



Impact of *Ready*[®] *Reading* and *Ready Mathematics* on Student Learning

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Introduction

In the spring of 2018, Curriculum Associates conducted comprehensive research into the impact of *Ready Reading* and *Ready Mathematics* instruction on student academic proficiency as measured by state summative test scores. In this study, consisting of schools from across New York State¹ where students had access to *Ready* books during the 2016–2017 academic year and took the New York State Grades 3–8 Test in spring 2017, our researchers found that schools with access to the *Ready* program experienced substantially higher scores on the state assessment than schools without access to *Ready*, controlling for key demographic factors.

For the purposes of this paper, schools with access to *Ready* books will be referred to as “*Ready* schools” and without access to *Ready* books as “schools without *Ready*.” *Ready* schools had New York State Grades 3–8 Test scores that were 4–7 scale score points higher in English Language Arts (ELA) and 7–11 scale score points higher in Mathematics than schools without *Ready*.

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Methodology

Research Questions

This research was undertaken with the goal of answering two key research questions:

- How do state summative test scores differ for schools where students have access to *Ready* books compared to schools where students do not have access to *Ready* books, controlling for key demographic characteristics?
- Are the differences statistically significant after controlling for selection bias?

Study Design

Curriculum Associates conducted an analysis of covariance (ANCOVA) to answer the above questions. To answer the first question, adjusted mean scale scores were calculated for the treatment (*Ready* schools) and control (schools without *Ready*) groups and were then compared.

To answer the second question, an ANCOVA was performed for each grade (3–8) and subject (ELA and Mathematics) to examine the effect of *Ready* on state summative test scores. Key demographic characteristics were included as covariates to control for selection bias. Results are considered statistically significant by the What Works Clearinghouse if the p -value is less than 5% ($p < .05$).

To account for differences across schools with and without access to *Ready*, the analysis controlled for:

- Percentage of students in the school who are students of color
- Percentage of students in the school who are eligible for the Federal Free and Reduced-Price Lunch Program
- Percentage of students in the district who are identified as English Learners
- Percentage of students in the district who are identified as students with disabilities

¹ Although *Ready* is used in nearly every state, this research study focused on the impact of *Ready* in New York State so results could be evaluated on a state's summative assessment. New York State is among the most diverse states in the United States, with schools in rural, suburban, and urban settings and students from every demographic group, making results from New York State highly generalizable to the nation.

By controlling for these four key demographic characteristics, this study meets the Every Student Succeeds Act (ESSA) Level 3 (Promising) requirements by correcting for selection bias and also yields helpful inferences to educators who are in schools and districts with varying proportions of students of color, low socioeconomic status (as measured by the Federal Free and Reduced-Price Lunch Program), English Learners, or identified as having a disability.

Treatment Group: Schools with *Ready* Books

For the purposes of the research in this report, a school was defined as a *Ready* school if the school:

- Had enough *Ready* books for at least 75% of students in a given grade during the 2016–2017 school year
- Had at least one book in the school the prior year (i.e., the school was not piloting the use of *Ready* for the first time during the 2016–2017 academic year)
- Did not have Curriculum Associates' *i-Ready Diagnostic* or *i-Ready Personalized Instruction* product so the data could demonstrate the impact of *Ready* books without conflating results with those from *i-Ready*

Control Group: Schools without *Ready* Books

For the purposes of the research in this report, a school was defined as a control group school if the school:

- Did not have any *Ready* books during the 2016–2017 school year
- Did not have *i-Ready* during the 2016–2017 school year

Sample Sizes

The following tables show the sample sizes of schools included in the analyses featured in this paper. Sample sizes vary across grades and subjects due to differences in *Ready* and *i-Ready* purchasing patterns for schools as well as availability of New York State Grades 3–8 Test data and National Center for Education Statistics (NCES) school- and district-level demographic data.

Number of Schools in ANCOVA with and without Access to *Ready Reading* Books

	3	4	5	6	7	8
<i>Ready Reading</i>						
<i>Ready</i> Schools	223	236	237	98	69	66
Schools without <i>Ready</i>	1,371	1,313	1,269	942	831	820

Number of Schools in ANCOVA with and without Access to *Ready Mathematics* Books

	3	4	5	6	7	8
<i>Ready Mathematics</i>						
<i>Ready</i> Schools	117	112	103	39	30	31
Schools without <i>Ready</i>	1,508	1,480	1,415	1,014	883	807

Program Overview

Curriculum Associates' *Ready* is a rigorous classroom instruction and practice program that fully prepares students for the demands of today's reading and mathematics standards in a highly interactive way, while providing teachers with step-by-step, point-of-use support to teach most effectively.

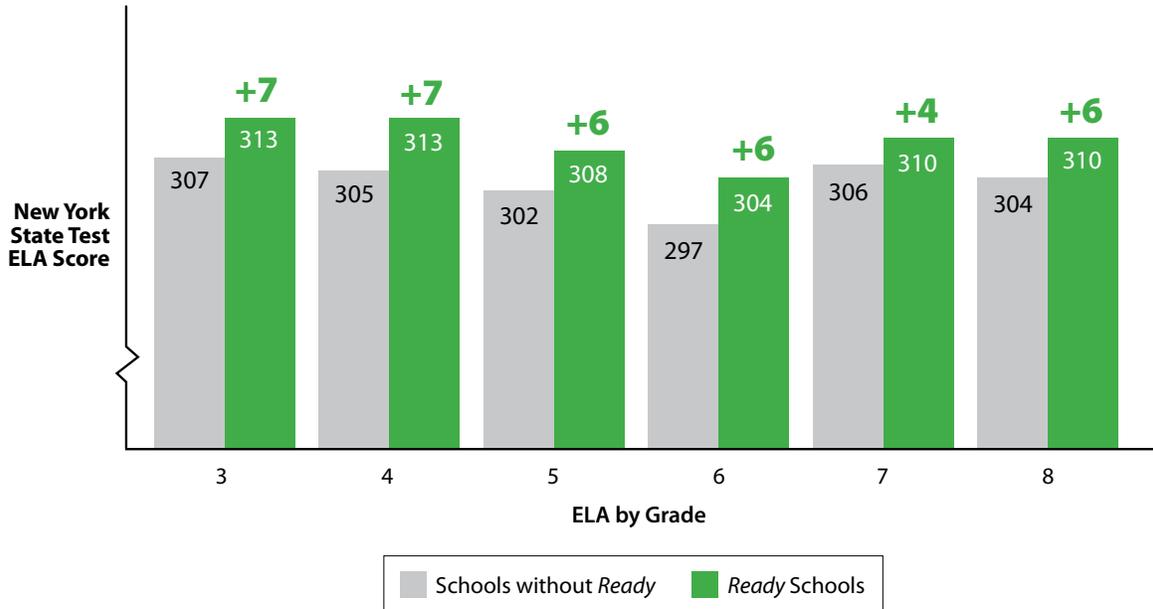
Ready Reading's complex, authentic texts engage students in opportunities to practice close reading strategies across a variety of genres and formats, and its scaffolded instructional design builds students' confidence in reading over time. Teachers have access to both on-grade level and differentiated resources to address the needs of all learners and build the habits of resilient, engaged readers. *Ready Reading* was designed to work alongside many different types of core programs, from nationally published anthologies to teacher-created materials, to add proven rigor and meaningful instruction to strengthen students' love of reading and success in school.

Ready Mathematics helps teachers create a rich classroom environment in which students at all levels become active, real-world problem solvers. Through teacher-led instruction, students develop mathematical reasoning, engage in discourse, and build strong mathematical habits. The program's instructional framework supports educators as they strengthen their teaching practices and facilitates meaningful discourse that encourages all learners. Recently named a top-rated K–8 program by EdReports.org, *Ready Mathematics* can be used as a school's core curriculum or to enhance mathematics instruction.

Results

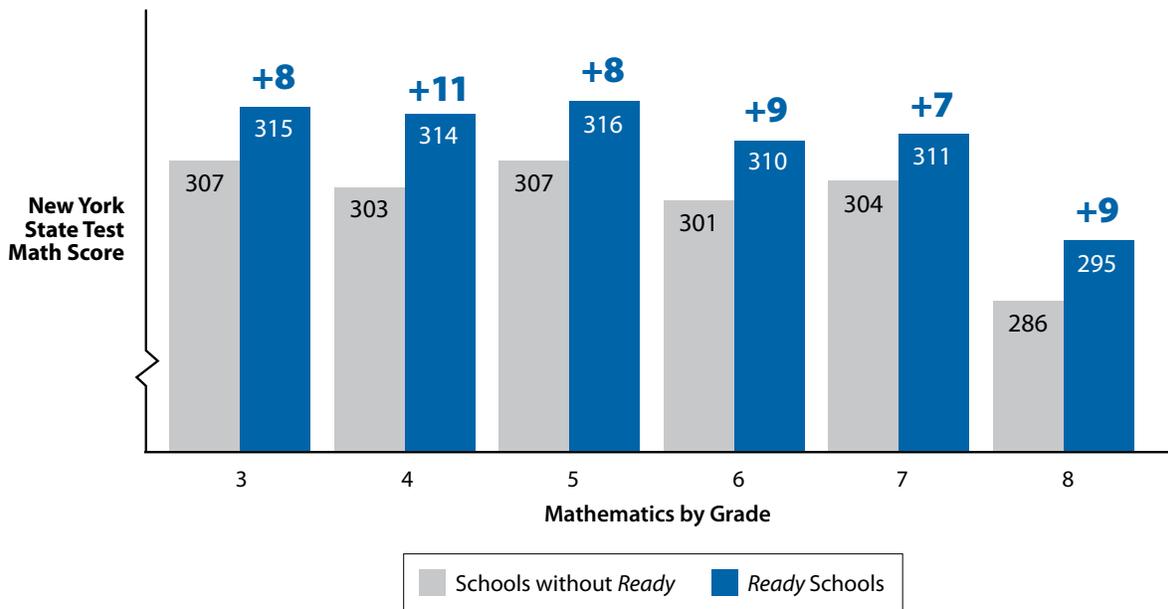
Our research found that students in *Ready* schools scored higher than students in schools without *Ready* on the New York State Test in both ELA and Mathematics. On average, and after controlling for key demographic variables, students in *Ready* schools had greater New York State Test scores in Grades 3–8 than students in schools without *Ready*. The findings indicated that, across all grades and both subjects, *Ready* schools outperformed schools without *Ready*. In ELA, *Ready* schools scored, on average, between 4–7 scale score points higher on the New York State Grades 3–8 Test than schools without *Ready*. In Mathematics, *Ready* schools scored, on average, between 7–11 scale score points higher on the New York State Grades 3–8 Test than schools without *Ready*. See Graph 1 and Graph 2.

Graph 1. Schools Using *Ready Reading* and Not Using *Ready Reading*, Grades 3–8 Performance on New York State ELA Test



Scores and score differences are rounded to the nearest whole number.

Graph 2. Schools Using *Ready Mathematics* and Not Using *Ready Mathematics*, Grades 3–8 Performance on New York State Math Test



Scores and score differences are rounded to the nearest whole number.

The results of this study were statistically significant at the $p < .05$ level for all grades and subjects, and results were significant at the $p < .0001$ level for both subjects for Grades 3–5 as well as Grade 6 for ELA. Based on the results of this analysis, *Ready* shows evidence of promoting greater student proficiency. The significance of the findings provides support for *Ready* as a program that meets the criteria for ESSA Level 3 (Promising).

Ready Statistical Significance with Controls by Grade

	3	4	5	6	7	8
Ready Reading	$p < .0001$	$p < .0001$	$p < .0001$	$p < .0001$	$p = .0076$	$p = .0028$
Ready Mathematics	$p < .0001$	$p < .0001$	$p < .0001$	$p < .0010$	$p = .0171$	$p = .0098$

Understanding p -Values

The p -values help support the interpretation of the statistical significance of a research result. Very low p -values indicate very low probabilities that results are due to chance. For example, a p -value of .0001 indicates that the results have a probability of less than 1 in 10,000 of being observed due to chance. In this study, if the p -value is smaller than a certain cutoff (such as .05, .01, or .0001), it indicates the very low probability that the differences in New York State Test scores between students in *Ready* schools and schools without *Ready* were due to chance.

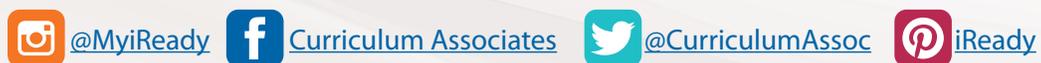
Conclusion

The results from this study meet ESSA Level 3 (Promising) requirements and show that students in *Ready Reading* and *Ready Mathematics* schools scored higher than students in schools without *Ready Reading* and *Ready Mathematics* on the New York State Tests for both ELA and Mathematics. These differences in school performance at Grades 3–8 were statistically significant after controlling for selection bias.



Built to address the rigor of the new standards, *i-Ready* helps students make real gains. *i-Ready* collects a broad spectrum of rich data on student abilities that identifies areas where a student needs support, measures growth across a student’s career, supports teacher-led differentiated instruction, and provides a personalized instructional path within a single online solution.

To learn more about evidence on the impact of *i-Ready Learning* programs, please visit CurriculumAssociates.com/Research.



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