this percentage dropped to 8 percent in Year 2. In Year 3, however, only one teacher, who was a new hire, attended Scholastic’s READ 180 training (5.5 hours). The other teachers new to READ 180 were unable to attend because they were brought on as staff after the training occurred. Returning teachers did not attend the training because it was a repeat of the Day 1 training they received in Years 1 and 2. Because of the differences in training offered in Year 3, it cannot be compared to previous years.

In Year 1, all of the school principals attended the implementation meeting, which outlined the logistics and requirements for executing READ 180 and the READ 180 training session. In Year 2, 5 of the 10 treatment school principals attended the READ 180 training.

Few literacy coaches attended READ 180 training in Years 1 and 2. In Year 1, 20 percent of the coaches received training in the READ 180 curriculum. In Year 2, none of the coaches attended the summer training because of a scheduling conflict. In Year 3, training was not offered.

Furthermore, all technology coordinators attended their READ 180 technical training session and all technology coordinators attended the technical training session. In Year 3, training was not offered.

In Year 2, treatment schools received READ 180 coaching visits from RTCs between September 11, 2007, and June 24, 2008.¹⁵ On average, treatment schools received 19.4 visits, ranging from 7 to 38 (see Table 24). During these visits RTCs met primarily with teachers, but there were instances in which they met with literacy coaches, vice principals, and principals.

Table 24. Number of READ 180 RTC visits received by schools in Years 2 and 3*

Treatment School	Year 2	Year 3
School 4	20	41
School 5	19	22
School 6	22	19
School 8	38	25
School 10	7	20
School 13	15	30
School 14	23	5
School 15	18	12
School 16	13	10
School 17	19	27
Average	19.4	21.1

* In Year 1, visitation logs did not differentiate between visits made for the whole-school intervention and the targeted intervention; therefore, it was not possible to determine how many READ 180 coaching visits schools received from RTCs.

2.D.2 Class Size, Years 1-3 Summary

In Year 1, 74 percent of teachers had class sizes within Scholastic guidelines. In year 2, this increased to 100 percent. In Year 3, 95.5 percent of teachers had class sizes that met READ 180 guidelines of 21 students or less. Table 25 provides the number and percentage of teachers for Years 1, 2, and 3 that were at each of the levels of fidelity to class size.

¹⁵ Visits supported the whole-school intervention and the targeted intervention.

Table 25. Number* and percentages of teachers by level fidelity to class size requirements, Years 1, 2, and 3

	Year 1		Year 2		Year 3	
	Number	%	Number	%	Number	%
High	17	73.9%	22**	100.0%	21	95.5%
Moderate-to-High	3	13.0%	0	0.0%	0	0.0%
Low-to-Moderate	0	0.0%	0	0.0%	0	0.0%
Low	3	13.0%	0	0.0%	1	4.5%
TOTAL	23	100%	22*	100%	22	100%

* The number of teachers is characterized by the lead classroom teacher. In instances in which a classroom was co-taught, only the lead teacher was included in the teacher count.

** Two classrooms had teachers leave their respective school mid-year. In each case, only one teacher is included in the teacher count.

At the school-level, 6 schools (60 percent) received an average score in the High category for all three years of the study. The most variation in scores occurred in Year 1, while in Year 2, all of the schools received an average rating in the High category.

2.D.2.1 Changes in Class Size Fidelity Among Years 1, 2, and 3

Four schools showed an increase in their average fidelity score from Year 1 to Year 2. The majority of schools exhibited no change from Year 2 to Year 3. Interestingly, the 3 of the 4 schools that showed an increase from Year 1 to Year 2, maintained an average score in the High category in Year 3. Table 26 shows the criteria for fidelity to class size requirements, and Table 27 shows changes in class size fidelity from the first three years of the grant.

Table 26. Criteria for fidelity to class size requirements

Average school score	Level
3.1-4	High
2.1-3	Moderate-to-High
1.1-2	Low-to-Moderate
0-1	Low

Table 27. Year 1, 2, and 3 average scores by school by level of fidelity to class size requirements

Treatment School	Year 1 (1-4)	Year 2 (1-4)	Year 3 (1-4)	Change from Year 1 to Year 2	Change from Year 2 to Year 3	Change from Year 1 to Year 3
School 4	2	4	4	2	0	2
School 5	4	4	4	0	0	0
School 6	4	4	4	0	0	0
School 8	2.5	4	2.5	1.5	-1.5	0
School 10	4	4	4	0	0	0
School 13	3.7	4	4	0.3	0	0.3
School 14	4	4	4	0	0	0
School 15	4	4	4	0	0	0
School 16	4	4	4	0	0	0
School 17	3.2	4	4	0.8	0	0.8

2.D.3 Ongoing Assessment, Years 1-3 Summary

The number of SRI assessments for all three years analyzed to determine fidelity (see Table 28). The vast majority of teachers assessed more than 75 percent of their students at least three times during Year 1. In Years 2 and 3, all teachers assessed more than 75 percent of their students at least three times during the schools year.

Table 28. Number* and percentages of teachers by level fidelity to assessment requirements, Years 1, 2, and 3

	Year 1		Year 2		Year 3	
	Number of teachers	%	Number of teachers	%	Number of teachers	%
High	20	90.9%	22	100.0%	22	100.0%
Moderate-to-High	1	4.5%	0	0.0%	0	0.0%
Low-to-Moderate	1	4.5%	0	0.0%	0	0.0%
Low	0	0.0%	0	0.0%	0	0.0%
TOTAL	22**	100%	22***	100%	22	100%

* The number of teachers is characterized by the lead classroom teacher. In instances in which a classroom was co-taught, only the lead teacher was included in the teacher count.

** Data for one teacher was unavailable.

*** Two classrooms had teachers leave their respective school mid-year. In each case, only one teacher is included in the teacher count.

In terms of school-level, the average rating for all three years was in the High category. Table 29 defines each school score and table 30 shows overall ratings of fidelity to assessment requirements across the first three years of the grant.

Table 29. Criteria for fidelity to assessment requirements

Average school score	Level
3.1-4	High
2.1-3	Moderate-to-High
1.1-2	Low-to-Moderate
0-1	Low

Table 30. Year 1, 2, and 3 average ratings by school by level of fidelity to assessment requirements

Treatment School	Year 1 (1-4)	Year 2 (1-4)	Year 3 (1-4)	Change from Year 1 to Year 2	Change from Year 2 to Year 3	Change from Year 1 to Year 3
School 4	4	4	4	0	0	0
School 5	4	4	4	0	0	0
School 6	4	4	4	0	0	0
School 8	4	4	4	0	0	0
School 10	4	4	4	0	0	0
School 13	4	4	4	0	0	0
School 14	4	4	4	0	0	0
School 15	4	4	4	0	0	0
School 16	4	4	4	0	0	0
School 17	4	4	4	0	0	0

2.D.3.1 Changes in Ongoing Assessment Among Years 1, 2, and 3

There were no changes in ongoing assessment from years 1 to 3 or between years.

2.D.4 Instructional Software, Years 1-3 Summary

In Year 1, 65 percent of teachers ensured that more than half of their students had moderate levels of exposure to the instructional software. In Year 2, the percentage fell to 9 percent. In Year 3, it rose to 18.2 percent (see Table 31).

Table 31. Number* and percentages of teachers by level fidelity to instructional software guidelines, Years 1, 2, and 3

	Year 1		Year 2		Year 3	
	Number of teachers	%	Number of teachers	%	Number of teachers	%
High	15	65.2%	2	9.1%	4	18.2%
Moderate-to-High	6	26.1%	0	0.0%	7	31.8%
Low-to-Moderate	2	8.7%	2	9.1%	5	22.7%
Low	0	0.0%	18	81.8%	6	27.3%
TOTAL	23	100%	22**	100%	22	100%

*The number of teachers is characterized by the lead classroom teacher. In instances in which a classroom was co-taught, only the lead teacher was included in the teacher count.

**Two classrooms had teachers leave their respective school mid-year. In each case, only one teacher is included in the teacher count.

Table 32 defines each school score and table 33 shows overall ratings of fidelity to instructional software requirements across the first three years of the grant.

Table 32. Criteria for fidelity to instructional software guidelines

Average school score	Level
3.1-4	High
2.1-3	Moderate-to-High
1.1-2	Low-to-Moderate
0-1	Low

Table 33. Year 1, 2, and 3 average ratings by school by level fidelity to instructional software guidelines

Treatment School	Year 1 (1-4)	Year 2 (1-4)	Year 3 (1-4)	Change from Year 1 to Year 2	Change from Year 2 to Year 3	Change from Year 1 to Year 3
School 4	3	1	4	-2	3	1
School 5	3.5	2	4	-1.5	2	0.5
School 6	3.5	1.8	4	-1.7	2.2	0.5
School 8	3.5	1	2.5	-2.5	1.5	-1
School 10	4	4	4	0	0	0
School 13	3.7	1	4	-2.7	3	0.3
School 14	3	1	4	-2	3	1
School 15	3.5	1	4	-2.5	3	0.5
School 16	3.5	1	4	-2.5	3	0.5
School 17	3.6	1.3	4	-2.3	2.7	0.4

In Year 1, the school level average for the majority of schools was in the High category. In Year 2, however, 90 percent of schools dropped to the Low-to-Moderate category. As explained earlier in the Chapter, there were instances in which students did not log off of the computer properly, which may have led to an underestimate in software usage. Fidelity to this component rebounded in Year 3 with all schools improving, especially 90 percent of schools in the High category.

2.D.4.1 Changes in Instructional Software Among Years 1, 2, and 3

Only one school remained unchanged in the High category for all three years of the study. There was a large decrease in fidelity for nine schools from Year 1 to Year 2. All of those schools increased in Year 2 and continued to increase in fidelity in Year 3. Even though changes from Year 1 to Year 3 were small, schools greatly increased fidelity to the component.

Impacts of the Targeted Intervention: Years 1, 2, and 3

3

3.A Study Design and Analytic Approach

3.A.1 Sampling Plan

3.A.1.1 Power

Power estimates describe how likely differences between treatment and control groups can be detected. Power calculations were conducted in the fall of 2006 using the following set of assumptions:

1. A total of 19 schools randomly assigned to treatment and control groups
2. About 90 students at each school participating at each time point
3. An intraclass correlation (ICC) of .02 (2% of the total variation in the outcome is between schools)
4. An alpha level for the statistical test set at .05 (two-tailed test)

The power calculations assume that level 2 covariates do not explain the variation in student outcomes. In fact, with a baseline ICC of 0.02, there is not much between-school variation to explain. Based on these power calculations, an effect size of .24 is estimated (just under a quarter of a standard deviation).

Using the standard deviations from the 8th grade Language Arts assessments in the SAT9 (Pearson Assessment, 1996), Table 34 illustrates the boost in scores because of intervention, assuming an effect size of .24.

Table 34. Illustrative example of the practical significance of a .24 effect

SAT9 subtest	Standard deviation	Effect size of intervention	Yearly score increase	Total increase over 4 years
Reading Vocabulary	46	.24	11 points	33 points
Reading Comprehension	41	.24	10 points	30 points
Language Arts	38	.24	9 points	27 points

This example shows that, with an effect size of .24, the power calculation should allow a difference of 9 points (and higher) between treatment and control students each year on the Language Arts subtest to be detected.

For assessing the effect of READ 180 on student achievement, an effect size of .28 (just over a quarter of a standard deviation) was estimated for Year 1.

3.A.1.2 School Eligibility, Randomization, and Sample Size

To participate in the Striving Readers grant, schools had to meet the following eligibility criteria:

1. Be Title I eligible
2. Serve a minimum of two grades (from 6,7,8)
3. Not using READ 180
4. Be categorized as “in need of improvement” under the No Child Left Behind Act
5. Serve a minimum of 25 eligible students

Based on these criteria, 20 schools were initially eligible. After randomization, two control schools later merged, leaving 19 participating schools. For the targeted portion of the grant, these schools were randomly assigned to either the intervention or a control condition.

The randomization process used blocking variables. Using the number of eligible students as the primary blocking variable, schools were divided into three groups: large schools (more than 100 eligible students), medium schools (51–100 eligible students), and small schools (25–50 eligible students). Within these three groups, schools then were sorted by number of years in need of improvement under NCLB and then by home language and special education status. Table 35 provides details of this blocking information.

Table 35. Blocking data used for random assignment

School name	No. Eligible students	Year INOI 05_06	No. Eligible non-English native language	# Eligible special ed	Strata	Group (1=T; 0=C)	
School 17	189	Yr5	43	80	1	1	Lrg schools n>100
School 7	98	Yr5	38	28	1	0	
School 6	107	Yr5	16	37	2	1	
School 1	108	Yr5	0	34	2	0	
School 11	182	Yr1	56	86	3	0	
School 16	90	Yr5	3	36	4	1	Med schools n=50-99
School 12	79	Yr5	1	43	4	0	
School 5	64	Yr5	3	37	5	1	
School 3	53	Yr5	12	30	5	0	
School 4	80	Yr4	0	40	6	1	
School 19	95	Yr3	0	68	6	0	
School 15	69	Yr1	34	26	7	1	
School 18	55	Yr1	11	26	7	0	
School 10	48	Yr4	1	5	8	1	Small schools n=25-49
School 2	39	Yr4	0	15	8	0	
School 14	37	Yr4	6	13	9	1	
School 9	33	Yr3	4	5	9	0	
School 8	27	Yr2	0	14	10	1	

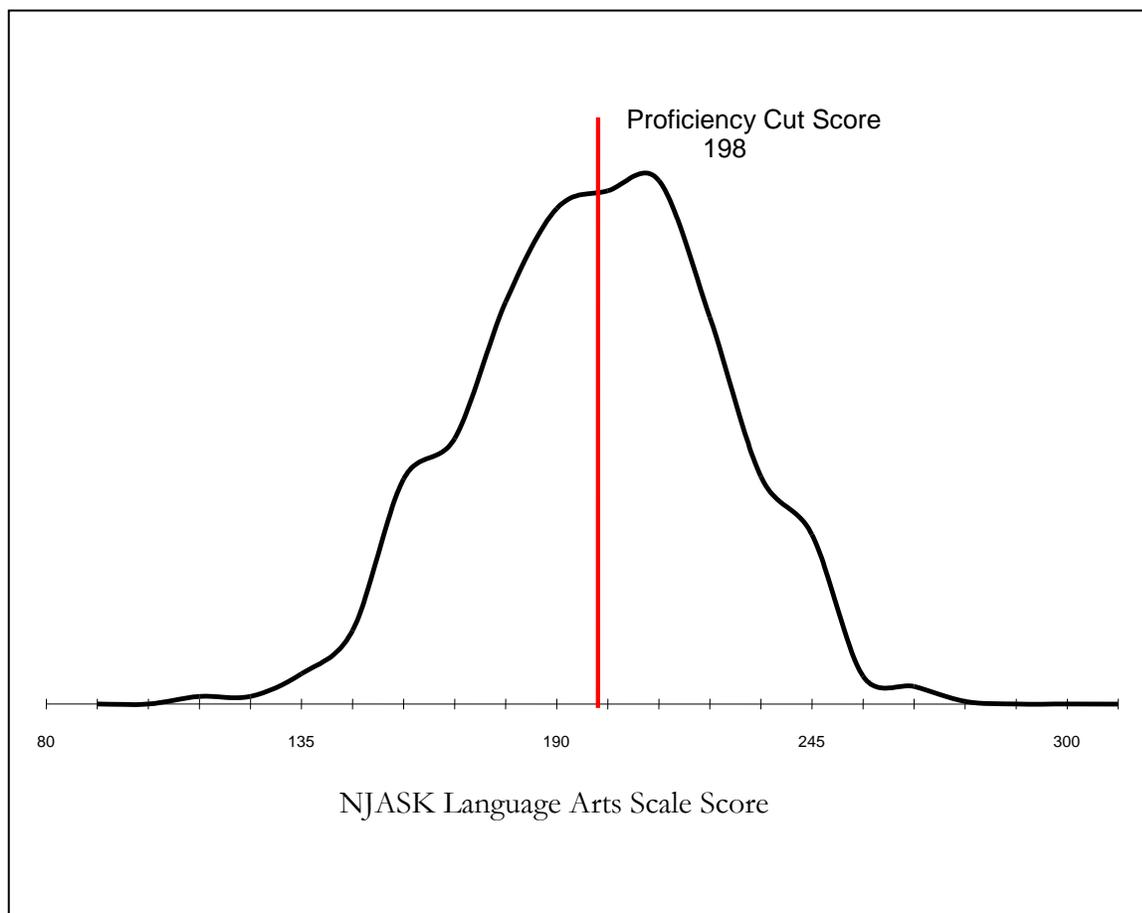
3.A.1.3 Student Eligibility and Sample Size

For students to be eligible for the targeted evaluation in Year 1, they had to be enrolled in one of the eligible middle schools and in grades 6, 7, or 8. Furthermore, student eligibility was based on their reading subtest score on the 2007 NJASK. In New Jersey, anyone scoring below a 200 is considered “partially proficient,” which is the lowest category possible. Scores 200–249 are “proficient,” while scores above 249 are “advanced proficient.” The cut-off scores for student eligibility were set by NPS, based on one standard deviation from the norm. An example of student scores and the cut-off for eligibility is represented graphically in Figure 4. The same student eligibility requirements are used for students in both treatment and control schools. They must score below the cut-off score on

the NJASK to be included in the evaluation. The specific cut-off scores for each grade are the following:

- 6th grade = 198
- 7th grade = 186
- 8th grade = 192

Figure 4. Language Arts scale score frequency distribution for 19 evaluation schools (Grade 5)



In Years 2 and 3, a second and third cohort of 6th graders was added. The cut-off score of 198 applied to these cohorts as well. Transfer students without an NJASK score were not eligible to participate in Striving Readers.

In Year 3, 1,167 students participated in the evaluation, with 638 attending treatment schools and 529 attending control schools.

3.A.2 Description of the Counterfactual

Thirty-six language arts classrooms in grades 6, 7, and 8 were observed by trained Westat researchers in the spring of 2007. Twenty-one of these classrooms were READ 180 classrooms, while the remainder were control classrooms.

Based on these observations, the number of students per classroom varied from 3 to 25. The average class size was 15. Using NPS data, there is a statistically significant difference in the class size of language arts classrooms by treatment group (see Table 36).

Table 36. Class size comparison, treatment versus control

	N	Mean	sd	Sig diff?
Control classrooms	101	18.02	5.63	*
Treatment classrooms	43	15.70	5.09	

T-test significant at the .05 level.

Classrooms were composed almost equally of male and female students, with respective averages of 7.4 and 7.3. Only 3 of the 36 teachers observed were male, with the remainder being female teachers.

In terms of the physical environment, observers were asked to rate the classroom on a scale of 1 to 4, with 4 being the highest possible score. As Table 37 shows, all observed classrooms scored well on the availability of books in the classroom and the resources displayed on the classroom walls. However, as might be expected, the treatment classrooms had significantly more technology-related resources available than control classrooms.

Table 37. Physical environment of classrooms

	Treatment		Control		Sig diff?
	Mean	sd	Mean	sd	
Technology	3.57	.598	2.93	.884	*
Bulletin boards/walls (e.g., student samples word walls)	3.29	.717	3.33	.724	
Availability of books	3.52	.512	3.27	.799	

T-test significant at the .05 level.

During the class period, observers also were asked to identify the literacy resources being used by students. Table 38 shows the results from these yes/no questions. Students in all classrooms used the same set of literacy resources, except in three cases: textbook use, use of computers, and use of audio equipment. In these cases, the treatment curriculum focuses heavily on these resources (i.e., eBooks, instructional software, and independent reading with CDs), so there is little surprise that treatment classrooms would score higher in these areas.

Table 38. Literacy resources used in observed classrooms

	Treatment		Control		Sig diff?
	% yes	sd	% yes	sd	
Reading or discussion of novels/stories/poems	95%	.229	100%	.000	
Textbook	79%	.419	21%	.426	*
Articles	47%	.514	21%	.426	
Students all read same text	74%	.452	77%	.439	
Workbook/worksheets used	76%	.436	73%	.458	
Video/film/television	42%	.507	14%	.363	
Notebooks/journals	81%	.402	93%	.258	
Computer use	95%	.218	20%	.414	*
Audio	80%	.410	7%	.258	*

T-test significant at the .05 level.

In terms of organization, climate, and culture, all classrooms scored very high on a 1 to 5 scale with 5 being the highest possible score. As a safe environment for struggling readers (i.e., struggling readers risked making mistakes, got a lot of encouragement, and read without ridicule), treatment classrooms scored significantly higher than control classrooms (see Table 39).

Table 39. Classroom organization

	Treatment		Control		Sig diff?
	Mean	sd	Mean	sd	
Classroom time well-structured and transitions were well defined	4.48	.190	4.33	.211	
Participation of all students actively encouraged	4.38	.201	4.27	.248	
Safe environment for struggling readers	4.57	.130	4.07	.228	*

T-test significant at the .05 level.

Student groupings were recorded once every 10 minutes during the classroom period. Table 40 shows the time spent in each grouping. These data show that students in treatment classrooms spent more time in small groups and working individually than students in control classrooms (who spent more time in whole class work).

Table 40. Average number of occasions that the following student groupings were observed

	Treatment		Control		Sig diff?
	Number	sd	Number	sd	
Whole class	2.95	1.56	4.67	2.26	*
Small group	5.14	1.35	3.00	2.00	*
Individual	3.38	2.91	1.53	2.39	*

T-test significant at the .05 level.

3.A.3 Data Collection Plan

3.A.3.1 Student Measures

To determine the effect of the targeted intervention on students, the scale score results of the Vocabulary, Reading Comprehension, and Language Arts subtests of SAT 10 were used.¹⁶ The SAT 10 uses vertical scaling and norm-referenced scores to ensure scale scores can be directly compared when students are assessed with different grade-level assessments at different times, and students' scores also can be compared with a larger national sample of scores on the same tests.

The Vocabulary subtest includes concepts such as synonyms, multiple-meaning words, and use of context clues to decipher the meaning of unknown words. The Reading Comprehension assesses students' reading achievement using text read for enjoyment (e.g., fiction, poetry), text read for informational or expository purposes (e.g., science, textbook material), and everyday functional text (e.g., directions, labels, forms). This subtest also measures students' ability to initially understand explicit details in a passage, interpret information in a passage, critically analyze and evaluate information in a passage, and apply appropriate reading strategies.

The Language Arts subtest is divided into three sections. The first focuses on language mechanics, including capitalization, punctuation, and usage. The second focuses on language expression, including writing strategies and sentence structure knowledge. The final section of the Language Arts subtest also focuses on language expression but on a higher level than the previous section. Students analyze written passages for the assessment of how well they recognize extraneous information and descriptive language and the combining of simplistic sentences.

¹⁶ Abbreviated battery.

Data on the reliability of the SAT 10 are restricted to Kuder-Richardson Formula 20 (KR-20) internal-consistency estimates. The reliability for the abbreviated battery of Reading subtests is .89. The SAT 10 thus appears to hold sufficient reliability to support data inferences about the performance of groups of students.

Along with the SAT 10 tests, the results of the NJASK Language Arts Literacy (LAL) test are examined as a measure of student learning. The NJASK is the state’s standardized exam, typically given near the end of the school year, and student-level results are reported as scale scores. The LAL section of the exam is composed of both literacy/reading and writing sections. State test data were not available for all grades, limiting the number of analysis groups examined using the NJASK results. Other limitations of the NJASK come from the fact that it is not a vertically equated test, nor is it nationally normed. Finally, single grade cohorts in different years cannot be combined because of changes made to the exam between assessments.

In addition to the SAT 10, the authors also estimated whether the intervention had an effect on student attendance. From district records, the authors constructed a student-level variable that was the number of unexcused absences from school for each student for the school year. Overall in Year 3, students missed an average of 15.7 days of school as compared to 23.2 average missed days in Year 1 (see Table 41). Year 3 also had significant differences between treatment and control schools for the number of days missed ($t[987] = 2.43, p = .015$).

Table 41. Average days of school missed in Year 3

	Average number of days missed
Overall	15.67
Control	14.70
Treatment	16.46

3.A.3.2 Schedule of Data Collection in Year 3

Data collection for Year 3 involved testing students in grades 6, 7, and 8 from May 18 to June 8, 2009. Two weeks prior to data collection, 17 field assessors attended a 1-day training program in Newark that was conducted by Westat. Training topics covered the study description and

background, administrative procedures, professional conduct, confidentiality, and student testing protocols. The goals of the training were the following:

- Increase the accuracy, quality and relevance of collected data
- Standardize data collection techniques and procedures
- Provide explicit procedures for assessors to follow

After training, SAT 10 testing materials were sent to each assessor. Approximately 2 weeks after training, assessors began testing all eligible students in grades 6, 7, and 8. The initial testing occurred over a 2-week period. Field assessors also conducted quality assurance checks of each student answer sheet to verify completeness and demographic information and to remove stray marks before scoring by Pearson Assessment (formerly Harcourt Assessment). Table 42 provides an overview of the data collection schedule for the spring of 2009.

Table 42. Data collection schedule for Year 3

Data collection activity	Date
Assessor training	May 8, 2009
Mail data collection materials to assessors	May 11 – May 13, 2009
Conduct test administration	May 18 – May 28, 2009
Make up testing	May 28 – June 8, 2009
Answer sheets sent to Pearson	July 6, 2008

3.A.4 Summary of Analytic Approach

3.A.4.1 Model Specifications

To determine the effect of READ 180, an intent-to-treat (ITT) analysis was conducted based on repeated cross-sectional data, using a multilevel software package (i.e., HLM). A linear two-level model was used, with student and school as the two levels. Achievement for students within schools was predicted by a series of student and school characteristics. Student covariates were fixed across schools with no interactions. For the attendance outcome, a Poisson distribution was used (the outcome is a count of days absent during the school year). An example of this HLM output is provided in Appendix B.

3.A.4.2 Selection of Analytic Variables

The student outcomes for the targeted intervention are the three reading achievement subscores from the SAT 10 (i.e., Reading Comprehension, Vocabulary, and Language Arts), NJASK Language Arts Literacy scale scores, and school attendance (the number of unexcused absences). A number of variables was used as covariates in the repeated cross-sectional design. Only a limited set of covariates was used because validity can be compromised if the models have the wrong structure or are poorly estimated. In accordance with the recommendations of the Committee for Proprietary Medicinal Products (2004), the authors identified all covariates prior to breaking the blind. Table 43 shows these covariates. The categorical variables were dummy-coded, and all variables (except the treatment indicator) were centered on the grand mean.

Table 43. Covariates for impact analysis

	Data format	Coding
Entered at school level		
Treatment assignment	Dichotomous	1=Treatment 0=Control
Number of eligible students	Continuous	
Year in need of improvement	Count	1=1st year 2=2nd year 3=3rd year 4=4th year 5=5th year
Number of eligible ELL students	Continuous	
Number of eligible Spec Ed students	Continuous	
Mean school reading score (NJASK)	Continuous	
Entered at student level		
Grade 6	Categorical	1=yes 0=no
Grade 7	Categorical	1=yes 0=no
Grade 8	Categorical	1=yes 0=no
Special education identification	Dichotomous	1=yes 0=no
Free lunch eligibility	Dichotomous	1=yes 0=no
ELL	Dichotomous	1=yes 0=no
Gender	Dichotomous	1=yes 0=no
African American	Dichotomous	1=yes 0=no
Hispanic	Dichotomous	1=yes 0=no
Baseline reading score (NJASK)	Continuous	
Use of supplementary education services provider	Dichotomous	1=yes 0=no

3.A.4.3 Analysis Groups

Students were divided into six analytic groups to examine the overall effect of 1, 2, and 3 years of intervention (see Table 44). The first analytic group included all students who were given the opportunity to receive 1 year of intervention. The second group included only 6th grade students who were given the opportunity to receive 1 year of intervention. The third and fourth groups included the 7th and 8th grade students who were given the opportunity to receive up to 2 years of treatment. The fifth group consists of the combined 7th and 8th grade students who were given the opportunity to receive 2 years of treatment. Finally, the sixth group included the 8th grade students who were given the opportunity to receive 3 years of intervention.

Table 44. Analysis groups by year and grade

	Year 1			Year 2			Year 3		
	6th grade	7th grade	8th grade	6th grade	7th grade	8th grade	6th grade	7th grade	8th grade
(1) Availability of 1 year of intervention for 6th, 7th, & 8th graders (combined) N = 2,169	✓	✓	✓	✓			✓		
(2) Availability of 1 year of intervention on 6th graders N = 1,301	✓			✓			✓		
(3) Availability of 2 years of intervention for 7th graders N = 794					✓			✓	
(4) Availability of 2 years of intervention for 8th graders N = 371						✓*			
(5) Availability of 2 years of intervention for 7th & 8th graders (combined) N = 1,167					✓	✓		✓	
(6) Availability of 3 years of intervention for 8th graders N = 387									✓

* No new students were added to this analytic sample since Year 2, so the estimate is unchanged from the Year 2 report.

3.A.4.4 Missing Data

Some data were missing for one of the covariates listed in Table 43: free and reduced lunch status. However, the amount of missing data was minimal, so no imputation was conducted. Some data

also were missing for student outcomes as shown in Table 45.¹⁷ Non-random missing data could compromise the internal validity of the evaluation if it led to the treatment and control groups no longer being comparable. Overall, 94 percent of eligible students in Year 3 took the SAT 10 (516 control students and 624 treatment students). Year 3 students who did not have SAT 10 results were compared and no statistically significant difference was found on baseline NJASK scores ($t[60] = .76, p = .48$). The lack of a difference increases confidence that missing data has not compromised treatment and control group comparability.

Table 45. Missing data for student outcomes, Year 3

Analytic group	Outcome variables	Total number tested	Number of missing	Missing %
(1) Availability of 1 year of treatment for 6th, 7th, & 8th graders (combined)	Comprehension	2171	193	8.9%
	Vocabulary	2171	289	13.3%
	Language arts	2171	323	14.9%
	Attendance	2171	68	3.1%
(2) Availability of 1 year of treatment on 6th graders	Comprehension	1303	105	8.1%
	Vocabulary	1303	141	10.8%
	Language arts	1303	163	12.5%
	Attendance	1303	66	5.1%
(3) Availability of 2 years of treatment for 7th graders	Comprehension	796	52	6.5%
	Vocabulary	796	61	7.7%
	Language arts	796	63	7.9%
	Attendance	796	132	16.6%
(4) Availability of 2 years of treatment for 8th graders	Comprehension	373	22	5.9%
	Vocabulary	373	23	6.2%
	Language arts	373	27	7.2%
	Attendance	373	96	25.7%
(5) Availability of 2 years of treatment for 7th & 8th graders (combined)	Comprehension	1169	74	6.3%
	Vocabulary	1169	84	7.2%
	Language arts	1169	90	7.7%
	Attendance	1169	228	19.5%
(6) Availability of 3 years of treatment for 8th graders	Comprehension	389	20	5.1%
	Vocabulary	389	20	5.1%
	Language arts	389	22	5.7%
	Attendance	389	81	20.8%

¹⁷ Consistent with the analysis plan, the authors did not impute missing data for outcome variables.

In Year 3, a moderate percentage of students (9 percent) did not receive READ 180 instruction. This is partly because some students transferred to other schools, but a number of students who were supposed to receive READ 180 and who were in treatment schools still did not receive it. See Table 46 for a description of reasons why eligible students did not receive READ 180.

Table 46. Reasons students did not receive READ 180 in Year 3

Reason for not receiving READ 180	Number of students
Transferred	3
Long-term absence	1
Unknown/Other	53
Total	57

Students who remained in the district, took a post-test, but did not actually receive READ 180 were left in the treatment group sample. Simply removing these students from the sample could bias the composition of the treatment group because of the potential self-selection of these participants. As a result, the estimates trade potential underestimation of treatment effects for maintenance of the randomized evaluation design. This is why results are presented as the effect of the ITT or the act of being assigned to the treatment group.

3.A.4.5 Subgroup Analyses

To examine the effect of treatment on specific subpopulations of students, students in each analytic group were divided into the following five subgroups:

1. Female students
2. Male students
3. African-American students
4. Hispanic students
5. Special education students.

Including ELL students as a separate subgroup for analyses was considered. However, too few students fit this criterion to conduct meaningful analyses. Also, subgroups were not used for analyses of NJASK scores.

3.B Description of the 1st, 2nd, and 3rd Year Samples

3.B.1 Characteristics of Schools and Students

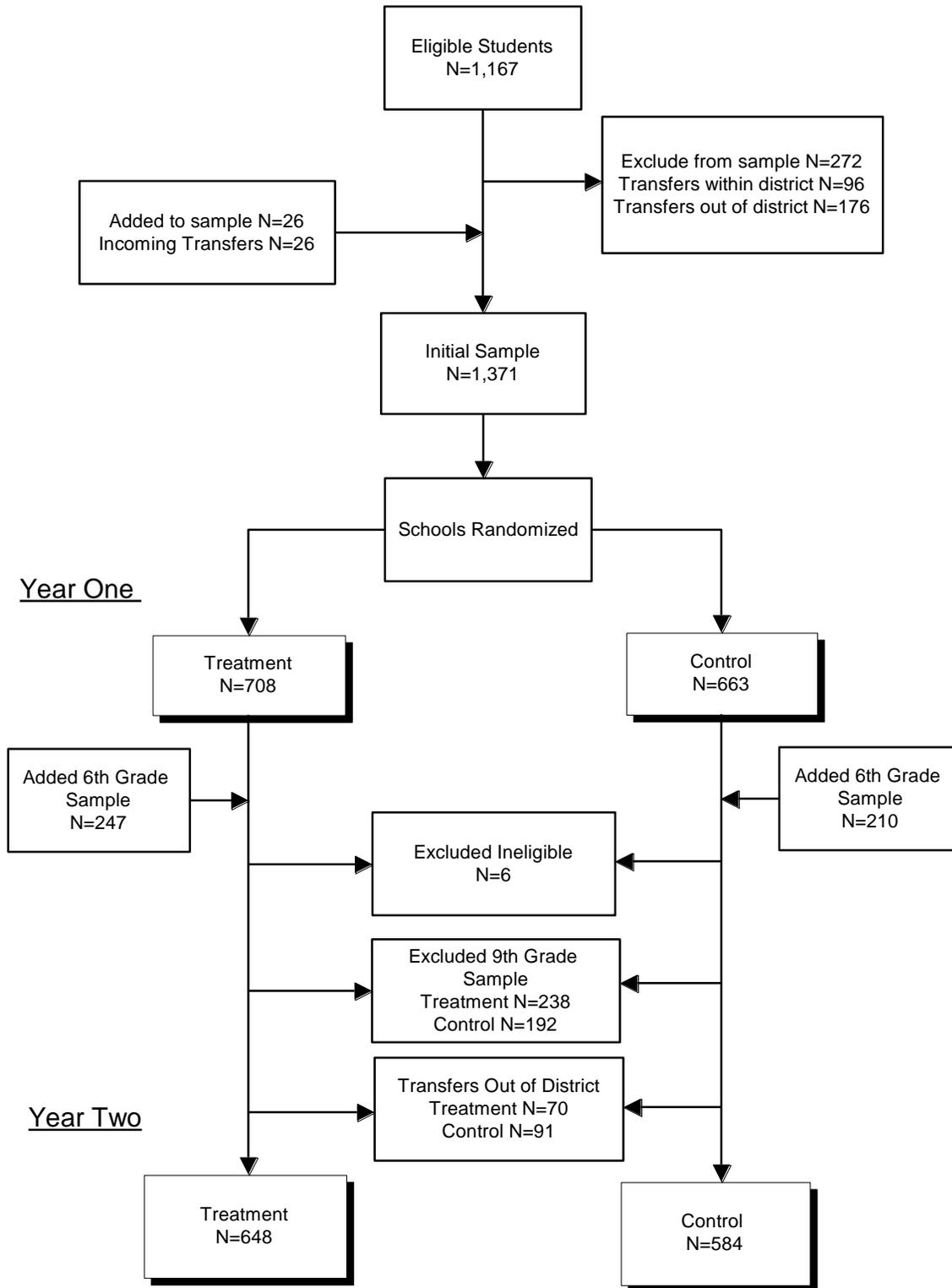
3.B.1.1 Schools

Nineteen middle schools were selected for the targeted intervention in Year 1. Of these schools, 10 were randomly assigned to receive READ 180, and 9 were randomly assigned to the control condition. All schools remained part of the sample in Year 3.

3.B.1.2 Students

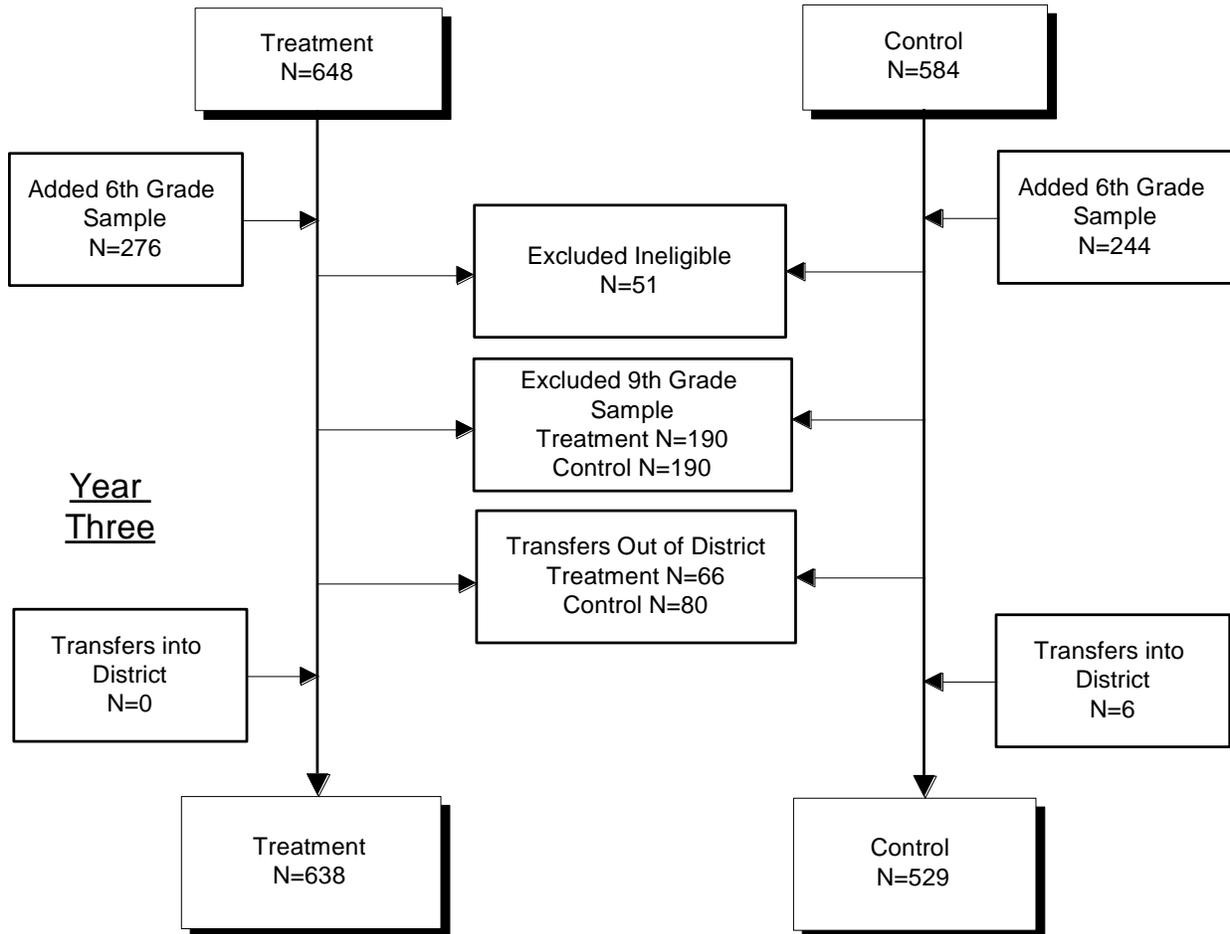
Students in 6th grade in Year 1 remained in the sample in Year 3 (they became the 8th graders). The 8th graders from Year 1 moved into the 9th grade in Year 2, while the 8th graders from Year 2 moved into the 9th grade in Year 3; they were dropped from the evaluation at that point. New cohorts of 6th graders were added to the sample in Years 2 and 3. Figure 5 shows this evolution of the student sample

Figure 5. Flow of students in the targeted intervention*



* The numbers in this report differ from the NPS Year 2 annual performance report. For evaluation purposes, Westat considers students as they were originally assigned to a condition while NPS summarizes students' current school.

Figure 5. Flow of students in the targeted intervention* (continued)



Nonrandom attrition of individuals from randomly assigned groups can cause the groups to be no longer comparable and can have the same effects as self-selection bias, but during the experiment rather than before it. The What Works Clearinghouse (2008) has established benchmarks for tolerance levels of attrition bias. With an overall attrition rate of 19.6 percent and a differential attrition rate of 5.6 percent, the potential attrition bias from Year 1 to Year 3 of the sample is reasonably small—less than 0.05 effect size units. In short, the attrition rates are low enough that effect size estimates of outcomes are unlikely to be biased, based on the What Works Clearinghouse guidelines.

Attrition rates have also been examined for each of the Year 3 analytic groups, and the results are presented in Table 47. None of the differences in attrition rates between the treatment and control groups are statistically significant.

Table 47. Attrition Rates of Year 3 targeted intervention analytic groups, by treatment status

Analytic Group	Analytic Sample Attrition Rate			
	Overall	Treatment	Control	Difference
(1) Availability of 1 year of treatment for 6 th , 7 th , & 8 th graders (combined)	0%	0%	0%	0%
(2) Availability of 1 year of treatment on 6 th graders	0%	0%	0%	0%
(3) Availability of 2 years of treatment for 7 th graders	12.9%	11.3%	14.9%	3.6%
(4) Availability of 2 years of treatment for 8 th graders	17.7%	14.2%	20.9%	6.7%
(5) Availability of 2 years of treatment for 7 th & 8 th graders (combined)	14.5%	12.2%	17.0%	4.8%
(6) Availability of 3 years of treatment for 8 th graders	25.3%	23.4%	27.5%	4.1%

The demographics of the 1,167 students eligible for the targeted intervention in Year 3 are similar to that of the students in NPS as a whole in several respects. Most of the Striving Readers students are African American (54 percent) or Hispanic (43 percent), compared to 55 and 43 percent in NPS as a whole. Moreover, 10 percent of Striving Readers students were ELLs, compared to 8 percent in the district as a whole. Table 48 provides more detailed demographic information.

Table 48. Characteristics of Year 3 students in the targeted intervention, by treatment status

Number (column %)	Students in treatment schools	Students in control schools	All students
Total number of students	638 (55%)	529 (45%)	1,167
Average no. of students per school	63.8	58.8	61.4
Grade			
6th grade	226 (35%)	183 (35%)	409 (35%)
7th grade	206 (32%)	157 (30%)	363 (31%)
8th grade	206 (32%)	189 (36%)	395 (34%)
Gender			
Male	379 (59%)	291 (55%)	670 (57%)
Female	258 (41%)	238 (45%)	496 (43%)
Status			
Economically disadvantaged	393 (62%)	306 (58%)	699 (60%)
ELLs	68 (11%)	49 (9%)	117 (10%)
Special education	308 (48%)	204 (39%)	512 (44%)
Race/ethnicity			
African American	345 (54%)	286 (54%)	631 (54%)
Hispanic	273 (43%)	230 (43%)	503 (43%)
Caucasian	4 (1%)	6 (1%)	10 (1%)
Other	16 (3%)	7 (1%)	23 (2%)

3.B.2 Tests of Equivalence for Treatment and Control Schools

Equivalence between treatment and control schools was tested in Year 1. Of the seven baseline variables tested for balance, one variable demonstrated a significant difference between treatment and control groups. As shown in Table 49, treatment schools had significantly more students eligible for free and reduced price lunch than control schools. However, this variable was incorporated into the analysis model as a student-level covariate and should not influence the impact estimates.

These balance tests were calculated using SAS’s PROC MIXED procedure to take into account the clustering of students within schools.

Table 49. Balance test for treatment and control groups, Year 1

Variable	Control Mean	Treatment Mean	DF	t Value	Pr > t
Males	54.75%	57.20%	1368	-0.91	0.361
Eligible free/reduced lunch	83.86%	91.38%	1368	-4.27	<.0001
ELL	3.34%	2.07%	1368	0.92	0.357
Special education student	29.08%	28.33%	1368	0.28	0.776
Rec'd supplemental reading instruct	20.42%	21.49%	1368	-0.57	0.570
African American	71.13%	70.07%	1368	0.40	0.688
Baseline state assessment score	176.63	177.28	1368	-0.74	0.458

Because the addition of new cohorts in Years 2 and 3, balance tests were rerun. In both Year 2 and year 3, none of the eight variables tested demonstrated a significant difference between treatment and control groups. However, the balance tests run on the year 3 analytic groups indicated significant differences between the treatment and control groups on the percentage of students eligible for free/reduced price lunch in analytic group 1, and the percentage of students receiving supplemental reading services in analytic group 5. The full results of the balance tests are presented in Appendix B.

3.C Effects on Students

Effects on students in each of the six analytic groups are presented in this section. Two aspects of the results are discussed for each group: whether any of the results are statistically significant at the .05 level, and whether any of the results reach an effect size threshold of .20. It has been noted that when considering the practical importance of effect sizes, the context of the type of outcome being measured and the sample being studied should be taken into account (Hill, Bloom, Black, & Lipsey, 2008). Effect sizes were calculated using Glass's Δ (Rosenthal, 1994) and represent a change in standard deviation due to being part of the treatment condition. For example, an effect size of .25 indicates that average scores for students in the treatment group were a quarter of a standard deviation higher than students' scores in the control group (see Appendix C for a table of standard deviations used to calculate effect sizes).

Following the summary of the findings, tables are provided that include the means, effect sizes, and p-values for treatment and control groups. Furthermore, Appendix C includes detailed tables of

model results. The Bloom “No-Show”¹⁸ rates also were calculated for each analytic group and were found to be quite low, between 1 percent and 3 percent. As a result, the Bloom adjustment was not used to convert the ITT estimates to treatment-on-treated (TOT) impact estimates.

3.C.1 Analytic Group 1

Analytic Group 1 combines all students who had 1 year of potential exposure to the treatment. This group includes the 6th, 7th, and 8th graders from the Year 1 sample; the cohort of 6th graders from the Year 2 sample; and the additional cohort of 6th graders from the Year 3 sample. The goal of this analysis group was to determine if treatment students who had (potentially) 1 year of READ 180 outperformed students in the control group. All grades were combined to provide the largest possible sample size, thus increasing power.

No significant effects were found for this group as a whole. Moreover, effect sizes also were small (see Table 50).

Table 50. Analytic Group 1 overall—effect of READ 180 after 1 year

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated impact	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	22.97 (21.04)	24.59 (21.74)	22.13	22.18	0.05	0.00	0.539
Vocabulary	613.07 (31.81)	616.48 (30.57)	613.51	616.44	2.93	0.09	0.069
Comprehension	610.03 (28.28)	611.38 (28.47)	609.11	611.88	2.77	0.10	0.076
Language Arts	599.42 (26.75)	599.52 (25.01)	598.87	600.75	1.88	0.07	0.118
Number of students	1022	1149					
Number of schools	9	10					

Subgroup analyses then were performed on this analytic group. Significant treatment effects were found for female students on the Comprehension and Language Arts subtest. Female students with the availability of 1 year of treatment scored higher on the Comprehension and Language Arts subtests of the SAT 10 than female students in the control group. However, their effect sizes of 0.16

¹⁸ “A situation in which some persons randomly assigned to the program do not participate, but follow-up data are available for these persons as well as for all participants and control group members” (Bloom, 1984, p. 226).

and 0.13, respectively, fall below the usual definition of small.¹⁹ That is, while the results have been found to be statistically significant, they may be too small to be of practical significance. Additionally, significant differences were found for male students on the Vocabulary subtest and African-American students on the Language Arts subtest. The effect sizes of these two findings also fall below the 0.20 threshold. Tables 51–55 provide the results of the subgroup analyses for Analytic Group 1.

Table 51. Analytic Group 1 females—effect of READ 180 after 1 year

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	22.88 (21.22)	25.38 (22.65)	21.15	21.23	0.08	0.00	0.425
Vocabulary	611.11 (30.98)	616.15 (31.83)	612.74	615.08	2.34	0.08	0.409
Comprehension	611.41 (26.24)	614.56 (28.80)	611.07	615.23	4.16	0.16	0.021
Language Arts	603.70 (26.30)	605.06 (25.07)	603.21	606.71	3.50	0.13	0.019
Number of students	447	476					
Number of schools	9	10					

Table 52. Analytic Group 1 males—effect of READ 180 after 1 year

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	23.04 (20.93)	24.01 (21.07)	22.76	22.78	0.02	0.00	0.781
Vocabulary	614.64 (32.40)	616.78 (29.62)	613.99	617.51	3.52	0.11	0.029
Comprehension	608.91 (29.80)	609.10 (28.06)	607.82	609.54	1.72	0.06	0.385
Language Arts	596.02 (26.64)	595.62 (24.26)	595.70	596.70	1.00	0.04	0.608
Number of students	575	672					
Number of schools	9	10					

¹⁹ Cohen (1977) described effect sizes of 0.20 as small, 0.50 as medium, and 0.80 as large.

Table 53. Analytic Group 1 African American—effect of READ 180 after 1 year

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	22.72 (20.70)	25.39 (22.66)	22.18	22.28	0.10	0.01	0.164
Vocabulary	613.45 (32.61)	617.92 (30.03)	614.72	617.52	2.80	0.09	0.171
Comprehension	609.48 (27.67)	611.65 (28.59)	608.73	611.54	2.81	0.10	0.275
Language Arts	598.64 (25.78)	601.02 (24.75)	598.13	601.35	3.22	0.12	0.044
Number of students	590	632					
Number of schools	9	10					

Table 54. Analytic Group 1 Hispanic—effect of READ 180 after 1 year

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	23.19 (21.46)	24.21 (20.73)	19.81	19.99	0.18	0.01	0.085
Vocabulary	612.96 (31.01)	614.95 (31.08)	613.85	616.84	2.99	0.10	0.370
Comprehension	611.20 (29.20)	611.41 (28.40)	611.59	615.02	3.43	0.12	0.147
Language Arts	600.54 (28.26)	598.28 (25.42)	601.04	600.35	-0.69	0.02	0.778
Number of students	418	487					
Number of schools	9	10					

Table 55. Analytic Group 1 Special Education—effect of READ 180 after 1 year

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	22.38 (20.39)	23.60 (19.87)	22.94	22.98	0.04	0.00	0.709
Vocabulary	604.60 (31.90)	609.44 (32.96)	604.42	609.15	4.73	0.15	0.094
Comprehension	602.70 (26.98)	602.58 (27.84)	601.23	603.36	2.13	0.08	0.390
Language Arts	590.22 (24.37)	590.38 (22.74)	589.45	591.43	1.98	0.08	0.324
Number of students	405	477					
Number of schools	9	10					

Table 56 summarizes statistically significant findings and effect sizes greater than 0.20 for Analytic Group 1. The READ 180 curriculum increased the average female and African-American students' Language Arts subtest scores by a statistically significant, but not practically significant, margin. Similarly, male students increased their Vocabulary scores and female students their Comprehension scores by a statistically significant, but not practically significant, margin.

Table 56. Analytic Group 1 summary—effect of READ 180 after 1 year

Subgroup	Vocabulary		Comprehension		Language Arts	
	ES	Sig	ES	Sig	ES	Sig
Overall						
Female				*		*
Male		*				
African American						*
Hispanic						
Special education						

3.C.2 Analytic Group 2

Analytic Group 2 is comprised of the 6th grade cohorts from Years 1 and 2 combined with the additional 6th grade cohort from Year 3. This increases the sample size of the 6th grade analysis and provides a better chance of finding an effect for this grade, if it exists. However, no statistically significant treatment effects were found for 6th graders. No overall effect size met the .20 cut off either (see Table 57).

Table 57. Analytic Group 2 overall—effect of READ 180 on 6th graders

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	20.57 (18.42)	20.29 (16.96)	20.09	20.05	-0.04	0.00	0.716
Vocabulary	601.87 (29.10)	605.70 (26.66)	601.80	605.30	3.50	0.12	0.110
Comprehension	599.76 (25.27)	602.44 (26.50)	599.66	603.21	3.55	0.14	0.120
Language Arts	589.96 (23.33)	591.53 (23.82)	589.84	592.54	2.70	0.12	0.086
Number of students	599	704					
Number of schools	9	10					

Subgroup analyses then were performed on this analytic group. Two groups exhibited both statistically and practically significant findings: The READ 180 curriculum increased the average female student’s Comprehension subtest score by an effect size of 0.22 and African-American students’ Language Arts subtest scores by an effect size of 0.20. Hispanic Comprehension subtest scores also were found to be statistically significant but did not meet the 0.20 cutoff. Tables 58 – 62 show the results of the subgroup analyses for Analytic Group 2.

Table 58. Analytic Group 2 female—effect of READ 180 on 6th graders

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	20.26 (19.61)	21.81 (17.85)	19.46	19.47	0.01	0.00	0.912
Vocabulary	599.54 (28.37)	603.58 (25.93)	600.61	602.98	2.37	0.08	0.426
Comprehension	602.22 (24.36)	605.25 (27.38)	601.23	606.55	5.32	0.22	0.026
Language Arts	595.59 (23.64)	597.94 (24.65)	595.08	598.28	3.20	0.14	0.148
Number of students	263	288					
Number of schools	9	10					

Table 59. Analytic Group 2 male—effect of READ 180 on 6th graders

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	20.80 (17.45)	19.61 (16.29)	20.97	20.90	-0.07	0.00	0.462
Vocabulary	603.71 (29.57)	607.23 (27.10)	602.57	607.19	4.62	0.16	0.061
Comprehension	597.81 (25.85)	600.44 (25.75)	597.98	600.95	2.97	0.11	0.290
Language Arts	585.59 (22.16)	587.11 (22.24)	586.01	588.06	2.05	0.09	0.323
Number of students	336	415					
Number of schools	9	10					

Table 60. Analytic Group 2 African American—effect of READ 180 on 6th graders

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	20.67 (19.13)	20.71 (18.25)	19.30	19.30	0.00	0.00	0.990
Vocabulary	601.91 (29.93)	606.65 (26.37)	602.64	607.28	4.64	0.15	0.101
Comprehension	598.84 (24.63)	602.29 (27.00)	598.59	602.99	4.40	0.18	0.227
Language Arts	589.88 (23.17)	593.57 (24.42)	589.36	593.91	4.55	0.20	0.036
Number of students	337	373					
Number of schools	9	10					

Table 61. Analytic Group 2 Hispanic—effect of READ 180 on 6th graders

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	20.16 (17.09)	20.34 (15.38)	17.89	18.08	0.19	0.01	0.223
Vocabulary	601.88 (28.35)	604.66 (26.67)	602.20	603.61	1.41	0.05	0.625
Comprehension	601.11 (26.10)	602.81 (25.96)	600.13	604.89	4.76	0.18	0.014
Language Arts	590.09 (23.96)	589.63 (23.33)	593.34	590.93	-2.41	0.10	0.475
Number of students	252	308					
Number of schools	9	10					

Table 62. Analytic Group 2 Special Education—effect of READ 180 on 6th graders

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	21.18 (18.91)	20.98 (17.13)	22.93	22.87	-0.06	0.00	0.662
Vocabulary	591.55 (27.65)	597.74 (25.68)	591.39	597.90	6.51	0.24	0.071
Comprehension	591.72 (23.12)	594.49 (24.63)	591.49	596.29	4.80	0.21	0.168
Language Arts	579.82 (19.54)	582.56 (20.95)	581.50	584.85	3.35	0.17	0.236
Number of students	238	317					
Number of schools	9	10					

Table 63 summarizes statistically significant findings and effect sizes greater than 0.20 for Analytic Group 2. The READ 180 curriculum increased the average female Comprehension scores and African-American students' Language Arts subtest scores by a statistically significant, and practically significant, margin.

Table 63. Analytic Group 2 summary—effect of READ 180 on 6th graders

Subgroup	Vocabulary		Comprehension		Language Arts	
	ES	Sig	ES	Sig	ES	Sig
Overall						
Female			0.22	*		
Male						
African American					0.20	*
Hispanic				*		
Special education	0.24		0.21			

3.C.3 Analytic Group 3

Analytic Group 3 includes the 7th graders in Year 2 (who were 6th graders in Year 1) and 7th graders in Year 3 (6th graders in Year 2). The students from this analytic group attending treatment schools have had the opportunity to access the READ 180 curriculum for 2 years. While exposure to 1 year of the treatment produced no significant results, it was hypothesized that after 2 years of exposure, treatment effects would be found. Overall effects were found in Comprehension (see Table 64).

Table 64. Analytic Group 3 overall—effect of 2 years of READ 180 on 7th graders

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	21.15 (18.76)	22.71 (18.85)	19.06	19.17	0.11	0.01	0.156
Vocabulary	624.21 (26.74)	626.44 (24.80)	623.02	626.23	3.21	0.12	0.057
Comprehension	616.01 (25.49)	618.34 (22.55)	314.30	319.03	4.73	0.19	0.022
Language Arts	608.18 (26.34)	606.47 (23.51)	606.06	607.91	1.85	0.07	0.325
Number of students	360	436					
Number of schools	9	10					

Along with the overall effects for this analysis group in Comprehension, subgroup differences were found. Significant treatment effects were found for males on the Comprehension subtest of the SAT 10 and for special education students on the Vocabulary and Comprehension subtests. In addition to being statistically significant, all of these findings have practically significant effect sizes. Tables 65 – 69 present the full subgroup.

Table 65. Analytic Group 3 female—effect of 2 years of READ 180 on 7th graders

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	20.28 (19.12)	22.67 (16.75)	17.24	17.45	0.21	0.01	0.006
Vocabulary	623.07 (26.35)	628.29 (23.18)	623.30	626.31	3.01	0.11	0.087
Comprehension	618.96 (25.56)	620.68 (21.90)	619.34	619.22	-0.12	0.00	0.944
Language Arts	612.69 (26.18)	611.85 (24.99)	612.24	611.70	-0.54	0.02	0.799
Number of students	173	188					
Number of schools	9	10					

Table 66. Analytic Group 3 male—effect of 2 years of READ 180 on 7th graders

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	21.93 (18.45)	22.72 (20.43)	20.32	20.37	0.05	0.00	0.648
Vocabulary	625.28 (27.13)	625.05 (25.92)	622.73	625.73	3.00	0.11	0.163
Comprehension	613.25 (25.18)	616.60 (22.91)	610.30	618.15	7.85	0.31	0.008
Language Arts	603.94 (25.85)	602.49 (21.55)	601.99	604.02	2.03	0.08	0.334
Number of students	187	247					
Number of schools	9	10					

Table 67. Analytic Group 3 African American—effect of 2 years of READ 180 on 7th graders

Outcome	Unadjusted Means (SD)		Regression-adjusted Means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	20.50 (18.62)	23.49 (21.12)	19.80	19.86	0.06	0.00	0.551
Vocabulary	623.08 (25.35)	628.01 (24.14)	624.57	628.01	3.44	0.14	0.059
Comprehension	614.24 (26.29)	619.96 (21.13)	614.78	620.18	5.40	0.21	0.070
Language Arts	605.45 (25.33)	605.84 (22.82)	605.65	607.16	1.51	0.06	0.440
Number of students	199	233					
Number of schools	9	10					

Table 68. Analytic Group 3 Hispanic—Effect of 2 years of READ 180 on 7th graders

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	22.00 (19.28)	21.79 (15.95)	19.82	19.80	-0.02	0.00	0.872
Vocabulary	625.69 (28.58)	624.43 (25.52)	626.67	626.50	-0.17	0.01	0.979
Comprehension	618.09 (24.56)	617.03 (22.95)	617.20	619.33	2.13	0.09	0.268
Language Arts	611.63 (27.81)	607.80 (24.31)	607.22	611.81	4.59	0.17	0.160
Number of students	153	195					
Number of schools	9	10					

Table 69. Analytic Group 3 Special Education—effect of 2 years of READ 180 on 7th graders

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	21.95 (17.95)	23.52 (18.41)	20.29	20.37	0.08	0.00	0.419
Vocabulary	615.60 (25.44)	621.24 (24.10)	615.13	620.49	5.36	0.21	0.028
Comprehension	607.63 (22.94)	611.39 (21.69)	603.85	612.55	8.70	0.38	0.001
Language Arts	597.26 (24.99)	598.36 (22.16)	596.79	599.67	2.88	0.12	0.377
Number of students	153	208					
Number of schools	9	10					

Table 70 summarizes statistically significant findings and effect sizes greater than 0.20 for Analytic Group 3. The READ 180 curriculum increased the average male and special education students' Comprehension subtests at a statistically significant level and by effect sizes of 0.20 or more. Similarly, special education students' Vocabulary subtest scores increased at rates that were both statistically and practically significant.

Table 70. Analytic Group 3 summary—effect of 2 years of READ 180 on 7th graders

Subgroup	Vocabulary		Comprehension		Language Arts	
	ES	Sig	ES	Sig	ES	Sig
Overall				*		
Female						
Male			0.31	*		
African American			0.21			
Hispanic						
Special education	0.21	*	0.38	*		

3.C.4 Analytic Group 4

Analytic Group 4 includes the 8th graders in Year 2 (who were 7th graders in year 1). The students from this analysis group attending treatment schools have had the opportunity to access the READ 180 curriculum for 2 years. This is the only analytic group that remained unchanged from Year 2. Thus, full results are not reported here but can be found in the Year 2 report (Hamilton, Grey-Adams, Meisch, & Petta, 2009). No overall effects were apparent (see Table 71). However, significant effects were found for female and Hispanic students. Availability of treatment positively affected Hispanic students' Language Arts scores. The effect size for Hispanic students for Language Arts is 0.47. On the other hand, the program had a negative effect on female students' attendance; however, the effect size for female student attendance is 0.01, which may indicate that this is a spurious finding.

When examining the effect sizes, Hispanic students in the treatment group achieved scores on all three subtests that were 0.20 or greater than control group students. Male students' Language Arts subtest achievement had an effect size of 0.22. Special education students' Comprehension achievement had an effect size of 0.24. Female students' results again had a negative (although not statistically significant) effect, with an effect size of -.22 for Vocabulary.

Table 71. Analytic Group 4 summary—effect of 2 years of READ 180 on 8th graders

Subgroup	Attendance		Vocabulary		Comprehension		Language Arts	
	ES	Sig	ES	Sig	ES	Sig	ES	Sig
Overall								
Female		*	-0.22					
Male							0.22	
African American								
Hispanic			0.23		0.20		0.47	*
Special education					0.24			

3.C.5 Analytic Group 5

Analytic Group 5 combines Analytic Groups 3 and 4. That is, it includes the 7th and 8th graders in Year 2 (who were 6th and 7th graders in Year 1) and the 7th graders in Year 3 (who were 6th graders in Year 2). This group combines all students who had 2 years of potential exposure to the intervention to increase power. Analytic Group 5 showed overall effects in both Vocabulary and Comprehension (see Table 72). However, the effect sizes of these findings were relatively small, less than the .20 threshold.

Table 72. Analytic Group 5 overall—effect of 2 years of READ 180

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	24.51 (22.81)	24.00 (20.08)	21.33	21.40	0.07	0.00	0.341
Vocabulary	630.32 (28.16)	630.91 (26.36)	629.05	631.58	2.53	0.09	0.032
Comprehension	623.81 (27.16)	624.97 (25.27)	621.68	626.27	4.59	0.17	0.009
Language Arts	613.29 (26.28)	611.65 (24.52)	610.50	613.14	2.64	0.10	0.132
Number of students	545	624					
Number of schools	9	10					

In subgroup analysis, significant treatment effects were found in female students’ attendance, male students’ Comprehension scores, Hispanic students’ Language Arts, and special education students’ Vocabulary and Comprehension scores. The female attendance rate was lower for treatment group students than those in the control group; however, with an effect size of 0.01 this is likely a spurious

finding. For the other three subgroups, findings were positive, indicating that treatment groups outperformed their control group counterparts. Tables 73 – 77 present the full subgroup results.

Table 73. Analytic Group 5 female—effect of 2 years of READ 180

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	22.84 (21.61)	24.78 (18.34)	18.42	18.66	0.24	0.01	0.003
Vocabulary	630.43 (27.41)	631.47 (23.18)	630.27	632.23	1.96	0.07	0.013
Comprehension	627.57 (27.46)	627.48 (24.28)	626.72	628.27	1.55	0.06	0.252
Language Arts	618.08 (26.20)	616.39 (25.66)	616.22	617.63	1.41	0.05	0.300
Number of students	269	272					
Number of schools	9	10					

Table 74. Analytic Group 5 male—effect of 2 years of READ 180

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	26.08 (23.82)	23.37 (21.42)	23.55	23.51	-0.04	0.00	0.703
Vocabulary	630.21 (28.93)	630.47 (28.60)	627.86	631.10	3.24	0.11	0.149
Comprehension	620.10 (26.40)	623.04 (25.87)	617.55	624.19	6.64	0.25	0.005
Language Arts	608.56 (25.54)	608.01 (22.99)	605.89	609.29	3.40	0.13	0.138
Number of students	276	351					
Number of schools	9	10					

Table 75. Analytic Group 5 African American—effect of 2 years of READ 180

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	24.10 (22.91)	23.43 (20.41)	22.39	22.36	-0.03	0.00	0.721
Vocabulary	630.10 (27.46)	632.15 (25.91)	631.04	632.33	1.29	0.05	0.362
Comprehension	622.89 (27.92)	626.28 (24.19)	622.52	626.55	4.03	0.14	0.083
Language Arts	611.37 (25.78)	611.09 (23.58)	610.72	612.15	1.43	0.06	0.499
Number of students	304	341					
Number of schools	9	10					

Table 76. Analytic Group 5 Hispanic—effect of 2 years of READ 180

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	25.33 (23.12)	24.83 (19.94)	21.58	21.70	0.12	0.01	0.337
Vocabulary	630.74 (29.33)	629.24 (26.95)	628.14	633.21	5.07	0.17	0.400
Comprehension	624.83 (26.40)	623.84 (25.89)	623.06	625.83	2.77	0.11	0.119
Language Arts	615.79 (27.25)	612.83 (25.69)	611.70	616.42	4.72	0.17	0.028
Number of students	230	272					
Number of schools	9	10					

Table 77. Analytic Group 5 Special Education—effect of 2 years of READ 180

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	24.95 (24.21)	25.18 (21.08)	23.27	23.32	0.05	0.00	0.625
Vocabulary	621.01 (27.30)	624.04 (26.02)	619.48	624.45	4.97	0.18	0.029
Comprehension	614.27 (25.15)	616.38 (24.91)	610.74	617.71	6.97	0.28	0.003
Language Arts	602.16 (25.48)	602.03 (23.29)	600.81	603.54	2.73	0.11	0.305
Number of students	219	280					
Number of schools	9	10					

Table 78 summarizes statistically significant findings and effect sizes greater than 0.20 for Analytic Group 5. The READ 180 curriculum increased the average male and special education students' Comprehension subtests at a statistically significant level and by effect sizes of 0.20 or more.

Table 78. Analytic Group 5 summary—effect of 2 years of READ 180

Subgroup	Vocabulary		Comprehension		Language Arts	
	ES	Sig	ES	Sig	ES	Sig
Overall		*		*		
Female						
Male			0.25	*		
African American						
Hispanic						*
Special education		*	0.28	*		

3.C.6 Analytic Group 6

Analytic Group 6 is comprised of the 8th graders in Year 3 (who were 6th graders in Year 1 and 7th graders in Year 2). The goal of this analysis group was to determine if treatment students who had (potentially) 3 years of READ 180 outperformed students in the control group. Analytic Group 6 showed overall effects in both Comprehension and Language Arts (see Table 79). However, the effect sizes of these findings were relatively small, less than the .20 threshold. Of note, the sample size of this analytic group is relatively small because it contains only one cohort of students. The Year 4 report will provide more information on the effects of 3 years of treatment with the addition of a second cohort.

Table 79. Analytic Group 6 overall—effect of 3 years of READ 180

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	14.72 (12.81)	16.68 (11.08)	15.58	15.58	0.00	0.00	0.990
Vocabulary	641.26 (28.20)	643.21 (23.27)	640.30	642.28	1.98	0.07	0.334
Comprehension	640.95 (25.63)	643.11 (22.20)	639.69	643.19	3.50	0.14	0.055
Language Arts	622.83 (24.14)	625.82 (23.87)	622.18	626.21	4.03	0.17	0.020
Number of students	182	207					
Number of schools	9	10					

Along with the overall effects in Comprehension and Language Arts for this analytic group, several subgroup differences were found. Significant treatment effects were found for female students on the Vocabulary subtest, for male students on the Comprehension and Language Arts subtests, for African-American students on the Language Arts subtest, and for special education students on all three of the SAT 10 subtests. In addition to being statistically significant, all of these findings have practically significant effect sizes, with the exception of the female Vocabulary finding (effect size 0.14). Tables 80 – 84 present the full subgroup results.

Table 80. Analytic Group 6 female—effect of READ 180

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	13.58 (11.25)	17.42 (11.38)	14.16	14.28	0.12	0.01	0.404
Vocabulary	640.40 (25.14)	644.60 (23.07)	639.64	643.03	3.39	0.14	0.043
Comprehension	645.11 (24.03)	643.88 (22.44)	644.71	643.84	-0.87	0.04	0.709
Language Arts	628.76 (22.01)	630.21 (26.88)	627.87	629.23	1.36	0.06	0.629
Number of students	95	94					
Number of schools	9	10					

Table 81. Analytic Group 6 male—effect of READ 180

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	16.16 (14.52)	15.97 (10.80)	16.23	16.15	-0.08	0.01	0.492
Vocabulary	642.19 (31.27)	642.07 (23.47)	640.95	641.53	0.58	0.02	0.871
Comprehension	636.49 (26.66)	642.48 (22.08)	634.91	642.83	7.92	0.30	0.004
Language Arts	616.54 (24.82)	622.25 (20.55)	616.70	622.99	6.29	0.25	0.005
Number of students	87	113					
Number of schools	9	10					

Table 82. Analytic Group 6 African American—effect of READ 180

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	14.06 (13.14)	15.48 (10.75)	16.81	16.69	-0.12	0.01	0.500
Vocabulary	639.31 (30.13)	643.36 (24.37)	638.08	641.54	3.46	0.11	0.158
Comprehension	637.36 (27.05)	642.51 (21.99)	636.74	641.19	4.45	0.16	0.070
Language Arts	320.11 (21.86)	625.04 (24.07)	620.17	625.34	5.17	0.24	0.030
Number of students	101	114					
Number of schools	9	10					

Table 83. Analytic Group 6 Hispanic—effect of READ 180

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	15.38 (12.67)	17.82 (11.39)	18.17	18.07	-0.10	0.01	0.722
Vocabulary	644.03 (25.57)	643.18 (22.13)	645.00	641.42	-3.58	0.14	0.372
Comprehension	645.62 (23.21)	643.91 (22.65)	644.69	645.52	0.83	0.04	0.828
Language Arts	626.30 (26.63)	627.08 (23.62)	623.08	627.99	4.91	0.18	0.359
Number of students	79	91					
Number of schools	9	10					

Table 84. Analytic Group 6 Special Education—effect of READ 180

Outcome	Unadjusted means (SD)		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
Attendance	16.91 (14.45)	18.80 (12.38)	12.72	12.54	-0.18	0.01	0.313
Vocabulary	628.78 (25.77)	637.46 (21.71)	628.31	636.28	7.97	0.31	0.044
Comprehension	632.93 (26.02)	638.62 (22.02)	630.52	640.79	10.27	0.39	0.003
Language Arts	613.08 (22.40)	618.94 (20.78)	613.66	621.11	7.45	0.33	0.013
Number of students	79	89					
Number of schools	9	10					

Table 85 summarizes statistically significant findings and effect sizes greater than 0.20 for Analytic Group 6. The READ 180 curriculum increased the average Comprehension, Vocabulary, and Language Arts subtests for special education students at a statistically significant level and by effect sizes of 0.20 or more. Similarly, male students' Comprehension and Language Arts subtest scores increased at rates that were both statistically and practically significant. African-American students had statistically and practically significant increases in Language Arts.

Table 85. Analytic Group 6 summary—effect of READ 180

Subgroup	Vocabulary		Comprehension		Language Arts	
	ES	Sig	ES	Sig	ES	Sig
Overall				*		*
Female		*				
Male			0.30	*	0.25	*
African American					0.24	*
Hispanic						
Special education	0.31	*	0.39	*	0.33	*

3.C.7 Effects on Students: New Jersey Assessment of Skills and Knowledge

The overall effect of READ 180 on students' reading achievement also was analyzed using the 2009 state reading assessment. Impact analyses were conducted using the NJASK as the outcome variable for Year 3 students with 1 year of intervention (6th grade students), 2 years of intervention (7th grade students), and 3 years of intervention (8th grade students). First, the relationship between NJASK and SAT 10 subtests were examined at each grade level and were found to be correlated at a level between 0.4 and 0.6 (see Tables 86 – 88).

Table 86. Correlations between SAT 10 subscales and NJASK—6th grade scores

Measure	SAT 10 Vocabulary	SAT 10 Comprehension	SAT 10 Language Arts	NJASK Language Arts
SAT 10 Vocabulary	–	0.50**	.44**	.46**
SAT 10 Comprehension		–	.54**	.55**
SAT 10 Reading			–	.52**
NJASK Language Arts				–

* $p < .05$, ** $p < .01$

Table 87. Correlations between SAT 10 subscales and NJASK—7th grade scores

Measure	SAT 10 Vocabulary	SAT 10 Comprehension	SAT 10 Language Arts	NJASK Language Arts
SAT 10 Vocabulary	–	0.47**	.52**	.49**
SAT 10 Comprehension		–	.50**	.53**
SAT 10 Reading			–	.54**
NJASK Language Arts				–

* $p < .05$, ** $p < .01$

Table 88. Correlations between SAT 10 subscales and NJASK—8th grade scores

Measure	SAT 10 Vocabulary	SAT 10 Comprehension	SAT 10 Language Arts	NJASK Language Arts
SAT 10 Vocabulary	–	0.49**	.51**	.51**
SAT 10 Comprehension		–	.56**	.55**
SAT 10 Reading			–	.59**
NJASK Language Arts				–

* $p < .05$, ** $p < .01$

As with the SAT 10 analyses, two aspects of the results were examined for each group. The first was whether any of the results were statistically significant at the .05 level. The second was whether any of the results reached an effect size threshold of .20. Results from the NJASK Language Arts Literacy exam showed no overall effects in any of the groups, either in terms of p-values or effect sizes (see Table 89). These findings may be a result of the smaller sample sizes available when looking at each grade separately and for only a single year.

Table 89. Year 3 grades 6, 7, and 8—effect of READ 180 on NJASK LAL

Grade Level	Unadjusted means		Regression-adjusted means		Estimated effect	Effect size	p-value
	Control	Treatment	Control	Treatment			
6 (1 year of exposure)	172.22	171.61	171.68	172.80	1.12	0.06	0.494
7 (2 years of exposure)	168.82	168.09	166.75	170.26	3.51	0.16	0.057
8 (3 years of exposure)	190.31	187.45	187.73	187.59	-0.14	-0.01	0.920

3.D Summary and Discussion

3.D.1 Overall Findings

Based on the analyses of the data, READ 180 had an overall significant effect in some areas of literacy skill. Overall, students in treatment schools exhibited the same level of achievement as students in control schools after they had 1 year of exposure to READ 180. However, after 2 and 3 years of exposure to READ 180, significant findings were observed for students in the treatment group. Students with 2 years of treatment scored higher than their control counterparts in Comprehension and Vocabulary, while students with 3 years of treatment scored higher than their control counterparts in Comprehension and Language Arts. These findings suggest that students may need 2 or more years of exposure to the program before significant effects are observed.

However, READ 180 did not have an overall significant effect on students' attendance or on the NJASK Language Arts Literacy test.

Figures 6–9 present overall findings for each analytic group by outcome measure, along with the relevant confidence intervals. Due to the large number of tests being run, false discoveries are a concern. Therefore, we subjected all of the findings to a Benjamini-Hochberg multiple testing correction (1995). Comparisons that remained statistically significant using the adjusted p-value are denoted in Table 90.

Figure 6. Summary of overall analysis findings by subtest —Vocabulary

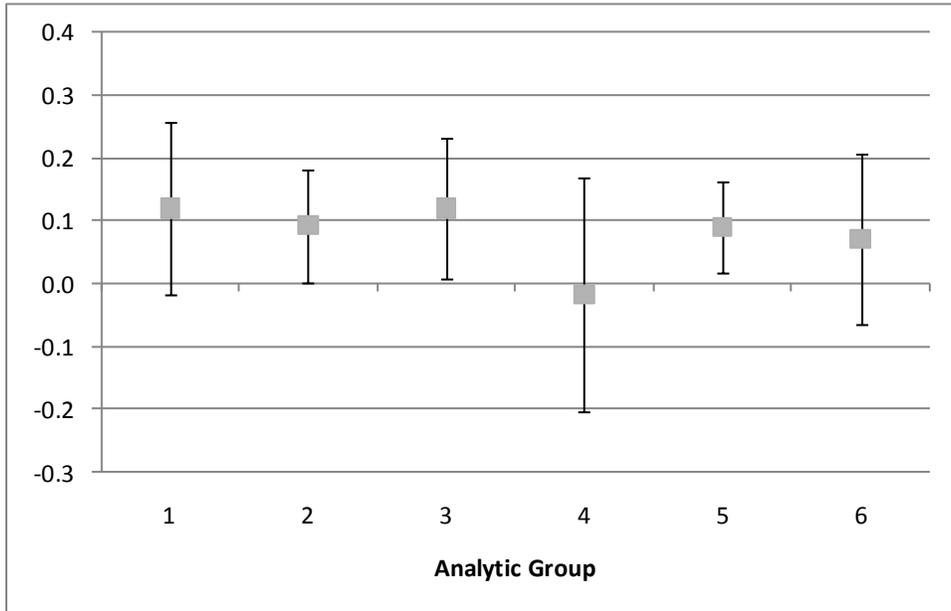


Figure 7. Summary of overall analysis findings by subtest —Comprehension

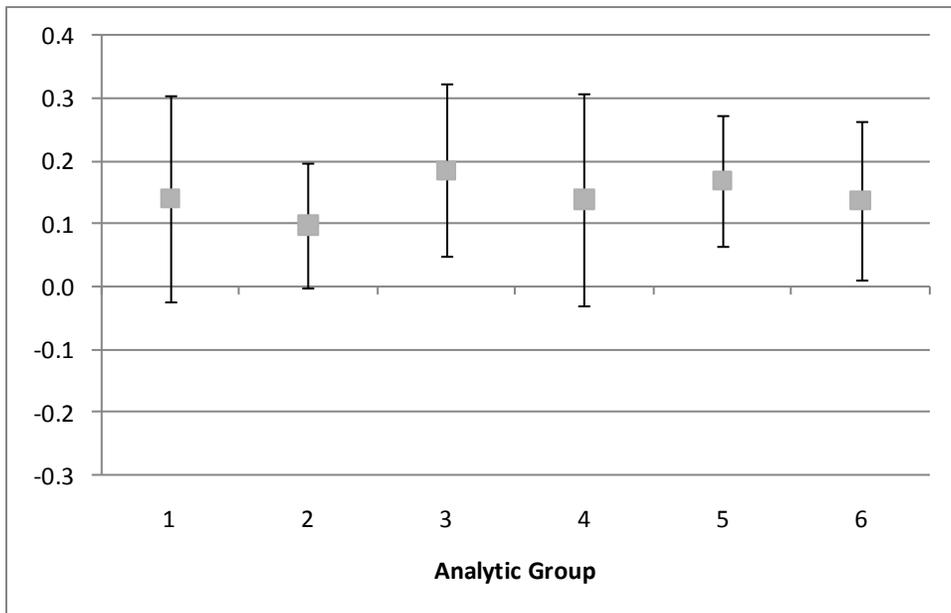


Figure 8. Summary of overall analysis findings by subtest—Language Arts

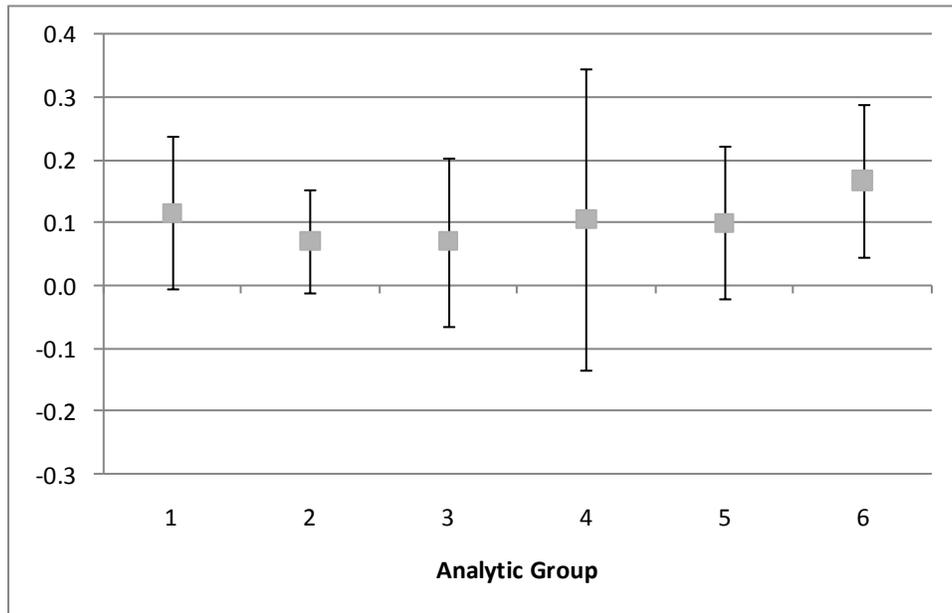
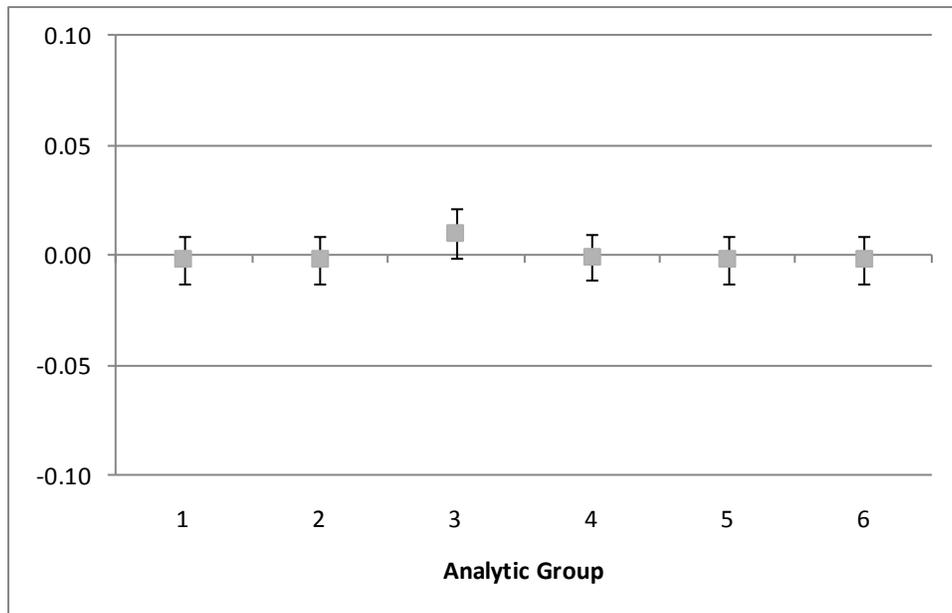


Figure 9. Summary of overall analysis findings by subtest—Attendance



As highlighted in Table 90, students with more than 1 year of exposure to the READ 180 curriculum benefited the most from the program in terms of literacy skills. Current literature provides an empirical foundation that READ 180 is a successful program for adolescent struggling readers (Fleischman, 2006; Scholastic Research and Validation, 2006; Scholastic Research and

Validation, 2008; Slavin, Cheung, Groff, & Lake, 2008), and several studies from various regions of the country have shown that exposure to the program can produce gains in reading abilities within the first year of exposure (Fleischman, 2006; Interactive Inc., 2002; Scholastic Research and Validation, 2008; Slavin, Cheung, Groff, & Lake, 2008; White, Haslam, & Hewes, 2006). The authors' findings do not suggest significant gains in reading abilities after 1 year of exposure; however, the overall findings help strengthen the current literature base that illustrates READ 180 can increase student reading abilities. In particular, this is the only evaluation of the program other than Lang and colleagues (2008) to use a randomized design and results may be similar. The Lang study found effects for moderately at-risk students after 1 year but not for high-risk students. It may be that such students require more exposure, as the evidence in this evaluation indicates. Their study also focused on high school students, which may alter the timing of effects as well. Finally, the possibility that implementation fidelity may affect the timing of when program effects are observed should be evaluated. The interaction of implementation and program exposure may help to explain the differences between the delayed effects observed in this evaluation and more immediate effects found in other high quality research on READ 180.

3.D.2 Subgroup Findings

It is important to also consider the significant effects found using the subgroup analyses. When looking at the subgroups, multiple significant effects were found on student outcomes. The implications of these subgroup analyses will be discussed in this section. In particular, findings that were statistically significant (with a p -value is 0.05 or smaller) will be highlighted. See Table 90 for all subgroup analyses where READ 180 had an effect on student outcomes.

READ 180 appeared to be particularly effective for special education students. Special education students with 2 years of exposure to READ 180 scored significantly higher on the Vocabulary and Comprehension subtests than control students. Special education students with 3 years of treatment scored higher than control students on all three subtests of the SAT 10: Vocabulary, Comprehension, and Language Arts. This treatment effect is both statistically and practically significant, with effect sizes of 0.31, 0.39, and 0.33, respectively. These findings indicate that after three years, reading achievement among students with more complex educational needs is improving as a result of the program. Other research on improving the literacy of students receiving special education has found similar or larger effect sizes (Swanson, 1999). Two meta-analyses of literacy interventions for students with learning disabilities estimated effect sizes ranging from .59 (Swanson, 1999) to 1.18 (Sencibaugh, 2007). However, much of this research has focused on interventions

targeted at younger students, and many of these studies relied on researcher-developed assessments. Both of these factors are frequently associated with higher effect sizes (Sencibaugh, 2007). When Sencibaugh (2007) disaggregated the studies by age and assessment type, the effect sizes were comparable to those found in this evaluation of the READ 180 curriculum.

Another subgroup that appeared to substantially benefit from READ 180 was males. As reported, male students with 2 years of exposure scored significantly higher on the Comprehension subtest; this significant finding also had substantial effect sizes. In addition to these findings, there are statistically and practically significant effects in both Comprehension and Language Arts for males with 3 years of exposure to READ 180. It appears that exposure to 3 years of READ 180 may be especially effective for male students and could contribute to raising their overall levels of reading achievement and closing the gender gap in reading achievement (Klecker, 2006; Planty et al., 2008).

Although male students seemed to be affected by exposure to READ 180 in later years, results for female students tended to occur earlier and fail to be sustained. Female students with 1 year of exposure to READ 180 scored significantly higher than control females on Comprehension and Language Arts. But by 3 years of treatment, female students only showed a statistically significant effect from READ 180 on the Vocabulary subtest. Explanations for the fade-out of effects from the program observed in the female subgroup should be the subject of future research.

The female subgroup also displayed a small number of negative effects. Female students with 2 years of exposure to READ 180 had significantly more absences than female students in the control group. It should be noted that the effect size of these findings is extremely small—just 0.01—making them practically insignificant. The difference represents treatment students being absent roughly 0.25 days more than control students during the course of the school year. In short, these results should not be cause for concern.

African-American students showed positive but irregular effects from READ 180 exposure. Among 6th, 7th, and 8th grade students with 1 year of READ 180 exposure, a statistically significant effect was observed in the Language Arts subtest. Similarly, for 6th grade students with 1 year of exposure, a statistically and practically significant finding was observed for Language Arts with an effect size of 0.20. No effects were apparent for students after 2 years in the program. After 3 years of exposure to READ 180, however, Language Arts scores were higher than for control students at both the statistical and practical significance levels with an effect size of 0.24. These findings concur with extant research showing that African-American students benefit significantly in improving their

reading achievement after exposure to the READ 180 program when compared to students that do not receive the READ 180 program (Scholastic Research and Validation, 2008; 2009).

Table 90. Summary of analysis findings by subgroups

Analysis groups	Outcomes	Overall		Female		Male		African American		Hispanic		Special Education	
		ES	Sig	ES	Sig	ES	Sig	ES	Sig	ES	Sig	ES	Sig
06	1 (1 year of treatment)				✓		✓		✓				
	2 (1 year of treatment)			✓	✓			✓	✓		✓	✓	
	3 (2 years of treatment)		✓		*	✓	✓†	✓				✓	✓
	4 (2 years of treatment)			*	*	✓				✓	✓	✓	
	5 (2 years of treatment)		✓		*	✓	✓†				✓	✓	✓
	6 (3 years of treatment)		✓		✓	✓	✓	✓	✓	✓		✓	✓

✓ Positive at either p<.05 or effect size >.20

* Negative at either p<.05 or effect size >.20

† Results remain significant after Benjamini-Hochberg procedure applied

Among Hispanic students, few effects were observed in the Year 3 analytic groups. In particular, for 6th grade students with 1 year of exposure, Hispanic students' Comprehension achievement was significantly higher than control students'. Seventh and 8th grade Hispanic students in the treatment group who had exposure to 2 years of READ 180 scored higher on the Language Arts subtest than Hispanic students in the control group, also at a statistically significant level. None of the other findings were either statistically or practically significant, including effects after 3 years of exposure to the program. From these findings, it appears that READ 180 has had limited effects on Hispanic student literacy. This finding is consistent with other high quality research on the effect of READ 180 on ELL student reading achievement (Haslam, White, & Klinge, 2006; What Works Clearinghouse, 2009).

The finding that the READ 180 curriculum has a positive effect on the literacy skills of male and special education students is promising because these two subgroups of students tend to have low literacy achievement (Institute for Educational Sciences [IES], 2007) and are most in need of effective literacy interventions. Data from the NAEP assessment indicate that there are literacy achievement gaps based on both race and gender (IES, 2007). In addition, compared to regular education students, 30–40 percent fewer special education students meet the criteria for proficiency on state reading assessments (Center on Education Policy, 2009). The findings from this report contribute to the evidence supporting READ 180 as an effective intervention for strengthening the literacy skills of students from subgroups that are at risk of low literacy achievement.

Implementation of the Whole-School Intervention: Years 1, 2, and 3

4

4.A Implementation Study Design

Professional development is widely used as a method for training teachers in appropriate methods of instruction, and research indicates it may produce changes in teachers' instructional behaviors over time (Landry, Anthony, Swank, & Monseque-Bailey, 2009; Onchwari & Keengwe, 2008; Wallace, 2009). Professional development can be delivered in various formats, including whole-group instruction as well as classroom embedded, individual instruction. Recent literature suggests a combination approach (whole-group with individual coaching) may be particularly effective at influencing teacher practices (Cantrell, Burns, & Calloway, 2009). NPS incorporated both whole-group professional development and classroom-embedded or “in-school” coaching into the design of its whole-school intervention. Two developers, NJCU and NUA, delivered professional development to all teachers in Striving Readers schools. Both NJCU and NUA provided whole-group professional development sessions and in-school, classroom-embedded professional development to reinforce the practice of text-based content literacy strategies.

The extent to which teachers in Striving Readers schools fully participated in the whole-school intervention was measured and summarized in Years 1, 2 and 3 of the evaluation. Fidelity was measured by obtaining records of teachers' participation in NJCU and NUA whole-group trainings, and receipt of in-school coaching visits. NJCU trainings were available to language arts teachers and NUA trainings were available to content teachers. Teachers who taught both language arts and content areas were eligible to participate in both NJCU and NUA trainings.

This chapter includes a description of the developers' roles in implementing the professional development and the curriculum used by each developer. Next, it presents detailed implementation findings for NJCU and NUA teachers in Year 3. Finally, it presents a summary of implementation in Years 1 through 3 along with a description of changes in implementation across the first 3 years of the grant.

4.A.1 Developers' Role in Implementation

The role of the developers was to provide substantive professional development to teachers, coaches, RTCs, and building administrators through the summer institutes; whole-group sessions during the school year; and ongoing in-school coaching visits. Each professional development curriculum is described in detail in the following sections.

The role of NJCU in Year 3 was to provide language arts teachers and literacy coaches with a 4-day²⁰ summer institute, two 1-day²¹ professional development sessions during the school year, and 12 in-school coaching visits per school during the school year. The goals of these visits are to provide assistance to teachers through modeling and discussion of classroom practices such as developing vocabulary, using graphic organizers, establishing routines for silent reading, and improving reading comprehension strategies. The number of visits increased each year (5 visits in Year 1; 10 visits, Year 2; 12 visits, Year 3) to better ensure parity relative to the professional development received by content area teachers.

NUA, the second professional development provider, provides professional development for teachers to support literacy across the content areas. Math, science, and social studies teachers were eligible to receive 3 training sessions during the 2008 summer institute, 2 large-group workshops during the school year, and 15 in-school coaching visits. For a description of and changes to the professional development model over the first 3 years of the grant please see section 1.C.2 and Table 4.

4.A.2 New Jersey City University Professional Development

NJCU's professional development was designed to introduce and reinforce the use of instructional strategies that enhance vocabulary development, fluency, and reading comprehension. The instructional strategies of NJCU's large-group trainings primarily address the development of linguistic acquisition, establishing routines for silent reading, and improving reading comprehension and writing strategies. A binder of materials that included the NPS "Language Arts Literacy Policy and Practices for Elementary, Middle and Secondary Schools," articles, strategies, graphic organizers, and sample activities on literacy strategies was distributed at each NJCU large-group professional

²⁰ Each day is a 4-hour session.

²¹ Each day is a 5.5-hour session.

development event. Daily feedback surveys also were used to ascertain the additional needs of participants; the workshop topics were revised based on the feedback to better address the identified areas of need. Sample workshop topics included the following:

- *How We Read*—Understanding the complexity of the reading process via prior knowledge; grapho-phonemic, semantic, and syntactical strategies; linguistic competence; and vocabulary enrichment.
- *How We Assess and Teach Reading*—Using assessment and diagnosis, miscue analysis, and strategies that promote success in reading, such as literature groups and circles; oral and silent reading best practices; purpose-setting; question-answer relationships; text annotation; note-taking; anticipation guides and post-reading reflection; double-entry journals; SQ3R; flowcharts, webs, and other graphic organizers; K-W-H-L-S; and personal dictionaries and vocabulary keepers.
- *How We Structure Effective Literacy Programs*—Understanding a brief history of literacy instruction, effective whole-class and small-group instruction, targeted instruction, phonemic awareness, guided reading, balanced literacy, and reading and writing across the curriculum.
- *Best Practices in Writing Instruction*—Gaining a historical perspective on writing instruction, the writing process, spelling and vocabulary development, the reading–writing connection, time management and the writing process, and extending the writing process.
- *How to Promote Speaking and Listening Skills*—Extending the reading–writing process to everyday conversation and enhancing the question/answer relationship.

In Year 3, NJCU was contracted to provide a minimum of 12 on-site coaching visits to each school, focusing on the quality of literacy instruction through observation, demonstration, and coaching. These visits provide an important opportunity for teachers to observe modeling sessions based on site-specific instructional needs and participate in debriefing periods afterward. During the coaching visits, NJCU coaches observe language arts literacy teachers and provide modeling and assistance in the literacy areas covered in the large-group trainings. The topics discussed and the practices modeled in the classroom include developing vocabulary, establishing routines for silent reading, identifying and using reading comprehension strategies, making reading–writing connections, responding to text with writing prompts, using graphic organizers, initiating summary writing, identifying major themes in texts, engaging in reading and writing of poetry, and developing habits of revising and editing. A debriefing session follows each lesson to allow coaches to describe what they see and identify important details that foster advanced thinking. In subsequent visits, the NJCU coaches observe teachers as they implement the demonstrated lessons.

4.A.3 National Urban Alliance Professional Development

The purposes of the summer institute and large-group workshops were to train teachers in cognitive strategies that focus on the teaching, learning, and assessment of advanced thinking; to break down school isolation; to build effective school teams; and to create a community of learners. A strong meta-cognitive and affective component was to be part of each workshop, encompassing such instructional issues as ethnic, gender, and racial bias; multiple intelligences; ELLs; special needs students; and learning styles. NUA's professional development strategies intend to accelerate the cognitive skills that support literacy development through strategies that are brain based, reflect the cultural learning patterns of students, and address the district's standards and learning goals.

The primary tools NUA uses to connect the content area and literacy are Thinking Maps,[®] which NUA uses as a professional development foundation to assist students in constructing, creating, and communicating meaning in the content areas by developing vocabulary, comprehension, and associated fluency strategies. NUA professional development has tackled these identified skills by connecting them to theoretical research on how the brain develops and how students from urban backgrounds learn.

NUA also promotes content literacy strategies that increase student achievement, as suggested by recognized adolescent literacy specialists (e.g., Kylene Beers, Janet Allen, Nancy Atwell, Tom Romano, Alfred Tatum, Michael Smith). These specialists agree that students must know the

Thinking Maps Overview

Circle Map: Used for seeking context. This tool enables students to generate relevant information about a topic as represented in the center of the circle. This map often is used for brainstorming, building both **vocabulary and comprehension**.

Bubble Map: Designed for the process of describing attributes. This map is used to identify character traits (language arts), cultural traits (social studies), properties (science), or attributes (mathematics). This map develops **vocabulary and comprehension and, in doing so, builds fluency**.

Double Bubble Map: Used for comparing and contrasting, such as characters in a story, historical figures, or social systems. This map also is used for prioritizing information within a comparison and building **comprehension**.

Tree Map: Enables students to do both inductive and deductive classification and is particularly useful in the sciences. Students learn to create general concepts, main ideas, category headings, supporting ideas and details, merging **literacy and content area skills to make meaning (comprehension)**.

Brace Map: Used for identifying the part-whole, physical relationships of an object. This map, like the **Tree Map**, is a visual imagery strategy endorsed by the Strategic Instruction Model (SIM) of the Center for Research on Learning, also noted in the *Reading Next* report as a strategy to develop **comprehension**.

Flow Map: Used for showing sequences, order, timelines, cycles, actions, steps, and directions. This map also develops comprehension and fluency skills, as relationships between events are clearly seen.

Multiflow Map: Used as a tool for seeking cause/effect relationships. The map expands when showing historical causes and predicting future events and outcomes. This map increases **comprehension**.

Bridge Map: Provides a visual pathway for creating and interpreting analogies. This map positively affects **comprehension, vocabulary, and fluency** as analogical reasoning and metaphorical concepts for deeper content learning are developed.

vocabulary of the content discipline, must access prior knowledge of the content or subject area, and must possess study skills such as note-taking in their predominant learning style to assist their ability to recall information from multiple sources. Students must bring skills in reading expository text rather than narrative text to the foreground in content disciplines, must monitor their understanding of the text and adjust speed and concentration to fit the difficulty of the text, and must possess techniques for organizing the information. In addition, they must have mastered basic skills of decoding, fluency, phonics, and comprehension—the learning to read skills—so they can now read to learn. The primary content literacy skills addressed in the NUA’s professional development are vocabulary, fluency, and comprehension developed through defining in context; describing; comparing and contrasting; classifying; sequencing; cause and effect reasoning; part–whole relationships; and analogies.

Teachers have been introduced to various literacy strategies during the first 3 years of the intervention. These strategies include taxonomies (literacy content), Circle Maps, Bubble and Double Bubble Maps, and Flow Maps (Thinking Maps). Additionally, teachers have been introduced to Brace Maps, Multiflow Maps, and Tree Maps while refining their use of the initial thinking maps. To reiterate NUA’s objective, the goal is to have students reach a point where they can proficiently explore and construct meaning from texts: “When students put language to work for them in content classrooms, it helps them to discover organize, retrieve, and elaborate what they are learning” (Vacca, 2000, p. 13).

To reinforce the implementation of the instructional strategies covered in the large-group trainings, NUA mentors visited each Striving Readers school. Fifteen school-based sessions were to be conducted to demonstrate (and provide coaching relative to) the application of the strategies presented during the large-group workshops. In the demonstration lessons, NUA mentors focused on the three systems that exist in every classroom: the relationship of teacher to student, the relationship of teacher to content, and the delivery system. Preceding each lesson, the mentor briefs the teacher on the lesson’s content, strategies, and rationale for selection of strategies.

The on-site demonstration lessons were to be conducted with half of each school’s Grade 6–8 faculty in attendance during either the morning or afternoon sessions to minimize the need for substitute teachers. NUA’s demonstration lessons are designed to address the heterogeneous make-up of the classroom, to be conducted in front of faculty from the school, to use authentic instructional materials, to be cued to existing courses of study and curricular demands, and to vividly illustrate the significant differences in advanced-level thinking that the cognitive strategies would make possible. A debriefing session follows each lesson to allow observers to describe what they saw

and identify important details that foster advanced thinking. After the demonstration lessons, the NUA design offers opportunities for teachers to practice what was observed. NUA mentors then use the peer coaching model to share with teachers what they observed and make additional comments.

4.B Implementation Results, Year 3

To determine the degree of fidelity to the whole-school intervention, multiple components were evaluated for each Striving Readers school. Subscores were developed to measure the extent to which each component was implemented. These components are the following:

- Whole-group training
 - NJCU
 - NUA
- In-school coaching
 - NJCU
 - NUA

Each of these components is discussed in the following sections. Year 3 results are presented, followed by a summary of implementation in Years 1–3 as well as a discussion of changes in implementation between Years 1 and 3.

4.B.1 Whole-Group Implementation Results, Year 3

4.B.1.1 NJCU Whole-Group Training Participation, Year 3

The first component of NJCU’s professional development for language arts literacy teachers was the whole-group training sessions. In alignment with the long-term goals of the project (in particular the embodiment of literacy-focused pedagogy) language arts literacy teachers attended 4 half-days of

whole group training at the summer institute on August 11–14, 2008. Whole-group training sessions were held during the school year on October 22, 2008, and January 28, 2009.²²

A total of 200 teachers were eligible to receive professional development from NJCU in Year 3. These eligible teachers have been categorized by their level of professional development activities. Table 91 defines the participation levels.

Table 91. Participation categories for NJCU group training in Year 3

Component	Full participation	Moderate participation	Low participation	No participation
Summer institute	4 days	3–5 days	1–2 days	0 days
Oct. & Jan. whole group	Plus 2 days			

Table 92 provides the number and percentage of teachers at each of the levels of participation outlined in Table 91.

Table 92. Number and percentage of NJCU-eligible teachers by level of participation in Year 3

	Number	%
Full participation	12	6.0
Moderate participation	62	31.0
Low participation	54	27.0
No participation	72	36.0
Total	200	100.0

As Table 92 shows, 64 percent of eligible teachers received at least some of the professional development training offered by NJCU. However, more than a third (36 percent) of eligible teachers received none at all. It should be noted 70 percent of teachers were eligible for both NUA and NJCU training. These teachers either taught both language arts and a content area subject (usually social studies), or they taught all subjects (usually special education or bilingual teachers). These teachers could have attended both summer institutes, but they were instructed to attend the NJCU training during the school year.

Despite less than ideal participation, at least some of the variation in teacher participation appears to reside at the school level. At the school level, the percentage of teachers receiving a full or moderate amount of NJCU professional development ranges from 8.3 to 83.3 percent. A score was created to

²² Summer institute trainings were 4 hours each for a total of 16 training hours. Trainings during the school year were 6 hours each for an additional 12 hours of possible training.

summarize the level of participation at the school level for the whole-group trainings provided by NJCU. Depending on the percentage of teachers who had full or moderate participation in the whole group trainings, each school was given an overall score of 1–4. For example, if a school had 80 percent of its teachers reach full and/or moderate participation, it would receive a high score of “4.” Table 93 shows how the score was calculated.

Table 93. Criteria for participation in NJCU group training

Percentage of teachers with high or moderate participation	School participation score
75–100%	4 (High)
50–74%	3 (Moderate to High)
25–49%	2 (Low-to-Moderate)
0–24%	1 (Low)

Table 94 presents the breakdown of participation by school.

Table 94. Number and percentage of teachers in each school by participation category: NJCU, Year 3

School	Total no. of teachers	% of teachers with High participation	% of teachers with Moderate participation	% of teachers with Low + no participation*	School participation score
School 5	6	0	83.3	16.7	High
School 2	6	0	50	50	Moderate-to-High
School 6	8	25	25	50	Moderate-to-High
School 9	10	0	50	50	Moderate-to-High
School 11	23	8.7	43.5	47.8	Moderate-to-High
School 15	14	0	50	50	Moderate-to-High
School 17	18	11.1	38.9	50	Moderate-to-High
School 1	8	0	37.5	62.5	Low-to-Moderate
School 3	5	40	0	60	Low-to-Moderate
School 4	8	0	25	75	Low-to-Moderate
School 7	14	14.3	14.3	71.4	Low-to-Moderate
School 8	9	0	44.4	55.6	Low-to-Moderate
School 12	7	0	28.6	71.4	Low-to-Moderate
School 14	8	0	25	75	Low-to-Moderate
School 10	6	0	16.7	83.3	Low
School 13	18	11.1	11.1	77.8	Low
School 16	9	0	22.2	77.8	Low
School 18	11	0	18.2	81.8	Low
School 19	12	0	8.3	91.7	Low
Total/Average	200	6.0	31.0	63.0	Low-to-Moderate

*Low and no participation have been combined.

More than a third of the schools (7 schools) achieved the highest or second highest level of participating, earning a score of 3 or 4. One school (5.3 percent) achieved the highest level of participation. Six schools (31.6 percent) achieved the second highest level of participation in the group training sessions. Seven schools (36.8 percent) achieved low-to-moderate participation, while 5 (26.3 percent) had the lowest level of participation. Low levels of participation can have serious implications for the likelihood of showing effects of the whole-school intervention. School-specific factors that might have caused such wide variation in attendance include staff transfers and communication about attendance for NJCU-led events.

4.B.1.2 NUA Whole-Group Training Participation, Year 3

The first component of NUA’s professional development for content area teachers was the large-group training sessions. Content teachers attended the 3 half-days of large group training at the summer institute on August 20–22, 2008. Whole-group training sessions were held during the school year on October 22, 2008, and January 28, 2009.²³

A total of 276 teachers were eligible to receive professional development from NUA in Year 3. These eligible teachers have been categorized by their level of participation in the NUA professional development activities. Table 95 defines the participation levels.

Table 95. Participation categories for NUA group training in Year 3

Component	Full	Moderate	Low	No
Summer institute	3 days	2–4 days	1 day	0 days
Oct. & Jan. whole group	Plus 2 days			

Table 96 provides the number and percentage of teachers at each of the levels of participation outlined in Table 95.

Table 96. Number and percentage of NUA-eligible teachers by level of participation in Year 3

	Number	%
Full participation	16	5.8
Moderate participation	103	37.3
Low participation	92	33.3
No participation	65	23.6
Total	276	100.0

²³ Summer institute trainings were 4 hours each for a total of 12 training hours. Trainings during the school year were 6 hours each for an additional 12 hours of possible training.

As Table 96 shows, more than 75 percent of eligible teachers received at least some of the professional development training offered by NUA, while 37 percent received a moderate amount. However, 23 percent of teachers received none at all. It should be noted 50 percent of teachers were eligible for both NUA and NJCU training. These teachers either taught both language arts and a content area subject (usually social studies), or they taught all subjects (usually special education or bilingual teachers). These teachers could have attended both summer institutes, but they were instructed to attend the NJCU training during the school year.

Again, at least some of the variation in participation appears to reside at the school level. As shown in Table 98, across the 19 participating schools, the percentage of teachers receiving a full or moderate amount of NUA professional development ranged from 16 to 75 percent. A score was created for the school level to summarize the extent of participation at the whole-group trainings provided by NUA. Depending on the percentage of teachers who had full or moderate participation in the whole group trainings, each school was given an overall score of 1–4. For example, if a school had 80 percent of its teachers reach full and/or moderate participation, it would receive a high score of “4.” Table 97 shows how the score was calculated.

Table 97. Criteria for participation in NUA group training

Percentage with full or moderate participation	School participation score
75–100%	4 (High)
50–74%	3 (Moderate-to-High)
25–49%	2 (Low-to-Moderate)
0–24%	1 (Low)

Table 98 provides the breakdown of participation by school.

Table 98. Number and percentage of teachers in each school by participation category: NUA, Year 3

School	Total no. of teachers	% of teachers with High participation	% of teachers with Moderate participation	% of teachers with Low + no participation*	School participation score
School 5	8	0	75	25	High
School 1	14	14.3	57.1	28.6	Moderate-to-High
School 6	14	14.3	50	35.7	Moderate-to-High
School 8	11	9.1	54.5	36.4	Moderate-to-High
School 13	22	18.2	36.4	45.5	Moderate-to-High
School 14	11	18.2	45.5	36.3	Moderate-to- High
School 15	17	11.8	52.9	35.3	Moderate-to- High
School 16	10	10	50	40	Moderate-to- High
School 2	11	0	27.3	72.7	Low-to-Moderate
School 3	5	0	40	60	Low-to-Moderate
School 4	13	0	38.5	61.5	Low-to-Moderate
School 9	14	0	28.6	71.4	Low-to-Moderate
School 10	8	0	25	75	Low-to-Moderate
School 11	31	0	35.5	64.5	Low-to-Moderate
School 12	12	0	41.7	58.3	Low-to-Moderate
School 17	25	4	36	60	Low-to-Moderate
School 7	22	4.5	13.6	81.8	Low
School 18	12	0	16.7	83.3	Low
School 19	16	0	18.8	81.2	Low
Total/Average	276	5.5	39.1	55.4	Low-to-Moderate

*Low and no participation have been combined.

One of the 19 schools (5 percent) achieved the highest level of implementation for participation in the group training sessions. Seven schools (37 percent) had moderate-to-high levels of implementation, while another eight (42 percent) had low-to-moderate levels of participation and three (16 percent) of schools had low participation. School-specific factors that might have caused such wide variation in attendance, such as staff transfers and communications about the mandated attendance for NUA-led activities, continue to be addressed and are expected to improve over the subsequent years of the whole-school intervention.

4.B.2 In-School Coaching Implementation Results, Year 3

4.B.2.1 NJCU Participation

The second component of NJCU’s professional development for language arts teachers was in-school coaching visits. The plan was for NJCU coaches to visit all 19 Striving Readers schools, starting in September 2008 and ending in May 2009. Each school was to be visited by a NJCU coach 12 times.²⁴ However, each school was visited by a NJCU coach an average of 10.8 times, ranging from 6 to 12 visits.

A score was calculated for each school based on the number of coaching visits received during Year 3. Table 99 provides the scoring criteria, while Table 100 presents the coaching score.

Table 99. Criteria for in-school coaching visits for NJCU

% of intended visits	School score
75–100%	4 (High)
50–74%	3 (Moderate-to-High)
25–49%	2 (Low-to-Moderate)
0–24%	1 (Low)

²⁴ As contracted through the Striving Readers grant, NJCU was expected to make 5 visits to Striving Readers schools in Year 3; however, Title 1 funds were used to subsidize the number of visits for a total 12 visits per school.

Table 100. Number of coaching visits received by school and resulting coaching score: NJCU, Year 3

School	Number of coaching visits	School coaching score
School 1	12	High
School 2	12	High
School 3	12	High
School 4	12	High
School 5	11	High
School 6	12	High
School 7	9	High
School 8	12	High
School 10	11	High
School 12	10	High
School 13	12	High
School 14	11	High
School 15	12	High
School 16	11	High
School 17	12	High
School 18	12	High
School 19	10	High
School 9	6	Moderate-to-High
School 11	6	Moderate-to-High
Average	10.8	High

As Table 100 shows, fully 89 percent, (17 of the schools) in Year 3 received between 75–100 percent of intended coaching visits laid out by the intervention model. The remaining 2 schools each received 6 visits, half of the intended visits.

It is possible that the coaching visits were able to mitigate the low participation in the group sessions. More than 80 percent of teachers received at least 1 hour of in-school coaching visits in Year 3. On average, teachers got an extra 13.7 hours of instruction from NJCUs’ coaching visits (see Table 101).

There was large variation in the amount of coaching hours at each school (3.55–28.06 hours). This range can be attributed to multiple factors such as different numbers of teachers at each school and the level of need of each individual teacher. No set number of hours was required for each teacher. Some teachers may have needed more in-school coaching hours than others to feel comfortable with the techniques. Therefore, the average hours of coaching received is provided as description but does not necessarily reflect that certain schools had higher or better levels of participation (see Table 101).

Table 101. Average number of NJCU coaching hours received by school in Year 3

School	Total no. of teachers	No. of coaching visits	Avg. hours rec'd	Receipt of coaching visits: Number of teachers with following participation levels*			
				0 hrs	1-15 hrs	16-30 hrs	31+ hrs
School 1	8	12	13.07	1	5	1	1
School 2	6	12	28.06	0	1	3	2
School 3	5	12	20.03	0	3	0	2
School 4	8	12	20.07	3	1	2	2
School 5	6	11	24.33	0	1	3	2
School 6	8	12	21.49	0	4	2	2
School 7	14	9	11.55	3	5	6	0
School 8	9	12	30.58	1	0	4	4
School 9	10	6	7.97	2	6	2	0
School 10	6	11	22.97	0	2	1	3
School 11	23	6	3.55	5	18	0	0
School 12	7	10	18.85	1	2	2	2
School 13	18	12	11.81	2	12	3	1
School 14	8	11	7.98	5	1	2	0
School 15	14	12	8.38	1	10	3	0
School 16	9	11	8.14	5	3	0	1
School 17	18	12	8.21	8	7	2	1
School 18	11	12	18.73	0	2	9	0
School 19	12	10	16.70	2	2	8	0
Total/Average	200	10.8	13.70	39	85	53	23

* It is impossible to determine the expected number of hours per school visit, because the visits were tailored to the specific needs of each school and the type of training provided (such as group sessions or individual demonstration lessons) and sometimes depended on the level of substitute coverage obtained. In addition, NPS did not require or specify the number of visits needed during the school year.

4.B.2.2 NUA Participation

The second component of the whole-school intervention is the in-school visits provided by the NUA mentors. The plan was for NUA to visit all 19 Striving Readers schools in the 3rd year of the grant, starting in September 2008 and ending in June 2009. Each school was to be visited by a NUA mentor for 15 days. Each school received an average of 14.2 visits. The number per school ranged from 12 to 15 visits. A score was calculated for each school based on the number of coaching visits received during Year 2. Table 102 provides the scoring criteria, while Table 103 presents the coaching score.

Table 102. Criteria for in-school coaching visits for NUA

% of intended visits	School score
75–100%	4 (High)
50–74%	3 (Moderate-to-High)
25–49%	2 (Low-to-Moderate)
0–24%	1 (Low)

Table 103. Number of coaching visits received by school and resulting coaching score: NUA, year 3

School	Number of coaching visits	School coaching score
School 1	15	High
School 2	14	High
School 3	13	High
School 4	15	High
School 5	14	High
School 6	14	High
School 7	14	High
School 8	15	High
School 9	15	High
School 10	15	High
School 11	14	High
School 12	14	High
School 13	15	High
School 14	14	High
School 15	13	High
School 16	12	High
School 17	15	High
School 18	14	High
School 19	14	High
Average	14.2	High

All 19 schools received all or nearly all of the coaching visits intended by the intervention. This suggests that NUA delivered the intended amount of coaching promised. It is possible that the coaching visits were able to mitigate the low participation in the group sessions. More than 85 percent of NUA teachers received at least 1 hour of in-school coaching in Year 3 and 45 percent of teachers received 16 hours or more of in-school coaching. Table 104 shows that, on average, teachers got an extra 14.7 hours of instruction from NUA coaching visits. Similar to NJCU, the number of hours individual teachers received was based on individual need. Teachers who received fewer hours of in-school coaching may not have required as intensive coaching as others, thus causing the wide variation in individual hours of coaching received.

Table 104. Average number of NUA coaching hours received by school in Year 3

School	Total no. of teachers	No. of coaching visits	Avg. hours rec'd	Receipt of coaching visits: Number of teachers with following participation levels*			
				0 hrs	1-15 hrs	16-30 hrs	31+ hrs
School 1	14	15	18.27	2	1	10	1
School 2	11	14	21.42	1	3	5	2
School 3	5	13	11.05	0	4	1	0
School 4	13	15	27.19	1	2	5	5
School 5	8	14	19.49	0	2	5	1
School 6	14	14	14.40	0	10	3	1
School 7	22	14	11.75	3	9	10	0
School 8	11	15	26.64	2	0	5	4
School 9	14	15	17.43	1	5	7	1
School 10	8	15	26.01	1	0	4	3
School 11	31	14	2.52	11	20	0	0
School 12	12	14	22.92	1	2	6	3
School 13	22	15	11.62	1	18	3	0
School 14	11	14	13.93	5	1	3	2
School 15	17	13	8.55	1	14	2	0
School 16	10	12	10.05	2	8	0	0
School 17	25	15	10.43	9	8	7	1
School 18	12	14	21.07	0	0	12	0
School 19	16	14	17.09	0	5	11	0
Total/Average	276	14.2	14.70	41	112	99	24

* It is impossible to determine the expected number of hours per school visit, because the visits were tailored to the specific needs of each school and the type of training provided (such as group sessions or individual demonstration lessons) and sometimes depended on the level of substitute coverage obtained. In addition, NPS did not require or specify the number of visits needed during the school year.

4.B.2.3 RTC In-School Coaching Participation

In addition to the in-school support from developers, language arts teachers also received in-school coaching support from the district RTCs. This support is provided on an as-needed basis. Between September 8, 2008, and June 25, 2009, Striving Reader RTCs visited all 19 schools. Each Striving Readers school was visited by an RTC an average of 28 days, ranging from 14 to 42 visits (see Table 105).

Table 105. Number of RTC coaching visits received by school in Year 3

School	Number of RTC coaching visits
School 1	34
School 2	32
School 3	15
School 4	46
School 5	27
School 6	42
School 7	34
School 8	26
School 9	14
School 10	38
School 11	28
School 12	29
School 13	40
School 14	15
School 15	16
School 16	17
School 17	41
School 18	19
School 19	21
Average	28.11

During these visits, RTCs worked with teachers on various whole-school activities, such as offering classroom support, coaching, modeling, offering assistance with student work, and using student data to inform instruction.²⁵ In addition, they assisted in preparing for the NJASK, the GEPA initiative, and standards-based lessons. Often RTCs worked on multiple activities during one visit.

4.B.3 Participation Summary, Year 3

A summary scale for Year 3 was developed to describe how connected professional development inputs are involved in the whole-school intervention model. An overall implementation score and level of implementation were calculated for each school in the study. Table 106 lists the definitions for the school-level implementation, which are based on the implementation scores for group sessions and coaching visits for NJCU. Table 107 provides each school’s score for the multiple

²⁵ RTCs are required to complete an “RTC Log” each time they visit a school. However, in Year 1, the log did not allow the research team to differentiate between visits to support the whole-school intervention and visits to support the targeted intervention. This was corrected in Year 2 and was used in Year 3. The form is provided in Appendix E.

facets of the professional development for the whole-school intervention—the group training sessions and the in-school coaching visits—in the NUA and the NJCU intervention models.

Table 106. Criteria for teacher participation in whole-school professional development activities

Average implementation score	Overall implementation level
4.0	High
3.0–3.9	Moderate-to-High
2.0–2.9	Moderate
0–1.9	Low

Table 107. School-level summary scores for participation in whole-school professional development activities in Year 3

School	Implementation scores by component				Average score	Summary Implementation scores
	NUA		NJCU			
	Whole group training	In-school coaching	Whole-group training	In-school coaching		
School 5	4	4	4	4	4	High
School 1	3	4	2	4	3.25	Moderate-to-High
School 2	2	4	3	4	3.25	Moderate-to-High
School 3	2	4	2	4	3	Moderate-to-High
School 4	2	4	2	4	3	Moderate-to-High
School 6	3	4	3	4	3.5	Moderate-to-High
School 8	3	4	2	4	3.25	Moderate-to-High
School 9	2	4	3	3	3	Moderate-to-High
School 11	2	4	3	3	3	Moderate-to-High
School 12	2	4	2	4	3	Moderate-to-High
School 13	3	4	1	4	3	Moderate-to-High
School 14	3	4	2	4	3.25	Moderate-to-High
School 15	3	4	3	4	3.5	Moderate-to-High
School 16	3	4	1	4	3	Moderate-to-High
School 17	2	4	3	4	3.25	Moderate-to-High
School 7	1	4	2	4	2.75	Moderate
School 10	2	4	1	4	2.75	Moderate
School 18	1	4	1	4	2.5	Moderate
School 19	1	4	1	4	2.5	Moderate
Average	2.3	4	2.2	3.9	3.1	Moderate-to-High

As Table 107 shows, one school achieved full implementation of all four components. An additional 14 schools had moderate-to-high levels of implementation for the whole-school intervention. The remaining four schools all had moderate levels of implementation, taking into account all components of the whole-school professional development.

It should be noted that the relatively high average levels of participation are related more to the high levels of whole-school coaching than to high levels of teacher participation in the group training. Even where teacher participation in the group professional development was poor, the developers (NUA and NJCU) compensated through multiple in-school visits.

4.C Barriers to Whole-School Implementation, Year 3

The most significant difference between the whole-school intervention “as planned” and “as implemented” was the low level of participation of teachers in both NJCU and NUA whole-group trainings. The many teachers who received very little or no training posed a serious problem for implementation of the whole-school intervention. Whole-school intervention effects were not found because of low participation rates of teachers rather than the ineffectiveness of the intervention itself.

Based on focus groups of teachers and feedback from district administrators, several additional barriers to participation in Year 3 have emerged. Returning teachers felt that the Year 3 whole-group trainings were a repeat of trainings they had attended in previous years. Teachers who have been in Striving Readers for multiple years felt they were hearing about the same strategies and not gaining new information. This may have affected their willingness to attend future trainings held by NUA or NJCU. It was suggested that separate trainings be held for returning and new teachers, with new content being provided for returning teachers.

Although teachers from the focus groups generally attended the summer trainings, they did mention some obstacles to attendance, citing inadequate lead time and a lack of adequate notice and clear communication from the district about the trainings. Because of previous commitments, these issues sometimes kept them from attending the trainings. It is important to note that teacher contracts in NPS specify that attendance at summer professional development activities cannot be mandated. Although teachers are paid for their attendance at the summer institutes, attendance is completely voluntary.

Scheduling was another significant obstacle for trainings held during the school year. NPS sets aside days for district-wide professional development during the school year, and all training (not just for the Striving Readers grant) occurs on these days. Therefore, NPS must decide whether the teacher should attend the Striving Readers professional development sessions, the other sessions also

scheduled, or remain in the school for departmental meetings. Moreover, a number of teachers are eligible to attend both the NUA and the NJCU sessions. Therefore, these dual eligible teachers must choose one curriculum partner over the other.

It was hoped that in Year 3 these trainings could be held on non-conflicting days. Unfortunately, it was not logistically possible. NPS has only a certain number of professional development days allotted, and multiple initiatives take place throughout the district that require whole-group trainings. Alternate methods of training teachers (i.e. part- or whole-day pull out) continue to be explored. However, there are benefits and drawbacks to these training methods as well, and district staff are considering their options for Year 4 carefully.

The January whole-group training day was not well attended by teachers. Both district personnel and teachers reported that the weather was particularly bad that day and the inclement weather kept many teachers from attending the training. As the road conditions were unsafe, many teachers did not attend any training.

In addition to low participation by the teachers in the professional development sessions, teacher turnover from Year 2 to Year 3 also was high (see Table 108). Despite direction from NPS asking principals not to reassign Striving Readers teachers, teacher turnover was 29 percent. This turnover rate is high in comparison to the national average, which is typically approximately 15 percent (Ingersoll, 2001; Luekens, Lyter, & Fox, 2004).²⁶ Although a number of teachers left Striving Readers classrooms between Years 2 and 3, a handful of teachers who were originally Year 1 teachers and who left in Year 2 did return in Year 3. Table 109 describes movement of teachers in all 3 years of the Striving Readers grant.

Table 108. Teacher turnover from Year 2 to Year 3

Year 2 teacher	Year 3 teacher	Number of teachers	%
Yes	Yes	257	70.8%
Yes	No	106	29.2%
No	Yes	80	–

²⁶ Teacher turnover is defined as teachers who were in grades 6, 7, or 8 in Striving Readers schools in Year 2 but were not in grades 6, 7, or 8 in Striving Readers schools in Year 3. Teachers who remained in Striving Readers schools but were no longer teaching 6-8 grades were counted in the turnover count, as were teachers who resigned or transferred to a school out of district or out of the 19 Striving Readers schools. This definition of turnover is different than other traditionally used definitions. Because of the parameters of the evaluation, teachers may have remained teaching in a different grade (i.e., 5th grade) or in a non-Striving Readers school within the district but were no longer part of the sample used in this study and, therefore, counted in the evaluation turnover rate.

Table 109. Turnover of teachers among Years 1, 2, and 3

Year 1 teacher	Year 2 teacher	Year 3 teacher	Number of teachers	%
Yes	Yes	Yes	182	54.00%
Yes	Yes	No	56	16.60%
Yes	No	No	91	27.00%
Yes	No	Yes	8	2.40%
No	Yes	Yes	75	–
No	Yes	No	50	–
No	No	Yes	72	–

The issue of principal turnover, a challenge in Year 2, has been somewhat resolved in Year 3. Principal turnover from Year 1 to Year 2 was 42 percent, while turnover in Year 3 was lower—only 16 percent (see Table 110). However, only 9 principals (47 percent) have remained consistent from Year 1 through Year 3 (see Table 111). This could have consequences for implementation. For example, if new principals are not familiar with or buy into the whole-school intervention, support of teacher participation in trainings could be hindered.

Table 110. Principal turnover from Year 2 to Year 3

Year 2 principal	Year 3 principal	Number of principals	%
Yes	Yes	16	84.2%
Yes	No	3	15.8%

Table 111. Turnover of principals among Years 1, 2, and 3

Year 1 principal	Year 2 principal	Year 3 principal	Number of principals	%
Yes	Yes	Yes	9	47.4%
Yes	No	Yes	7	36.8%
Yes	Yes	No	2	10.5%
Yes	No	No	1	5.2%

Although significant steps also have been taken in Year 3 to improve implementation of the whole-school intervention, some serious challenges remain. NPS undertook specific actions to strengthen the implementation of the Striving Readers whole-school intervention in Year 3. Most importantly, NPS hired a project manager in January 2008, after a 7-month search for a qualified candidate. Having the project manager in place at the beginning of Year 3 increased communication with principals and teachers tremendously. The project manager has ensured that all staff are aware of which trainings teachers should be attending. Additionally, new sign-in sheets at whole-group trainings have been used to both track attendance and to make certain that teachers are attending the

correct training. Furthermore, prior to January 2008, it was difficult for NPS to monitor the amount of in-school coaching provided to specific teachers by the curriculum partners. To overcome this challenge, the project manager created the In-School Professional Development Form (see Appendix D) to track the provision of these services. The form continued to be used in Year 3.

4.D Years 1–3 Implementation Summary

4.D.1 Whole-School Training Participation, Years 1–3 Summary

The whole-school intervention consisted of both whole-group professional development and in-school coaching visits. The degree of implementation in Years 1, 2, and 3 was determined by examining the extent of teacher participation in the whole-group training activities provided by NUA and NJCU. In each year, schools were given a series of participation scores based on the percentage of eligible teachers who attended the relevant whole-group training sessions. The scores ranged from 1 to 4. For example, in the NUA column, a school was given a score of “4” if more than three-quarters of all eligible content area teachers attended the NUA whole-group professional development sessions. Similarly, a score of “1” was assigned to a school where less than a quarter of teachers attended. An average score then was computed for each school based on the attendance at NUA and NJCU whole-group sessions. Based on the average of participation scores, each school was assigned a participation rating level: Low, Low-to-Moderate, Moderate-to-High, or High (see Table 112). Table 113 provides a comparison of whole-group participation scores in Years 1, 2, and 3.

Table 112. Criteria for participation in whole-group professional development activities

Average score	School participation rating
3.1–4	High
2.1–3	Moderate-to-High
1.1–2	Low-to-Moderate
0-1	Low

Table 113. Year 1, 2, and 3 ratings by school on teacher participation in whole-group professional development activities

School	Year 1			Year 2			Year 3			Change from Year 1 to Year 2	Change from Year 2 to Year 3	Change from Year 1 to Year 3
	NUA (1-4)	NJCU (1-4)	Avg. Score (1-4)	NUA (1-4)	NJCU (1-4)	Avg. Score (1-4)	NUA (1-4)	NJCU (1-4)	Avg. Score (1-4)			
School 1	3	1	1.5	4	2	3	3	2	2.5	1.5	-0.5	1
School 2	1	1	1	3	1	2	2	3	2.5	1	0.5	1.5
School 3	3	3	3	1	1	1	2	2	2	-2	1	-1
School 4	2	2	2	3	1	2	2	2	2	0	0	0
School 5	3	1	1.5	3	1	2	4	4	4	0.5	2	2.5
School 6	2	3	2.5	2	1	1.5	3	3	3	-1	1.5	0.5
School 7	2	2	2	2	1	1.5	1	2	1.5	-0.5	0	-0.5
School 8	2	3	2.5	3	1	2	3	2	2.5	-0.5	0.5	0
School 9	1	3	1.5	2	2	2	2	3	2.5	0.5	0.5	1
School 10	2	3	2.5	2	1	1.5	2	1	1.5	-1	0	-1
School 11	2	3	2.5	2	1	1.5	2	3	2.5	-1	1	0
School 12	3	3	3	2	2	2	2	2	2	-1	0	-1
School 13	1	2	1.5	1	1	1	3	1	2	-0.5	1	0.5
School 14	2	2	2	3	2	2.5	3	2	2.5	0.5	0	0.5
School 15	2	2	2	1	2	1.5	3	3	3	-0.5	1.5	1
School 16	3	2	2.5	4	1	2.5	3	1	2	0	-0.5	-0.5
School 17	2	1	1.5	1	1	1	2	3	2.5	-0.5	1.5	1
School 18	3	3	3	3	1	2	1	1	1	-1	-1	-2
School 19	1	1	1	1	1	1	1	1	1	0	0	0
Average	2.11	2.16	2.05	2.26	1.26	1.76	2.32	2.16	2.24	-0.29	0.47	0.18

In Year 1, overall teacher participation in NJCU and NUA whole-group trainings was in the Moderate-to-High rating (2.05; see Table 113). No school achieved an average rating in the High category; however 8 schools (42 percent) received average scores for participation in the Moderate-to-High category. Another 8 schools were in the Low-to-Moderate category, while 1 school received a Low rating for overall participation in the whole group trainings. Average participation between NUA and NJCU trainings was not different, with average scores for participation being 2.11 and 2.16 respectively, which is in the Moderate-to-High range.

In Year 2, overall teacher participation in NJCU and NUA whole-group trainings was in the Low-to-Moderate rating category (1.76; see Table 113). No school achieved an average rating in the High category, and only 3 schools (16 percent) received average scores for participation in the Moderate-to-High category. Another 11 schools (58 percent) were in the Low-to-Moderate category, while 4 schools received a Low rating for overall participation in the whole group trainings. Participation scores were higher for NUA (2.26) and were in the Moderate-to-High category. whereas NJCU average participation was in the Low-to-Moderate category (1.26).

In Year 3, overall teacher participation in NJCU and NUA whole-group trainings was in the Moderate-to-High rating category (2.24). One school received an average score for participation in the High category. Nine schools (47 percent) received average scores for participation in the Moderate-to-High category. Another 7 schools (37 percent) were in the Low-to-Moderate category, while 2 schools received a Low rating for overall participation in the whole group trainings. Both participation scores were in the Low-to-Moderate category for NUA (2.32) and NJCU (2.16). See Table 114 for a summary.

Table 114. Summary of year 1, 2, and 3 school participation in whole group professional development activities by average rating

	Year 1		Year 2		Year 3	
	Number of schools	Percentage of schools	Number of schools	Percentage of schools	Number of schools	Percentage of schools
Low	2	11%	4	21%	2	11%
Low to moderate	9	47%	12	63%	7	37%
Moderate to high	8	42%	3	15%	9	47%
High	0	0%	0	0%	1	5%

4.D.1.1 Changes in Participation Among Years 1, 2, and 3

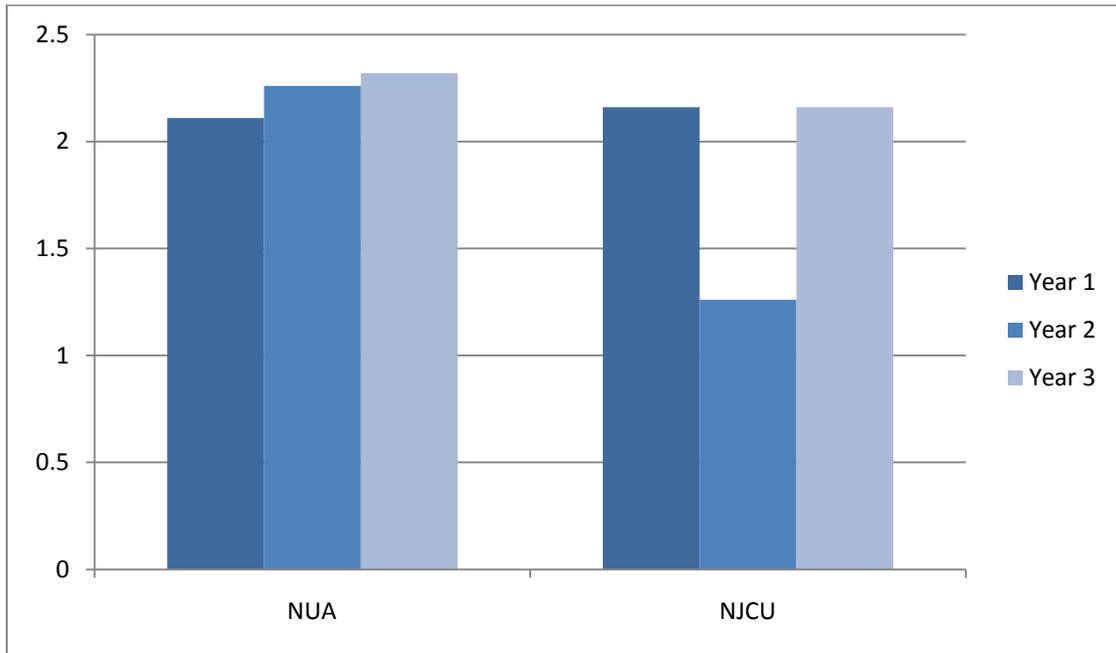
Only 4 schools increased their average participation score between Year 1 and Year 2, although 3 schools scored the same in Year 1 and Year 2. The remaining 12 schools' participation scores decreased from Year 1 to Year 2. Overall, the average rating of participation decreased from 2.26 in Year 1 to 1.76 in Year 2, dropping participation from the Moderate-to-High category to Low-to-Moderate Category.

In Year 3, however, participation rebounded from the Year 2 decrease. Ten schools increased their average participation score between Year 2 and Year 3, although 6 schools scored the same from Year 2 to Year 3. The remaining 3 schools' participation scores decreased from Year 1 to Year 2.

From Year 1 to Year 3, changes in participation in the whole group training also changed. Nine schools (47 percent) increased scores, and the overall average participation scores (0.18) also increased. Four schools had no change in scores between Year 1 and 3, while 6 schools decreased from Year 1 to Year 3.

Overall, NUA whole-group participation scores increased in each of the 3 years of the grant (see Figure 10). In Year 1, the average score was 2.11, but it increased to 2.26 in Year 2 and 2.32 in Year 3. Although this increase did not lead to a change in the participation category (all 3 scores are in the Moderate-to-High range), it is encouraging to see an upward trend in participation in whole-group trainings for NUA teachers.

Figure 10. Changes in participation among Years 1, 2, and 3



4.D.2 In-School Coaching Participation, Years 1–3 Summary

The level of teacher support provided by the curriculum developers is calculated by examining the number of in-school visits made by NUA and NJCU. Based on the average of in-school participation scores, each school was assigned a participation rating level: Low, Low-to-Moderate, Moderate-to-High, or High (see Table 115). Table 116 provides each school with a score for these in-school visits. Each school’s score is based on the number of visits received compared to the number that was anticipated. For example, in the NUA column, a school is given a score of “4” if it received at least three-quarters of the designated coaching visits. An average score then is computed for each school based on the NUA and NJCU components.

Table 115. Criteria for in-school coaching participation

Average score	School participation rating
3.1–4	High
2.1–3	Moderate-to-High
1.1–2	Low-to-Moderate
0–1	Low

In Year 1, overall receipt of in-school coaching was high, with an average score of 3.53. For NUA in-school coaching, all 19 schools received a high score of 4. Scores for NJCU in Year 1 had more variation. Eleven schools received high scores for in-school coaching receipt. Two other schools received Moderate-to-High scores and two others received Low-to-Moderate scores. The remaining four schools received Low scores for in-school coaching receipt.

Overall rating of in-school coaching receipt also was high in Year 2, with an average score of 3.87. Again, for NUA, all 19 schools received a high score of 4. For NJCU, 17 of the 19 schools received a High rating of a 4, while one school received a Low-to-Moderate rating and the other a Low rating.

In Year 3, the overall receipt of in-school coaching continued in the High range with an average score of 3.95. As in Years 2 and 3, all 19 schools received a high score of 4. For NJCU, the two schools that had lower ratings in Year 2 received a High rating in Year 3.

4.D.1.2 Changes in Participation Among Years 1, 2, and 3

No decrease in average participation score was found between Year 1 and Year 2. In fact, there was an increase in average score of .34. A total of 12 schools did not have a change in participation scores between Years 1 and 2 (mainly because participation was already as high as possible) and 7 schools increased their average in-school participation score between Years 1 and 2 of the grant (see Table 116).

From Year 2 to Year 3, a slight increase of .08 occurred in the in-school coaching scores. Fifteen schools remained the same (again mainly because participation was already as high as possible). Two schools decreased their overall in-school coaching receipt scores while two other schools showed increases in in-school coaching receipt.

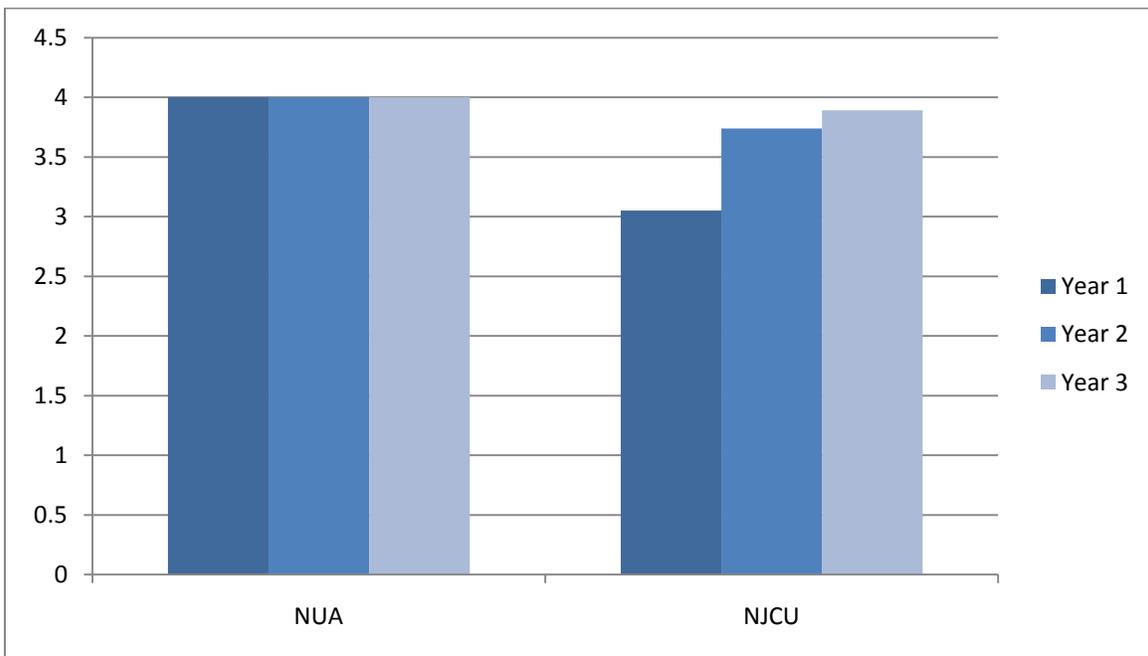
In changes between Year 1 and Year 3, in-school coaching receipts increased overall by .42. Nine schools remained the same (already at the highest level of implementation). Eight other schools increased their scores between Years 1 and 3. Only two schools' scores decreased over the 3 years of the grant.

Table 116. Years 1, 2, and 3 ratings by school on receipt of in-school teacher support

School	Year 1			Year 2			Year 3			Change from Year 1 to Year 2	Change from Year 2 to Year 3	Change from Year 1 to Year 3
	NUA	NJCU	Avg. Score	NUA	NJCU	Avg. Score	NUA	NJCU	Avg. Score			
School 1	4	4	4.0	4	4	4	4	4	4	0	0	0
School 2	4	4	4.0	4	4	4	4	4	4	0	0	0
School 3	4	4	4.0	4	4	4	4	4	4	0	0	0
School 4	4	4	4.0	4	4	4	4	4	4	0	0	0
School 5	4	4	4.0	4	4	4	4	4	4	0	0	0
School 6	4	4	4.0	4	4	4	4	4	4	0	0	0
School 7	4	4	4.0	4	4	4	4	4	4	0	0	0
School 8	4	2	3.0	4	4	4	4	4	4	1	0	1
School 9	4	4	4.0	4	4	4	4	3	3.5	0	-0.5	-0.5
School 10	4	3	3.5	4	4	4	4	4	4	0.5	0	0.5
School 11	4	4	4.0	4	4	4	4	3	3.5	0	-0.5	-0.5
School 12	4	2	3.0	4	4	4	4	4	4	1	0	1
School 13	4	1	2.5	4	4	4	4	4	4	1.5	0	1.5
School 14	4	1	2.5	4	4	4	4	4	4	1.5	0	1.5
School 15	4	4	4.0	4	4	4	4	4	4	0	0	0
School 16	4	3	3.5	4	4	4	4	4	4	0.5	0	0.5
School 17	4	4	4.0	4	4	4	4	4	4	0	0	0
School 18	4	1	2.5	4	1	2.5	4	4	4	0	1.5	1.5
School 19	4	1	2.5	4	2	3	4	4	4	0.5	1	1.5
Average	4.00	3.05	3.53	4.00	3.74	3.87	4.00	3.89	3.95	0.34	0.08	0.42

Note that all 19 schools received overall in-school coaching receipt scores in the High range in all 3 years of the grant (Figure 11). Additionally, implementation scores for NUA were High for all 19 schools for all 3 years of the grant. Each school received the intended number of visits in each of the 3 years. This led to NUA in-school coaching scores being higher than NJCU. However, although NJCU in-school coaching scores were lower than NUA, they were all consistently in the High range and increased over the 3 years of the grant.

Figure 11. Changes in in-school support among Years 1, 2, and 3



Effect of Whole-School Intervention

5

The purpose evaluating the whole-school intervention was to examine how teachers' participation in professional development affected their attitudes about teaching and their literacy practices in the classroom. Teacher surveys were only administered in the first 2 years of the intervention; thus the analysis of teacher attitudes is limited to those 2 years. Additionally, the effect of the whole-school intervention on student achievement also was explored. This chapter is divided into two parts: an evaluation of the whole-school intervention's effect on teachers and the observed results from those analyses, and an evaluation of the intervention's effect on student achievement and the observed results from those analyses.

5.A Whole-School Intervention—Impacts on Teachers

5.A.1 Study Design and Analytic Approach

5.A.1.1 Sampling Plan and Sample Selection

All 19 eligible schools (targeted treatment and control) participated in the whole-school professional development interventions. Eligible content teachers were 6th, 7th, and 8th grade teachers of math, science, and social science identified by their school principal and instructed to attend the NUA trainings. Eligible language arts teachers similarly were identified by their principals and instructed to attend the NJCU training. Special education teachers, teachers in bilingual classrooms, and resource teachers were eligible to attend both trainings. It is important to note that the NUA and NJCU groups are not mutually exclusive. The teachers who teach all subjects were eligible to receive both sets of training. In addition, some teachers taught language arts in addition to social studies and, therefore, could attend either training.

A total of 337 teachers were eligible to participate in the whole-school intervention in Year 1. Of those, 128 were math, science, or social studies teachers only and were eligible for professional development provided by the NUA. Another 76 teachers were language arts teachers only and were eligible for training from NJCU. The remaining 133 teachers either taught both language arts and a

content area subject (usually social studies), or they taught all subjects (usually special education or bilingual teachers) and, therefore, were eligible to receive both NUA and NJCU trainings.

In Year 2, 363 teachers were eligible to receive professional development and also to participate in the teacher surveys as part of the whole-school intervention. Of these, 147 were eligible for professional development provided by the NUA. Another 100 teachers were eligible for training from NJCU, while 116 teachers were eligible for both NUA and NJCU training (see Table 117).

Table 117. Number of teachers eligible to participate in the whole-school intervention

	Number of teachers eligible			
	Total	NUA	NJCU	NUA & NJCU
Year 1	337	128	76	133
Year 2	363	147	100	116

Teacher turnover from Year 1 to Year 2 was an issue within NPS. Of the eligible Year 1 teachers (337), 238 remained in Striving Readers schools teaching grades 6, 7, and/or 8 in Year 2. These 238 teachers, therefore, were eligible to receive 2 years of professional development and take part in all of the available teacher surveys.

5.A.1.2 Sample Size

Surveys were administered at six time points during Years 1 and 2 of the evaluation. Of the 238 teachers eligible to complete all six surveys, only 20 NUA-trained (8.4 percent) and 35 NJCU-trained (14.7 percent) teachers did so. Tables 118 and 119 provide the number of teachers who completed a survey at each of the six time points.

Table 118. Number of surveys completed by NUA-trained teachers

Survey	Number of teachers who completed a survey
Pre-survey	136
Post 1	94
Post 2	123
Post 3	143
Post 4	185
Post 5	198

Table 119. Number of surveys completed by NJCU-trained teachers

Survey	Number of teachers who completed a survey
Pre-survey	169
Post 1	149
Post 2	101
Post 3	114
Post 4	104
Post 5	135

5.A.2 Description of the Counterfactual

All teachers teaching grades 6, 7, and 8 in the 19 Striving Readers schools were eligible to take part in the professional development activities and in the teacher surveys. No comparison group of teachers was available and no teacher survey data was available for other teachers in the district. However, teachers' baseline scores were compared against survey responses at later time points to determine if any change occurred in teachers' beliefs or practices within the classroom.

5.A.3 Data Collection Plan

A series of six teacher surveys were administered during the first 2 years of the Striving Readers grant to gather information about teachers' demographics, attitudes, and practices in the classroom. Surveys were administered at six different time points for both NUA- and NJCU-trained teachers. The pre-survey was administered in the summer of 2006 before any training was received and the following five follow-up (post-) surveys were administered during the 2006–2007 and 2007–2008 school years.

5.A.3.1 Teacher Measures

Teacher surveys were developed by Westat in conjunction with the developers of the whole-school interventions. The surveys had three main purposes:

1. Gather demographic and educational or training background information about the teachers receiving the whole-school professional development.

2. Measure teacher attitudes and perceptions that could be influenced by their involvement in the professional development program.
3. Measure the degree to which teachers implement the teaching strategies learned as part of the professional development program.

Teachers were administered a pre-survey on the first morning of summer training in 2006, before training began. For teachers who missed the first day of training, or who attended the make-up training sessions, the pre-survey was administered separately but still before they received any training. The first post-survey was administered on the last day of the initial training. Post-survey 2 was distributed to teachers individually at their school. Post-survey 3 was administered to content area teachers attending whole group training on January 24, 2007 and mailed to non-attending teachers at their schools. Post-surveys 4 and 5 were administered during Year 2 of the evaluation. They were distributed at whole-group trainings and sent to teachers at their individual schools with the help of the RTCs. Post-survey 4 was administered during October of Year 2, while post-survey 5 was administered to teachers at the final whole-group training of Year 2 in March 2008. Teachers were offered gift cards to Starbucks and Dunkin Donuts as an incentive to complete the survey. Table 120 shows a summary of teacher survey administration dates.

Table 120. Teacher survey administration dates

Teacher surveys	Administration date
NJCU pre-survey	August 14, 2006
NUA pre-survey	August 23, 2006
NJCU pre-survey make-up	September 6, 2006
	September 27, 2006
NUA pre-survey make-up	September 15–30, 2006
NJCU post-survey 1	August 17, 2006
	September 6, 2006
	September 27, 2006
NUA post-survey 1	August 25, 2006
NJCU & NUA post-survey 2	October 25, 2006
NJCU & NUA post-survey 3	January 24, 2007
NJCU & NUA post-survey 4	October, 2007
NJCU & NUA post-survey 5	March, 2008

5.A.4 Summary of Analytic Approach—Teacher Surveys

5.A.4.1 Survey Scale Development—Factor Analyses

Survey instruments were designed separately for the NUA and NJCU treatments, although a number of questions were common to both. Both the NUA and NJCU surveys contained identical questions about teacher self-evaluations of teaching ability and institutional support. Scales were developed to determine teachers' attitudes about effectiveness in the classroom and institutional support, and for content area teachers, a scale was introduced that examined teachers' use of specific literacy strategies in the classroom.

Exploratory factor analyses were conducted to determine if there were separate factors for teacher perception of institutional support and self-evaluation of effectiveness from the administered survey questions. Factor analysis is appropriate when trying to identify latent constructs underlying measured variables (Henson & Roberts, 2006). To ensure that correlations among the items warranted factor analyses, a Kaiser-Myer-Olkin (KMO) Measure of sampling adequacy was calculated for the institutional support survey items and the effectiveness items. The KMO was in the “meritorious” range for both institutional support items (KMO = .817) and the effectiveness items (KMO = .888), suggesting that the strength of the relationships between the variables was enough to continue with a factor analysis. Additionally, Bartlett's test of sphericity was significant for both sets of items, meaning the correlation matrix was not an identity matrix. Overall, these tests show that both sets of items were factorable.

Principal component analysis (PCA) was used as the extraction method for both the institutional support items and the effectiveness items. The analysis of the institutional support items is discussed first, followed by the analysis of the effectiveness items.

From an original pool of 13 items, PCA revealed a three-factor structure for the institutional support items. Twelve items were retained in the institutional support factor. Using Kaiser's K1 rule, three factors were retained because their eigenvalues were greater than 1.0 (see Table 121). This three-factor solution explained 61.34 percent of the variance. The first factor, Institutional Support, explained 36.89 percent of the variance. The second factor, Autonomy, explained 13.48 percent of the variance, while the final factor, Work Environment, explained 10.97 percent of the variance. A full listing of the survey questions comprising each of these three factors (Institutional Support, Autonomy, and Work Environment) is provided in Appendix E.

Table 121. Initial eigenvalues and percentage of variance explained for institutional support

Component	Eigenvalue	% of variance explained
1*	4.06	36.89
2*	1.48	13.48
3*	1.21	10.97
4	0.81	7.33
5	0.77	6.95
6	0.6	5.41
7	0.53	4.81
8	0.52	4.74
9	0.41	3.7
10	0.33	3.02
11	0.3	2.7

* Factors Retained

Three teacher effectiveness factors were identified from the 12 questions that focused on teacher effectiveness attitudes: General Effectiveness, Effectiveness with Challenging Students, and Self-Evaluation of Skills. As with the analyses of institutional support factors, Kaiser's K1 rule was used and three factors were retained because their eigenvalues were greater than 1.0 (see Table 122). This three-factor solution explained 64.44 percent of the variance. The first factor, General Effectiveness, explained 44.49 percent of the variance. The second factor, Effectiveness with Challenging Students, explained 10.55 percent of the variance, while the final factor, Self-Evaluation of Skills, explained 9.39 percent of the variance. A full listing of the survey questions comprising each factor of the self-evaluation survey is provided in Appendix E.

Table 122. Initial eigenvalues and percentage of variance explained for self-evaluation

Component	Eigenvalue	% of variance explained
1*	5.34	44.49
2*	1.27	44.49
3*	1.13	10.55
4	0.77	9.39
5	0.74	6.4
6	0.58	6.2
7	0.55	4.83
8	0.54	4.6
9	0.35	4.48
10	0.3	2.89
11	0.23	2.46
12	0.22	1.88

* Factors retained

5.A.4.2 Model Specifications

Because teachers in all 19 Striving Readers schools were eligible to receive the whole-school intervention, a randomized experimental design for this evaluation was not possible. Therefore, a quasi-experimental pre–post comparison approach was adopted. However, without a control group, it is not possible to create a causal link between the professional development interventions and changes in teachers’ self-reported attitudes or practices. The lack of an appropriate comparison group means that any number of extraneous factors not captured by the surveys, such as personal motivation or unique prior experience, could be responsible for observed changes. Also, because teachers volunteered for whole-group training participation, a dosage analysis comparing those with more professional development to those with less also is inappropriate. Despite these limitations, an associative and correlational analysis is still informative within the context of an exploratory approach to gaining a greater understanding of the whole-school intervention. To this end, descriptive analyses of overall changes from the pre- to post-survey time period are presented, as well as correlations between professional development participation and survey variables.

5.A.4.3 Selection of Analytic Variables

The teacher outcome variables are the three institutional support factors and the three self-evaluation factors from the teacher survey described previously.

Another outcome from the teacher surveys was asked only of NUA-trained teachers. These questions asked content area teachers in mathematics, science, and social studies to describe how often they used specific literacy instruction components or strategies into their class lessons. Responses could range from 0 (“Never”) to 4 (“Almost Daily”). Changes from the pretraining survey to the final post-survey were examined for each literacy practice question. The responses to these questions were used directly and were not part of the factor analysis.

5.A.4.4 Analysis Groups

Two analytic groups were constructed for analyzing responses to the teacher surveys. The first group consisted of teachers with 1 year of potential professional development exposure, meaning that they had taken the pre-survey and either post-survey 1 or post-survey 2. The second group consisted of teachers with 2 years of potential professional development exposure, meaning that

they had taken the pre-survey and either post-survey 4 or post-survey 5. Within these two analytic groups, more disaggregated analyses were conducted on the NJCU- and NUA-trained teachers separately.

5.B Description of Participants—Teachers

A description of the two samples provides context for the teacher attitudes and practices results presented in the following section. The number of teachers taking the pre- and post-survey after 2 years was not substantially different for the NUA and NJCU training sessions. However, a larger number of NUA teachers responded to the post-survey after a 1 year period.

In terms of the racial distribution of respondents, African Americans comprised the largest segment in both cases, followed by Caucasians and Hispanics. The racial distributions were similar among the pre- and both post-survey periods for NUA and NJCU (see Table 123).

Table 123. NJCU and NUA survey demographics—ethnicity/race

Ethnicity/ Race	NJCU			NUA		
	Pre-survey (N = 169)	Post-survey 1 year (N = 155)	Post-survey 2 years (N = 135)	Pre-survey (N = 136)	Post-survey 1 Year (N = 246)	Post-survey 2 Years (N = 198)
Hispanic	23%	25%	21%	18%	21%	17%
Caucasian	36%	37%	37%	44%	44%	42%
African American	47%	49%	46%	51%	49%	49%
Asian	1%	3%	1%	3%	5%	4%
Other	2%	4%	2%	3%	1%	4%

Note: Some columns may sum to more than 100 percent because respondents had the option of selecting more than one response.

The age of the participants was evenly distributed between 25 and 64 years, with a shift toward the slightly older age groups among the pre- and post-survey periods. As expected, very few participants were over age 65 and only a small proportion was under the age of 25 (see Table 124).

Table 124. NJCU and NUA survey demographics—age

Age group	NJCU			NUA		
	Pre-survey (N = 169)	Post-survey 1 year (N = 155)	Post-survey 2 years (N = 135)	Pre-survey (N = 136)	Post-survey 1 year (N = 246)	Post-survey 2 years (N = 198)
< 25	7%	7%	6%	6%	5%	5%
25–34	27%	25%	23%	24%	24%	23%
35–44	23%	21%	18%	28%	28%	26%
45–54	24%	24%	27%	27%	26%	25%
55–64	19%	23%	24%	13%	16%	20%
65+	1%	1%	2%	0%	1%	1%

Note: Some columns may sum to more than 100 percent because of rounding.

5.C Effects on Teachers

The results of the survey analyses are presented in this section, comparing teacher responses from the pre-survey to the 1- and 2-year post-survey periods. As noted previously, there could be many potential casual agents responsible for these changes in addition to the whole-school intervention. The results do not solely represent the effects of the professional development programs but rather provide information about overall changes reported by teachers during the pre- and post-survey time periods. This section first reports changes in the incorporation of literacy practices into the classrooms of content area teachers from the pre-survey to the 1- and 2-year post-surveys, followed by changes in self-evaluation for NJCU- and NUA-trained teachers from the pre-survey to post-survey.

Overall, one significant difference in the literacy practices of content area teachers (NUA only) occurred between the pre- and the 1-year post-survey time period: an increase in having students use Thinking Maps. Between the pre- and the 2-year post-survey time period, two significant differences occurred: an increase in having students use Thinking Maps and a decrease in presenting real world problems relevant to the lesson.

Teachers' attitudes about their own effectiveness or the professional support they receive from the district showed a number of declines between the pre- and the 1- and 2-year post-survey time periods (for both NJCU- and NUA-trained teachers). Between the pre- and the 1-year post-survey time period on self-evaluation, a decrease in feelings of effectiveness with challenging students and in the self-evaluation of skills occurred. Between the pre- and the 2-year post-survey time period, significant decreases occurred in feelings of general effectiveness, feelings of effectiveness with

challenging students, and the self-evaluation of skills. Feelings of being less effective are not always a negative result if they reflect a newfound humility among teachers for the difficulty in connecting with hard-to-reach students. None of the factors for feelings of institutional support showed a significant difference (see Table 125).

Table 125. NJCU and NUA survey results—self-evaluation of effectiveness and institutional support

Self-evaluation factor	1 year change (n = 124)	2 year change (n = 86)
General Effectiveness	-0.09	-0.15 *
Effective with Challenging Students	-0.22 *	-0.22 *
Self-Evaluation of Skills	-0.27 *	-0.30 *
Institutional Support	-0.10	-0.05
Autonomy	-0.02	0.10
Work Environment	-0.11	0.10

* significant at $p < .05$

Correlational analyses were conducted to explore any associations between teachers' dosage of professional development and change in their attitudes and behaviors. Overall, very few significant relationships were found. The only significant relation found was between the amount of professional development over 2 years for NUA-trained teachers and feelings of general effectiveness. NUA-trained teachers who had more professional development over 2 years reported a positive gain in feelings of general effectiveness as a teacher. This dosage correlation is particularly notable given the earlier finding that overall feelings of effectiveness tended to decrease over time. It suggests that at least part of the overall decline may be driven by teachers who attended fewer professional development sessions. See Tables 126–130 for correlations between professional development and teacher attitudes and practices.

Table 126. NUA correlations between professional development and belief changes after 1 year of professional development

	1	2	3	4
1 Year–Days of professional development (1.)	–	0.169	-0.12	0.128
1 Year–Change in General Effectiveness (2.)	–	–	0.093	.446*
1 Year–Change in Self-Evaluation of skills (3.)	–	–	–	-0.118
1 Year–Change in Effectiveness with Challenging Students (4.)				

* $p < .001$

Table 127. NJCU correlations between professional development and belief changes after 1 year of professional development

	1	2	3	4
1 Year—Days of professional development (1.)	–	0.037	0.074	0.061
1 Year—Change in General Effectiveness (2.)	–	–	0.134	.467**
1 Year—Change in Self-Evaluation of skills (3.)	–	–	–	.206*
1 Year—Change in Effectiveness with Challenging Students (4.)				

* $p < .05$, ** $p < .001$

Table 128. NUA correlations between professional development and belief changes after 2 years of professional development

	1	2	3	4
2 Years—Days of professional development (1.)	–	.255*	-0.19	0.189
2 Year—Change in General Effectiveness (2.)	–	–	0.106	.597**
2 Year—Change in Self-Evaluation of skills (3.)	–	–	–	-0.156
2 Year—Change in Effectiveness with Challenging Students (4.)				

* $p < .05$, ** $p < .001$

Table 129. NJCU correlations between professional development and belief changes after 2 years of professional development

	1	2	3	4
2 Years—Days of professional development (1.)	–	0.04	0.055	0.027
2 Year—Change in General Effectiveness (2.)	–	–	.231*	.561**
2 Year—Change in Self-Evaluation of skills (3.)	–	–	–	.431**
2 Year—Change in Effectiveness with Challenging Students (4.)				

* $p < .05$, ** $p < .001$

Table 130. NUA correlations between professional development and literacy changes

	1	2	3
1 Year—Days of professional development (1.)	–	.821**	0.08
2 Years—Days of professional development (2.)	–	–	0.165
Change in Literacy Practices (3.)			

* $p < .05$, ** $p < .001$

5.C.1 Discussion and Conclusions

Given the limitations of the teacher survey data, causal conclusions about the effect of professional development training on changes in teachers' practices and attitudes are not possible. However, exploratory analyses offer a description of changes in practices and attitudes over the first 2 years of the whole-school intervention.

Little change was seen in teachers' self-reported literacy practices. Overall, content area teachers did not have any significant changes in literacy practices, with the exception of their use of Thinking Maps and presenting real world problems. Teachers reported having their students use Thinking Maps more often (after both Years 1 and 2) but reported a decrease in the presentation of real world problems after 2 years. Thinking Maps were stressed heavily in the NUA professional development trainings, and this may be related to an increase in teachers' reported use of this strategy.

Some change occurred in teachers' self-reported attitudes about their effectiveness in the classroom; however, this was not in the expected direction. After 1 year, teachers felt less effective with challenging students and in their evaluation of their own teaching skills. After 2 years, teachers felt less effective overall, felt less effective with challenging students, and felt their own skills had decreased. It is concerning that their attitudes would decline after having opportunities to receive substantial professional development. However, teachers' self-reported attitudes were high to start the project, indicating a ceiling effect may have been an issue. If teachers already felt quite effective at the start of the Striving Readers project, they would not have had much room to grow, and the decline (which in reality was quite small) may be more related to this than any effect of attending professional development. It also is possible that the professional development sessions led some teachers to realizing how much more they needed to learn to be an effective educator.

Finally, correlations between the amount of professional development and teachers' attitudes and practices reveal few associations between dosage of professional development and classroom changes. For both NUA- and NJCU-trained teachers, the amount of professional development in the first year was not related to any changes in their attitudes or practices. Similarly, after 2 years, the amount of professional development was not related to changes in attitudes or practices for NUA- or NJCU-trained teachers, with the exception of feelings of general effectiveness. There was a significant positive correlation between the amount of professional development NUA-trained teachers received over 2 years and changes in their feelings of general effectiveness. NUA-trained teachers who had more professional development over 2 years reported a positive gain in feelings of general effectiveness as a teacher. However, as a correlational analysis, it is quite possible that the association is driven by more motivated teachers than by the intervention. Those teachers who are

motivated enough to attend the most professional development sessions also may be the most motivated to implement what they've learned and take away a positive feeling of their effectiveness in the classroom.

The results of the teacher survey analyses do not show the effects of the whole-school professional development program on attitudes and behaviors that had been hypothesized. There are several plausible explanations for the null findings, including low participation rates in the intervention, the relatively short amount of time that has passed since the program began, or simply the limitations of the evaluation approach itself. The following section analyzes the relationship between the implementation of the whole-school program and student performance on the state's standardized reading exams. Despite the lack of results found among teachers' survey responses, it is possible that students still benefitted from the professional development their teachers received.

5.D Whole-School Intervention—Effects on Students

5.D.1 Study Design and Analytic Approach

5.D.1.1 Sampling Plan and Sample Selection—Students

The analyses of student NJASK scores focus on the connection between the implementation of the professional development intervention and student literacy achievement. To evaluate this relationship, the results of the NJASK LAL test were used as the measure of student learning. The NJASK is the state's standardized exam, typically given near the end of the school year, and results are reported as scale scores. The LAL section of the exam is composed of both literacy/reading and writing sections.

Along with the 19 Striving Readers treatment schools, data were collected for all other schools in the district covering at least one of the middle grades (6, 7, or 8) as a comparison group. All students who took the NJASK in the district were eligible and were included in school level data for the analyses. Treatment and control groups then were compared using a modified short interrupted time series model. This relatively new analytic approach to studying whole-school reforms provides a rigorous method to evaluate a program when only a few years of data are available (Bloom, 2003). Specifically, the short interrupted time series measures the effect of an intervention as the change in performance from the period prior to implementation to the period after.

5.D.1.2 Sample Size

The sample consisted of the 19 Striving Readers schools as well as the remaining schools serving at least one middle grade (6, 7, or 8) in the district to serve as the comparison group. The unit of analysis is at the school level. The total sample size is 43 schools at the 6th grade level, 40 schools at the 7th grade level, and 39 schools at the 8th grade level, leveraged across 3 years.

5.D.2 Description of the Counterfactual

All teachers teaching 6th, 7th, and 8th grades in the 19 Striving Readers schools were eligible to take part in the whole-school professional development activities. As a result, there is no randomized control group to provide a counterfactual. Rather, the authors pursue a quasi-experimental design that attempts to statistically factor out sources of potential bias, as described in section 5.D.4.1.

5.D.3 Data Collection Plan

5.D.3.1 Outcome Measures

The key measure for student outcomes in the whole-school intervention is the Grade 6, 7 and 8 state literacy assessment: the NJASK. More information on these assessments is provided in Section 1.D.2.3. The NJASK is the state’s standardized exam, typically given near the end of the school year. The Language Arts Literacy section of the exam is composed of both literacy/reading and writing sections.

5.D.3.2 Schedule of Data Collection

In the 2005–06, 2006–07, and 2007–08 school years, students took the NJASK near the end of the year, typically in late April and early May. The short interrupted time series model is premised on comparing the performance of schools before and after the intervention was put in place. In this case, the NJASK scores from 2005–06 provide the preprogram performance data. The next 2 years then provide the post-program implementation performance data, which allows a comparison to see if any changes took place after the whole-school intervention was started.

5.D.4 Study Design and Analytic Approach—Student NJASK

5.D.4.1 Model Specifications

School-level data were available for grades 6, 7, and 8, but were only available from the district for school years 2005–06, 2006–07, and 2007–08. Along with the average NJASK LAL scale score for each school building, data were collected on basic demographic characteristics: gender (percent male), ethnicity/race (percent African American and percent Hispanic), special education (percent of students with an IEP), and ELLs (percent designated limited English proficient). A control variable also was included for the nine Striving Readers schools that also were receiving the READ 180 targeted intervention.

The fact that all teachers in the Striving Readers schools received the whole-school treatment presented substantial challenges for this analysis. The treatment and comparison groups are not randomly assigned for the whole-school intervention, introducing serious threats to the internal validity of any evaluation design. In addition, the NJASK test was changed between the 2006–07 and 2007–08 school years, making LAL scores incomparable over time. A lack of student-level data for the comparison schools also reduced the number of available modeling alternatives, such as growth curve modeling. Finally, without more than a single year of data before implementation of the intervention, it is not possible to construct a preprogram trend-line counterfactual.

To deal with these issues, a mixed model regression approach, based on the interrupted time series (ITS) concept, was designed for the NJASK evaluation. The primary goal of this model is to leverage the availability of multiple years of data to factor out some of the validity issues raised by the lack of randomization, just like an ITS design. The model does this by comparing grade cohorts of treatment and comparison groups over time focusing specifically on the year-to-year gains in scale score averages. It is essentially a difference-in-difference model, because it focuses on the difference between treatment and comparison groups at different points in time. We include all of the middle schools in the district as a comparison group for two reasons. First, by including a larger number of schools in the analysis the power of the models to detect significant differences is increased. Second, we assume that the demographic homogeneity of the district makes all of the middle schools relatively similar, such that any external factors that affected test scores, other than the whole school intervention, can be effectively controlled for by the difference-in-difference model approach. The descriptive statistics provided below comparing the demographics of the treatment and control schools suggest that this is a reasonable assumption.

The mixed model approach also allows the inclusion of covariates for observable differences in the demographic composition of schools as well as a random intercept to vary across the groups. Perhaps most importantly, it also takes into account the alteration of the NJASK exam by looking separately at the score changes from baseline to Year 1 and from Year 1 to Year 2. Whatever effect the changes to the test had on test scores is assumed to have affected all schools equally. Thus, the 6th grade score gains between 2005–06 and 2006–07 and the 6th grade score gains between 2006–07 and 2007–08 of treatment and comparison schools are compared, taking into account starting absolute score levels and potential shifts caused by changes to the test itself. Each model is run for the 6th, 7th, and 8th grade cohorts.

The equation is specified as follows:

$$Y_{ij} = \beta_0 + \beta_1(Trt_j) + \beta_2(Yr1_{ij}) + \beta_3(Trt_j * Yr1_{ij}) + \beta_4(Yr2_{ij}) + \beta_5(Trt_j * Yr2_{ij}) + \sum_{m=1}^M \beta_{7+m}(Z_{mj}) + \mu_{0j} + \varepsilon_{ij}$$

- Y_{ij} is the school-mean reading score at time-point i ($i=0,1,2$) of the j^{th} school ($j=1,\dots,45$)
- Trt_j = 1 if treatment school, = 0 if comparison
- $Yr1_{ij}$ = 1 if measurement from Year 1, = 0 else
- $Yr2_{ij}$ = 1 if measurement from Year 2, = 0 else
- Z_{mj} is the m^{th} ($m= 1 \dots M$) school level covariate measured at baseline (including whether a school received the READ 180 targeted treatment)
- μ_{0j} is a random intercept term for the j^{th} school assumed distributed $N(0, \tau^2)$
- ε_{ij} is residual error of the i^{th} measurement from the conditional mean of the j^{th} school assumed distributed $N(0, \sigma^2)$
- $\hat{\beta}_1$ is the estimate of the mean difference between treatment and comparison schools at baseline
- $\hat{\beta}_2$ is the mean difference between Baseline and Year 1 for comparison schools
- $\hat{\beta}_3$ is the difference between treatment and comparison schools in Baseline to Year 1 growth (i.e., treatment effect of one year of treatment).
- $\hat{\beta}_4$ is the mean difference between Baseline and Year 2 for comparison schools
- $\hat{\beta}_5$ is the difference between treatment and comparison schools in Baseline to Year 2 growth (i.e., effect of two years of treatment).

A statistically significant result for β_3 would indicate that the whole-school intervention treatment schools had greater gains on the NJASK LAL test between baseline and Year 1 than the comparison group schools, while a statistically significant result for β_5 would indicate that the whole-school intervention treatment schools had greater gains on the NJASK LAL test between baseline and Year 2 than the comparison group schools.

5.D.4.2 Analysis Groups

Table 131 provides descriptive statistics for the NJASK LAL scale score analyses of the whole-school impact evaluation. As noted previously, the analyses were conducted at the building level, meaning that the statistics presented are school averages for each variable.

Table 131. Analysis group NJASK LAL scores for all years combined

Variable	6th grade cohort		7th grade cohort		8th grade cohort	
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)
LAL scale score	129	184.27 (17.50)	118	192.52 (12.67)	116	194.56 (15.79)

Given the concerns about potential incomparability between the treatment and comparison groups, descriptive statistics have been disaggregated by those groups. Table 132 shows few differences between the two groups with the exception of the percentage of special education students, where the comparison group has a larger proportion on average. The treatment group also has a larger proportion of Hispanic students in each of the grade cohorts.

Table 132. Treatment and comparison group demographic averages for all years combined

Variable	6th grade cohort		7th grade cohort		8th grade cohort	
	Treatment	Comparison	Treatment	Comparison	Treatment	Comparison
LAL scale score	185.2	183.5	192.8	192.3	195.4	193.7
Male	50.9%	53.4%	51.3%	53.9%	51.5%	55.3%
African American	54.7%	53.7%	67.0%	65.1%	67.8%	61.8%
Hispanic	42.6%	36.1%	30.9%	23.1%	29.7%	25.3%
Special education	22.4%	27.9%	21.0%	27.2%	22.6%	24.3%
Limited English proficiency	5.8%	6.8%	6.5%	7.5%	5.7%	7.9%
(N)	(57)	(72)	(56)	(62)	(56)	(60)

5.D.3.4 Missing Data

Because the whole-school NJASK LAL analyses rely on building-level information, issues with missing data were minor. There was one missing time point for a treatment school at the 7th and 8th grade levels and a missing time point for one comparison school at the 7th grade level.

5.E Description of Students

In the cohort of schools with a 6th grade, average student demographics showed schools were relatively evenly divided by gender and had large minority populations (54 percent African American and 39 percent Hispanic). These schools also had large special needs populations (25 percent) and moderate populations of students with limited English proficiency (6 percent). Average student demographics were similar for the individual cohorts of schools with 7th and 8th grades: they were relatively evenly divided by gender and had large minority populations (66 percent African American and 27 percent Hispanic for 7th grade schools; 65 percent African American and 26 Hispanic for 8th grade schools), had large special needs populations (24 percent for both 7th and 8th grade schools), and moderate populations of students with limited English proficiency (7 percent for both 7th and 8th grade schools).

5.F Effects on Students

Results of the NJASK LAL analyses revealed no statistically significant effects of the whole-school intervention on student achievement on the New Jersey reading assessment at either Year 1 or Year 2 (see Table 133). Comparisons of both 1-year and 2-year gains between treatment and comparison schools for 6th, 7th, and 8th grade cohorts showed a small advantage for the treatment group in each case, but none of those estimates were statistically different from zero. The significant findings for the uniform changes variable in Year 2 indicate that all schools experienced a significant shift in their performance, most likely resulting from the changes made to the state’s language arts exam. Although the myriad limitations discussed earlier indicated the difficulty of finding an appropriate comparison group, the fact that the models did not indicate a baseline difference between the two groups does bolster confidence in the models to a small degree. Full regression results are available in Appendix F.

Table 133. NJASK results by analysis group

Effect	6th grade cohort		7th grade cohort		8th grade cohort	
	Estimate	Pr > t	Estimate	Pr > t	Estimate	Pr > t
Baseline differences between groups	0.56	0.916	2.20	0.573	2.48	0.557
Uniform Changes, Year 1	-4.29	0.129	2.58	0.166	0.43	0.804
<i>Treatment Effect in Year 1</i>	5.38	0.188	0.34	0.894	3.52	0.157
Uniform Changes, Year 2	-9.14	0.005	-6.99	0.000	8.08	0.000
<i>Treatment Effect in Year 2</i>	0.30	0.942	2.02	0.428	2.18	0.380

5.F.1 Discussion and Conclusions

Results from the analysis of whole-school NJASK outcomes indicate no difference in performance levels between the Striving Readers schools and those in the comparison group on the Language Arts section of the state’s standardized exam at either Year 1 or Year 2. The lack of a connection between the professional development program and teacher-reported attitudes and practices at the earlier stages of the program’s logic model is consistent with the lack of evidence for a relationship between the whole-school intervention and student outcomes at the latter stages of the logic model. As a distal outcome, changing test scores rests on first changing the practices and behaviors of many district employees. As such, it simply may be that more time is needed for such changes to take hold before they have an impact on student achievement.

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Appendix A

READ 180 Pacing Guide

READ 180 MASTER LAYOUT

T-1

6 th Grade [Year 1]	7 th Grade [Year 2]	8 th Grade [Year 3]
rBook Workshop 1 The New Americans Skill: Main Idea & Detail Writing Focus: Expository Writing	rBook Workshop 7 Alien Invaders Skill: Cause and Effect Writing Focus: Persuasive Writing	rBook Flex Workshop 4 Crime Lab Science Skill: Summarize Writing Focus: Expository Summary
rBook Workshop 2 When Disaster Strikes Skill: Sequence of Events Writing Focus: Narrative Writing	rBook Workshop 8 Turning Points Skill: Compare and Contrast Writing Focus: Descriptive Writing	rBook Flex Workshop 5 Wired for Trouble Skill: Fact and Opinion Writing Focus: Persuasive Writing
rBook Workshop 3 Identity Crisis Skill: Story Elements Writing Focus: Literature Response	rBook Workshop 9 The Streets of Harlem Skill: Make Inferences Writing Focus: Personal Narrative	rBook Flex Workshop 6 Facing the Elements Skill: Story Elements Writing Focus: Literature Review
rBook Workshop 4 Stolen Childhoods Skill: Summarize Writing Focus: Expository Summary	rBook Flex Workshop 1 Eyes on the Graduation Prize Skill: Main Idea & Detail Writing Focus: Expository Writing	rBook Flex Workshop 7 Creatures of the Deep Skill: Cause and Effect Writing Focus: Descriptive Writing
rBook Workshop 5 Under Pressure Skill: Problem and Solution Writing Focus: Persuasive Writing	rBook Flex Workshop 2 Tsunami: Disaster of a Century Skill: Sequence of Events Writing Focus: Narrative Writing	rBook Flex Workshop 8 Going Global Skill: Compare and Contrast Writing Focus: Persuasive Writing
rBook Workshop 6 Poe: The Master of Horror Skill: Story Elements Writing Focus: Literature Review	rBook Flex Workshop 3 Long Journey to Justice Skill: Story Elements Writing Focus: Literature Response	rBook Flex Workshop 9 The Art of the Memoir Skill: Make Inferences Writing Focus: Personal Narrative

Appendix B

Targeted Intervention –

Student Outcomes: HLM Output and Student Outcomes: Detailed Tables

Program: HLM 6 Hierarchical Linear and Nonlinear Modeling
 Authors: Stephen Raudenbush, Tony Bryk, & Richard Congdon
 Publisher: Scientific Software International, Inc. (c) 2000
 techsupport@ssicentral.com
 www.ssicentral.com

Module: HLM2.EXE (6.06.2857.2)
 Date: 15 October 2009, Thursday
 Time: 10:28: 2

SPECIFICATIONS FOR THIS HLM2 RUN

Problem Title: Vocab_Overall

The data source for this run = \\rk8\vol1805\STRIVING\Data
 Analysis\HLM\Data\MDM\Year 3\Treat1_6Grade\Overall.mdm
 The command file for this run = \\Rk8\vol1805\STRIVING\Data
 Analysis\HLM\Models\Year 3\Treat1_6Grade\Vocab_Overall.hlm
 Output file name = \\rk8\vol1805\STRIVING\Data
 Analysis\HLM\Models\Year 3\Treat1_6Grade\Vocab_Overall.txt
 The maximum number of level-1 units = 1303
 The maximum number of level-2 units = 19
 The maximum number of iterations = 100
 Method of estimation: restricted maximum likelihood

Weighting Specification

	Weighting?	Weight Variable Name	Normalized?
Level 1	no		
Level 2	no		
Precision	no		

The outcome variable is VOCAB

The model specified for the fixed effects was:

Level-1 Coefficients	Level-2 Predictors
INTRCPT1, B0	INTRCPT2, G00
	TREAT, G01
\$	NELGIBLE, G02
\$	YRIMPROV, G03
\$	NELL, G04
\$	NSPECED, G05
\$	MEANSCHO, G06
#% GENDER slope, B1	INTRCPT2, G10

```
##          LEP slope, B2          INTRCPT2, G20
##          SPECED slope, B3        INTRCPT2, G30
##          SUPPREAD slope, B4      INTRCPT2, G40
##          RDUMBLK slope, B5      INTRCPT2, G50
##          GDUMY2_6 slope, B6     INTRCPT2, G60
##          GDUMY3_6 slope, B7     INTRCPT2, G70
##          SCORENJS slope, B8     INTRCPT2, G80
```

'#' - The residual parameter variance for this level-1 coefficient has been set to zero.

'%' - This level-1 predictor has been centered around its grand mean.

'\$' - This level-2 predictor has been centered around its grand mean.

The model specified for the covariance components was:

Sigma squared (constant across level-2 units)

Tau dimensions
INTRCPT1

Summary of the model specified (in equation format)

Level-1 Model

$$Y = B_0 + B_1(\text{GENDER}) + B_2(\text{LEP}) + B_3(\text{SPECED}) + B_4(\text{SUPPREAD}) + B_5(\text{RDUMBLK}) + B_6(\text{GDUMY2_6}) + B_7(\text{GDUMY3_6}) + B_8(\text{SCORENJS}) + R$$

Level-2 Model

$$B_0 = G_{00} + G_{01}(\text{TREAT}) + G_{02}(\text{NELGIBLE}) + G_{03}(\text{YRIMPROV}) + G_{04}(\text{NELL}) + G_{05}(\text{NSPECED}) + G_{06}(\text{MEANSCHO}) + U_0$$
$$B_1 = G_{10}$$
$$B_2 = G_{20}$$
$$B_3 = G_{30}$$
$$B_4 = G_{40}$$
$$B_5 = G_{50}$$
$$B_6 = G_{60}$$
$$B_7 = G_{70}$$
$$B_8 = G_{80}$$

Run-time deletion has reduced the number of level-1 records to 1161

Iterations stopped due to small change in likelihood function

The outcome variable is VOCAB

Final estimation of fixed effects
(with robust standard errors)

Fixed Effect	Coefficient	Standard Error	T-ratio	Approx. d.f.	P-value
For INTRCPT1, B0					
INTRCPT2, G00	601.795381	1.478916	406.917	12	0.000
TREAT, G01	3.499793	2.032205	1.722	12	0.110
NELGIBLE, G02	-0.012921	0.047519	-0.272	12	0.790
YRIMPROV, G03	0.075351	0.504747	0.149	12	0.884
NELL, G04	0.122058	0.070251	1.737	12	0.107
NSPECED, G05	-0.051433	0.076625	-0.671	12	0.515
MEANSCHO, G06	0.008834	0.351498	0.025	12	0.981
For GENDER slope, B1					
INTRCPT2, G10	6.008895	1.510202	3.979	1146	0.000
For LEP slope, B2					
INTRCPT2, G20	-0.772474	1.665979	-0.464	1146	0.643
For SPECED slope, B3					
INTRCPT2, G30	-10.117448	1.999519	-5.060	1146	0.000
For SUPPREAD slope, B4					
INTRCPT2, G40	2.310077	2.012604	1.148	1146	0.252
For RDUMBLK slope, B5					
INTRCPT2, G50	1.774990	1.475771	1.203	1146	0.230
For GDUMY2_6 slope, B6					
INTRCPT2, G60	-0.737105	1.632070	-0.452	1146	0.651
For GDUMY3_6 slope, B7					
INTRCPT2, G70	3.721958	1.546829	2.406	1146	0.016
For SCORENJS slope, B8					
INTRCPT2, G80	7.922402	1.071372	7.395	1146	0.000

The robust standard errors are appropriate for datasets having a moderate to large number of level 2 units. These data do not meet this criterion.

Final estimation of variance components:

Random Effect		Standard Deviation	Variance Component	df	Chi-square	P-value
INTRCPT1, level-1,	U0	3.45922	11.96619	12	23.41696	0.024
	R	25.50537	650.52387			

Statistics for current covariance components model

Deviance = 10795.747982
Number of estimated parameters = 2

B1. Analysis Group 1 – Vocabulary -- 1 year of treatment for 6th, 7th, & 8th graders combined

Table 1. Vocabulary – Overall

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	613.51	1.17	12	522.14	0.000
Treatment (S)	2.93	1.47	12	1.99	0.069
Num eligible students (S)	-0.02	0.04	12	-0.48	0.639
Yr in need of improvement (S)	-0.16	0.59	12	-0.27	0.794
Num. ELL students (S)	-0.01	0.04	12	-0.18	0.863
Num. Special Education students (S)	0.05	0.07	12	0.75	0.471
Mean score of schools (S)	0.65	0.27	12	2.46	0.030
GENDER	3.86	1.31	1864	2.95	0.004
English Language Learners	-2.11	1.43	1864	-1.48	0.139
Special Education student	-8.28	1.60	1864	-5.19	0.000
Rec'd supplemental reading instruct	1.03	2.01	1864	0.51	0.607
African American	0.36	1.43	1864	0.25	0.800
Grade 7 Year 1	23.23	1.82	1864	12.74	0.000
Grade 8 Year 1	35.88	2.37	1864	15.12	0.000
Grade 6 Year 2	-0.75	1.67	1864	-0.45	0.655
Grade 6 Year 3	4.64	1.53	1864	3.03	0.003
Baseline NJ score	6.91	0.85	1864	8.18	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	9.88		0.015	
Level-1 Residual	Student	671.65			

Table 2. Vocabulary – Female

Fixed Effects						
Effect	Standard					
	Estimate	Error	DF	t Value	Pr > t 	
Intercept	612.74	2.01	12	304.62	0.000	
Treatment (S)	2.34	2.73	12	0.86	0.409	
Num eligible students (S)	-0.02	0.08	12	-0.23	0.825	
Yr in need of improvement (S)	-0.21	1.09	12	-0.19	0.854	
Num. ELL students (S)	-0.06	0.09	12	-0.64	0.537	
Num. Special Education students (S)	0.08	0.14	12	0.59	0.566	
Mean score of schools (S)	0.60	0.41	12	1.49	0.163	
English Language Learners	-1.73	2.47	799	-0.70	0.482	
Special Education student	-8.22	2.10	799	-3.92	0.000	
Rec'd supplemental reading instruct	-0.35	2.68	799	-0.13	0.898	
African American	0.70	1.60	799	0.44	0.660	
Grade 7 Year 1	24.96	2.55	799	9.80	0.000	
Grade 8 Year 1	40.06	4.95	799	8.10	0.000	
Grade 6 Year 2	-0.14	1.85	799	-0.07	0.941	
Grade 6 Year 3	4.29	2.67	799	1.61	0.108	
Baseline NJ score	6.70	1.32	799	5.07	0.000	
Random Effects						
Variance Components	Estimate		ICC			
Level-2 Random Intercept	School	30.86	0.044			
Level-1 Residual	Student	665.58				

Table 3. Vocabulary – Male

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	613.99	1.19	12	514.41	0.000
Treatment (S)	3.52	1.42	12	2.48	0.029
Num eligible students (S)	-0.02	0.03	12	-0.67	0.517
Yr in need of improvement (S)	-0.43	0.61	12	-0.72	0.488
Num. ELL students (S)	0.08	0.05	12	1.62	0.131
Num. Special Education students (S)	0.00	0.05	12	-0.07	0.950
Mean score of schools (S)	0.19	0.32	12	0.60	0.562
English Language Learners	-1.92	2.68	1050	-0.72	0.474
Special Education student	-8.71	2.19	1050	-3.97	0.000
Rec'd supplemental reading instruct	2.27	2.50	1050	0.91	0.364
African American	0.40	2.20	1050	0.18	0.858
Grade 7 Year 1	21.43	2.38	1050	9.00	0.000
Grade 8 Year 1	32.29	2.17	1050	14.91	0.000
Grade 6 Year 2	-1.87	2.21	1050	-0.85	0.398
Grade 6 Year 3	3.93	2.55	1050	1.54	0.123
Baseline NJ score	7.14	0.88	1050	8.12	0.000
Random Effects					
Variance Components	Estimate		ICC		
Level-2 Random Intercept	School	5.37	0.008		
Level-1 Residual	Student	675.08			

Table 4. Vocabulary - African American

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	614.72	1.51	12	407.04	0.000
Treatment (S)	2.80	1.92	12	1.46	0.171
Num eligible students (S)	0.00	0.06	12	-0.06	0.956
Yr in need of improvement (S)	0.22	0.78	12	0.28	0.785
Num. ELL students (S)	0.04	0.08	12	0.44	0.665
Num. Special Education students (S)	-0.03	0.10	12	-0.29	0.773
Mean score of schools (S)	0.34	0.31	12	1.10	0.293
GENDER	3.31	1.55	1036	2.13	0.033
English Language Learners	-1.14	5.88	1036	-0.19	0.847
Special Education student	-9.28	2.03	1036	-4.56	0.000
Rec'd supplemental reading instruct	-1.43	2.32	1036	-0.62	0.537
Grade 7 Year 1	23.61	2.80	1036	8.44	0.000
Grade 8 Year 1	34.66	2.65	1036	13.06	0.000
Grade 6 Year 2	-0.88	2.32	1036	-0.38	0.705
Grade 6 Year 3	3.79	2.21	1036	1.71	0.086
Baseline NJ score	7.57	1.22	1036	6.19	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	14.67		0.021	
Level-1 Residual	Student	668.11			

Table 5. Vocabulary – Hispanic

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	613.85	2.76	10	222.56	0.000
Treatment (S)	2.99	3.18	10	0.94	0.370
Num eligible students (S)	0.03	0.07	10	0.39	0.708
Yr in need of improvement (S)	-0.81	0.80	10	-1.02	0.334
Num. ELL students (S)	-0.14	0.12	10	-1.19	0.262
Num. Special Education students (S)	-0.01	0.11	10	-0.07	0.943
Mean score of schools (S)	-0.10	0.41	10	-0.25	0.806
GENDER	4.55	2.29	774	1.99	0.046
English Language Learners	-0.54	1.25	774	-0.43	0.665
Special Education student	-6.91	1.84	774	-3.76	0.000
Rec'd supplemental reading instruct	4.65	3.36	774	1.38	0.167
Grade 7 Year 1	22.52	2.25	774	10.01	0.000
Grade 8 Year 1	37.41	3.81	774	9.83	0.000
Grade 6 Year 2	-1.65	2.32	774	-0.71	0.477
Grade 6 Year 3	3.11	2.72	774	1.14	0.254
Baseline NJ score	6.66	0.90	774	7.39	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	47.42		0.066	
Level-1 Residual	Student	673.61			

Table 6. Vocabulary - Special Education

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	604.42	2.04	12	295.82	0.000
Treatment (S)	4.73	2.60	12	1.82	0.094
Num eligible students (S)	0.02	0.07	12	0.38	0.712
Yr in need of improvement (S)	-0.48	0.89	12	-0.54	0.597
Num. ELL students (S)	-0.01	0.07	12	-0.15	0.887
Num. Special Education students (S)	-0.07	0.10	12	-0.69	0.506
Mean score of schools (S)	-0.01	0.29	12	-0.03	0.981
GENDER	3.43	2.17	740	1.58	0.114
English Language Learners	-6.05	2.93	740	-2.07	0.039
Rec'd supplemental reading instruct	0.27	3.05	740	0.09	0.931
African American	-2.94	1.73	740	-1.70	0.088
Grade 7 Year 1	29.59	3.25	740	9.10	0.000
Grade 8 Year 1	41.29	4.86	740	8.49	0.000
Grade 6 Year 2	1.15	2.83	740	0.41	0.684
Grade 6 Year 3	8.06	3.59	740	2.25	0.025
Baseline NJ score	6.62	0.92	740	7.18	0.000
Random Effects					
Variance Components	Estimate		ICC		
Level-2 Random Intercept	School	23.00	0.032		
Level-1 Residual	Student	701.90			

B2. Analysis Group 2 – Vocabulary -- 1 year of treatment for 6th graders

Table 7. Vocabulary – Overall

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	601.80	1.48	12	406.92	0.000
Treatment (S)	3.50	2.03	12	1.72	0.110
Num eligible students (S)	-0.01	0.05	12	-0.27	0.790
Yr in need of improvement (S)	0.08	0.50	12	0.15	0.884
Num. ELL students (S)	0.12	0.07	12	1.74	0.107
Num. Special Education students (S)	-0.05	0.08	12	-0.67	0.515
Mean score of schools (S)	0.01	0.35	12	0.03	0.981
GENDER	6.01	1.51	1146	3.98	0.000
English Language Learners	-0.77	1.67	1146	-0.46	0.643
Special Education student	-10.12	2.00	1146	-5.06	0.000
Rec'd supplemental reading instruct	2.31	2.01	1146	1.15	0.252
African American	1.77	1.48	1146	1.20	0.230
Grade 6 Year 2	-0.74	1.63	1146	-0.45	0.651
Grade 6 Year 3	3.72	1.55	1146	2.41	0.016
Baseline NJ score	7.92	1.07	1146	7.40	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	11.97		0.018	
Level-1 Residual	Student	650.52			

Table 8. Vocabulary – Female

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	600.61	2.13	12	282.29	0.000	
Treatment (S)	2.37	2.88	12	0.82	0.426	
Num eligible students (S)	0.03	0.05	12	0.64	0.533	
Yr in need of improvement (S)	-0.12	1.02	12	-0.12	0.910	
Num. ELL students (S)	0.01	0.10	12	0.15	0.884	
Num. Special Education students (S)	-0.10	0.11	12	-0.94	0.364	
Mean score of schools (S)	-0.51	0.38	12	-1.34	0.206	
English Language Learners	1.18	2.34	478	0.50	0.615	
Special Education student	-12.68	2.61	478	-4.85	0.000	
Rec'd supplemental reading instruct	1.93	3.40	478	0.57	0.571	
African American	2.43	2.64	478	0.92	0.357	
Grade 6 Year 2	1.02	1.54	478	0.67	0.506	
Grade 6 Year 3	2.74	2.49	478	1.10	0.273	
Baseline NJ score	8.58	1.56	478	5.50	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	30.24	0.048			
Level-1 Residual	Student	604.47				

Table 9. Vocabulary – Male

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	602.57	1.47	12	410.70	0.000	
Treatment (S)	4.62	2.24	12	2.06	0.061	
Num eligible students (S)	-0.04	0.05	12	-0.67	0.515	
Yr in need of improvement (S)	-0.12	0.46	12	-0.27	0.792	
Num. ELL students (S)	0.20	0.08	12	2.47	0.030	
Num. Special Education students (S)	-0.03	0.07	12	-0.40	0.693	
Mean score of schools (S)	0.08	0.26	12	0.29	0.774	
English Language Learners	-2.08	3.37	655	-0.62	0.538	
Special Education student	-8.65	2.61	655	-3.31	0.001	
Rec'd supplemental reading instruct	2.38	3.50	655	0.68	0.495	
African American	1.32	2.36	655	0.56	0.577	
Grade 6 Year 2	-2.17	2.24	655	-0.97	0.332	
Grade 6 Year 3	3.96	2.78	655	1.42	0.155	
Baseline NJ score	7.73	1.17	655	6.61	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	2.64	0.004			
Level-1 Residual	Student	686.03				

Table 10. Vocabulary – African American

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	602.64	1.83	12	328.80	0.000
Treatment (S)	4.64	2.61	12	1.77	0.101
Num eligible students (S)	-0.02	0.07	12	-0.30	0.770
Yr in need of improvement (S)	0.63	0.73	12	0.85	0.410
Num. ELL students (S)	0.21	0.10	12	2.13	0.055
Num. Special Education students (S)	-0.05	0.09	12	-0.55	0.590
Mean score of schools (S)	-0.34	0.34	12	-1.00	0.338
GENDER	5.29	1.65	613	3.21	0.002
English Language Learners	1.93	7.16	613	0.27	0.788
Special Education student	-12.54	2.75	613	-4.56	0.000
Rec'd supplemental reading instruct	-2.71	2.64	613	-1.03	0.306
Grade 6 Year 2	-1.05	2.24	613	-0.47	0.639
Grade 6 Year 3	3.04	2.16	613	1.41	0.160
Baseline NJ score	7.86	1.55	613	5.08	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	21.20	0.032		
Level-1 Residual	Student	642.47			

Table 11. Vocabulary – Hispanic

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	602.20	2.30	10	261.88	0.000
Treatment (S)	1.41	2.80	10	0.50	0.625
Num eligible students (S)	-0.03	0.05	10	-0.51	0.623
Yr in need of improvement (S)	0.13	0.56	10	0.23	0.820
Num. ELL students (S)	0.01	0.09	10	0.15	0.886
Num. Special Education students (S)	0.03	0.11	10	0.25	0.810
Mean score of schools (S)	0.23	0.17	10	1.33	0.212
GENDER	6.66	2.66	489	2.51	0.013
English Language Learners	1.19	1.47	489	0.81	0.417
Special Education student	-7.58	2.43	489	-3.12	0.002
Rec'd supplemental reading instruct	9.01	2.78	489	3.24	0.002
Grade 6 Year 2	-2.09	2.36	489	-0.89	0.377
Grade 6 Year 3	0.83	2.90	489	0.29	0.774
Baseline NJ score	8.43	1.05	489	8.03	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	19.12	0.029		
Level-1 Residual	Student	647.35			

Table 12. Vocabulary – Special Education

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	591.39	2.49	12	237.66	0.000
Treatment (S)	6.51	3.29	12	1.98	0.071
Num eligible students (S)	-0.12	0.08	12	-1.53	0.151
Yr in need of improvement (S)	0.20	0.90	12	0.23	0.825
Num. ELL students (S)	0.21	0.09	12	2.19	0.049
Num. Special Education students (S)	0.13	0.13	12	0.98	0.346
Mean score of schools (S)	-0.28	0.24	12	-1.14	0.276
GENDER	8.39	1.30	469	6.43	0.000
English Language Learners	-5.98	3.47	469	-1.72	0.086
Rec'd supplemental reading instruct	2.72	4.99	469	0.55	0.586
African American	-3.01	1.78	469	-1.70	0.090
Grade 6 Year 2	1.18	2.59	469	0.46	0.649
Grade 6 Year 3	4.27	4.02	469	1.06	0.289
Baseline NJ score	7.49	1.32	469	5.66	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	42.16		0.067	
Level-1 Residual	Student	590.94			

B3. Analysis Group 3 – Vocabulary -- 2 years of treatment for 7th graders

Table 13. Vocabulary – Overall

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	623.02	1.27	12	488.68	0.000
Treatment (S)	3.21	1.53	12	2.10	0.057
Num eligible students (S)	0.03	0.04	12	0.71	0.491
Yr in need of improvement (S)	-0.75	0.56	12	-1.32	0.211
Num. ELL students (S)	0.13	0.07	12	1.82	0.094
Num. Special Education students (S)	-0.12	0.10	12	-1.17	0.264
Mean score of schools (S)	-0.14	0.14	12	-0.99	0.341
GENDER	0.91	1.32	721	0.69	0.489
English Language Learners	-2.27	3.91	721	-0.58	0.561
Special Education student	-5.72	1.80	721	-3.17	0.002
Rec'd supplemental reading instruct	2.15	2.62	721	0.82	0.412
African American	2.59	1.91	721	1.36	0.175
Grade 7 Year 3	2.24	2.89	721	0.77	0.439
Baseline NJ score	10.59	1.00	721	10.60	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	3.92		0.007	
Level-1 Residual	Student	525.24			

Table 14. Vocabulary – Female

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	623.30	1.35	12	462.88	0.000	
Treatment (S)	3.01	1.62	12	1.86	0.087	
Num eligible students (S)	0.05	0.05	12	1.16	0.271	
Yr in need of improvement (S)	-0.08	0.72	12	-0.11	0.918	
Num. ELL students (S)	0.13	0.10	12	1.31	0.214	
Num. Special Education students (S)	-0.15	0.11	12	-1.36	0.198	
Mean score of schools (S)	0.23	0.12	12	1.99	0.070	
English Language Learners	5.48	4.51	321	1.22	0.225	
Special Education student	-3.45	2.91	321	-1.18	0.238	
Rec'd supplemental reading instruct	1.35	4.28	321	0.32	0.751	
African American	3.23	2.87	321	1.13	0.262	
Grade 7 Year 3	1.37	3.70	321	0.37	0.712	
Baseline NJ score	10.13	1.36	321	7.47	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	1.37	0.003			
Level-1 Residual	Student	506.73				

Table 15. Vocabulary – Male

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	622.73	1.33	12	469.77	0.000	
Treatment (S)	3.00	2.02	12	1.49	0.163	
Num eligible students (S)	0.02	0.05	12	0.37	0.719	
Yr in need of improvement (S)	-1.19	0.67	12	-1.79	0.099	
Num. ELL students (S)	0.10	0.07	12	1.32	0.213	
Num. Special Education students (S)	-0.09	0.11	12	-0.77	0.458	
Mean score of schools (S)	-0.18	0.17	12	-1.07	0.305	
English Language Learners	-11.26	5.79	388	-1.94	0.052	
Special Education student	-7.82	2.91	388	-2.69	0.008	
Rec'd supplemental reading instruct	3.74	2.67	388	1.40	0.162	
African American	2.95	3.53	388	0.83	0.405	
Grade 7 Year 3	2.85	3.79	388	0.75	0.453	
Baseline NJ score	10.74	1.36	388	7.89	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	1.80	0.003			
Level-1 Residual	Student	544.91				

Table 16. Vocabulary - African American

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	624.57	1.51	12	412.92	0.000
Treatment (S)	3.44	1.65	12	2.09	0.059
Num eligible students (S)	0.06	0.04	12	1.39	0.190
Yr in need of improvement (S)	-0.02	0.68	12	-0.03	0.980
Num. ELL students (S)	0.19	0.09	12	2.09	0.059
Num. Special Education students (S)	-0.18	0.09	12	-1.93	0.078
Mean score of schools (S)	0.17	0.09	12	1.92	0.078
GENDER	2.27	1.37	379	1.65	0.099
English Language Learners	-8.37	4.46	379	-1.88	0.061
Special Education student	-3.54	2.71	379	-1.31	0.193
Rec'd supplemental reading instruct	0.32	3.41	379	0.10	0.925
Grade 7 Year 3	5.65	3.01	379	1.88	0.061
Baseline NJ score	9.90	1.19	379	8.35	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	0.37	0.001		
Level-1 Residual	Student	476.80			

Table 17. Vocabulary - Hispanic

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	626.67	3.67	8	170.67	0.000
Treatment (S)	-0.17	6.00	8	-0.03	0.979
Num eligible students (S)	-0.03	0.13	8	-0.21	0.839
Yr in need of improvement (S)	0.30	1.21	8	0.25	0.808
Num. ELL students (S)	-0.07	0.24	8	-0.30	0.774
Num. Special Education students (S)	0.03	0.28	8	0.11	0.916
Mean score of schools (S)	-0.31	0.19	8	-1.61	0.146
GENDER	-1.75	2.98	314	-0.59	0.556
English Language Learners	-1.15	4.38	314	-0.26	0.794
Special Education student	-7.49	3.17	314	-2.37	0.019
Rec'd supplemental reading instruct	4.46	3.26	314	1.37	0.173
Grade 7 Year 3	-1.47	3.66	314	-0.40	0.688
Baseline NJ score	10.98	2.33	314	4.72	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	61.33	0.096		
Level-1 Residual	Student	575.56			

Table 18. Vocabulary - Special Education

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	615.13	1.53	12	402.36	0.000
Treatment (S)	5.36	2.15	12	2.50	0.028
Num eligible students (S)	0.03	0.06	12	0.46	0.657
Yr in need of improvement (S)	-1.37	0.64	12	-2.14	0.053
Num. ELL students (S)	0.12	0.09	12	1.36	0.199
Num. Special Education students (S)	-0.12	0.07	12	-1.56	0.144
Mean score of schools (S)	-0.13	0.17	12	-0.81	0.433
GENDER	-0.09	1.67	318	-0.06	0.956
English Language Learners	3.13	6.06	318	0.52	0.606
Rec'd supplemental reading instruct	2.01	4.05	318	0.50	0.620
African American	5.05	2.01	318	2.52	0.013
Grade 7 Year 3	2.50	4.52	318	0.55	0.581
Baseline NJ score	9.92	1.30	318	7.62	0.000
Random Effects					
Variance Components	Estimate		ICC		
Level-2 Random Intercept	School	0.26	0.000		
Level-1 Residual	Student	523.76			

B4. Analysis Group 5 – Comprehension -- 2 years of treatment for 7th & 8th graders combined

Table 19. Vocabulary –Overall

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	629.05	0.84	12	746.48	0.000
Treatment (S)	2.53	1.04	12	2.43	0.032
Num eligible students (S)	-0.01	0.03	12	-0.26	0.801
Yr in need of improvement (S)	-0.44	0.34	12	-1.30	0.217
Num. ELL students (S)	0.10	0.04	12	2.16	0.051
Num. Special Education students (S)	-0.06	0.07	12	-0.82	0.429
Mean score of schools (S)	0.06	0.19	12	0.31	0.761
GENDER	2.24	1.54	1070	1.46	0.145
English Language Learners	-2.06	2.20	1070	-0.94	0.350
Special Education student	-5.94	1.84	1070	-3.22	0.002
Rec'd supplemental reading instruct	2.42	2.42	1070	1.00	0.318
African American	2.74	1.78	1070	1.54	0.124
Grade 8 Year 2	17.15	2.46	1070	6.97	0.000
Grade 7 Year 3	2.23	2.83	1070	0.79	0.431
Baseline NJ score	10.01	0.97	1070	10.32	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	0.39	0.001		
Level-1 Residual	Student	554.80			

Table 20. Vocabulary – Female

Fixed Effects						
Effect	Estimate	Standard Error	DF	t Value	Pr > t 	
Intercept	630.27	0.43	12	1450.58	0.000	
Treatment (S)	1.96	0.67	12	2.93	0.013	
Num eligible students (S)	-0.01	0.02	12	-0.35	0.731	
Yr in need of improvement (S)	0.29	0.25	12	1.15	0.275	
Num. ELL students (S)	0.05	0.02	12	1.88	0.084	
Num. Special Education students (S)	-0.08	0.04	12	-2.33	0.038	
Mean score of schools (S)	0.49	0.13	12	3.66	0.004	
English Language Learners	2.77	3.61	490	0.77	0.444	
Special Education student	-2.50	2.14	490	-1.17	0.245	
Rec'd supplemental reading instruct	-1.33	3.56	490	-0.37	0.709	
African American	0.66	2.15	490	0.31	0.759	
Grade 8 Year 2	14.31	4.10	490	3.49	0.001	
Grade 7 Year 3	1.89	3.36	490	0.56	0.574	
Baseline NJ score	9.59	1.19	490	8.06	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	0.08	0.000			
Level-1 Residual	Student	498.08				

Table 21. Vocabulary – Male

Fixed Effects						
Effect	Estimate	Standard Error	DF	t Value	Pr > t 	
Intercept	627.86	1.40	12	449.18	0.000	
Treatment (S)	3.24	2.10	12	1.54	0.149	
Num eligible students (S)	0.01	0.06	12	0.22	0.828	
Yr in need of improvement (S)	-1.00	0.68	12	-1.47	0.166	
Num. ELL students (S)	0.10	0.07	12	1.36	0.200	
Num. Special Education students (S)	-0.08	0.11	12	-0.74	0.476	
Mean score of schools (S)	-0.01	0.21	12	-0.06	0.952	
English Language Learners	-9.19	4.29	567	-2.14	0.032	
Special Education student	-8.05	2.22	567	-3.62	0.001	
Rec'd supplemental reading instruct	5.06	2.66	567	1.90	0.057	
African American	4.51	3.10	567	1.45	0.146	
Grade 8 Year 2	19.15	2.41	567	7.95	0.000	
Grade 7 Year 3	2.33	3.99	567	0.58	0.560	
Baseline NJ score	10.56	1.50	567	7.04	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	11.78	0.019			
Level-1 Residual	Student	592.37				

Table 22. Vocabulary - African American

Fixed Effects						
Effect	Estimate	Standard Error	DF	t Value	Pr > t 	
Intercept	631.04	0.95	12	665.54	0.000	
Treatment (S)	1.29	1.36	12	0.95	0.362	
Num eligible students (S)	0.02	0.02	12	0.65	0.529	
Yr in need of improvement (S)	-0.38	0.54	12	-0.70	0.499	
Num. ELL students (S)	0.15	0.06	12	2.57	0.025	
Num. Special Education students (S)	-0.13	0.05	12	-2.60	0.023	
Mean score of schools (S)	0.11	0.12	12	0.95	0.361	
GENDER	3.91	1.64	575	2.39	0.017	
English Language Learners	-5.00	4.04	575	-1.24	0.216	
Special Education student	-4.68	2.21	575	-2.12	0.034	
Rec'd supplemental reading instruct	1.59	3.34	575	0.47	0.635	
Grade 8 Year 2	19.78	2.41	575	8.22	0.000	
Grade 7 Year 3	5.26	2.93	575	1.80	0.072	
Baseline NJ score	9.36	0.70	575	13.45	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	0.16	0.000			
Level-1 Residual	Student	536.00				

Table 23. Hispanic

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	628.14	3.63	9	173.23	0.000
Treatment (S)	5.07	5.74	9	0.88	0.400
Num eligible students (S)	-0.13	0.14	9	-0.96	0.364
Yr in need of improvement (S)	0.55	1.30	9	0.42	0.682
Num. ELL students (S)	-0.02	0.23	9	-0.08	0.943
Num. Special Education students (S)	0.21	0.26	9	0.80	0.444
Mean score of schools (S)	0.05	0.37	9	0.13	0.904
GENDER	-0.71	2.41	460	-0.30	0.768
English Language Learners	-0.85	2.88	460	-0.30	0.768
Special Education student	-6.43	2.80	460	-2.30	0.022
Rec'd supplemental reading instruct	3.19	3.03	460	1.05	0.293
Grade 8 Year 2	13.49	3.19	460	4.23	0.000
Grade 7 Year 3	-1.31	3.59	460	-0.37	0.715
Baseline NJ score	11.13	1.88	460	5.93	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	61.16		0.097	
Level-1 Residual	Student	571.24			

Table 24. Vocabulary - Special Education

Fixed Effects						
Effect	Estimate	Standard Error	DF	t Value	Pr > t 	
Intercept	619.48	1.38	12	449.19	0.000	
Treatment (S)	4.97	2.00	12	2.48	0.029	
Num eligible students (S)	-0.04	0.06	12	-0.70	0.497	
Yr in need of improvement (S)	-0.75	0.49	12	-1.53	0.151	
Num. ELL students (S)	0.13	0.08	12	1.65	0.124	
Num. Special Education students (S)	0.01	0.07	12	0.10	0.926	
Mean score of schools (S)	0.00	0.19	12	0.01	0.989	
GENDER	0.12	1.67	443	0.07	0.941	
English Language Learners	3.19	6.28	443	0.51	0.611	
Rec'd supplemental reading instruct	2.62	3.92	443	0.67	0.504	
African American	4.70	2.64	443	1.79	0.075	
Grade 8 Year 2	18.37	2.98	443	6.16	0.000	
Grade 7 Year 3	2.34	4.64	443	0.51	0.614	
Baseline NJ score	10.91	1.00	443	10.87	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	0.32	0.001			
Level-1 Residual	Student	555.79				

B5. Analysis Group 6 – Comprehension -- 3 years of treatment for 8th graders

Table 25. Vocabulary – Overall

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	640.30	1.01	12	632.42	0.000
Treatment (S)	1.98	1.97	12	1.01	0.334
Num eligible students (S)	0.05	0.04	12	1.26	0.230
Yr in need of improvement (S)	-0.41	0.67	12	-0.62	0.547
Num. ELL students (S)	0.08	0.09	12	0.92	0.377
Num. Special Education students (S)	-0.11	0.07	12	-1.68	0.118
Mean score of schools (S)	-0.28	0.18	12	-1.60	0.135
GENDER	4.74	2.30	356	2.06	0.040
English Language Learners	-2.89	5.62	356	-0.52	0.607
Special Education student	-12.05	3.07	356	-3.92	0.000
Rec'd supplemental reading instruct	7.14	2.66	356	2.68	0.008
African American	1.72	2.78	356	0.62	0.537
Baseline NJ score	11.36	1.89	356	6.01	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	0.50	0.001		
Level-1 Residual	Student	504.02			

Table 26. Vocabulary – Female

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	639.64	0.79	12	812.95	0.000
Treatment (S)	3.39	1.50	12	2.26	0.043
Num eligible students (S)	0.07	0.03	12	2.30	0.041
Yr in need of improvement (S)	-0.47	0.60	12	-0.78	0.449
Num. ELL students (S)	0.08	0.06	12	1.31	0.214
Num. Special Education students (S)	-0.20	0.06	12	-3.29	0.007
Mean score of schools (S)	0.08	0.17	12	0.48	0.640
English Language Learners	0.03	5.78	166	0.01	0.996
Special Education student	-12.24	5.04	166	-2.43	0.016
Rec'd supplemental reading instruct	5.39	3.48	166	1.55	0.123
African American	7.35	3.28	166	2.24	0.026
Baseline NJ score	11.06	1.52	166	7.30	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	0.18	0.000		
Level-1 Residual	Student	434.77			

Table 27. Vocabulary – Male

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	640.95	2.02	12	317.97	0.000
Treatment (S)	0.58	3.46	12	0.17	0.871
Num eligible students (S)	-0.02	0.08	12	-0.22	0.832
Yr in need of improvement (S)	-0.55	1.28	12	-0.43	0.672
Num. ELL students (S)	0.11	0.16	12	0.72	0.488
Num. Special Education students (S)	0.04	0.13	12	0.33	0.745
Mean score of schools (S)	-0.53	0.24	12	-2.19	0.048
English Language Learners	-11.72	8.30	179	-1.41	0.159
Special Education student	-12.06	4.06	179	-2.97	0.004
Rec'd supplemental reading instruct	9.67	3.66	179	2.64	0.009
African American	-3.41	3.82	179	-0.89	0.373
Baseline NJ score	11.73	2.48	179	4.73	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	4.49	0.008		
Level-1 Residual	Student	575.00			

Table 28. Vocabulary – African American

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	638.08	2.21	12	288.33	0.000
Treatment (S)	3.46	2.30	12	1.50	0.158
Num eligible students (S)	0.05	0.05	12	1.09	0.298
Yr in need of improvement (S)	-0.29	1.30	12	-0.22	0.828
Num. ELL students (S)	0.17	0.10	12	1.60	0.135
Num. Special Education students (S)	-0.01	0.08	12	-0.13	0.896
Mean score of schools (S)	-0.38	0.30	12	-1.28	0.225
GENDER	1.77	3.33	191	0.53	0.594
Special Education student	-13.54	2.92	191	-4.64	0.000
Rec'd supplemental reading instruct	8.30	3.48	191	2.38	0.018
Baseline NJ score	12.74	1.96	191	6.49	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	2.11	0.004		
Level-1 Residual	Student	535.97			

Table 29. Vocabulary – Hispanic

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	645.00	2.67	7	241.96	0.000
Treatment (S)	-3.58	3.75	7	-0.95	0.372
Num eligible students (S)	0.02	0.07	7	0.35	0.739
Yr in need of improvement (S)	0.20	0.80	7	0.26	0.806
Num. ELL students (S)	-0.07	0.17	7	-0.41	0.691
Num. Special Education students (S)	-0.03	0.15	7	-0.19	0.854
Mean score of schools (S)	-0.48	0.21	7	-2.34	0.051
GENDER	7.59	3.32	153	2.29	0.023
English Language Learners	-2.29	4.76	153	-0.48	0.631
Special Education student	-9.87	4.19	153	-2.35	0.020
Rec'd supplemental reading instruct	4.30	2.90	153	1.48	0.140
Baseline NJ score	10.73	3.61	153	2.97	0.004
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	0.34	0.001		
Level-1 Residual	Student	459.36			

Table 30. Vocabulary – Special Education

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	628.31	2.54	11	247.67	0.000
Treatment (S)	7.97	3.51	11	2.27	0.044
Num eligible students (S)	0.07	0.07	11	0.94	0.369
Yr in need of improvement (S)	-0.52	0.99	11	-0.53	0.607
Num. ELL students (S)	0.00	0.12	11	-0.01	0.995
Num. Special Education students (S)	-0.12	0.13	11	-0.89	0.392
Mean score of schools (S)	0.29	0.30	11	0.97	0.355
GENDER	5.64	3.92	144	1.44	0.152
English Language Learners	-13.18	12.09	144	-1.09	0.278
Rec'd supplemental reading instruct	7.05	3.60	144	1.96	0.052
African American	2.01	3.36	144	0.60	0.549
Baseline NJ score	8.67	2.63	144	3.29	0.002
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	9.29	0.019		
Level-1 Residual	Student	471.06			

B6. Analysis Group 1 – Comprehension -- 1 year of treatment for 6th, 7th, & 8th graders combined

Table 31. Comprehension – Overall

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	609.11	0.82	12	745.45	0.000
Treatment (S)	2.77	1.43	12	1.94	0.076
Num eligible students (S)	-0.11	0.04	12	-3.21	0.008
Yr in need of improvement (S)	0.23	0.46	12	0.51	0.621
Num. ELL students (S)	0.04	0.05	12	0.85	0.413
Num. Special Education students (S)	0.23	0.05	12	4.97	0.000
Mean score of schools (S)	0.79	0.27	12	2.94	0.013
GENDER	-2.75	0.93	1960	-2.96	0.004
English Language Learners	-0.61	1.23	1960	-0.50	0.616
Special Education student	-9.32	0.86	1960	-10.86	0.000
Rec'd supplemental reading instruct	-0.76	1.29	1960	-0.59	0.554
African American	-2.73	1.15	1960	-2.38	0.018
Grade 7 Year 1	16.25	2.60	1960	6.24	0.000
Grade 8 Year 1	35.80	1.62	1960	22.05	0.000
Grade 6 Year 2	1.47	2.11	1960	0.70	0.485
Grade 6 Year 3	6.01	2.31	1960	2.60	0.010
Baseline NJ score	5.81	0.69	1960	8.45	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	8.90	0.016		
Level-1 Residual	Student	544.94			

Table 32. Comprehension – Female

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	611.07	1.01	12	604.39	0.000
Treatment (S)	4.16	1.56	12	2.66	0.021
Num eligible students (S)	-0.15	0.04	12	-3.94	0.002
Yr in need of improvement (S)	0.12	0.47	12	0.26	0.802
Num. ELL students (S)	0.11	0.04	12	2.83	0.016
Num. Special Education students (S)	0.25	0.06	12	3.99	0.002
Mean score of schools (S)	0.70	0.29	12	2.43	0.032
English Language Learners	2.13	1.44	833	1.48	0.140
Special Education student	-11.38	1.59	833	-7.17	0.000
Rec'd supplemental reading instruct	-3.41	1.93	833	-1.76	0.078
African American	-1.03	1.53	833	-0.67	0.501
Grade 7 Year 1	15.89	2.96	833	5.37	0.000
Grade 8 Year 1	35.41	2.60	833	13.60	0.000
Grade 6 Year 2	-0.11	3.49	833	-0.03	0.974
Grade 6 Year 3	5.82	3.80	833	1.53	0.126
Baseline NJ score	5.50	0.92	833	5.98	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	3.16		0.006	
Level-1 Residual	Student	521.71			

Table 33. Comprehension – Male

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	607.82	1.35	12	449.30	0.000
Treatment (S)	1.72	1.91	12	0.90	0.385
Num eligible students (S)	-0.07	0.05	12	-1.61	0.133
Yr in need of improvement (S)	-0.04	0.65	12	-0.06	0.953
Num. ELL students (S)	-0.01	0.08	12	-0.11	0.913
Num. Special Education students (S)	0.18	0.07	12	2.54	0.026
Mean score of schools (S)	0.52	0.33	12	1.57	0.143
English Language Learners	-3.57	1.72	1112	-2.07	0.039
Special Education student	-8.11	0.98	1112	-8.26	0.000
Rec'd supplemental reading instruct	1.11	2.33	1112	0.48	0.632
African American	-3.85	1.78	1112	-2.16	0.031
Grade 7 Year 1	16.65	3.59	1112	4.63	0.000
Grade 8 Year 1	36.20	2.58	1112	14.02	0.000
Grade 6 Year 2	2.41	2.61	1112	0.92	0.357
Grade 6 Year 3	5.48	2.49	1112	2.21	0.028
Baseline NJ score	5.95	0.78	1112	7.68	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	14.44		0.025	
Level-1 Residual	Student	565.03			

Table 34. Comprehension – African American

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	608.73	1.13	12	537.99	0.000
Treatment (S)	2.81	2.46	12	1.14	0.275
Num eligible students (S)	-0.08	0.06	12	-1.43	0.180
Yr in need of improvement (S)	-0.35	0.83	12	-0.42	0.680
Num. ELL students (S)	0.07	0.08	12	0.92	0.375
Num. Special Education students (S)	0.14	0.07	12	2.12	0.055
Mean score of schools (S)	0.23	0.50	12	0.46	0.652
GENDER	-3.07	1.19	1099	-2.58	0.010
English Language Learners	-12.58	13.40	1099	-0.94	0.349
Special Education student	-9.30	1.66	1099	-5.60	0.000
Rec'd supplemental reading instruct	-2.46	1.61	1099	-1.52	0.128
Grade 7 Year 1	16.21	3.33	1099	4.87	0.000
Grade 8 Year 1	34.72	2.11	1099	16.43	0.000
Grade 6 Year 2	1.57	2.55	1099	0.62	0.537
Grade 6 Year 3	4.37	3.26	1099	1.34	0.180
Baseline NJ score	6.37	0.82	1099	7.78	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	30.76	0.056		
Level-1 Residual	Student	515.37			

Table 35. Comprehension – Hispanic

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	611.59	1.82	10	335.90	0.000
Treatment (S)	3.43	2.18	10	1.57	0.147
Num eligible students (S)	-0.20	0.04	10	-4.66	0.001
Yr in need of improvement (S)	-0.07	0.42	10	-0.17	0.871
Num. ELL students (S)	-0.02	0.06	10	-0.24	0.817
Num. Special Education students (S)	0.37	0.07	10	5.07	0.000
Mean score of schools (S)	-0.04	0.26	10	-0.17	0.870
GENDER	-2.77	1.68	805	-1.65	0.099
English Language Learners	0.56	1.08	805	0.52	0.604
Special Education student	-9.91	1.32	805	-7.51	0.000
Rec'd supplemental reading instruct	1.55	2.12	805	0.73	0.466
Grade 7 Year 1	16.51	2.88	805	5.74	0.000
Grade 8 Year 1	36.78	2.49	805	14.75	0.000
Grade 6 Year 2	0.75	3.11	805	0.24	0.809
Grade 6 Year 3	5.94	3.02	805	1.97	0.049
Baseline NJ score	5.20	1.03	805	5.03	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	3.45	0.006		
Level-1 Residual	Student	582.32			

Table 36. Comprehension – Special Education

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	601.23	1.53	12	392.02	0.000
Treatment (S)	2.13	2.39	12	0.89	0.390
Num eligible students (S)	-0.06	0.05	12	-1.31	0.215
Yr in need of improvement (S)	-0.21	0.62	12	-0.34	0.740
Num. ELL students (S)	0.07	0.07	12	1.02	0.330
Num. Special Education students (S)	0.07	0.07	12	1.00	0.338
Mean score of schools (S)	-0.11	0.19	12	-0.55	0.592
GENDER	-0.09	1.43	764	-0.06	0.951
English Language Learners	3.54	2.71	764	1.31	0.192
Rec'd supplemental reading instruct	1.23	2.23	764	0.55	0.582
African American	-2.12	2.23	764	-0.95	0.343
Grade 7 Year 1	13.23	3.35	764	3.94	0.000
Grade 8 Year 1	32.92	1.92	764	17.14	0.000
Grade 6 Year 2	-3.02	2.25	764	-1.34	0.180
Grade 6 Year 3	-0.03	3.01	764	-0.01	0.992
Baseline NJ score	5.09	0.83	764	6.14	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	12.49		0.023	
Level-1 Residual	Student	531.52			

B7. Analysis Group 2 – Comprehension -- 1 year of treatment for 6th graders

Table 37. Comprehension – Overall

Fixed Effects						
Effect	Estimate	Standard Error	DF	t Value	Pr > t 	
Intercept	599.66	1.45	12	414.30	0.000	
Treatment (S)	3.55	2.13	12	1.67	0.120	
Num eligible students (S)	-0.12	0.05	12	-2.72	0.019	
Yr in need of improvement (S)	0.57	0.53	12	1.07	0.307	
Num. ELL students (S)	0.11	0.06	12	1.86	0.086	
Num. Special Education students (S)	0.18	0.08	12	2.12	0.055	
Mean score of schools (S)	0.46	0.28	12	1.63	0.128	
GENDER	-3.13	1.33	1182	-2.36	0.018	
English Language Learners	2.02	1.94	1182	1.05	0.297	
Special Education student	-8.57	1.32	1182	-6.49	0.000	
Rec'd supplemental reading instruct	-0.85	1.75	1182	-0.49	0.625	
African American	-2.15	1.44	1182	-1.49	0.135	
Grade 6 Year 2	1.17	2.18	1182	0.54	0.591	
Grade 6 Year 3	5.80	2.29	1182	2.53	0.012	
Baseline NJ score	5.87	0.66	1182	8.91	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	20.82	0.035			
Level-1 Residual	Student	578.99				

Table 38. Comprehension – Female

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	601.23	1.70	12	354.38	0.000
Treatment (S)	5.32	2.08	12	2.55	0.026
Num eligible students (S)	-0.14	0.04	12	-3.73	0.003
Yr in need of improvement (S)	0.86	0.61	12	1.42	0.180
Num. ELL students (S)	0.20	0.05	12	4.30	0.001
Num. Special Education students (S)	0.19	0.08	12	2.27	0.042
Mean score of schools (S)	0.29	0.27	12	1.10	0.292
English Language Learners	5.04	1.90	492	2.65	0.009
Special Education student	-9.54	2.34	492	-4.07	0.000
Rec'd supplemental reading instruct	-6.77	2.45	492	-2.77	0.006
African American	-1.03	2.55	492	-0.40	0.687
Grade 6 Year 2	-0.30	3.50	492	-0.08	0.933
Grade 6 Year 3	5.66	3.67	492	1.54	0.123
Baseline NJ score	7.54	0.94	492	7.99	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	3.14	0.006		
Level-1 Residual	Student	565.83			

Table 39. Comprehension – Male

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	597.98	1.60	12	374.00	0.000
Treatment (S)	2.97	2.68	12	1.11	0.290
Num eligible students (S)	-0.12	0.07	12	-1.73	0.109
Yr in need of improvement (S)	0.45	0.76	12	0.59	0.565
Num. ELL students (S)	0.08	0.10	12	0.78	0.451
Num. Special Education students (S)	0.15	0.09	12	1.58	0.139
Mean score of schools (S)	0.18	0.32	12	0.58	0.576
English Language Learners	-1.20	3.03	677	-0.40	0.690
Special Education student	-7.89	1.71	677	-4.60	0.000
Rec'd supplemental reading instruct	2.84	2.48	677	1.15	0.252
African American	-2.66	1.93	677	-1.38	0.168
Grade 6 Year 2	2.81	2.71	677	1.04	0.301
Grade 6 Year 3	5.20	2.46	677	2.11	0.035
Baseline NJ score	5.04	0.94	677	5.36	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	35.71	0.057		
Level-1 Residual	Student	587.48			

Table 40. Comprehension – African American

Fixed Effects						
Effect	Estimate	Standard			t Value	Pr > t
		Error	DF	DF		
Intercept	598.59	1.63	12	368.10	0.000	
Treatment (S)	4.40	3.45	12	1.28	0.227	
Num eligible students (S)	-0.17	0.09	12	-1.90	0.082	
Yr in need of improvement (S)	0.91	1.02	12	0.89	0.389	
Num. ELL students (S)	0.23	0.12	12	1.97	0.072	
Num. Special Education students (S)	0.13	0.10	12	1.26	0.233	
Mean score of schools (S)	-0.35	0.46	12	-0.76	0.462	
GENDER	-2.20	1.26	635	-1.75	0.080	
English Language Learners	-7.25	15.81	635	-0.46	0.646	
Special Education student	-9.02	1.85	635	-4.89	0.000	
Rec'd supplemental reading instruct	-5.59	2.49	635	-2.25	0.025	
Grade 6 Year 2	0.77	2.47	635	0.31	0.756	
Grade 6 Year 3	4.33	3.08	635	1.41	0.161	
Baseline NJ score	6.22	1.10	635	5.64	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	63.55	0.104			
Level-1 Residual	Student	548.93				

Table 41. Comprehension – Hispanic

Fixed Effects						
Effect	Estimate	Standard			t Value	Pr > t
		Error	DF	DF		
Intercept	600.13	1.89	10	318.29	0.000	
Treatment (S)	4.76	1.60	10	2.98	0.014	
Num eligible students (S)	-0.18	0.05	10	-3.91	0.003	
Yr in need of improvement (S)	0.20	0.48	10	0.41	0.691	
Num. ELL students (S)	0.04	0.06	10	0.65	0.532	
Num. Special Education students (S)	0.33	0.08	10	4.17	0.002	
Mean score of schools (S)	0.20	0.17	10	1.17	0.270	
GENDER	-5.29	2.24	503	-2.36	0.019	
English Language Learners	2.93	2.06	503	1.42	0.156	
Special Education student	-8.68	2.20	503	-3.95	0.000	
Rec'd supplemental reading instruct	4.63	1.98	503	2.33	0.020	
Grade 6 Year 2	0.36	3.23	503	0.11	0.912	
Grade 6 Year 3	4.71	3.22	503	1.46	0.144	
Baseline NJ score	5.35	0.73	503	7.36	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	0.46	0.001			
Level-1 Residual	Student	604.60				

Table 42. Comprehension – Special Education

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	591.49	2.23	12	265.61	0.000
Treatment (S)	4.80	3.27	12	1.47	0.168
Num eligible students (S)	-0.19	0.09	12	-2.14	0.054
Yr in need of improvement (S)	0.66	0.94	12	0.70	0.498
Num. ELL students (S)	0.22	0.10	12	2.11	0.056
Num. Special Education students (S)	0.20	0.13	12	1.60	0.134
Mean score of schools (S)	-0.25	0.29	12	-0.85	0.413
GENDER	0.03	2.14	478	0.01	0.990
English Language Learners	3.06	3.19	478	0.96	0.339
Rec'd supplemental reading instruct	4.57	3.54	478	1.29	0.197
African American	-2.16	2.36	478	-0.92	0.359
Grade 6 Year 2	-2.95	2.32	478	-1.27	0.204
Grade 6 Year 3	-3.07	3.23	478	-0.95	0.343
Baseline NJ score	3.89	0.96	478	4.04	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	40.43		0.070	
Level-1 Residual	Student	540.73			

B8. Analysis Group 3 – Comprehension -- 2 years of treatment for 7th graders

Table 43. Comprehension – Overall

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	614.30	1.17	12	525.49	0.000
Treatment (S)	4.73	1.79	12	2.65	0.022
Num eligible students (S)	-0.07	0.04	12	-1.90	0.082
Yr in need of improvement (S)	-0.14	0.55	12	-0.25	0.809
Num. ELL students (S)	0.13	0.08	12	1.60	0.135
Num. Special Education students (S)	0.10	0.11	12	0.88	0.399
Mean score of schools (S)	0.13	0.20	12	0.65	0.529
GENDER	-3.22	1.52	730	-2.12	0.034
English Language Learners	-2.42	3.43	730	-0.71	0.480
Special Education student	-7.19	2.41	730	-2.99	0.003
Rec'd supplemental reading instruct	-0.85	2.50	730	-0.34	0.735
African American	1.04	2.05	730	0.51	0.612
Grade 7 Year 3	-0.11	2.59	730	-0.04	0.967
Baseline NJ score	8.86	1.35	730	6.57	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	13.45	0.029		
Level-1 Residual	Student	447.37			

Table 44. Comprehension – Female

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	619.34	1.16	12	535.85	0.000
Treatment (S)	-0.12	1.66	12	-0.07	0.944
Num eligible students (S)	0.03	0.03	12	1.06	0.310
Yr in need of improvement (S)	0.20	0.47	12	0.44	0.670
Num. ELL students (S)	0.11	0.04	12	2.76	0.018
Num. Special Education students (S)	-0.12	0.06	12	-2.05	0.062
Mean score of schools (S)	0.30	0.23	12	1.32	0.213
English Language Learners	-2.96	6.21	324	-0.48	0.633
Special Education student	-7.80	2.58	324	-3.02	0.003
Rec'd supplemental reading instruct	1.47	4.09	324	0.36	0.719
African American	1.36	2.00	324	0.68	0.496
Grade 7 Year 3	-4.48	2.46	324	-1.82	0.069
Baseline NJ score	9.45	1.28	324	7.39	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	0.18	0.000		
Level-1 Residual	Student	440.94			

Table 45. Comprehension – Male

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	610.30	2.05	12	298.26	0.000
Treatment (S)	7.85	2.46	12	3.19	0.008
Num eligible students (S)	-0.15	0.05	12	-2.83	0.016
Yr in need of improvement (S)	-0.79	0.75	12	-1.06	0.310
Num. ELL students (S)	0.10	0.11	12	0.88	0.398
Num. Special Education students (S)	0.27	0.15	12	1.74	0.107
Mean score of schools (S)	0.07	0.21	12	0.33	0.745
English Language Learners	-0.78	2.69	394	-0.29	0.772
Special Education student	-7.25	2.69	394	-2.70	0.008
Rec'd supplemental reading instruct	-1.85	2.58	394	-0.72	0.474
African American	0.27	2.84	394	0.10	0.925
Grade 7 Year 3	3.26	3.61	394	0.90	0.368
Baseline NJ score	8.46	1.77	394	4.77	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	24.17	0.051		
Level-1 Residual	Student	448.14			

Table 46. Comprehension – African American

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	614.78	2.15	12	285.34	0.000
Treatment (S)	5.40	2.73	12	1.98	0.070
Num eligible students (S)	-0.04	0.04	12	-0.97	0.354
Yr in need of improvement (S)	-0.83	0.79	12	-1.05	0.314
Num. ELL students (S)	0.12	0.11	12	1.04	0.319
Num. Special Education students (S)	0.08	0.14	12	0.55	0.592
Mean score of schools (S)	0.16	0.16	12	0.96	0.358
GENDER	-3.10	1.97	385	-1.58	0.116
English Language Learners	-4.60	5.50	385	-0.84	0.404
Special Education student	-7.33	2.60	385	-2.82	0.005
Rec'd supplemental reading instruct	1.42	3.60	385	0.40	0.692
Grade 7 Year 3	-0.34	2.92	385	-0.12	0.908
Baseline NJ score	8.82	1.24	385	7.13	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	28.56	0.063		
Level-1 Residual	Student	426.58			

Table 47. Comprehension – Hispanic

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	617.20	1.40	8	439.67	0.000
Treatment (S)	2.13	1.79	8	1.19	0.268
Num eligible students (S)	-0.11	0.04	8	-2.54	0.035
Yr in need of improvement (S)	0.16	0.47	8	0.34	0.744
Num. ELL students (S)	0.02	0.08	8	0.23	0.824
Num. Special Education students (S)	0.19	0.08	8	2.41	0.042
Mean score of schools (S)	0.01	0.17	8	0.08	0.939
GENDER	-5.37	1.63	317	-3.30	0.001
English Language Learners	-1.83	3.58	317	-0.51	0.609
Special Education student	-5.92	2.84	317	-2.09	0.037
Rec'd supplemental reading instruct	-3.74	3.81	317	-0.98	0.327
Grade 7 Year 3	1.57	4.47	317	0.35	0.725
Baseline NJ score	8.38	2.30	317	3.64	0.001
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	3.85	0.008		
Level-1 Residual	Student	455.09			

Table 48. Comprehension – Special Education

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	603.85	1.50	12	401.40	0.000
Treatment (S)	8.70	2.07	12	4.21	0.001
Num eligible students (S)	-0.21	0.04	12	-5.21	0.000
Yr in need of improvement (S)	-0.10	0.53	12	-0.19	0.850
Num. ELL students (S)	0.41	0.06	12	6.93	0.000
Num. Special Education students (S)	0.21	0.09	12	2.20	0.048
Mean score of schools (S)	0.38	0.17	12	2.27	0.043
GENDER	-2.01	1.46	320	-1.38	0.169
English Language Learners	1.44	2.50	320	0.58	0.564
Rec'd supplemental reading instruct	1.87	3.94	320	0.48	0.634
African American	3.34	2.47	320	1.35	0.178
Grade 7 Year 3	-2.04	4.56	320	-0.45	0.653
Baseline NJ score	6.85	1.84	320	3.73	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	3.40	0.008		
Level-1 Residual	Student	436.58			

B9. Analysis Group 5 – Comprehension -- 2 years of treatment for 7th & 8th graders combined

Table 49. Comprehension – Overall

Fixed Effects						
Effect	Estimate	Standard Error	DF	t Value	Pr > t 	
Intercept	621.68	1.05	12	592.10	0.000	
Treatment (S)	4.59	1.46	12	3.15	0.009	
Num eligible students (S)	-0.05	0.03	12	-1.65	0.124	
Yr in need of improvement (S)	-0.16	0.40	12	-0.40	0.698	
Num. ELL students (S)	0.02	0.06	12	0.27	0.791	
Num. Special Education students (S)	0.09	0.08	12	1.13	0.281	
Mean score of schools (S)	0.26	0.17	12	1.55	0.147	
GENDER	-2.98	1.15	1080	-2.59	0.010	
English Language Learners	-3.39	2.62	1080	-1.29	0.196	
Special Education student	-6.95	1.73	1080	-4.03	0.000	
Rec'd supplemental reading instruct	-1.12	2.04	1080	-0.55	0.582	
African American	0.83	1.29	1080	0.64	0.521	
Grade 8 Year 2	21.27	2.03	1080	10.47	0.000	
Grade 7 Year 3	0.03	2.47	1080	0.01	0.992	
Baseline NJ score	9.10	1.00	1080	9.13	0.000	
Random Effects						
Variance Components		Estimate		ICC		
Level-2 Random Intercept	School	8.39		0.018		
Level-1 Residual	Student	445.66				

Table 50. Comprehension – Female

Fixed Effects						
Effect	Estimate	Standard		DF	t Value	Pr > t
		Error	DF			
Intercept	626.72	0.83	12	753.08	0.000	
Treatment (S)	1.55	1.29	12	1.21	0.252	
Num eligible students (S)	0.02	0.03	12	0.60	0.561	
Yr in need of improvement (S)	-0.05	0.42	12	-0.11	0.916	
Num. ELL students (S)	0.02	0.04	12	0.58	0.574	
Num. Special Education students (S)	-0.08	0.06	12	-1.37	0.196	
Mean score of schools (S)	0.39	0.16	12	2.49	0.029	
English Language Learners	-6.07	4.86	493	-1.25	0.213	
Special Education student	-6.94	2.32	493	-2.99	0.003	
Rec'd supplemental reading instruct	-0.35	3.88	493	-0.09	0.929	
African American	-0.68	1.65	493	-0.41	0.682	
Grade 8 Year 2	18.83	2.35	493	8.02	0.000	
Grade 7 Year 3	-4.17	2.32	493	-1.80	0.073	
Baseline NJ score	9.93	1.04	493	9.57	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	0.40	0.001			
Level-1 Residual	Student	428.12				

Table 51. Comprehension – Male

Fixed Effects						
Effect	Estimate	Standard		DF	t Value	Pr > t
		Error	DF			
Intercept	617.55	1.71	12	362.12	0.000	
Treatment (S)	6.64	1.91	12	3.48	0.005	
Num eligible students (S)	-0.08	0.04	12	-2.28	0.042	
Yr in need of improvement (S)	-0.56	0.58	12	-0.97	0.352	
Num. ELL students (S)	-0.01	0.09	12	-0.14	0.892	
Num. Special Education students (S)	0.21	0.11	12	1.84	0.090	
Mean score of schools (S)	0.16	0.18	12	0.87	0.402	
English Language Learners	0.22	1.58	574	0.14	0.887	
Special Education student	-6.91	2.01	574	-3.44	0.001	
Rec'd supplemental reading instruct	-2.23	1.90	574	-1.17	0.241	
African American	1.86	2.00	574	0.93	0.355	
Grade 8 Year 2	23.22	2.65	574	8.76	0.000	
Grade 7 Year 3	3.66	3.54	574	1.03	0.303	
Baseline NJ score	8.61	1.50	574	5.74	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	8.47	0.018			
Level-1 Residual	Student	460.72				

Table 52. Comprehension – African American

Fixed Effects						
Effect	Estimate	Standard Error	DF	t Value	Pr > t 	
Intercept	622.52	1.73	12	360.20	0.000	
Treatment (S)	4.03	2.14	12	1.89	0.083	
Num eligible students (S)	-0.04	0.03	12	-1.16	0.271	
Yr in need of improvement (S)	-0.62	0.61	12	-1.03	0.325	
Num. ELL students (S)	0.04	0.08	12	0.55	0.593	
Num. Special Education students (S)	0.06	0.10	12	0.65	0.527	
Mean score of schools (S)	0.27	0.15	12	1.80	0.097	
GENDER	-1.80	1.34	582	-1.34	0.182	
English Language Learners	-4.80	3.59	582	-1.34	0.182	
Special Education student	-7.22	1.97	582	-3.66	0.000	
Rec'd supplemental reading instruct	0.95	3.22	582	0.30	0.768	
Grade 8 Year 2	22.83	2.52	582	9.06	0.000	
Grade 7 Year 3	-0.05	2.73	582	-0.02	0.987	
Baseline NJ score	9.13	0.98	582	9.33	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	17.83	0.040			
Level-1 Residual	Student	428.27				

Table 53. Comprehension – Hispanic

Fixed Effects						
Effect	Estimate	Standard Error	DF	t Value	Pr > t 	
Intercept	623.06	1.15	9	540.93	0.000	
Treatment (S)	2.77	1.61	9	1.72	0.119	
Num eligible students (S)	-0.05	0.04	9	-1.46	0.177	
Yr in need of improvement (S)	0.08	0.34	9	0.23	0.827	
Num. ELL students (S)	-0.12	0.07	9	-1.81	0.103	
Num. Special Education students (S)	0.19	0.08	9	2.48	0.035	
Mean score of schools (S)	0.17	0.11	9	1.54	0.157	
GENDER	-5.73	1.54	463	-3.71	0.000	
English Language Learners	-3.54	2.86	463	-1.24	0.217	
Special Education student	-5.64	2.24	463	-2.51	0.013	
Rec'd supplemental reading instruct	-4.09	3.56	463	-1.15	0.251	
Grade 8 Year 2	19.58	2.71	463	7.24	0.000	
Grade 7 Year 3	1.76	4.41	463	0.40	0.690	
Baseline NJ score	8.93	1.64	463	5.44	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	0.16	0.000			
Level-1 Residual	Student	458.45				

Table 54. Comprehension – Special Education

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	610.74	1.54	12	395.36	0.000
Treatment (S)	6.97	1.86	12	3.75	0.003
Num eligible students (S)	-0.15	0.04	12	-3.42	0.006
Yr in need of improvement (S)	-0.21	0.40	12	-0.54	0.600
Num. ELL students (S)	0.22	0.06	12	3.69	0.003
Num. Special Education students (S)	0.16	0.09	12	1.80	0.096
Mean score of schools (S)	0.32	0.13	12	2.48	0.029
GENDER	-1.80	1.68	445	-1.07	0.285
English Language Learners	2.10	1.78	445	1.18	0.238
Rec'd supplemental reading instruct	1.25	3.57	445	0.35	0.725
African American	1.99	2.05	445	0.97	0.334
Grade 8 Year 2	21.36	2.75	445	7.78	0.000
Grade 7 Year 3	-1.99	4.37	445	-0.45	0.649
Baseline NJ score	8.63	1.25	445	6.88	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	4.56		0.010	
Level-1 Residual	Student	462.39			

B10. Analysis Group 6 – Comprehension -- 3 years of treatment for 8th graders

Table 55. Comprehension – Overall

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	639.69	0.96	12	668.75	0.000	
Treatment (S)	3.50	1.65	12	2.12	0.055	
Num eligible students (S)	0.01	0.03	12	0.33	0.747	
Yr in need of improvement (S)	-0.98	0.50	12	-1.95	0.075	
Num. ELL students (S)	0.10	0.08	12	1.27	0.230	
Num. Special Education students (S)	-0.08	0.06	12	-1.31	0.215	
Mean score of schools (S)	-0.21	0.12	12	-1.71	0.113	
GENDER	-0.08	2.05	356	-0.04	0.968	
English Language Learners	1.84	4.23	356	0.44	0.663	
Special Education student	-1.83	2.33	356	-0.79	0.431	
Rec'd supplemental reading instruct	1.38	3.64	356	0.38	0.704	
African American	-0.33	2.42	356	-0.14	0.893	
Baseline NJ score	12.78	1.49	356	8.58	0.000	
Random Effects						
Variance Components		Estimate		ICC		
Level-2 Random Intercept	School	0.89		0.002		
Level-1 Residual	Student	414.89				

Table 56. Comprehension – Female

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	644.71	1.50	12	429.56	0.000	
Treatment (S)	-0.87	2.28	12	-0.38	0.709	
Num eligible students (S)	0.00	0.06	12	-0.01	0.992	
Yr in need of improvement (S)	-1.09	0.54	12	-2.01	0.067	
Num. ELL students (S)	-0.02	0.10	12	-0.24	0.812	
Num. Special Education students (S)	-0.07	0.09	12	-0.72	0.485	
Mean score of schools (S)	0.24	0.12	12	1.99	0.070	
English Language Learners	-0.57	5.59	166	-0.10	0.919	
Special Education student	-1.30	2.96	166	-0.44	0.661	
Rec'd supplemental reading instruct	1.73	4.18	166	0.41	0.680	
African American	2.60	2.94	166	0.88	0.379	
Baseline NJ score	13.10	1.87	166	6.99	0.000	
Random Effects						
Variance Components		Estimate		ICC		
Level-2 Random Intercept	School	0.25		0.001		
Level-1 Residual	Student	392.48				

Table 57. Comprehension – Male

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	634.91	1.82	12	347.99	0.000	
Treatment (S)	7.92	2.19	12	3.61	0.004	
Num eligible students (S)	-0.04	0.05	12	-0.69	0.501	
Yr in need of improvement (S)	-0.85	0.87	12	-0.98	0.347	
Num. ELL students (S)	0.18	0.10	12	1.77	0.102	
Num. Special Education students (S)	0.01	0.10	12	0.09	0.927	
Mean score of schools (S)	-0.22	0.24	12	-0.91	0.379	
English Language Learners	5.35	4.64	179	1.15	0.251	
Special Education student	-2.63	3.83	179	-0.69	0.494	
Rec'd supplemental reading instruct	1.23	4.59	179	0.27	0.789	
African American	-2.28	2.72	179	-0.84	0.402	
Baseline NJ score	11.99	1.89	179	6.36	0.000	
Random Effects						
Variance Components		Estimate		ICC		
Level-2 Random Intercept	School	4.57		0.010		
Level-1 Residual	Student	440.29				

Table 58. Comprehension – African American

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	636.74	1.74	12	366.52	0.000	
Treatment (S)	4.45	2.24	12	1.98	0.070	
Num eligible students (S)	0.01	0.05	12	0.22	0.829	
Yr in need of improvement (S)	-0.68	1.06	12	-0.65	0.531	
Num. ELL students (S)	0.20	0.09	12	2.25	0.044	
Num. Special Education students (S)	-0.01	0.08	12	-0.12	0.904	
Mean score of schools (S)	-0.36	0.27	12	-1.33	0.207	
GENDER	-2.51	2.69	191	-0.93	0.353	
Special Education student	-3.22	3.41	191	-0.94	0.347	
Rec'd supplemental reading instruct	0.67	4.37	191	0.15	0.879	
Baseline NJ score	13.31	1.91	191	6.97	0.000	
Random Effects						
Variance Components		Estimate		ICC		
Level-2 Random Intercept	School	3.43		0.008		
Level-1 Residual	Student	432.87				

Table 59. Comprehension – Hispanic

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	644.69	2.33	7	276.74	0.000	
Treatment (S)	0.83	3.65	7	0.23	0.828	
Num eligible students (S)	0.03	0.06	7	0.49	0.636	
Yr in need of improvement (S)	-0.66	0.81	7	-0.82	0.442	
Num. ELL students (S)	0.00	0.14	7	-0.01	0.993	
Num. Special Education students (S)	-0.11	0.10	7	-1.13	0.295	
Mean score of schools (S)	-0.01	0.18	7	-0.06	0.955	
GENDER	2.89	1.74	153	1.66	0.099	
English Language Learners	2.51	4.23	153	0.59	0.553	
Special Education student	-1.25	2.67	153	-0.47	0.640	
Rec'd supplemental reading instruct	1.76	4.07	153	0.43	0.666	
Baseline NJ score	12.46	2.17	153	5.75	0.000	
Random Effects						
Variance Components		Estimate		ICC		
Level-2 Random Intercept	School	12.24		0.030		
Level-1 Residual	Student	401.04				

Table 60. Comprehension – Special Education

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	630.52	1.86	11	338.99	0.000	
Treatment (S)	10.27	2.64	11	3.89	0.003	
Num eligible students (S)	-0.18	0.06	11	-2.92	0.015	
Yr in need of improvement (S)	-0.71	0.64	11	-1.11	0.289	
Num. ELL students (S)	0.25	0.07	11	3.47	0.006	
Num. Special Education students (S)	0.16	0.10	11	1.66	0.124	
Mean score of schools (S)	-0.06	0.15	11	-0.38	0.710	
GENDER	-1.35	3.66	144	-0.37	0.713	
English Language Learners	-2.85	6.85	144	-0.42	0.678	
Rec'd supplemental reading instruct	-0.16	4.73	144	-0.03	0.973	
African American	-4.32	2.81	144	-1.54	0.127	
Baseline NJ score	13.77	2.65	144	5.19	0.000	
Random Effects						
Variance Components		Estimate		ICC		
Level-2 Random Intercept	School	1.45		0.003		
Level-1 Residual	Student	414.29				

B11. Analysis Group 1 – Language Arts -- 1 year of treatment for 6th, 7th, & 8th graders combined

Table 61. Language Arts – Overall

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	598.87	0.63	12	943.46	0.000
Treatment (S)	1.88	1.12	12	1.68	0.118
Num eligible students (S)	-0.14	0.02	12	-6.01	0.000
Yr in need of improvement (S)	0.50	0.49	12	1.01	0.331
Num. ELL students (S)	0.06	0.04	12	1.66	0.122
Num. Special Education students (S)	0.26	0.04	12	6.31	0.000
Mean score of schools (S)	0.56	0.27	12	2.03	0.065
GENDER	-6.80	1.18	1830	-5.75	0.000
English Language Learners	-3.69	1.41	1830	-2.61	0.009
Special Education student	-11.44	1.18	1830	-9.68	0.000
Rec'd supplemental reading instruct	-0.63	1.16	1830	-0.54	0.589
African American	-1.83	1.40	1830	-1.31	0.191
Grade 7 Year 1	14.30	2.38	1830	6.02	0.000
Grade 8 Year 1	26.80	1.47	1830	18.25	0.000
Grade 6 Year 2	-2.12	1.58	1830	-1.34	0.182
Grade 6 Year 3	-0.80	1.64	1830	-0.49	0.626
Baseline NJ score	5.09	0.57	1830	8.89	0.000
Random Effects					
Variance Components	Estimate		ICC		
Level-2 Random Intercept	School	6.85	0.016		
Level-1 Residual	Student	434.67			

Table 62. Language Arts – Female

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	603.21	0.79	12	764.54	0.000
Treatment (S)	3.50	1.29	12	2.71	0.019
Num eligible students (S)	-0.15	0.04	12	-3.57	0.004
Yr in need of improvement (S)	0.06	0.47	12	0.14	0.895
Num. ELL students (S)	0.09	0.05	12	1.76	0.104
Num. Special Education students (S)	0.25	0.07	12	3.74	0.003
Mean score of schools (S)	0.19	0.17	12	1.11	0.290
English Language Learners	-3.50	1.80	774	-1.94	0.052
Special Education student	-14.07	1.36	774	-10.32	0.000
Rec'd supplemental reading instruct	-3.46	0.91	774	-3.78	0.000
African American	-2.22	2.02	774	-1.10	0.274
Grade 7 Year 1	13.09	2.98	774	4.39	0.000
Grade 8 Year 1	25.84	2.58	774	10.00	0.000
Grade 6 Year 2	-1.12	2.42	774	-0.46	0.642
Grade 6 Year 3	-0.33	1.92	774	-0.17	0.864
Baseline NJ score	6.56	0.92	774	7.10	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	0.32	0.001		
Level-1 Residual	Student	454.03			

Table 63. Language Arts – Male

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	595.70	1.42	12	418.43	0.000
Treatment (S)	1.00	1.90	12	0.53	0.608
Num eligible students (S)	-0.11	0.05	12	-2.33	0.038
Yr in need of improvement (S)	0.54	0.73	12	0.74	0.474
Num. ELL students (S)	0.02	0.07	12	0.27	0.789
Num. Special Education students (S)	0.23	0.10	12	2.34	0.037
Mean score of schools (S)	0.55	0.40	12	1.35	0.201
English Language Learners	-4.44	1.84	1041	-2.41	0.016
Special Education student	-9.98	1.75	1041	-5.71	0.000
Rec'd supplemental reading instruct	1.45	1.89	1041	0.76	0.445
African American	-2.08	1.57	1041	-1.33	0.186
Grade 7 Year 1	15.54	2.52	1041	6.17	0.000
Grade 8 Year 1	28.40	1.48	1041	19.24	0.000
Grade 6 Year 2	-2.58	1.83	1041	-1.41	0.159
Grade 6 Year 3	-1.24	2.23	1041	-0.55	0.579
Baseline NJ score	4.17	0.70	1041	5.94	0.000
Random Effects					
Variance Components	Estimate		ICC		
Level-2 Random Intercept	School	21.96	0.051		
Level-1 Residual	Student	411.68			

Table 64. Language Arts –African American

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	598.13	0.89	12	674.66	0.000
Treatment (S)	3.22	1.43	12	2.25	0.044
Num eligible students (S)	-0.13	0.04	12	-3.62	0.004
Yr in need of improvement (S)	0.59	0.56	12	1.06	0.311
Num. ELL students (S)	0.06	0.06	12	1.16	0.267
Num. Special Education students (S)	0.22	0.05	12	4.08	0.002
Mean score of schools (S)	0.40	0.28	12	1.42	0.182
GENDER	-6.78	1.33	1015	-5.10	0.000
English Language Learners	-11.70	10.53	1015	-1.11	0.267
Special Education student	-10.65	1.50	1015	-7.12	0.000
Rec'd supplemental reading instruct	-1.18	1.72	1015	-0.69	0.493
Grade 7 Year 1	13.76	2.19	1015	6.29	0.000
Grade 8 Year 1	25.42	1.91	1015	13.32	0.000
Grade 6 Year 2	-0.16	2.06	1015	-0.08	0.940
Grade 6 Year 3	-0.43	2.12	1015	-0.20	0.840
Baseline NJ score	5.67	0.73	1015	7.75	0.000
Random Effects					
Variance Components	Estimate		ICC		
Level-2 Random Intercept	School	8.31	0.019		
Level-1 Residual	Student	425.69			

Table 65. Language Arts – Hispanic

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	601.04	1.99	10	301.29	0.000
Treatment (S)	-0.69	2.39	10	-0.29	0.778
Num eligible students (S)	-0.11	0.05	10	-2.10	0.062
Yr in need of improvement (S)	0.26	0.55	10	0.48	0.642
Num. ELL students (S)	-0.03	0.08	10	-0.33	0.747
Num. Special Education students (S)	0.23	0.12	10	1.93	0.082
Mean score of schools (S)	0.10	0.22	10	0.43	0.677
GENDER	-6.70	2.16	760	-3.10	0.002
English Language Learners	-2.91	1.27	760	-2.29	0.023
Special Education student	-12.60	2.04	760	-6.18	0.000
Rec'd supplemental reading instruct	0.96	1.35	760	0.71	0.478
Grade 7 Year 1	14.95	3.44	760	4.34	0.000
Grade 8 Year 1	28.50	1.99	760	14.33	0.000
Grade 6 Year 2	-5.07	1.70	760	-2.99	0.003
Grade 6 Year 3	-2.00	2.38	760	-0.84	0.401
Baseline NJ score	4.65	0.71	760	6.52	0.000
Random Effects					
Variance Components	Estimate		ICC		
Level-2 Random Intercept	School	15.83	0.034		
Level-1 Residual	Student	453.57			

Table 66. Language Arts – Special Education

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	589.45	1.24	12	476.60	0.000
Treatment (S)	1.98	1.93	12	1.03	0.324
Num eligible students (S)	-0.07	0.05	12	-1.54	0.148
Yr in need of improvement (S)	0.70	0.67	12	1.05	0.314
Num. ELL students (S)	0.03	0.07	12	0.49	0.635
Num. Special Education students (S)	0.12	0.07	12	1.58	0.139
Mean score of schools (S)	-0.22	0.21	12	-1.04	0.321
GENDER	-3.61	1.82	728	-1.98	0.047
English Language Learners	-0.05	3.08	728	-0.02	0.986
Rec'd supplemental reading instruct	1.52	2.55	728	0.60	0.551
African American	-1.48	2.01	728	-0.74	0.462
Grade 7 Year 1	12.16	4.19	728	2.90	0.004
Grade 8 Year 1	25.83	1.74	728	14.87	0.000
Grade 6 Year 2	-5.91	1.72	728	-3.43	0.001
Grade 6 Year 3	-4.57	2.68	728	-1.70	0.089
Baseline NJ score	4.48	0.60	728	7.41	0.000
Random Effects					
Variance Components	Estimate		ICC		
Level-2 Random Intercept	School	11.10	0.030		
Level-1 Residual	Student	364.97			

B12. Analysis Group 2 – Language Arts -- 1 year of treatment for 6th graders

Table 67. Language Arts – Overall

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	589.84	0.99	12	593.00	0.000
Treatment (S)	2.70	1.45	12	1.87	0.086
Num eligible students (S)	-0.13	0.04	12	-3.35	0.006
Yr in need of improvement (S)	0.85	0.53	12	1.61	0.134
Num. ELL students (S)	0.11	0.05	12	1.98	0.070
Num. Special Education students (S)	0.20	0.06	12	3.36	0.006
Mean score of schools (S)	0.30	0.22	12	1.41	0.184
GENDER	-8.43	1.35	1124	-6.25	0.000
English Language Learners	-2.69	2.20	1124	-1.22	0.222
Special Education student	-10.77	1.61	1124	-6.68	0.000
Rec'd supplemental reading instruct	-0.34	1.23	1124	-0.28	0.783
African American	0.13	1.73	1124	0.08	0.939
Grade 6 Year 2	-2.23	1.68	1124	-1.32	0.186
Grade 6 Year 3	-0.85	1.60	1124	-0.53	0.594
Baseline NJ score	5.65	0.71	1124	7.92	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	9.19		0.020	
Level-1 Residual	Student	439.35			

Table 68. Language Arts – Female

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	595.08	1.20	12	494.83	0.000	
Treatment (S)	3.20	2.07	12	1.54	0.148	
Num eligible students (S)	-0.06	0.07	12	-0.90	0.387	
Yr in need of improvement (S)	0.47	0.76	12	0.61	0.551	
Num. ELL students (S)	0.13	0.08	12	1.62	0.132	
Num. Special Education students (S)	0.08	0.10	12	0.75	0.468	
Mean score of schools (S)	-0.26	0.20	12	-1.33	0.208	
English Language Learners	-2.17	2.43	466	-0.90	0.371	
Special Education student	-14.63	1.68	466	-8.70	0.000	
Rec'd supplemental reading instruct	-3.03	1.74	466	-1.75	0.081	
African American	3.36	3.25	466	1.03	0.302	
Grade 6 Year 2	-1.00	2.51	466	-0.40	0.689	
Grade 6 Year 3	-0.98	1.81	466	-0.54	0.588	
Baseline NJ score	8.78	1.11	466	7.88	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	9.25	0.021			
Level-1 Residual	Student	431.23				

Table 69. Language Arts – Male

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	586.01	1.39	12	423.02	0.000	
Treatment (S)	2.05	1.99	12	1.03	0.323	
Num eligible students (S)	-0.13	0.05	12	-2.52	0.027	
Yr in need of improvement (S)	0.78	0.62	12	1.26	0.233	
Num. ELL students (S)	0.04	0.08	12	0.43	0.672	
Num. Special Education students (S)	0.22	0.09	12	2.35	0.037	
Mean score of schools (S)	0.45	0.23	12	1.92	0.079	
English Language Learners	-2.88	2.42	645	-1.19	0.235	
Special Education student	-8.29	2.56	645	-3.24	0.002	
Rec'd supplemental reading instruct	0.93	2.23	645	0.42	0.675	
African American	-1.95	1.61	645	-1.21	0.228	
Grade 6 Year 2	-2.72	1.85	645	-1.47	0.142	
Grade 6 Year 3	-0.97	2.28	645	-0.42	0.672	
Baseline NJ score	4.11	0.66	645	6.24	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	21.88	0.049			
Level-1 Residual	Student	426.38				

Table 70. Language Arts – African American

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	589.36	1.14	12	517.42	0.000
Treatment (S)	4.55	1.93	12	2.36	0.036
Num eligible students (S)	-0.12	0.05	12	-2.60	0.023
Yr in need of improvement (S)	0.89	0.65	12	1.36	0.198
Num. ELL students (S)	0.08	0.07	12	1.10	0.294
Num. Special Education students (S)	0.17	0.05	12	3.22	0.008
Mean score of schools (S)	0.35	0.24	12	1.47	0.167
GENDER	-9.62	1.36	602	-7.09	0.000
English Language Learners	-7.47	13.11	602	-0.57	0.569
Special Education student	-11.35	2.13	602	-5.34	0.000
Rec'd supplemental reading instruct	-0.90	2.06	602	-0.44	0.663
Grade 6 Year 2	-0.09	2.09	602	-0.04	0.966
Grade 6 Year 3	-0.21	2.02	602	-0.10	0.919
Baseline NJ score	6.35	1.08	602	5.88	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	11.33	0.026		
Level-1 Residual	Student	431.17			

Table 71. Language Arts – Hispanic

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	593.34	2.79	10	212.39	0.000
Treatment (S)	-2.41	3.24	10	-0.74	0.475
Num eligible students (S)	-0.08	0.08	10	-1.03	0.328
Yr in need of improvement (S)	1.58	0.80	10	1.99	0.074
Num. ELL students (S)	-0.06	0.13	10	-0.50	0.629
Num. Special Education students (S)	0.18	0.17	10	1.08	0.307
Mean score of schools (S)	-0.09	0.17	10	-0.51	0.622
GENDER	-7.27	2.62	478	-2.77	0.006
English Language Learners	-1.48	1.78	478	-0.83	0.407
Special Education student	-10.50	2.98	478	-3.52	0.001
Rec'd supplemental reading instruct	0.28	1.78	478	0.16	0.875
Grade 6 Year 2	-5.65	1.91	478	-2.95	0.004
Grade 6 Year 3	-2.48	2.64	478	-0.94	0.350
Baseline NJ score	5.06	0.46	478	11.10	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	20.82	0.043		
Level-1 Residual	Student	460.59			

Table 72. Language Arts – Special Education

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	581.50	1.91	12	303.97	0.000
Treatment (S)	3.35	2.69	12	1.25	0.236
Num eligible students (S)	-0.18	0.10	12	-1.84	0.090
Yr in need of improvement (S)	1.79	1.04	12	1.72	0.110
Num. ELL students (S)	0.13	0.10	12	1.21	0.250
Num. Special Education students (S)	0.23	0.14	12	1.61	0.133
Mean score of schools (S)	-0.39	0.25	12	-1.56	0.144
GENDER	-2.76	2.06	456	-1.34	0.182
English Language Learners	0.27	3.04	456	0.09	0.928
Rec'd supplemental reading instruct	5.15	3.84	456	1.34	0.181
African American	-2.06	3.22	456	-0.64	0.523
Grade 6 Year 2	-5.74	1.68	456	-3.42	0.001
Grade 6 Year 3	-8.59	3.75	456	-2.29	0.022
Baseline NJ score	4.70	0.69	456	6.77	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	33.51	0.084		
Level-1 Residual	Student	366.94			

B13. Analysis Group 3 – Language Arts -- 2 years of treatment for 7th graders

Table 73. Language Arts – Overall

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	606.06	1.40	12	433.60	0.000
Treatment (S)	1.85	1.80	12	1.03	0.325
Num eligible students (S)	-0.09	0.06	12	-1.54	0.150
Yr in need of improvement (S)	0.11	0.59	12	0.19	0.857
Num. ELL students (S)	0.28	0.08	12	3.35	0.006
Num. Special Education students (S)	0.04	0.09	12	0.41	0.692
Mean score of schools (S)	-0.08	0.16	12	-0.51	0.619
GENDER	-7.25	1.32	719	-5.51	0.000
English Language Learners	-3.09	2.24	719	-1.38	0.167
Special Education student	-9.08	2.24	719	-4.06	0.000
Rec'd supplemental reading instruct	-0.51	1.95	719	-0.26	0.794
African American	-1.90	1.84	719	-1.03	0.303
Grade 7 Year 3	-1.41	2.47	719	-0.57	0.568
Baseline NJ score	9.80	1.12	719	8.78	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	9.68	0.022		
Level-1 Residual	Student	440.06			

Table 74. Language Arts –Female

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	612.24	1.80	12	340.01	0.000
Treatment (S)	-0.54	2.06	12	-0.26	0.799
Num eligible students (S)	-0.08	0.06	12	-1.36	0.200
Yr in need of improvement (S)	0.74	0.60	12	1.23	0.242
Num. ELL students (S)	0.27	0.10	12	2.77	0.017
Num. Special Education students (S)	0.06	0.10	12	0.54	0.596
Mean score of schools (S)	0.33	0.17	12	1.95	0.075
English Language Learners	-1.38	2.84	319	-0.49	0.627
Special Education student	-10.93	2.70	319	-4.05	0.000
Rec'd supplemental reading instruct	-1.91	3.76	319	-0.51	0.612
African American	0.36	3.11	319	0.12	0.908
Grade 7 Year 3	-3.39	2.54	319	-1.33	0.183
Baseline NJ score	11.12	1.37	319	8.14	0.000
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	2.67	0.006		
Level-1 Residual	Student	448.00			

Table 75. Language Arts – Male

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	601.99	1.63	12	370.31	0.000	
Treatment (S)	2.03	2.02	12	1.01	0.334	
Num eligible students (S)	-0.10	0.05	12	-1.95	0.075	
Yr in need of improvement (S)	-0.11	0.48	12	-0.23	0.819	
Num. ELL students (S)	0.24	0.07	12	3.65	0.004	
Num. Special Education students (S)	0.04	0.08	12	0.45	0.659	
Mean score of schools (S)	-0.22	0.17	12	-1.30	0.218	
English Language Learners	-4.45	2.95	388	-1.51	0.132	
Special Education student	-8.30	3.10	388	-2.68	0.008	
Rec'd supplemental reading instruct	1.32	2.99	388	0.44	0.658	
African American	-4.02	2.26	388	-1.78	0.076	
Grade 7 Year 3	0.13	3.30	388	0.04	0.969	
Baseline NJ score	8.74	1.33	388	6.59	0.000	
Variance Components						
		Estimate	ICC			
Level-2 Random Intercept	School	0.85	0.002			
Level-1 Residual	Student	436.43				

Table 76. Language Arts – African American

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	605.65	1.27	12	476.99	0.000	
Treatment (S)	1.51	1.89	12	0.80	0.440	
Num eligible students (S)	-0.01	0.05	12	-0.24	0.813	
Yr in need of improvement (S)	-0.51	0.61	12	-0.84	0.415	
Num. ELL students (S)	0.28	0.08	12	3.40	0.006	
Num. Special Education students (S)	-0.05	0.08	12	-0.58	0.570	
Mean score of schools (S)	-0.23	0.10	12	-2.28	0.041	
GENDER	-8.06	1.47	378	-5.48	0.000	
English Language Learners	-5.71	4.29	378	-1.33	0.184	
Special Education student	-7.22	3.14	378	-2.30	0.022	
Rec'd supplemental reading instruct	0.41	2.77	378	0.15	0.883	
Grade 7 Year 3	1.26	3.05	378	0.41	0.679	
Baseline NJ score	10.11	1.39	378	7.28	0.000	
Random Effects						
		Estimate	ICC			
Level-2 Random Intercept	School	6.89	0.016			
Level-1 Residual	Student	417.68				

Table 77. Language Arts – Hispanic

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	607.22	2.30	8	264.10	0.000
Treatment (S)	4.59	2.97	8	1.55	0.160
Num eligible students (S)	-0.26	0.06	8	-4.51	0.002
Yr in need of improvement (S)	1.04	0.48	8	2.14	0.064
Num. ELL students (S)	0.23	0.12	8	1.93	0.089
Num. Special Education students (S)	0.41	0.13	8	3.11	0.015
Mean score of schools (S)	0.34	0.13	8	2.61	0.031
GENDER	-7.42	2.09	313	-3.55	0.001
English Language Learners	-2.61	1.98	313	-1.32	0.189
Special Education student	-11.38	2.49	313	-4.56	0.000
Rec'd supplemental reading instruct	-0.82	4.16	313	-0.20	0.845
Grade 7 Year 3	-4.61	4.08	313	-1.13	0.260
Baseline NJ score	9.38	1.71	313	5.49	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	0.33	0.001		
Level-1 Residual	Student	470.52			

Table 78. Language Arts – Special Education

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	596.79	2.61	12	228.58	0.000
Treatment (S)	2.88	3.14	12	0.92	0.377
Num eligible students (S)	-0.08	0.09	12	-0.89	0.391
Yr in need of improvement (S)	1.21	0.68	12	1.79	0.098
Num. ELL students (S)	0.39	0.12	12	3.30	0.007
Num. Special Education students (S)	-0.07	0.11	12	-0.63	0.544
Mean score of schools (S)	0.15	0.23	12	0.66	0.523
GENDER	-3.65	1.51	315	-2.42	0.016
English Language Learners	-4.25	3.80	315	-1.12	0.266
Rec'd supplemental reading instruct	-3.93	3.84	315	-1.03	0.306
African American	1.08	2.05	315	0.53	0.599
Grade 7 Year 3	2.29	4.18	315	0.55	0.583
Baseline NJ score	7.66	1.71	315	4.47	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	10.03	0.020		
Level-1 Residual	Student	480.70			

B14. Analysis Group 5 – Comprehension -- 2 years of treatment for 7th & 8th graders combined

Table 79. Language Arts – Overall

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	610.50	1.24	12	491.47	0.000
Treatment (S)	2.64	1.63	12	1.61	0.132
Num eligible students (S)	-0.09	0.05	12	-1.92	0.078
Yr in need of improvement (S)	0.23	0.36	12	0.63	0.543
Num. ELL students (S)	0.19	0.06	12	3.10	0.010
Num. Special Education students (S)	0.10	0.09	12	1.15	0.272
Mean score of schools (S)	0.22	0.18	12	1.18	0.260
GENDER	-6.11	0.98	1064	-6.21	0.000
English Language Learners	-3.82	2.05	1064	-1.86	0.062
Special Education student	-9.21	2.29	1064	-4.03	0.000
Rec'd supplemental reading instruct	-1.13	2.49	1064	-0.45	0.650
African American	-0.83	1.82	1064	-0.46	0.647
Grade 8 Year 2	13.73	2.50	1064	5.50	0.000
Grade 7 Year 3	-1.04	2.69	1064	-0.39	0.697
Baseline NJ score	8.94	0.96	1064	9.37	0.000
Random Effects					
Variance Components		Estimate		ICC	
Level-2 Random Intercept	School	8.01		0.018	
Level-1 Residual	Student	428.02			

Table 80. Language Arts – Female

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	616.22	1.15	12	533.97	0.000	
Treatment (S)	1.41	1.30	12	1.09	0.300	
Num eligible students (S)	-0.06	0.04	12	-1.42	0.182	
Yr in need of improvement (S)	0.56	0.28	12	1.96	0.074	
Num. ELL students (S)	0.16	0.06	12	2.47	0.030	
Num. Special Education students (S)	0.05	0.09	12	0.56	0.586	
Mean score of schools (S)	0.42	0.16	12	2.61	0.023	
English Language Learners	-3.27	2.24	486	-1.46	0.144	
Special Education student	-10.59	2.81	486	-3.77	0.000	
Rec'd supplemental reading instruct	-4.93	4.22	486	-1.17	0.244	
African American	-1.64	2.91	486	-0.56	0.573	
Grade 8 Year 2	9.44	2.72	486	3.47	0.001	
Grade 7 Year 3	-2.77	2.63	486	-1.05	0.294	
Baseline NJ score	10.71	1.04	486	10.27	0.000	
Random Effects						
Variance Components		Estimate		ICC		
Level-2 Random Intercept	School	0.21		0.000		
Level-1 Residual	Student	441.84				

Table 81. Language Arts – Male

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	605.89	1.43	12	424.93	0.000	
Treatment (S)	3.40	2.14	12	1.59	0.138	
Num eligible students (S)	-0.10	0.06	12	-1.66	0.122	
Yr in need of improvement (S)	-0.01	0.52	12	-0.02	0.986	
Num. ELL students (S)	0.18	0.06	12	2.78	0.017	
Num. Special Education students (S)	0.11	0.10	12	1.16	0.268	
Mean score of schools (S)	0.26	0.23	12	1.15	0.273	
English Language Learners	-4.00	2.82	565	-1.42	0.157	
Special Education student	-8.00	2.57	565	-3.12	0.002	
Rec'd supplemental reading instruct	1.09	3.04	565	0.36	0.719	
African American	-0.12	2.18	565	-0.05	0.957	
Grade 8 Year 2	17.07	2.68	565	6.36	0.000	
Grade 7 Year 3	0.64	3.55	565	0.18	0.857	
Baseline NJ score	7.77	1.12	565	6.96	0.000	
Random Effects						
Variance Components		Estimate		ICC		
Level-2 Random Intercept	School	10.51		0.025		
Level-1 Residual	Student	410.47				

Table 82. Language Arts – African American

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	610.72	1.52	12	400.78	0.000	
Treatment (S)	1.43	2.05	12	0.70	0.499	
Num eligible students (S)	-0.06	0.06	12	-0.93	0.370	
Yr in need of improvement (S)	-0.42	0.61	12	-0.69	0.503	
Num. ELL students (S)	0.23	0.08	12	2.87	0.015	
Num. Special Education students (S)	0.04	0.09	12	0.44	0.670	
Mean score of schools (S)	0.10	0.20	12	0.48	0.639	
GENDER	-5.09	1.30	573	-3.92	0.000	
English Language Learners	-6.48	4.10	573	-1.58	0.114	
Special Education student	-7.86	2.70	573	-2.92	0.004	
Rec'd supplemental reading instruct	-1.43	2.47	573	-0.58	0.564	
Grade 8 Year 2	17.26	2.30	573	7.49	0.000	
Grade 7 Year 3	2.14	3.08	573	0.69	0.488	
Baseline NJ score	8.13	1.17	573	6.93	0.000	
Random Effects						
Variance Components		Estimate		ICC		
Level-2 Random Intercept	School	19.65		0.045		
Level-1 Residual	Student	414.08				

Table 83. Language Arts – Hispanic

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	611.70	1.47	9	416.40	0.000	
Treatment (S)	4.72	1.80	9	2.62	0.028	
Num eligible students (S)	-0.21	0.04	9	-5.25	0.000	
Yr in need of improvement (S)	1.08	0.24	9	4.44	0.002	
Num. ELL students (S)	0.06	0.06	9	0.98	0.354	
Num. Special Education students (S)	0.40	0.08	9	5.04	0.000	
Mean score of schools (S)	0.39	0.12	9	3.30	0.010	
GENDER	-8.16	1.63	456	-5.01	0.000	
English Language Learners	-3.46	1.35	456	-2.56	0.011	
Special Education student	-10.85	2.60	456	-4.18	0.000	
Rec'd supplemental reading instruct	-0.33	5.19	456	-0.07	0.949	
Grade 8 Year 2	8.71	2.76	456	3.15	0.002	
Grade 7 Year 3	-4.81	4.72	456	-1.02	0.308	
Baseline NJ score	10.19	1.38	456	7.38	0.000	
Random Effects						
Variance Components		Estimate		ICC		
Level-2 Random Intercept	School	0.14		0.000		
Level-1 Residual	Student	437.85				

Table 84. Language Arts – Special Education

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	600.81	2.28	12	263.18	0.000
Treatment (S)	2.73	2.54	12	1.07	0.305
Num eligible students (S)	-0.10	0.06	12	-1.54	0.149
Yr in need of improvement (S)	0.88	0.48	12	1.82	0.093
Num. ELL students (S)	0.35	0.07	12	4.80	0.000
Num. Special Education students (S)	-0.04	0.09	12	-0.44	0.671
Mean score of schools (S)	0.30	0.20	12	1.52	0.154
GENDER	-2.18	1.25	438	-1.74	0.082
English Language Learners	-2.46	4.25	438	-0.58	0.563
Rec'd supplemental reading instruct	-4.12	4.02	438	-1.02	0.307
African American	1.91	1.92	438	1.00	0.320
Grade 8 Year 2	15.47	2.88	438	5.36	0.000
Grade 7 Year 3	2.48	4.48	438	0.55	0.580
Baseline NJ score	8.23	1.07	438	7.67	0.000
Random Effects					
Variance Components	Estimate		ICC		
Level-2 Random Intercept	School	9.62	0.020		
Level-1 Residual	Student	462.95			

B15. Analysis Group 6 – Comprehension -- 3 years of treatment for 8th graders

Table 85. Language Arts – Overall

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	622.18	0.76	12	813.33	0.000
Treatment (S)	4.03	1.50	12	2.69	0.020
Num eligible students (S)	0.00	0.03	12	-0.04	0.968
Yr in need of improvement (S)	0.79	0.54	12	1.46	0.169
Num. ELL students (S)	0.12	0.06	12	2.02	0.066
Num. Special Education students (S)	-0.09	0.06	12	-1.60	0.135
Mean score of schools (S)	-0.03	0.17	12	-0.20	0.843
GENDER	-5.50	1.62	354	-3.40	0.001
English Language Learners	-1.51	3.47	354	-0.44	0.662
Special Education student	-2.76	2.97	354	-0.93	0.354
Rec'd supplemental reading instruct	-1.29	3.21	354	-0.40	0.688
African American	-0.88	2.42	354	-0.36	0.717
Baseline NJ score	11.50	1.43	354	8.04	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	0.47	0.001		
Level-1 Residual	Student	412.97			

Table 86. Language Arts – Female

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	627.87	0.86	12	726.57	0.000
Treatment (S)	1.36	2.75	12	0.50	0.629
Num eligible students (S)	0.00	0.06	12	-0.03	0.976
Yr in need of improvement (S)	1.48	1.04	12	1.42	0.181
Num. ELL students (S)	0.17	0.10	12	1.77	0.101
Num. Special Education students (S)	-0.06	0.10	12	-0.58	0.572
Mean score of schools (S)	0.11	0.21	12	0.54	0.600
English Language Learners	-3.98	4.26	164	-0.94	0.352
Special Education student	3.35	5.80	164	0.58	0.565
Rec'd supplemental reading instruct	-10.88	5.27	164	-2.07	0.040
African American	1.44	3.40	164	0.42	0.673
Baseline NJ score	11.27	1.90	164	5.92	0.000
Random Effects					
Variance Components		Estimate	ICC		
Level-2 Random Intercept	School	14.96	0.032		
Level-1 Residual	Student	456.67			

Table 87. Language Arts – Male

Fixed Effects						
Effect	Estimate	Standard			Pr > t 	
		Error	DF	t Value		
Intercept	616.70	1.30	12	473.50	0.000	
Treatment (S)	6.29	1.80	12	3.49	0.005	
Num eligible students (S)	-0.04	0.05	12	-0.81	0.435	
Yr in need of improvement (S)	0.14	0.49	12	0.29	0.779	
Num. ELL students (S)	0.14	0.07	12	1.97	0.071	
Num. Special Education students (S)	-0.09	0.08	12	-1.12	0.284	
Mean score of schools (S)	-0.20	0.21	12	-0.98	0.345	
English Language Learners	3.25	7.97	179	0.41	0.684	
Special Education student	-6.38	3.60	179	-1.77	0.078	
Rec'd supplemental reading instruct	5.60	3.23	179	1.74	0.084	
African American	-2.20	2.91	179	-0.75	0.452	
Baseline NJ score	11.43	2.10	179	5.44	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	0.17	0.000			
Level-1 Residual	Student	366.50				

Table 88. Language Arts – African American

Fixed Effects						
Effect	Estimate	Standard			Pr > t 	
		Error	DF	t Value		
Intercept	620.17	1.53	12	405.82	0.000	
Treatment (S)	5.17	2.09	12	2.47	0.030	
Num eligible students (S)	-0.04	0.06	12	-0.65	0.527	
Yr in need of improvement (S)	1.04	0.93	12	1.11	0.290	
Num. ELL students (S)	0.12	0.09	12	1.31	0.216	
Num. Special Education students (S)	-0.05	0.09	12	-0.55	0.590	
Mean score of schools (S)	0.11	0.17	12	0.63	0.541	
GENDER	-7.01	1.94	189	-3.62	0.001	
Special Education student	-4.10	4.30	189	-0.95	0.342	
Rec'd supplemental reading instruct	-1.10	4.60	189	-0.24	0.811	
Baseline NJ score	10.11	1.52	189	6.67	0.000	
Random Effects						
Variance Components		Estimate	ICC			
Level-2 Random Intercept	School	9.28	0.024			
Level-1 Residual	Student	383.21				

Table 89. Language Arts – Hispanic

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	623.08	3.15	7	197.65	0.000	
Treatment (S)	4.91	5.00	7	0.98	0.359	
Num eligible students (S)	-0.06	0.07	7	-0.82	0.439	
Yr in need of improvement (S)	0.74	1.00	7	0.74	0.485	
Num. ELL students (S)	0.19	0.20	7	0.95	0.374	
Num. Special Education students (S)	0.02	0.10	7	0.20	0.850	
Mean score of schools (S)	-0.52	0.21	7	-2.46	0.043	
GENDER	-3.56	3.14	153	-1.13	0.259	
English Language Learners	0.23	3.72	153	0.06	0.950	
Special Education student	0.27	2.75	153	0.10	0.922	
Rec'd supplemental reading instruct	-0.37	4.11	153	-0.09	0.928	
Baseline NJ score	14.31	3.06	153	4.68	0.000	
Random Effects						
Variance Components		Estimate		ICC		
Level-2 Random Intercept	School	22.17		0.047		
Level-1 Residual	Student	449.74				

Table 90. Language Arts – Special Education

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	613.66	1.23	11	497.37	0.000	
Treatment (S)	7.45	2.48	11	3.00	0.013	
Num eligible students (S)	-0.13	0.08	11	-1.57	0.145	
Yr in need of improvement (S)	1.25	0.68	11	1.83	0.094	
Num. ELL students (S)	0.24	0.08	11	2.83	0.017	
Num. Special Education students (S)	0.00	0.11	11	0.04	0.969	
Mean score of schools (S)	0.03	0.25	11	0.11	0.912	
GENDER	-5.82	3.35	143	-1.74	0.084	
English Language Learners	-14.98	3.49	143	-4.30	0.000	
Rec'd supplemental reading instruct	2.65	3.49	143	0.76	0.449	
African American	-4.19	3.56	143	-1.18	0.241	
Baseline NJ score	9.24	2.36	143	3.91	0.000	
Random Effects						
Variance Components		Estimate		ICC		
Level-2 Random Intercept	School	0.29		0.001		
Level-1 Residual	Student	363.40				

B16. Analysis Group 1 – Attendance -- 1 year of treatment for 6th, 7th, & 8th graders combined

Table 91. Attendance – Overall

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	22.13	0.05	12	60.12	0.000
Treatment (S)	0.05	0.07	12	0.63	0.539
Num eligible students (S)	0.00	0.00	12	2.41	0.033
Yr in need of improvement (S)	0.04	0.03	12	1.43	0.178
Num. ELL students (S)	0.00	0.00	12	0.32	0.757
Num. Special Education students (S)	-0.01	0.00	12	-2.81	0.016
Mean score of schools (S)	-0.01	0.01	12	-0.82	0.431
GENDER	-0.02	0.04	2085	-0.60	0.550
English Language Learners	-0.37	0.06	2085	-6.51	0.000
Special Education student	-0.08	0.05	2085	-1.66	0.098
Rec'd supplemental reading instruct	-0.09	0.07	2085	-1.23	0.220
African American	-0.02	0.06	2085	-0.39	0.693
Grade 7 Year 1	0.16	0.06	2085	2.57	0.010
Grade 8 Year 1	0.35	0.07	2085	4.85	0.000
Grade 6 Year 2	0.12	0.08	2085	1.55	0.122
Grade 6 Year 3	-0.35	0.09	2085	-4.11	0.000
Baseline NJ score	-0.05	0.02	2085	-2.50	0.013

Table 92. Attendance – Female

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	21.15	0.05	12	55.57	0.000
Treatment (S)	0.08	0.10	12	0.83	0.425
Num eligible students (S)	0.01	0.00	12	2.66	0.021
Yr in need of improvement (S)	0.03	0.04	12	0.78	0.453
Num. ELL students (S)	0.00	0.00	12	-0.33	0.745
Num. Special Education students (S)	-0.01	0.01	12	-2.08	0.059
Mean score of schools (S)	0.00	0.02	12	0.02	0.982
English Language Learners	-0.39	0.07	886	-5.21	0.000
Special Education student	-0.10	0.10	886	-1.09	0.277
Rec'd supplemental reading instruct	-0.10	0.09	886	-1.08	0.279
African American	0.04	0.07	886	0.57	0.568
Grade 7 Year 1	0.18	0.07	886	2.64	0.009
Grade 8 Year 1	0.48	0.08	886	5.82	0.000
Grade 6 Year 2	0.22	0.14	886	1.58	0.114
Grade 6 Year 3	-0.30	0.09	886	-3.27	0.001
Baseline NJ score	-0.04	0.04	886	-1.07	0.286

Table 93. Attendance – Male

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	22.76	0.05	12	60.46	0.000
Treatment (S)	0.02	0.06	12	0.29	0.781
Num eligible students (S)	0.00	0.00	12	0.84	0.419
Yr in need of improvement (S)	0.05	0.02	12	2.25	0.044
Num. ELL students (S)	0.00	0.00	12	1.43	0.179
Num. Special Education students (S)	-0.01	0.00	12	-2.33	0.038
Mean score of schools (S)	-0.02	0.01	12	-1.82	0.094
English Language Learners	-0.34	0.07	1184	-4.89	0.000
Special Education student	-0.07	0.07	1184	-1.08	0.282
Rec'd supplemental reading instruct	-0.09	0.07	1184	-1.25	0.212
African American	-0.06	0.07	1184	-0.83	0.406
Grade 7 Year 1	0.14	0.09	1184	1.56	0.120
Grade 8 Year 1	0.25	0.08	1184	3.13	0.002
Grade 6 Year 2	0.03	0.07	1184	0.42	0.673
Grade 6 Year 3	-0.38	0.10	1184	-3.70	0.000
Baseline NJ score	-0.05	0.02	1184	-2.45	0.014

Table 94. Attendance - African American

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	22.18	0.05	12	58.10	0.000
Treatment (S)	0.10	0.07	12	1.48	0.164
Num eligible students (S)	0.00	0.00	12	1.37	0.197
Yr in need of improvement (S)	0.05	0.03	12	1.57	0.142
Num. ELL students (S)	0.00	0.00	12	1.20	0.252
Num. Special Education students (S)	-0.01	0.00	12	-2.14	0.053
Mean score of schools (S)	-0.03	0.01	12	-2.02	0.066
GENDER	-0.04	0.06	1181	-0.75	0.455
English Language Learners	-0.97	0.39	1181	-2.49	0.013
Special Education student	-0.10	0.05	1181	-1.86	0.063
Rec'd supplemental reading instruct	-0.11	0.10	1181	-1.10	0.274
Grade 7 Year 1	0.03	0.10	1181	0.31	0.760
Grade 8 Year 1	0.31	0.11	1181	2.84	0.005
Grade 6 Year 2	0.03	0.10	1181	0.33	0.742
Grade 6 Year 3	-0.49	0.11	1181	-4.41	0.000
Baseline NJ score	-0.06	0.02	1181	-2.77	0.006

Table 95. Attendance – Hispanic

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	19.81	0.08	11	39.53	0.000
Treatment (S)	0.18	0.09	11	1.89	0.085
Num eligible students (S)	0.00	0.00	11	1.62	0.133
Yr in need of improvement (S)	0.02	0.03	11	0.73	0.480
Num. ELL students (S)	0.00	0.00	11	0.48	0.641
Num. Special Education students (S)	-0.01	0.00	11	-2.06	0.063
Mean score of schools (S)	0.00	0.01	11	0.12	0.907
GENDER	-0.01	0.03	848	-0.35	0.727
English Language Learners	-0.34	0.07	848	-4.71	0.000
Special Education student	-0.06	0.09	848	-0.68	0.494
Rec'd supplemental reading instruct	-0.11	0.08	848	-1.41	0.158
Grade 7 Year 1	0.30	0.05	848	6.37	0.000
Grade 8 Year 1	0.40	0.09	848	4.48	0.000
Grade 6 Year 2	0.22	0.07	848	2.99	0.003
Grade 6 Year 3	-0.14	0.14	848	-1.03	0.303
Baseline NJ score	-0.04	0.03	848	-1.28	0.200

Table 96. Attendance - Special Education

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	22.94	0.06	12	54.77	0.000
Treatment (S)	0.04	0.10	12	0.38	0.709
Num eligible students (S)	0.00	0.00	12	0.62	0.549
Yr in need of improvement (S)	0.05	0.03	12	1.63	0.129
Num. ELL students (S)	0.00	0.00	12	0.77	0.456
Num. Special Education students (S)	-0.01	0.01	12	-1.17	0.266
Mean score of schools (S)	0.00	0.01	12	-0.54	0.598
GENDER	-0.03	0.05	829	-0.60	0.552
English Language Learners	0.02	0.12	829	0.17	0.863
Rec'd supplemental reading instruct	-0.08	0.10	829	-0.76	0.449
African American	-0.01	0.08	829	-0.10	0.919
Grade 7 Year 1	-0.02	0.10	829	-0.23	0.820
Grade 8 Year 1	0.21	0.07	829	2.94	0.004
Grade 6 Year 2	0.00	0.08	829	0.06	0.955
Grade 6 Year 3	-0.31	0.12	829	-2.61	0.010
Baseline NJ score	-0.07	0.02	829	-3.21	0.002

B17. Analysis Group 2 – Attendance -- 1 year of treatment for 6th graders

Table 97. Attendance – Overall

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	20.09	0.06	12	50.26	0.000
Treatment (S)	-0.04	0.11	12	-0.37	0.716
Num eligible students (S)	0.00	0.00	12	1.39	0.191
Yr in need of improvement (S)	0.06	0.03	12	1.78	0.099
Num. ELL students (S)	0.00	0.00	12	-0.84	0.416
Num. Special Education students (S)	-0.01	0.01	12	-1.34	0.205
Mean score of schools (S)	0.00	0.02	12	0.10	0.926
GENDER	0.00	0.05	1221	-0.03	0.975
English Language Learners	-0.20	0.05	1221	-4.34	0.000
Special Education student	0.01	0.05	1221	0.27	0.791
Rec'd supplemental reading instruct	0.00	0.06	1221	-0.01	0.992
African American	-0.05	0.06	1221	-0.77	0.441
Grade 6 Year 2	0.12	0.08	1221	1.58	0.115
Grade 6 Year 3	-0.38	0.08	1221	-4.76	0.000
Baseline NJ score	-0.06	0.02	1221	-3.22	0.002

Table 98. Attendance – Female

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	19.46	0.06	12	45.83	0.000
Treatment (S)	0.01	0.13	12	0.11	0.912
Num eligible students (S)	0.01	0.00	12	1.73	0.109
Yr in need of improvement (S)	0.04	0.05	12	0.83	0.421
Num. ELL students (S)	0.00	0.00	12	-0.95	0.360
Num. Special Education students (S)	-0.01	0.01	12	-1.24	0.239
Mean score of schools (S)	0.00	0.02	12	0.25	0.809
English Language Learners	-0.23	0.09	516	-2.45	0.015
Special Education student	0.00	0.08	516	0.03	0.980
Rec'd supplemental reading instruct	-0.04	0.11	516	-0.34	0.736
African American	-0.06	0.08	516	-0.67	0.506
Grade 6 Year 2	0.22	0.14	516	1.61	0.108
Grade 6 Year 3	-0.32	0.08	516	-3.93	0.000
Baseline NJ score	-0.06	0.03	516	-1.92	0.055

Table 99. Attendance – Male

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	20.97	0.06	12	47.19	0.000
Treatment (S)	-0.07	0.10	12	-0.76	0.462
Num eligible students (S)	0.00	0.00	12	0.95	0.362
Yr in need of improvement (S)	0.09	0.03	12	2.53	0.027
Num. ELL students (S)	0.00	0.00	12	-0.33	0.747
Num. Special Education students (S)	-0.01	0.00	12	-1.14	0.278
Mean score of schools (S)	0.00	0.01	12	0.08	0.940
English Language Learners	-0.17	0.11	692	-1.56	0.119
Special Education student	0.00	0.07	692	0.03	0.977
Rec'd supplemental reading instruct	0.00	0.07	692	-0.01	0.995
African American	-0.05	0.08	692	-0.59	0.552
Grade 6 Year 2	0.04	0.06	692	0.68	0.496
Grade 6 Year 3	-0.40	0.10	692	-3.99	0.000
Baseline NJ score	-0.06	0.02	692	-3.36	0.001

Table 100. Attendance – African American

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	19.30	0.07	12	41.19	0.000
Treatment (S)	0.00	0.14	12	0.01	0.990
Num eligible students (S)	0.01	0.00	12	1.44	0.175
Yr in need of improvement (S)	0.09	0.04	12	2.00	0.068
Num. ELL students (S)	0.00	0.00	12	-0.73	0.481
Num. Special Education students (S)	-0.01	0.01	12	-1.45	0.173
Mean score of schools (S)	0.01	0.02	12	0.80	0.439
GENDER	0.03	0.08	673	0.42	0.672
English Language Learners	-1.08	0.50	673	-2.18	0.029
Special Education student	-0.04	0.06	673	-0.71	0.477
Rec'd supplemental reading instruct	-0.03	0.10	673	-0.34	0.734
Grade 6 Year 2	0.05	0.11	673	0.49	0.622
Grade 6 Year 3	-0.49	0.11	673	-4.46	0.000
Baseline NJ score	-0.06	0.03	673	-2.35	0.019

Table 101. Attendance – Hispanic

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	17.89	0.10	11	27.62	0.000
Treatment (S)	0.19	0.15	11	1.29	0.223
Num eligible students (S)	0.00	0.00	11	0.41	0.688
Yr in need of improvement (S)	0.01	0.03	11	0.29	0.775
Num. ELL students (S)	0.00	0.01	11	0.25	0.805
Num. Special Education students (S)	-0.01	0.00	11	-1.08	0.303
Mean score of schools (S)	0.01	0.01	11	1.46	0.173
GENDER	-0.05	0.04	505	-1.28	0.202
English Language Learners	-0.18	0.05	505	-3.59	0.001
Special Education student	0.09	0.06	505	1.42	0.156
Rec'd supplemental reading instruct	-0.05	0.07	505	-0.78	0.439
Grade 6 Year 2	0.21	0.07	505	2.95	0.004
Grade 6 Year 3	-0.19	0.13	505	-1.47	0.141
Baseline NJ score	-0.06	0.03	505	-1.67	0.096

Table 102. Attendance – Special Education

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	22.93	0.08	12	38.32	0.000
Treatment (S)	-0.06	0.13	12	-0.45	0.662
Num eligible students (S)	0.00	0.00	12	0.88	0.397
Yr in need of improvement (S)	0.07	0.04	12	1.68	0.118
Num. ELL students (S)	0.00	0.00	12	-0.45	0.658
Num. Special Education students (S)	-0.01	0.01	12	-1.12	0.287
Mean score of schools (S)	0.00	0.01	12	-0.36	0.726
GENDER	-0.03	0.06	504	-0.54	0.587
English Language Learners	-0.06	0.14	504	-0.44	0.663
Rec'd supplemental reading instruct	0.09	0.08	504	1.13	0.261
African American	-0.14	0.06	504	-2.11	0.035
Grade 6 Year 2	0.02	0.08	504	0.27	0.784
Grade 6 Year 3	-0.45	0.13	504	-3.51	0.001
Baseline NJ score	-0.06	0.02	504	-2.58	0.010

B18. Analysis Group 3 – Attendance – 2 years of treatment for 7th graders

Table 103. Attendance – Overall

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	19.06	0.04	12	69.05	0.000
Treatment (S)	0.11	0.07	12	1.51	0.156
Num eligible students (S)	0.00	0.00	12	2.53	0.027
Yr in need of improvement (S)	0.04	0.02	12	1.83	0.091
Num. ELL students (S)	0.00	0.00	12	-0.31	0.763
Num. Special Education students (S)	-0.01	0.00	12	-1.81	0.095
Mean score of schools (S)	0.00	0.01	12	-0.37	0.721
GENDER	0.05	0.06	649	0.97	0.333
English Language Learners	-0.17	0.13	649	-1.28	0.200
Special Education student	0.02	0.07	649	0.28	0.778
Rec'd supplemental reading instruct	0.03	0.13	649	0.24	0.809
African American	0.09	0.11	649	0.83	0.405
Grade 7 Year 3	-0.47	0.11	649	-4.37	0.000
Baseline NJ score	-0.06	0.04	649	-1.57	0.116

Table 104. Attendance – Female

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	17.24	0.05	12	56.68	0.000
Treatment (S)	0.21	0.06	12	3.40	0.006
Num eligible students (S)	0.01	0.00	12	4.66	0.000
Yr in need of improvement (S)	0.01	0.02	12	0.53	0.607
Num. ELL students (S)	-0.01	0.00	12	-1.68	0.119
Num. Special Education students (S)	0.00	0.00	12	-1.06	0.309
Mean score of schools (S)	-0.01	0.01	12	-1.14	0.276
English Language Learners	-0.15	0.16	290	-0.95	0.345
Special Education student	0.06	0.10	290	0.56	0.578
Rec'd supplemental reading instruct	-0.02	0.17	290	-0.10	0.918
African American	-0.02	0.17	290	-0.11	0.913
Grade 7 Year 3	-0.50	0.12	290	-4.30	0.000
Baseline NJ score	-0.05	0.04	290	-1.13	0.261

Table 105. Attendance – Male

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	20.32	0.07	12	45.93	0.000
Treatment (S)	0.05	0.11	12	0.47	0.648
Num eligible students (S)	0.00	0.00	12	1.65	0.125
Yr in need of improvement (S)	0.06	0.03	12	2.06	0.061
Num. ELL students (S)	0.00	0.00	12	0.45	0.661
Num. Special Education students (S)	-0.01	0.00	12	-1.96	0.074
Mean score of schools (S)	0.00	0.01	12	-0.23	0.825
English Language Learners	-0.13	0.14	347	-0.96	0.338
Special Education student	-0.01	0.11	347	-0.07	0.947
Rec'd supplemental reading instruct	0.05	0.15	347	0.35	0.727
African American	0.16	0.15	347	1.05	0.294
Grade 7 Year 3	-0.45	0.17	347	-2.57	0.011
Baseline NJ score	-0.06	0.05	347	-1.09	0.276

Table 106. Attendance – African American

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	19.80	0.06	12	50.88	0.000
Treatment (S)	0.06	0.09	12	0.61	0.551
Num eligible students (S)	0.01	0.00	12	2.79	0.017
Yr in need of improvement (S)	0.03	0.03	12	0.89	0.389
Num. ELL students (S)	0.00	0.01	12	-0.81	0.432
Num. Special Education students (S)	-0.01	0.00	12	-2.96	0.013
Mean score of schools (S)	0.00	0.01	12	-0.74	0.475
GENDER	0.10	0.09	344	1.09	0.277
English Language Learners	-0.65	0.14	344	-4.66	0.000
Special Education student	0.05	0.14	344	0.39	0.693
Rec'd supplemental reading instruct	0.11	0.17	344	0.62	0.534
Grade 7 Year 3	-0.57	0.15	344	-3.81	0.000
Baseline NJ score	-0.05	0.05	344	-0.94	0.350

Table 107. Attendance – Hispanic

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	19.82	0.10	8	30.49	0.000
Treatment (S)	-0.02	0.15	8	-0.17	0.872
Num eligible students (S)	0.00	0.00	8	0.44	0.670
Yr in need of improvement (S)	0.15	0.06	8	2.64	0.030
Num. ELL students (S)	-0.01	0.01	8	-2.08	0.071
Num. Special Education students (S)	0.01	0.01	8	1.77	0.115
Mean score of schools (S)	0.02	0.01	8	1.91	0.092
GENDER	-0.01	0.10	279	-0.06	0.951
English Language Learners	-0.19	0.12	279	-1.57	0.117
Special Education student	-0.03	0.07	279	-0.44	0.661
Rec'd supplemental reading instruct	0.00	0.14	279	-0.03	0.975
Grade 7 Year 3	-0.41	0.10	279	-3.95	0.000
Baseline NJ score	-0.07	0.05	279	-1.33	0.184

Table 108. Attendance - Special Education

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	20.29	0.06	12	46.61	0.000
Treatment (S)	0.08	0.10	12	0.84	0.419
Num eligible students (S)	0.01	0.00	12	4.70	0.000
Yr in need of improvement (S)	0.01	0.04	12	0.18	0.860
Num. ELL students (S)	-0.01	0.00	12	-2.36	0.036
Num. Special Education students (S)	-0.01	0.00	12	-4.09	0.002
Mean score of schools (S)	-0.01	0.01	12	-1.13	0.280
GENDER	0.03	0.07	277	0.40	0.688
English Language Learners	-0.07	0.19	277	-0.38	0.705
Rec'd supplemental reading instruct	0.26	0.25	277	1.02	0.307
African American	0.06	0.16	277	0.39	0.696
Grade 7 Year 3	-0.63	0.25	277	-2.49	0.014
Baseline NJ score	-0.04	0.05	277	-0.86	0.389

B19. Analysis Group 5 – Comprehension -- 2 years of treatment for 7th & 8th graders combined

Table 109. Attendance – Overall

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	21.33	0.04	12	82.65	0.000
Treatment (S)	0.07	0.07	12	0.99	0.341
Num eligible students (S)	0.00	0.00	12	2.62	0.023
Yr in need of improvement (S)	0.03	0.02	12	1.42	0.182
Num. ELL students (S)	0.00	0.00	12	-0.67	0.515
Num. Special Education students (S)	0.00	0.00	12	-0.81	0.433
Mean score of schools (S)	0.00	0.01	12	-0.81	0.433
GENDER	0.04	0.06	925	0.72	0.469
English Language Learners	-0.22	0.10	925	-2.23	0.026
Special Education student	-0.01	0.05	925	-0.27	0.791
Rec'd supplemental reading instruct	0.01	0.08	925	0.15	0.882
African American	-0.02	0.10	925	-0.16	0.870
Grade 8 Year 2	0.15	0.06	925	2.34	0.019
Grade 7 Year 3	-0.44	0.10	925	-4.50	0.000
Baseline NJ score	-0.08	0.04	925	-1.85	0.065

Table 110. Attendance – Female

Fixed Effects					
Effect	Standard				
	Estimate	Error	DF	t Value	Pr > t
Intercept	18.42	0.05	12	63.42	0.000
Treatment (S)	0.24	0.06	12	3.72	0.003
Num eligible students (S)	0.01	0.00	12	6.28	0.000
Yr in need of improvement (S)	0.01	0.02	12	0.36	0.727
Num. ELL students (S)	0.00	0.00	12	-1.59	0.137
Num. Special Education students (S)	0.00	0.00	12	-0.58	0.570
Mean score of schools (S)	-0.01	0.01	12	-2.70	0.020
English Language Learners	-0.23	0.15	423	-1.60	0.111
Special Education student	0.02	0.08	423	0.28	0.778
Rec'd supplemental reading instruct	-0.06	0.16	423	-0.38	0.702
African American	-0.07	0.14	423	-0.50	0.615
Grade 8 Year 2	0.18	0.09	423	2.07	0.039
Grade 7 Year 3	-0.47	0.11	423	-4.22	0.000
Baseline NJ score	-0.02	0.03	423	-0.53	0.597

Table 111. Attendance - Male

Fixed Effects						
Effect	Estimate	Standard		DF	t Value	Pr > t
		Error				
Intercept	23.55	0.04		12	76.88	0.000
Treatment (S)	-0.04	0.09		12	-0.39	0.703
Num eligible students (S)	0.00	0.00		12	0.95	0.363
Yr in need of improvement (S)	0.06	0.03		12	2.01	0.067
Num. ELL students (S)	0.00	0.00		12	-0.08	0.936
Num. Special Education students (S)	0.00	0.00		12	-0.30	0.767
Mean score of schools (S)	0.01	0.01		12	0.95	0.361
English Language Learners	-0.09	0.11		489	-0.82	0.415
Special Education student	-0.02	0.09		489	-0.25	0.804
Rec'd supplemental reading instruct	0.04	0.11		489	0.37	0.708
African American	0.05	0.09		489	0.48	0.629
Grade 8 Year 2	0.12	0.11		489	1.15	0.250
Grade 7 Year 3	-0.39	0.17		489	-2.25	0.025
Baseline NJ score	-0.14	0.06		489	-2.29	0.022

Table 112. Attendance – African American

Fixed Effects						
Effect	Estimate	Standard		DF	t Value	Pr > t
		Error				
Intercept	22.39	0.06		12	49.01	0.000
Treatment (S)	-0.03	0.09		12	-0.37	0.721
Num eligible students (S)	0.01	0.00		12	3.42	0.006
Yr in need of improvement (S)	-0.01	0.04		12	-0.21	0.836
Num. ELL students (S)	-0.01	0.00		12	-1.12	0.284
Num. Special Education students (S)	-0.01	0.00		12	-2.29	0.041
Mean score of schools (S)	-0.01	0.01		12	-1.22	0.246
GENDER	0.09	0.09		513	1.09	0.276
English Language Learners	-0.50	0.17		513	-3.05	0.003
Special Education student	0.03	0.08		513	0.41	0.681
Rec'd supplemental reading instruct	0.04	0.10		513	0.35	0.724
Grade 8 Year 2	0.03	0.10		513	0.26	0.795
Grade 7 Year 3	-0.52	0.13		513	-3.93	0.000
Baseline NJ score	-0.09	0.04		513	-2.20	0.028

Table 113. Attendance – Hispanic

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	21.58	0.09	9	35.96	0.000	
Treatment (S)	0.12	0.12	9	1.02	0.337	
Num eligible students (S)	0.00	0.00	9	-0.14	0.895	
Yr in need of improvement (S)	0.10	0.05	9	2.16	0.059	
Num. ELL students (S)	-0.01	0.01	9	-1.34	0.213	
Num. Special Education students (S)	0.02	0.01	9	1.87	0.093	
Mean score of schools (S)	0.00	0.01	9	0.34	0.739	
GENDER	-0.04	0.06	380	-0.70	0.487	
English Language Learners	-0.20	0.10	380	-1.95	0.052	
Special Education student	-0.07	0.04	380	-1.70	0.089	
Rec'd supplemental reading instruct	0.03	0.10	380	0.29	0.775	
Grade 8 Year 2	0.30	0.07	380	4.20	0.000	
Grade 7 Year 3	-0.43	0.11	380	-3.98	0.000	
Baseline NJ score	-0.06	0.06	380	-0.90	0.370	

Table 114. Attendance - Special Education

Fixed Effects						
Effect	Estimate	Standard		t Value	Pr > t 	
		Error	DF			
Intercept	23.27	0.07	12	43.23	0.000	
Treatment (S)	0.05	0.11	12	0.50	0.625	
Num eligible students (S)	0.01	0.00	12	3.85	0.003	
Yr in need of improvement (S)	0.02	0.03	12	0.54	0.596	
Num. ELL students (S)	-0.01	0.00	12	-1.59	0.138	
Num. Special Education students (S)	-0.01	0.00	12	-2.82	0.016	
Mean score of schools (S)	0.00	0.01	12	-0.72	0.486	
GENDER	0.08	0.11	382	0.75	0.455	
English Language Learners	-0.15	0.15	382	-1.01	0.314	
Rec'd supplemental reading instruct	-0.08	0.19	382	-0.44	0.657	
African American	0.03	0.14	382	0.19	0.850	
Grade 8 Year 2	0.19	0.15	382	1.25	0.212	
Grade 7 Year 3	-0.26	0.19	382	-1.35	0.178	
Baseline NJ score	-0.09	0.08	382	-1.20	0.231	

B20. Analysis Group 6 – Comprehension -- 3 years of treatment for 8th graders

Table 115. Attendance – Overall

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	15.58	0.05	12	52.47	0.000
Treatment (S)	0.00	0.06	12	-0.01	0.990
Num eligible students (S)	0.01	0.00	12	2.85	0.015
Yr in need of improvement (S)	-0.02	0.02	12	-1.37	0.196
Num. ELL students (S)	-0.01	0.00	12	-2.70	0.020
Num. Special Education students (S)	-0.01	0.00	12	-2.63	0.022
Mean score of schools (S)	0.00	0.00	12	-0.35	0.731
GENDER	0.00	0.09	295	0.04	0.971
English Language Learners	0.06	0.29	295	0.22	0.825
Special Education student	0.20	0.20	295	1.00	0.317
Rec'd supplemental reading instruct	-0.02	0.21	295	-0.10	0.919
African American	-0.14	0.14	295	-0.98	0.326
Baseline NJ score	-0.03	0.03	295	-0.85	0.399

Table 116. Attendance – Female

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	14.16	0.12	12	22.18	0.000
Treatment (S)	0.12	0.14	12	0.87	0.404
Num eligible students (S)	0.01	0.00	12	2.10	0.057
Yr in need of improvement (S)	-0.04	0.04	12	-1.08	0.301
Num. ELL students (S)	-0.01	0.01	12	-1.33	0.210
Num. Special Education students (S)	-0.01	0.01	12	-0.96	0.358
Mean score of schools (S)	-0.01	0.01	12	-0.70	0.499
English Language Learners	0.13	0.33	148	0.39	0.699
Special Education student	0.45	0.38	148	1.18	0.241
Rec'd supplemental reading instruct	-0.31	0.41	148	-0.74	0.459
African American	-0.13	0.20	148	-0.67	0.506
Baseline NJ score	-0.06	0.05	148	-1.16	0.249

Table 117. Attendance – Male

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	16.23	0.10	12	26.99	0.000
Treatment (S)	-0.08	0.11	12	-0.71	0.492
Num eligible students (S)	0.01	0.00	12	1.57	0.142
Yr in need of improvement (S)	-0.02	0.04	12	-0.43	0.672
Num. ELL students (S)	-0.01	0.00	12	-2.96	0.012
Num. Special Education students (S)	-0.01	0.01	12	-1.35	0.201
Mean score of schools (S)	0.01	0.01	12	0.88	0.395
English Language Learners	-0.06	0.36	136	-0.17	0.864
Special Education student	0.08	0.29	136	0.28	0.783
Rec'd supplemental reading instruct	0.13	0.30	136	0.43	0.668
African American	-0.09	0.19	136	-0.46	0.649
Baseline NJ score	0.00	0.04	136	0.04	0.968

Table 118. Attendance – African American

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	16.81	0.17	12	16.63	0.000
Treatment (S)	-0.12	0.17	12	-0.70	0.500
Num eligible students (S)	0.01	0.00	12	2.09	0.058
Yr in need of improvement (S)	-0.05	0.07	12	-0.80	0.438
Num. ELL students (S)	-0.02	0.01	12	-2.37	0.036
Num. Special Education students (S)	-0.02	0.01	12	-1.87	0.085
Mean score of schools (S)	0.02	0.01	12	1.66	0.122
GENDER	-0.04	0.13	142	-0.34	0.731
Special Education student	0.53	0.42	142	1.26	0.209
Rec'd supplemental reading instruct	-0.28	0.43	142	-0.64	0.521
Baseline NJ score	-0.09	0.05	142	-1.69	0.093

Table 119. Attendance – Hispanic

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	18.17	0.19	5	15.49	0.000
Treatment (S)	-0.10	0.26	5	-0.38	0.722
Num eligible students (S)	0.00	0.01	5	0.13	0.902
Yr in need of improvement (S)	0.02	0.06	5	0.24	0.818
Num. ELL students (S)	-0.01	0.01	5	-1.37	0.228
Num. Special Education students (S)	0.01	0.01	5	0.48	0.653
Mean score of schools (S)	-0.01	0.01	5	-1.08	0.330
GENDER	0.02	0.04	140	0.38	0.706
English Language Learners	-0.02	0.07	140	-0.32	0.753
Special Education student	0.06	0.09	140	0.63	0.529
Rec'd supplemental reading instruct	0.10	0.09	140	1.09	0.278
Baseline NJ score	0.00	0.02	140	0.18	0.861

Table 120. Attendance – Special Education

Fixed Effects					
Effect	Estimate	Standard		t Value	Pr > t
		Error	DF		
Intercept	12.72	0.16	11	16.35	0.000
Treatment (S)	-0.18	0.17	11	-1.06	0.313
Num eligible students (S)	0.01	0.01	11	1.48	0.168
Yr in need of improvement (S)	0.00	0.04	11	0.10	0.926
Num. ELL students (S)	-0.01	0.01	11	-1.33	0.212
Num. Special Education students (S)	-0.02	0.01	11	-1.77	0.104
Mean score of schools (S)	-0.01	0.01	11	-0.58	0.570
GENDER	0.02	0.13	105	0.19	0.850
English Language Learners	0.55	0.35	105	1.57	0.120
Rec'd supplemental reading instruct	1.28	0.35	105	3.61	0.001
African American	-0.07	0.23	105	-0.32	0.748
Baseline NJ score	0.04	0.09	105	0.38	0.707

Appendix C

Standard Deviations

Standard Deviations Used in Calculating Effect Sizes

Table 154. Summary of Control Group Standard Deviations

Analysis groups	Outcomes	Overall	Female	Male	African American	Hispanic	Special Education
1	Attendance	18.42	19.61	17.45	19.13	17.09	18.91
	Vocabulary	29.1	28.37	29.57	29.93	28.35	27.65
	Comprehension	25.27	24.36	25.85	24.63	26.1	23.12
	Language Arts	23.33	23.64	22.16	23.17	23.96	19.54
2	Attendance	21.04	21.22	20.93	20.7	21.46	20.39
	Vocabulary	31.81	30.98	32.4	32.61	31.01	31.9
	Comprehension	28.28	26.24	29.8	27.67	29.2	26.98
	Language Arts	26.75	26.3	26.64	25.78	28.26	24.37
3	Attendance	18.76	19.12	18.45	18.62	19.28	17.95
	Vocabulary	26.74	26.35	27.13	25.35	28.58	25.44
	Comprehension	25.49	25.56	25.18	26.29	24.56	22.94
	Language Arts	26.34	26.18	25.85	25.33	27.81	24.99
4	Attendance	27.97	27.97	27.97	27.97	27.97	27.97
	Vocabulary	27.1	27.1	27.1	27.1	27.1	27.1
	Comprehension	23.71	23.71	23.71	23.71	23.71	23.71
	Language Arts	23.15	23.15	23.15	23.15	23.15	23.15
5	Attendance	22.81	21.61	23.82	22.91	23.12	24.21
	Vocabulary	28.16	27.41	28.93	27.46	29.33	27.3
	Comprehension	27.16	27.46	26.4	27.92	26.4	25.15
	Language Arts	26.28	26.2	25.54	25.78	27.25	25.48
6	Attendance	12.81	11.25	14.52	13.14	12.67	14.45
	Vocabulary	28.2	25.14	31.27	30.13	25.57	25.77
	Comprehension	25.63	24.03	26.66	27.05	23.12	26.02
	Language Arts	24.14	22.01	24.82	21.86	26.63	22.4

Appendix D

Measures

D2. Striving Readers RTC Visitation Log

Striving Readers RTC Visitation Log	Name: _____	Date: _____
Teacher: _____ Intervention: _____ (TI or WSI) Grade: _____ Time: _____ _____ Coaching _____ Modeling _____ Conferencing w/ Teacher _____ Conferencing w/ Literacy Coach/Administrator (circle) _____ Analysis of student work _____ NJCU: _____ NUA: _____ Grade Level/LAL Content Meeting _____ Distribution of district material _____ Fluency _____ Readers' Theatre _____ Read Aloud _____ Shared Reading _____ Familiar Rereading _____ Other: _____ _____ Concept Map _____ Greek/Latin Root Words _____ Words for the Day _____ Word Work/Word Sorts _____ Other: _____ _____ Comprehension _____ Reciprocal Teaching _____ Think Aloud _____ Response Journals _____ Strategy Lesson _____ Other: _____ _____ Read 180 _____ Whole Group _____ Small Group Instruction _____ Computer Station _____ Independent Reading _____ Analyzing SAM reports to drive instruction _____ Other: _____ _____ Writing _____ Writers' Workshop _____ Rubrics _____ Progressive Writing Walls _____ Other: _____	Teacher: _____ Intervention: _____ (TI or WSI) Grade: _____ Time: _____ _____ Coaching _____ Modeling _____ Conferencing w/ Teacher _____ Conferencing w/ Literacy Coach/Administrator (circle) _____ Analysis of student work _____ NJCU: _____ NUA: _____ Grade Level/LAL Content Meeting _____ Distribution of district material _____ Fluency _____ Readers' Theatre _____ Read Aloud _____ Shared Reading _____ Familiar Rereading _____ Other: _____ _____ Concept Map _____ Greek/Latin Root Words _____ Words for the Day _____ Word Work/Word Sorts _____ Other: _____ _____ Comprehension _____ Reciprocal Teaching _____ Think Aloud _____ Response Journals _____ Strategy Lesson _____ Other: _____ _____ Read 180 _____ Whole Group _____ Small Group Instruction _____ Computer Station _____ Independent Reading _____ Analyzing SAM reports to drive instruction _____ Other: _____ _____ Writing _____ Writers' Workshop _____ Rubrics _____ Progressive Writing Walls _____ Other: _____	Teacher: _____ Intervention: _____ (TI or WSI) Grade: _____ Time: _____ _____ Coaching _____ Modeling _____ Conferencing w/ Teacher _____ Conferencing w/ Literacy Coach/Administrator (circle) _____ Analysis of student work _____ NJCU: _____ NUA: _____ Grade Level/LAL Content Meeting _____ Distribution of district material _____ Fluency _____ Readers' Theatre _____ Read Aloud _____ Shared Reading _____ Familiar Rereading _____ Other: _____ _____ Concept Map _____ Greek/Latin Root Words _____ Words for the Day _____ Word Work/Word Sorts _____ Other: _____ _____ Comprehension _____ Reciprocal Teaching _____ Think Aloud _____ Response Journals _____ Strategy Lesson _____ Other: _____ _____ Read 180 _____ Whole Group _____ Small Group Instruction _____ Computer Station _____ Independent Reading _____ Analyzing SAM reports to drive instruction _____ Other: _____ _____ Writing _____ Writers' Workshop _____ Rubrics _____ Progressive Writing Walls _____ Other: _____
Comments: _____ _____ _____ _____ _____		

School Name: _____ SY 2008-2009

D3. Striving Readers Observation Tool



Striving Readers: Newark

CLASSROOM OBSERVATION PROTOCOL

Spring 2007

Observer name _____ Date of observation _____

School: _____ Obs. Start Time _____ End Time: _____

Teacher name: _____ Teacher gender: Female Male

Grade you are observing 6th 7th 8th combination

Adult present in the room *besides* the classroom teacher? Yes No

Role of this adult (e.g., student teacher/paraprofessional) _____

students in class 10 minutes into the observation: _____ [# females: _____ # males _____]

(please check to ensure that #females + #males sum to the total number of students)

I. Physical Environment

1. Resources (e.g., print materials, technology)

1	2	3	4
<i>Sparsely equipped</i>			<i>Rich in resources</i>

2. Bulletin Boards and/or Walls (e.g., student samples and word walls)

1	2	3	4
<i>Bare, or used solely for decorative purposes</i>			<i>Rich with student work and content-relevant materials</i>

3. Availability of Books

1	2	3	4
<i>Few books available, and/or one reading level only</i>			<i>Books plentiful, available, and for variety of reading levels</i>

II. Materials/Technologies Used During Class Period by Students (Please check all that apply.)

- | | | | | |
|---|-----|--------------------------|----|--------------------------|
| 1. Reading <u>or</u> discussion of print materials (if yes, complete 1a-1c) | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 1a. Novels/Stories/Poems | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 1b. Textbook/Anthology | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 1c. Articles | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 2. Did students read text during this class period? (if yes, complete 2a) | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 2a. Are all students reading the same text? | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 3. Workbooks / worksheets | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 4. Video, film, tv | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 5. Writing in notebooks/journals | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 6. Computer use (if yes, complete 6a-6c) | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 6a. Used for research (such as web searches) | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 6b. Used for writing (MS Word) | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 6c. Used for reading instruction (specialty software) | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 7. Audio (tape players, cd players; NOT teacher reading aloud) | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |

III. Classroom Climate

To what extent do you agree or disagree with each of the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. Instructional time was well structured; transitions were well defined	1	2	3	4	5
2. Participation of all students was actively encouraged by the teacher	1	2	3	4	5
3. This appeared to be a safe environment for struggling readers to learn in.	1	2	3	4	5
4. At the end of the class period, teacher summarized what was learned	1	2	3	4	5
5. There was a high level of critical thinking required by students	1	2	3	4	5

IV. Time Sampled Data (Begin 1st row ten minutes after the official start time of class and then complete every 10 minutes)

Time	% of student s engaged in task	Student Grouping <i>(refers to how students are working, not how seating is arranged)</i>			Instructional Codes <i>(Add a code of "T" if teacher is providing direct instruction or modeling; Add "S" if students are applying strategies on their own or with one another; Use both "T" and "S" if applicable)</i>				
					<u>Vocabulary</u>	<u>Fluency</u>	<u>Comprehension</u>	<u>Writing</u>	<u>Other Activity</u>
1: _____	<25% <input type="checkbox"/> 25-50% <input type="checkbox"/> 51-75% <input type="checkbox"/> <75% <input type="checkbox"/>	Whole class <input type="checkbox"/>	Pairs <input type="checkbox"/>	Small group <input type="checkbox"/>	Individual <input type="checkbox"/>				
2: _____	<25% <input type="checkbox"/> 25-50% <input type="checkbox"/> 51-75% <input type="checkbox"/> <75% <input type="checkbox"/>	Whole class <input type="checkbox"/>	Pairs <input type="checkbox"/>	Small group <input type="checkbox"/>	Individual <input type="checkbox"/>				
3: _____	<25% <input type="checkbox"/> 25-50% <input type="checkbox"/> 51-75% <input type="checkbox"/> <75% <input type="checkbox"/>	Whole class <input type="checkbox"/>	Pairs <input type="checkbox"/>	Small group <input type="checkbox"/>	Individual <input type="checkbox"/>				
4: _____	<25% <input type="checkbox"/> 25-50% <input type="checkbox"/> 51-75% <input type="checkbox"/> <75% <input type="checkbox"/>	Whole class <input type="checkbox"/>	Pairs <input type="checkbox"/>	Small group <input type="checkbox"/>	Individual <input type="checkbox"/>				
5: _____	<25% <input type="checkbox"/> 25-50% <input type="checkbox"/> 51-75% <input type="checkbox"/> <75% <input type="checkbox"/>	Whole class <input type="checkbox"/>	Pairs <input type="checkbox"/>	Small group <input type="checkbox"/>	Individual <input type="checkbox"/>				
6: _____	<25% <input type="checkbox"/> 25-50% <input type="checkbox"/> 51-75% <input type="checkbox"/> <75% <input type="checkbox"/>	Whole class <input type="checkbox"/>	Pairs <input type="checkbox"/>	Small group <input type="checkbox"/>	Individual <input type="checkbox"/>				
7: _____	<25% <input type="checkbox"/> 25-50% <input type="checkbox"/> 51-75% <input type="checkbox"/> <75% <input type="checkbox"/>	Whole class <input type="checkbox"/>	Pairs <input type="checkbox"/>	Small group <input type="checkbox"/>	Individual <input type="checkbox"/>				
8: _____	<25% <input type="checkbox"/> 25-50% <input type="checkbox"/> 51-75% <input type="checkbox"/> <75% <input type="checkbox"/>	Whole class <input type="checkbox"/>	Pairs <input type="checkbox"/>	Small group <input type="checkbox"/>	Individual <input type="checkbox"/>				
9: _____	<25% <input type="checkbox"/> 25-50% <input type="checkbox"/> 51-75% <input type="checkbox"/> <75% <input type="checkbox"/>	Whole class <input type="checkbox"/>	Pairs <input type="checkbox"/>	Small group <input type="checkbox"/>	Individual <input type="checkbox"/>				

D-6

Instruction codes

Vocabulary <i>Focus is on vocabulary development.</i>		Fluency <i>Focus is on improving reading fluency</i>		Comprehension <i>Focus is on improving student reading comprehension.</i>		Writing <i>Students writing, or writing instruction is happening.</i>		Other Activity <i>Describes other activities</i>	
Code	Definition	Code	Definition	Code	Definition	Code	Definition	Code	Definition
T-CC	<u>Context Clue</u> : Teacher directs students to look in rest of text to infer meaning of a word. Can inc. reading rest of the sentence and guessing what makes sense, or look at accompanying picture.	S-CR	<u>Choral Reading</u> : Groups of students read in unison. Passage may be read multiple times. Teacher may read along.	T-GO S-GO	<u>Graphic Organizer</u> : Teacher or students complete a pictorial representation of how ideas in text are connected and organized.	T-CW S-CW	<u>Collaborative Writing</u> : teachers and/or students work together to create stories, w teacher/student as the scribe	ADM	<u>Administration</u> : Teacher engaged in administrative tasks, such as grading papers
S-DIC	<u>Dictionary use</u> : Students look up unfamiliar words. Includes glossary provided by teacher, glossary in their textbook, a separate dictionary, or online dictionary.	S-PR	<u>Paired Reading</u> : Pairs of students take turns reading out loud.	S-KWL	<u>K-W-L</u> : “What I know, what I want to find out, what I learned.” 3-column chart. Fill out K and W <i>before</i> reading and L <i>after</i> reading.	T-GW	<u>Guided Writing</u> : Teachers guide writing process through mini-lessons & conferences. Sometimes called writer’s workshop	ASS S-COM	<u>Assessment</u> : Teacher and students engaged in testing <u>Computer</u> : Computer use for research, writing or instruction
T-E	<u>Etymology</u> : Teacher discusses the history or origin of a word. Can involve identifying prefixes and suffixes.	S-RR	<u>Repeated oral Reading</u> : Same passage read aloud multiple times (by teacher and/or students) while others follow along.	T-MU	<u>Monitoring Understanding</u> : Teacher monitors by asking specific questions & encouraging students to monitor own understanding. May do this through a think aloud (add TA code). Does not inc. general questions, like “are there are any questions?”	S-JU	<u>Journal Use</u> : Students write in journals/blogs. A journal is usually in a separate notebook	S-COP	<u>Cooperative</u> : Students are working collaboratively in groups to discuss text. May inc. pair reading, reciprocal teaching, or other structured protocols around reading or discussing text. Peer or group editing add “W” to code/
T-GO	<u>Graphic Organizer</u> : Pictorial representation of how ideas in a text are connected & organized.	S-LI	<u>Listening to Text</u> : Students read along in a book while listening to the text.	T-MC S-MC	<u>Making Connections</u> : Teacher or students relate text to current events or to material already covered. T may do this through a think aloud (add TA code).	S-NT	<u>Note Taking</u> : Students are taking notes. If they are copying notes add – X to code	T-DIS	<u>Discussion</u> : Teacher is leading or moderating a class discussion. There is student to student interaction. Otherwise use LEC
T-PT	<u>Pre-teaching</u> : Discuss meaning of words <i>before</i> read text. Can involve discussing word & activating prior knowledge.	O-F	<u>Other Fluency</u> : Specify	S-P	<u>Predictions</u> : Students make predictions before, and at specified points during reading.	S-WP	<u>Writing Process</u> : Students work on planning, writing, revising or editing their text. Long term project	T-LEC	<u>Lecture</u> : Teacher talks most of the time. Students respond briefly to questions. Almost no student to student talk
T-WW S-WW	<u>Word Wall</u> : List of words related to unit posted on the wall & easily visible. Use of the word wall would inc adding new words, using words on wall to complete a task, or overtly referring to posted words			S-SM	<u>Summarizing</u> : <i>After</i> reading students use one of a number of strategies to create a summary.	S-QR	<u>Question Response</u> : Students respond to questions or prompts in writing – could be questions at the end of a text, from teacher, or on workbooks.	T-MOD T-TA	<u>Modeling</u> : Teacher demonstrates / models how to analyze a word, answer a question. <u>Think Aloud</u> : Teacher describes their thought process to model how a strategy is used. Literally walks students through their personal thought process.
O-V	<u>Other Vocabulary</u> : Specify			T-TX	<u>Text Structure</u> : Explicitly teaching expository text structure. May inc how text is organized, id words in bold, & recognize signal words (eg “therefore”). T may do this through a think aloud (add TA code).	S-QW	<u>Quick Writing</u> : Meant to elicit connection or response to reading.	TRAN	<u>Transition</u> : No instruction is taking place because students are transitioning from one activity to another
				O-C	<u>Other Comprehension</u> : Specify	O-W	<u>Other Writing</u> : Specify	OTH	<u>Other</u> : Specify

VI. Student Questions

1. Ask a students if this was a typical class (if no, also ask for an example of how it was atypical). Record response here:

Student:

Student gender: Male† Female†

D4. Westat Fidelity Measure



Striving Readers: Newark

FIDELITY PROTOCOL

Spring 2007

Observer name _____ Date of observation _____

School: _____ Lesson Start Time _____ End Time: _____

Teacher name: _____ Teacher gender: Female Male

Grade you are observing 6th 7th 8th Mixed

students in class 10 minutes into the observation: _____ [# girls: _____ # boys _____]

of students tardy: _____

For how long did this READ 180 section meet today? < hour 60 – 89 min 90-95 min 96 min+

I. Classroom Organization, Materials, and Equipment

	Yes	No	NA
1. Room had a space designated for independent reading	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
1a. Independent reading area has comfortable seating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1b. Independent reading area has sufficient working cd players	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1c. Independent reading area has adequate paperback books	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Room had a space designated for small group instruction	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
3. Room had a space designated for whole group instruction.	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
4. Room had a space containing computer workstations.	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
4a. There are at least five functioning computer workstations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. There is enough space for students to move easily between stations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Room has a paperback library with books labeled by level	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
6. Expectations for student performance & behavior are posted	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

II. Instruction

Whole-Group Instruction **Start time:** _____ **End time** _____

1. Do the instructional activities involve a READ 180 rBook?

Yes No

1b. What color is the cover of the rBook?

Blue Green

2. Do all students have an rBook?

Yes Some of them have rBooks No

3. Are students using their rBooks for writing responses to the teacher's questions and prompts?

Yes Some of them are using rBooks No

4. Do the students work with any materials other than READ 180?

Yes No



If yes, briefly describe the materials below: *(remember to ask teacher question 4 at the end of class)*

5. Does the teacher attempt to engage all students in the instructional activities by asking questions, providing prompts, and soliciting responses?

Yes Teacher attempts to engage some students No

6. Does the teacher make explicit connections between the Whole-Group learning activities and the content or focus of the Small-Group instruction that will follow the Whole Group session?

Yes No

Small-Group Instruction Start time: _____ **End time** _____

1. Do the instructional activities involve a READ 180 rBook?

Yes No

2. Do all students have an rBook?

Yes Some of them have rBooks No

3. Are students using their rBooks for writing responses to the teacher's questions and prompts?

Yes Some of them are using rBooks No

4. Do the students work with any materials other than READ 180?

Yes No

If yes, briefly describe the materials below: *(remember to ask teacher question 4 at the end of class)*

5. Does the teacher attempt to engage all of the students in the small-group instructional activities by asking questions, providing prompts, and soliciting responses?

Yes teacher attempts to engage some students No

6. Does the teacher provide explicit feedback on student work and their participation in small-group learning activities?

Yes teacher provides feedback to some students No

7. Does the teacher make explicit connections between the Small-Group learning activities and those included in the earlier Whole-Group session?

Yes No

Independent Reading
time _____

Start time: _____

End

1. Do students using the Audiobooks appear to be listening and following along with the text?

- Yes Some No No, because students are not using Audiobooks

2. Are students writing in reading logs or journals?

- Yes Some are writing in logs or journals No

Computer Rotation
time _____

Start time: _____

End

1. Do the students appear to be on task?

- Yes Some are on task No

2. Do any of the students appear to be having trouble using the computers?

- Yes, some are having trouble No

If students have trouble, do they receive help quickly?

- Yes No

Whole-Group Wrap-Up
time _____

Start time: _____

End

1. Does the teacher review key points from the lesson?

- Yes No

2. Do students reflect on literacy or learning experiences?

- Yes No

III. Classroom Management

Based on the entire observation of the READ 180 class, answer the following questions.

1. Are expectations for rotations, student work, and behavior clear and explicit?
 Yes, as indicated by clear directions from the teacher
 Yes, as indicated by displays that are posted on classroom walls and elsewhere
 No
2. Is there disruptive behavior that interrupts the classroom instruction and student movement from one rotation to the next?
 Yes No

IV Teacher Questions

1. Were any students absent today? If so, how many students?
2. Are all of the students listed in SAM?
3. How often do students take the SRI?
4. (ONLY ASK IF MATERIALS OTHER THAN RBOOK WERE USED IN WHOLE GROUP OR SMALL GROUP SESSION) I noticed that you used some materials that were not READ 180 in whole group/small group. Why is that?
5. Was today a typical lesson? Did I observe anything that was unusual for your class?

Appendix E
Survey Items

Survey Items for Teacher Effectiveness (NUA & NJCU)

General Effectiveness: How effective do you consider yourself a teacher of the following groups of students? (Responses range from 1 – “Not at all effective” to 5 – “Extremely Effective”)

Effective with - Male students
Effective with - Female students
Effective with - Students of color

Effectiveness with Challenging Students: How effective do you consider yourself a teacher of the following groups of students? (Responses range from 1 – “Not at all effective” to 5 – “Extremely Effective”)

I believe that I can truly make a difference in the lives of my students education and their careers
Effective with - Students with low motivation
Effective with - English language learners
Effective with - Students with behavior management problems
Effective with - Students who have reading difficulties
Effective with - Under performing students

Self-Evaluation of Skills: To what extent do you agree or disagree with each of the following statements? (Responses range from 1 – “Strongly disagree” to 5 – “Strongly agree”)

I consider myself to be a “subject matter expert” in reading
I am well prepared to adapt instructional materials to a variety of reading levels
Most students are interested and engaged in my classes

Survey Items for Attitudes about Professional Support (NUA & NJCU)

Institutional Support: To what extent do you agree or disagree with each of the following statements? (Responses range from 1 – “Strongly disagree” to 5 – “Strongly agree”)

Necessary materials such as supplies, paper and copy machines are available to me
Once we start a new initiative at my school, we follow up to make sure that it’s working
The principal of my school encourages me to try new methods of instruction
My principal backs me up when I need it
In my school, staff are recognized for a job well done

Autonomy: To what extent do you agree or disagree with each of the following statements? (Responses range from 1 – “Strongly disagree” to 5 – “Strongly agree”)

I do not have enough autonomy over my classroom
I am required to follow rules that conflict with my best professional judgment about teaching
Routine duties and paperwork interfere with my job of teaching

Work Environment: To what extent do you agree or disagree with each of the following statements? (Responses range from 1 – “Strongly disagree” to 5 – “Strongly agree”)

Improving student literacy seems to be a high priority at my school
The professional development I tend to get is generally a waste of time
Students often have to share textbooks due to lack of resources
The satisfaction I get from teaching isn’t worth all the stress and disappointment

Appendix F

Whole School Student Impact Tables

Analysis Group 1 – 6th Grade

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	201.03	12.35	46	16.29	0.000
Targeted Treatment	-0.44	5.43	72	-0.08	0.936
Male	0.25	0.10	72	2.60	0.011
African American	-0.18	0.12	72	-1.48	0.144
Hispanic	-0.19	0.12	72	-1.53	0.131
Special Education student	-0.45	0.06	72	-6.88	0.000
Limited English proficient	0.29	0.18	72	1.61	0.112
Treatment (Baseline)	0.56	5.23	72	0.11	0.916
Year 1	-4.29	2.80	72	-1.53	0.129
Treatment*Year 1	5.38	4.04	72	1.33	0.188
Year 2	-9.14	3.16	72	-2.89	0.005
Treatment*Year 2	0.30	4.16	72	0.07	0.942
2-Year Treatment Average	2.84	3.56	72	0.80	0.428

Random Effects		
Variance Components	Estimate	Pr > z
Level-2 Random Intercept	111.64	0.000
Level-1 Residual	82.11	0.000

Analysis Group 2 – 7th Grade

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	222.88	10.08	42	22.12	0.000
Targeted Treatment	-1.71	4.18	64	-0.41	0.684
Male	0.16	0.07	64	2.32	0.023
African American	-0.34	0.10	64	-3.52	0.001
Hispanic	-0.32	0.11	64	-2.83	0.006
Special Education student	-0.27	0.05	64	-4.94	0.000
Limited English proficient	-0.09	0.16	64	-0.57	0.572
Treatment (Baseline)	2.20	3.89	64	0.57	0.573
Year 1	2.58	1.84	64	1.40	0.166
Treatment*Year 1	0.34	2.53	64	0.13	0.894
Year 2	-6.99	1.88	64	-3.73	0.000
Treatment*Year 2	2.02	2.53	64	0.80	0.428
2-Year Treatment Average	1.18	2.18	64	0.54	0.590

Random Effects		
Variance Components	Estimate	Pr > z
Level-2 Random Intercept	71.54	0.000
Level-1 Residual	28.67	0.000

Analysis Group 3 – 8th Grade

Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > t
Intercept	241.11	11.68	42	20.64	0.000
Targeted Treatment	-4.50	4.55	62	-0.99	0.327
Male	-0.19	0.09	62	-1.99	0.051
African American	-0.37	0.11	62	-3.52	0.001
Hispanic	-0.20	0.12	62	-1.73	0.090
Special Education student	-0.38	0.07	62	-5.38	0.000
Limited English proficient	-0.30	0.19	62	-1.65	0.118
Treatment (Baseline)	2.48	4.20	62	0.04	0.557
Year 1	0.43	1.73	62	0.25	0.804
Treatment*Year 1	3.52	2.46	62	1.43	0.157
Year 2	8.08	1.80	62	4.49	0.000
Treatment*Year 2	2.18	2.47	62	0.88	0.380
2-Year Treatment Average	2.85	2.12	62	1.34	0.184

Random Effects		
Variance Components	Estimate	Pr > z
Level-2 Random Intercept	87.85	0.000
Level-1 Residual	26.92	0.000