

READ 180
Stages A and B:
Iredell-Statesville Schools,
North Carolina

IMPACT STUDY



Final Report

A Study of
READ 180
Stages A and B:

in Upper Elementary and
Middle Schools in
Iredell-Statesville Schools,
North Carolina

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*Final Report prepared by Scholastic
Research and Evaluation Department*

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Foreword

Every day millions of students in our upper elementary and middle schools struggle with their academic work due to poor reading skills. These students are unable to effectively participate in classroom discussions, complete their homework assignments, or meet basic achievement levels on local and state tests. The consequences are sobering, as many students terminate their studies years later or struggle throughout their schooling with little hope of reaching their true potential. The good news, however, is that after decades of research, we know more today than we have ever known about effective reading instruction and the specific needs of struggling readers. These students need comprehensive instruction in phonemic awareness, phonics, fluency, vocabulary, and comprehension in an environment that is supportive, engaging, and accommodating to their individual needs. With *READ 180*, Scholastic offers a meaningful solution, enabling struggling readers with a variety of reading skills deficiencies to gain the knowledge and motivation needed to become successful readers.

READ 180 is currently in use in more than 2,000 classrooms nationwide and is one of the most thoroughly researched and documented reading intervention programs ever developed. After ten years of scientific research in association with Vanderbilt University and six years in schools, *READ 180* is producing quantifiable gains in reading achievement among struggling readers. The program features differentiated instruction, engaging materials, and an array of teacher and student supports that help build confident and successful readers.

This impact study provides an overview of how Scholastic *READ 180*'s distinctive features meet the needs of struggling readers. Further, this study presents the effectiveness of the program among elementary and middle-school students in the Iredell-Statesville Schools in North Carolina.

***READ 180* is used in grades four through eight at five elementary schools and seven middle schools.**

The Need

BACKGROUND

Iredell-Statesville Schools, located in Iredell County, North Carolina, has approximately 19,050 students. Under North Carolina's ABC's of Public Education Act, first developed in response to the School Based Management and Accountability Program enacted by the General Assembly in June of 1996 and continually fine-tuned each year since its inception, Iredell-Statesville Schools has seven "Schools of Excellence," 14 "Schools of Distinction," seven "Schools of Progress," and no schools designated as low performing. The district's demographics in 2002–2003 included 12.5% Exceptional Children and 4% English-Language Learners. Approximately one third of the students receive free and reduced lunch, and 14 of 19 elementary schools receive Title I funding.

Iredell-Statesville Schools began implementing the *READ 180* program in the 2002–2003 school year to increase literacy levels among students performing at level I or II, as defined by North Carolina's achievement levels for students. Currently, *READ 180* is used in grades four through eight at five elementary schools and seven middle schools. Schools with the highest Title I funding were chosen as the schools to receive the *READ 180* program.

The Solution

READ 180 OVERVIEW

A result of more than ten years of research by experts at Vanderbilt University, *READ 180* is an intensive reading program designed to meet the needs of students whose reading achievement is below the proficient level. Through a collaborative research effort between Vanderbilt University and the Orange County Public School System in Florida, the *READ 180* pilot was used with more than 10,000 students between 1991 and 1999. The research conclusively showed that when schools implement and follow the instructional model, significant gains can be expected after one to two years in the areas of reading achievement, the development of more positive attitudes and behaviors, and overall higher school achievement.

READ 180 is designed to support teachers in their efforts to improve reading achievement for students reading below grade level in grades four through twelve.

READ 180 utilizes an intensive reading intervention approach to:

- Deliver individualized, adjusted reading instruction to improve students' reading skills;
- Provide practice and the application of skills in multiple contexts to increase reading achievement; and
- Support and motivate students as they progress toward becoming life-long readers and learners.

The *READ 180* instructional model provides a simple way to organize instruction and classroom activity. It combines research-based reading practices with the effective use of technology, offering students an opportunity to achieve reading success through a combination of instructional, modeled, and independent reading components. The instructional model is designed to send a strong message that each individual is valued, supported, given choices, and can succeed.

The *READ 180* model combines the following elements:

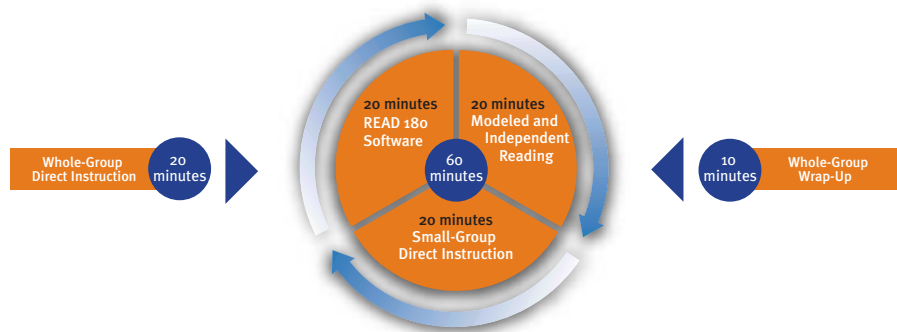
- 90-minute daily class periods
- Reduced class size of 15 students per class
- *READ 180* software that provides students with daily, intensive, individualized practice
- Daily modeled or independent reading practice

Daily individual or small-group instruction:

- Whole-group instruction in word analysis, vocabulary development, reading comprehension, and writing
- Distinct classroom areas are designed for each type of instructional activity, including a computer area with five computers for the

READ 180 instructional software, a comfortable reading area with cassette players and headphones for listening to the *READ 180* Audio-books, and a work table for teacher-directed small-group instruction

The 90-Minute Instructional Model



The *READ 180* approach begins with 20 minutes of whole-class literacy, in which the teacher and students engage in shared reading, read aloud, or mini skill lessons. Next, the students are split into three groups, and each group participates in three 20-minute rotations. During each of the three rotations the teacher works directly with one small group of students, while the remaining students work independently at the computer or reading stations. After the rotations, the instruction ends with a 10-minute wrap-up for students to reflect on their daily performance.

PURPOSE OF STUDY

The following evaluation is an assessment of *READ 180* student outcomes in North Carolina's Iredell-Statesville District. This outcome assessment was designed in order to evaluate the effectiveness of *READ 180* in Iredell-Statesville. The research questions at the heart of the analysis were:

1. What impact does *READ 180* have on student reading proficiency?
2. What impact does the length of exposure to *READ 180* have on student reading proficiency?

Methods

STUDY PARTICIPANTS

The student sample used for this analysis includes 475 fourth through eighth grade students. Of this group:

- 441 students had both 2002 and 2003 reading test scores
- 370 students experienced *READ 180* for the entire year
- 105 students experienced *READ 180* for one semester only
- 142 students are learning disabled

RESEARCH DESIGN & ANALYSIS

Standardized English comprehension tests are administered to all North Carolina students once a year. In order to find out whether *READ 180* had an effect on students' reading comprehension, the scores of *READ 180* students in 2002 (before participation in the *READ 180* instruction) were compared with the scores in 2003, after they participated in *READ 180*.

The North Carolina standardized end-of-grade reading comprehension tests are comprised of 56 items and require about 100 minutes for completion. The tests are given to students in grades 3–8 during the final three weeks of the school year. They are multiple-choice and measure reading comprehension by having students read passages and answer questions appropriate to each grade level.

Recent revisions in the North Carolina English Language Arts curriculum necessitated revisions in the end-of-grade tests. The revised tests were implemented for the first time in 2002–2003. Since this analysis makes use of both 2001–2002 as well as 2002–2003 scores, the 2001–2002 scores were converted to equate with the new scale. Thus, in this analysis the term “rescaled 2002 scores” refers to the scores that have been converted to the new scale.

The conversion table in the *Technical Notes 03* document, provided by the North Carolina Board of Education, was used to calculate the rescaled 2002 scores. Since the table was designed for converting new scores into old scores, there were several places where there was no matching new score for a given old score. In these cases, the next consecutive score from the table was applied. These missing data points were filled in with scores that were 0.5 points up or down from the missing data point. This process had no effect that we know of on the results of our analysis or on the accuracy of the data.

The North Carolina standardized Math end-of-grade test scores were also gathered for these students and used as a control variable, providing more information on the students' academic background. Students' gender and ethnicity were used for additional background controls.

The student sample is large enough to employ a matched-pairs t-test analysis of 2002 and 2003 test scores (pre- and post-*READ 180*). In addition, we conducted a series of ANCOVA analyses in order to examine the effect of time in the program (one semester vs. two semesters) on the overall success of the students, and to detect possible interactions between the background student variables and time in the program.

Results

Analysis of Data-Achievement Levels

North Carolina has defined four achievement levels* for its students:

- **Level I:** Students performing at this level do not have sufficient mastery of knowledge and skills in this subject area to be successful at the next grade level.
- **Level II:** Students performing at this level demonstrate inconsistent mastery of knowledge and skills in this subject and are minimally prepared to be successful at the next grade level.
- **Level III:** Students performing at this level consistently demonstrate mastery of grade level subject matter and skills and are well prepared for the next grade level.
- **Level IV:** Students performing at this level consistently perform in a superior manner clearly beyond that required to be proficient at grade level work.

Students who experienced READ 180 gained, on average, half an achievement level.

Students who experienced *READ 180* gained, on average, half an achievement level (see Table 1, Graph 1). For comparison, the same students gained, on average, only 0.2 of a level in math.

Table 1. Percent of Students by Achievement Level Gains.

	Total Reading		Total Math	
	N	%	N	%
Gained 2 Levels	25	5.3	8	1.7
Gained 1 Level	215	45.3	128	26.9
Did Not Change Level	172	36.2	220	46.3
Lost 1 Level	27	5.7	56	11.8
Lost 2 Levels	2	.4	1	.2

*Achievement Level definitions listed above were gathered from the State Web site at <http://abcs.ncpublicschools.org/abcsfiles/TechNotes03.pdf>.

50.6% of all *READ 180* students reveal a gain of at least one reading achievement level.

Graph 1. Number of Students by Achievement Level Gains.



As shown in Table 1, 50.6% of all *READ 180* students reveal a gain of at least one reading achievement level. In Graph 2 below, the percentage of students revealing growth of at least one reading achievement level is disaggregated by grade. Graph 2 reveals that over 63% of the students in 5th grade reveal growth of at least one achievement level and just over 65% of students in 8th grade reveal growth of at least one achievement level.

Graph 2. Percentage of Students Who Gained At Least One Reading Level by Grade.

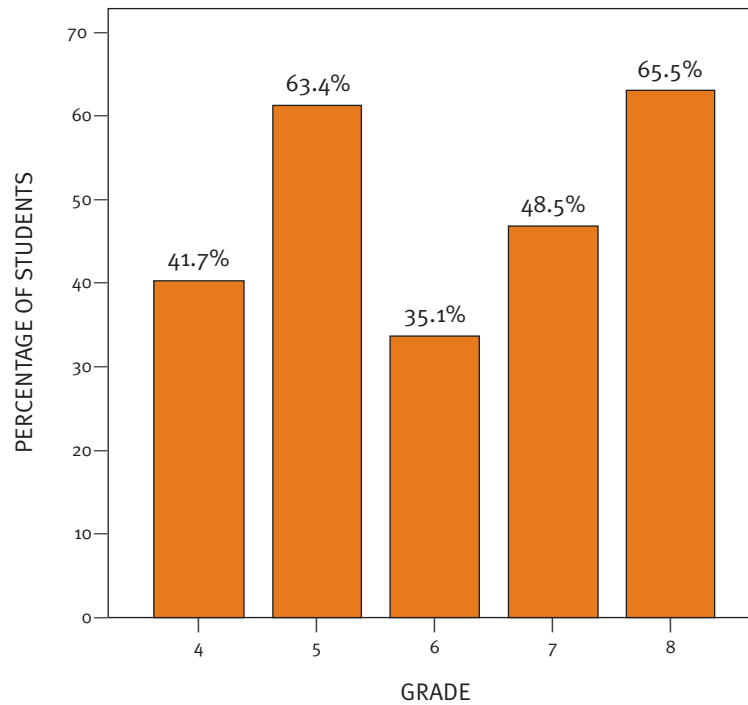


Table 2. North Carolina End of Grade Test—Reading Scale Scores by Grade.

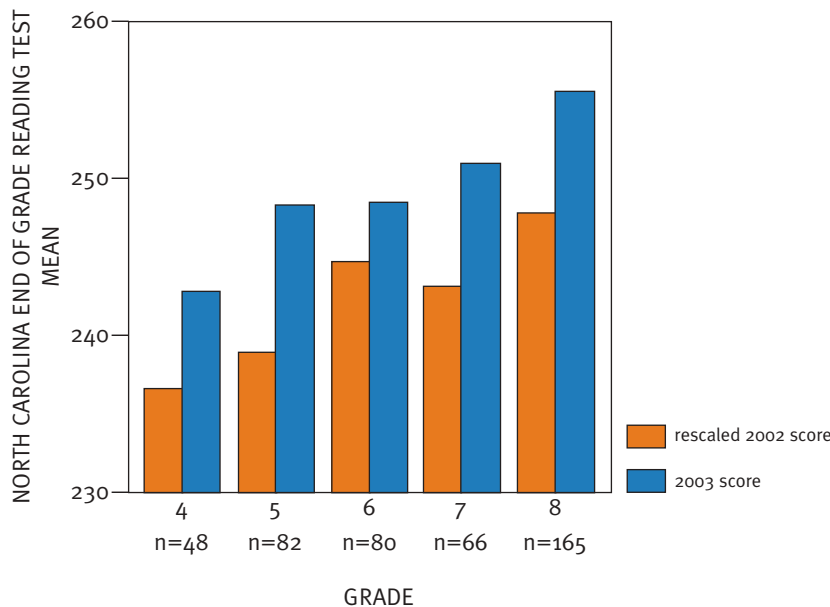
Grade	N	Mean Pre (SD)	Mean Post (SD)	Gain	Expected Growth
4	48	236.53 (4.57)	242.77 (6.12)	6.85	5.2
5	82	238.91 (4.56)	248.44 (5.69)	10.28	4.6
6	80	244.59 (5.70)	248.19 (6.22)	4.08	3.0
7	66	243.08 (4.60)	251.06 (6.60)	7.97	3.3
8	165	247.79 (4.67)	255.51 (6.33)	7.25	2.7

* Expected Growth grade level gains for 2002–2003 Provided by District Research Office.

While “expected growth” varies by grade level and testing year, the average gain in the 2002–2003 year was 3.76 for grades 4–8. Above, Table 2 and Graph 3, below, reveal that students using *READ 180* in all grades showed gains of greater than the expected gain. Students in grade four averaged 6.85 points, more than the expected growth for their grade level. Students in grade five had a mean growth of 10.28 points, almost two and a half times the expected growth of a student in one year. Students in grade six also experienced better than average expected growth. Students in grades seven and eight had gains more than double the expected growth, with means of 7.97 and 7.25 respectively. Graph 3 demonstrates the relatively high gains of 5th graders, and relatively low gains of 6th graders (mostly due to their high starting point). See Appendix A for the analysis of outliers.

Students using READ 180 in all grades showed gains of greater than the expected gain.

Graph 3. Mean Reading Scores by Grade Level.



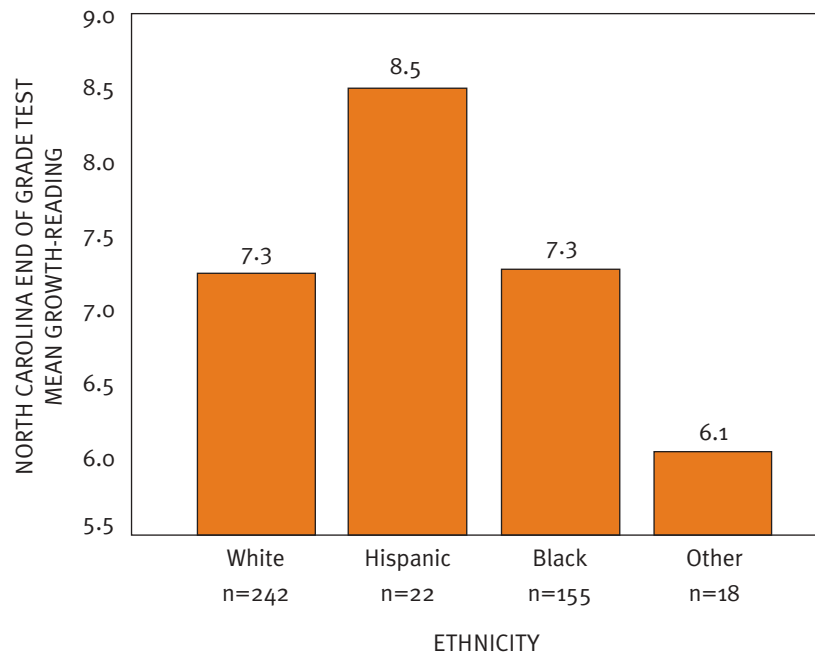
Analysis of Data-T-Test Results

Matched-pairs t-tests were conducted on several levels of analysis. Statistically significant relationships were found for all levels including prior year reading ability and ethnic background. Students performed significantly better after the *READ 180* instruction (see Appendix B for t-test results and Appendix C for Technical Definitions). T-tests were conducted on 2002 and 2003 reading scores for the following groups:

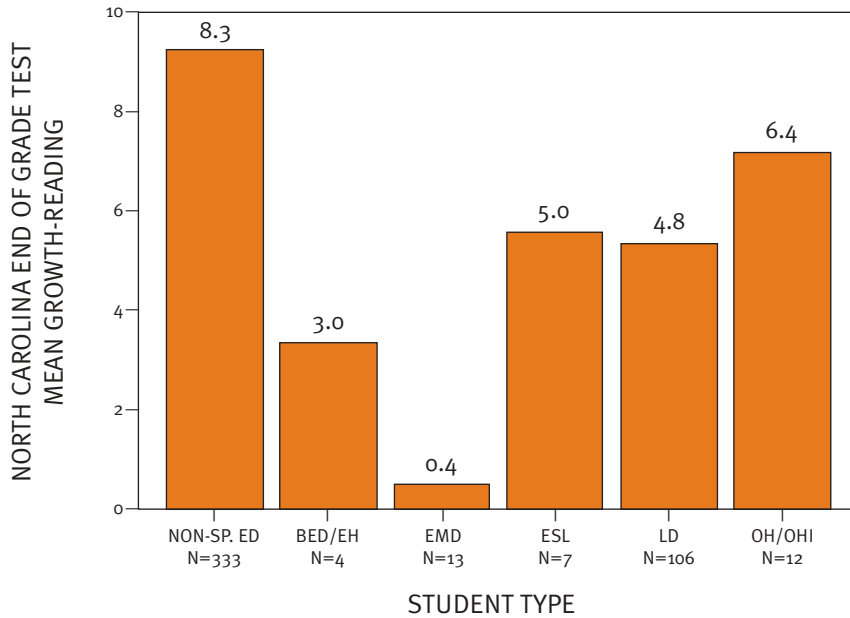
- The entire sample (N=441)
- By grade level
- By number of semesters (1 and 2)
- By ethnic background
- By gender
- By student type (learning disabled and normal)
- By reading ability level, based on students' 2002 reading scores
- By school

Graph 4 shows the average gain by the three major ethnicities. While the Hispanic students revealed the greatest improvement (8.5 points), it is important to note that only 22 students were in this group.

Graph 4. Average Reading Gain in Points by Ethnicity.



Graph 5. Average Reading Gain in Points by Each Sub-Group.



Learning disabled students revealed an average growth of 4.8 points.

- NON-SP. ED=Non-Special Education
- BED/EH=Behaviorally Emotionally Disabled/Emotionally Handicapped
- EMD=Educable Mentally Disabled
- ESL=English as a Second Language
- LD=Learning Disabled
- OH/OHI=Orthopedically Handicapped/Other Health Impairments

Graph 5 demonstrates the mean growth for Exceptional Children. The largest representation of exceptional students were classified as Learning Disabled and revealed an average growth of 4.8 points.

Findings

The findings indicate that the *READ 180* program was successful in improving literacy skills of North Carolina students, as measured by the North Carolina standardized reading tests. Students gained, on average, half a reading level, and all groups of students performed significantly better on the end-of-grade reading test. Approximately 51% of all students in grades four through eight revealed growth of at least one achievement level. Interestingly, over 60% of the students in fifth and eighth grade revealed growth of at least one grade level.

Students using *READ 180* in all grades showed gains greater than the expected gain for their grade level. It is important to note that, while the average gain in reading for the *READ 180* students is higher than the expected growth, these results cannot be attributed solely to *READ 180* without a comparison group of students.

A small portion of students participated in *READ 180* for only one semester with a highly regarded teacher. The data shows that time in the program had no significant effect on student performance. More information on the exact method of implementation of the *READ 180* curriculum in North Carolina is desired in order to deepen our understanding of this finding.

As confirmed by results from the Iredell-Statesville Schools, struggling readers made substantial gains in reading achievement using READ 180.

Summary

Troubling statistics from the Department of Education find that 37% of fourth graders and 26% of eighth graders read below basic levels. These findings come in an era where schools and districts face increased accountability demands, making it even more crucial for educators to implement reforms to support these under-performing students. Scholastic *READ 180* helps schools meet this challenge and already plays an important role in the lives of many struggling readers.

As confirmed by results from the Iredell-Statesville Schools, struggling readers made substantial gains in reading achievement using *READ 180*. Based on the four achievement levels defined by North Carolina's educational system, over half of the *READ 180* students improved at least one reading achievement level in one year or less. On average, *READ 180* students in all grades showed significantly greater improvement compared to expected gains, often surpassing the expected growth for their grade level by more than 100%. In addition to these impressive gains, the analysis reveals that reading improvement was evident across gender, grade level, learning disability, and English-Language Learner (ELL) status.

READ 180 offers schools a comprehensive solution without overlooking the individual needs of each student. Through a flexible instructional model, leveled reading, and software that differentiates instruction, each student receives the appropriate and individualized instruction needed to become a successful reader. The program also offers motivational support that is truly effective in improving student confidence and attitudes towards reading and school. As students experience small doses of success, they seek more both within and outside of the *READ 180* classroom.

The task of transforming struggling readers into fluent readers is never simple. It requires a commitment from educators and students, time, and hard work. However, *READ 180* offers a proven solution that is effective because it accommodates varying student needs and interests in one classroom session. With *READ 180*, Scholastic has combined research and best practice to produce a program that enables struggling readers achieve measurable learning gains.

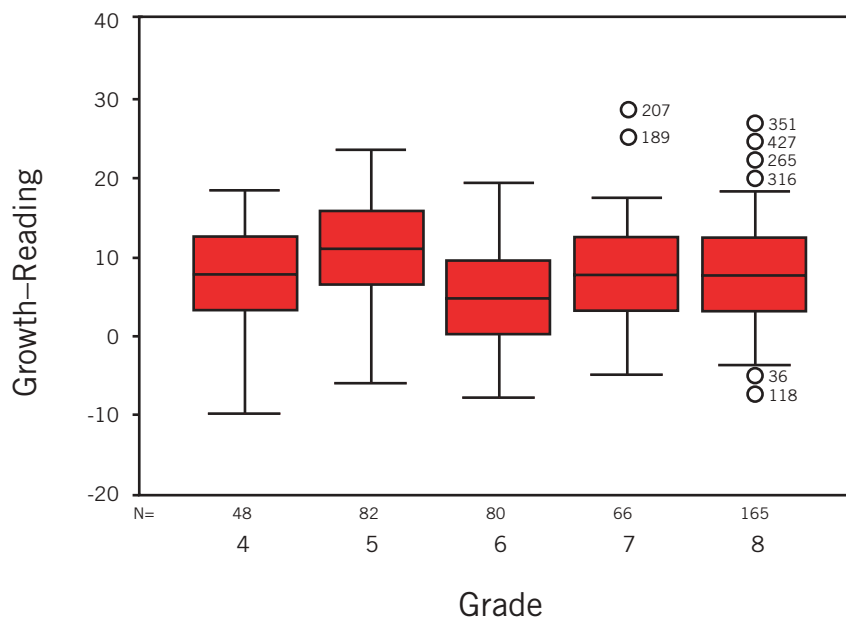
Appendix A

Analysis of Outliers

Graph 6 (see below) illustrates the nature of the distribution of student gains within each grade level (outliers are marked with ID numbers). For each grade, the red box reveals the gains made for students within the 25%–75% range (inter-quartile distance). The horizontal line within each box reveals the median gain score for each grade. The two vertical lines outside the box extend to the smallest and largest observations within 1.5 times the inter-quartile distance. Observations that fall between 1.5 inter-quartile distances to 3 inter-quartile distances are called *mild outliers* and are distinguished by a closed circle. Ten *mild outliers* are evident on the graph.

The entire analysis in this evaluation was conducted twice, once for the entire dataset and once for a reduced dataset without the ten outliers. The results of both analyses were identical, and the reported results are the results for the entire sample.

Graph 6. Distribution of Student Gains by Grade Level.



Appendix B – T-Test Results

- All students: $t(437)=25.863, p<0.01$
- By Grade:
 - 4th grade: $t(47)=7.887, p<0.01$
 - 5th grade: $t(79)=15.339, p<0.01$
 - 6th grade: $t(79)=6.053, p<0.01$
 - 7th grade: $t(65)=10.962, p<0.01$
 - 8th grade: $t(163)=18.223, p<0.01$
- By Number of Semesters:
 - One semester: $t(104)=12.472, p<0.01$
 - Two semesters: $t(332)=22.635, p<0.01$
- By Ethnic Background:
 - White students: $t(242)=18.540, p<0.01$
 - Black students: $t(155)=16.359, p<0.01$
 - Hispanic students: $t(22)=6.270, p<0.01$
- By Gender:
 - Male: $t(247)=17.621, p<0.01$
 - Female: $t(189)=19.479, p<0.01$
- By Student Type:
 - Not otherwise classified students: $t(320)=28.050, p<0.01$
 - Learning disabled: $t(116)=7.463, p<0.01$
- By Reading Ability Level (2002 reading score):
 - Level I (lowest): $t(74)=12.319, p<0.01$
 - Level II: $t(307)=23.529, p<0.01$
 - Level III: $t(51)=6.293, p<0.01$
 - (only 3 students in Level IV)
- By School:
 - School 1: $t(41)=7.785, p<0.01$
 - School 2: $t(23)=7.927, p<0.01$
 - School 3: $t(62)=8.811, p<0.01$
 - School 4: $t(37)=9.656, p<0.01$
 - School 5: $t(27)=6.341, p<0.01$
 - School 6: $t(29)=10.105, p<0.01$
 - School 7: $t(51)=8.361, p<0.01$
 - School 8: $t(49)=9.950, p<0.01$
 - School 9: $t(22)=4.083, p<0.01$
 - School 10: $t(41)=9.103, p<0.01$
 - School 11: $t(12)=5.337, p<0.01$
 - School 12: $t(32)=3.862, p<0.01$

Appendix C– Technical Definitions

1. “Statistically significant relationship” means that we place confidence of at least 95 percent in the decision to generalize the findings from the sample to the population. There is only a 5 percent probability that the findings are attributed to chance and not to a real relationship between the variables. This is a statistical procedure and does not indicate “significance” in the ordinary language sense of “meaningful.”
2. “Matched-pairs T-Test” is an inferential test that determines whether there is a significant difference between the means of the pre and the post scores.
3. ANCOVA (Analysis of Covariance) is a statistical method that allows us to adjust for the pretest measure in determining whether there is a significant difference between the means of several different groups and group combinations.

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