Ready Efficacy:
Research on Ready Program Impact

Research Support for Ready and ESSA
The Impact of Ready

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 State, where students had access to Ready books during the 2016–2017 academic year and took the New York State assessments in spring 2017, our researchers found that schools that had access to the Ready program experienced higher scores on the state assessment than schools that did not have access to Ready, controlling for key demographic factors.

Scores on the New York State Grades 3–8 Test for those schools with access to Ready were substantially higher than scores for schools without access to Ready. For the purposes of this paper, schools with access to Ready books will be referred to as “Ready schools” and those without access to Ready books as “schools without Ready.” Ready schools had New York State Grades 3–8 Test scores that were four to seven scale score points higher in English Language Arts (ELA) and seven to eleven scale score points higher in Mathematics than schools without Ready.

The results of this analysis, which controlled for selection bias as required by the Every Student Succeeds Act (ESSA), were statistically significant at the \( p<.05 \) level across all subjects and grades, and most results were significant at the \( p<.0001 \) level. To account for differences across schools with and without access to Ready, the analysis controlled for:

- The proportion of each school that is non-Caucasian
- The proportion of each school that is eligible for the Federal Free and Reduced-Price Lunch Program
- The proportion of each district identified as English Learners (these data are not collected by the federal government at the school level), and
- The proportion of each district identified as students with disabilities (also not collected at the school level by the federal government).

Our research found that students in Ready schools scored higher than students in schools without Ready on state summative assessments. Furthermore, because this study yielded favorable results controlling for selection bias for grades 3–8, the research provides evidence that Ready Reading and Ready Mathematics meet the criteria for ESSA Level 3: Promising Evidence, with favorable effects.

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), and
- Did not have Curriculum Associates’ i-Ready Diagnostic or i-Ready Instruction product, so that we could demonstrate the impact of Ready books without conflating results with those from i-Ready.

Control Group: Schools without Ready or i-Ready

For the purposes of the research in this report, schools in the control group, or schools without Ready, were identified using the following criteria:

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

1 Although Ready is used in nearly every state, this research study focused on the impact of Ready in New York State so that we could evaluate results 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.
**Ready Schools Had Higher State Assessment Scores Than Schools without Ready**

In both ELA and Mathematics, Ready schools had, on average, greater New York State Grades 3–8 Test scores than schools without Ready, controlling for key demographic characteristics.

**New York State Test Scale Scores for ELA:**
*Ready Schools and Schools without Ready*

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

**New York State Test Scale Scores for Mathematics:**
*Ready Schools and Schools without Ready*

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

ESSA defines four categories of research evidence for an effective program. Under ESSA, a Level 3 program should be supported by at least one correlational study that controls for selection bias. The results of this study satisfy ESSA’s Level 3 requirements by demonstrating that Ready schools outperform schools without Ready with statistical significance and while controlling for selection bias.

To examine the relationship between Ready use and New York State Grades 3–8 Test scores, the Curriculum Associates research team conducted an ANCOVA analysis and corrected for selection bias using the following school- and district-level demographic variables:

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

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

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 Evidence.

### Ready Statistical Significance with Controls by Grade

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<th>6</th>
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### Understanding $p$-values

$p$-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 NYSTP scores between students in Ready schools and schools without Ready were due to chance.
Sample Sizes

The following tables show the samples 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 Analysis with and without Access to Ready Books (Reading)

<table>
<thead>
<tr>
<th>Reading</th>
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<th>5</th>
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</thead>
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<tr>
<td>Ready Schools</td>
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<td>236</td>
<td>237</td>
<td>98</td>
<td>69</td>
<td>66</td>
</tr>
<tr>
<td>Schools without Ready</td>
<td>1,371</td>
<td>1,313</td>
<td>1,269</td>
<td>942</td>
<td>831</td>
<td>820</td>
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Number of Schools in ANCOVA Analysis with and without Access to Ready Books (Mathematics)

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<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<tr>
<td>Ready Schools</td>
<td>117</td>
<td>112</td>
<td>103</td>
<td>39</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td>Schools without Ready</td>
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<td>1,480</td>
<td>1,415</td>
<td>1,014</td>
<td>883</td>
<td>807</td>
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Findings from the Research
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?

Curriculum Associates’ research team conducted an ANCOVA analysis 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.

The findings indicated that, across all grades and both subjects, Ready schools outperformed schools without Ready. In ELA, Ready schools scored, on average, between four and seven 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 seven and eleven scale score points higher on the New York State Grades 3–8 Test than schools without Ready.

To answer the second question, an ANCOVA analysis 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 What Works Clearinghouse if the $p$-value is less than five percent ($p < .05$). All calculated $p$-values for this analysis were significant at the $p < .05$ level for all grades and subjects.

Findings from these analyses support positive answers to both research questions:
Students in Ready schools scored higher than students in schools without Ready on state summative assessments. These differences in school performance at grades 3–8 were statistically significant after controlling for selection bias.
About the *Ready* Program

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 rated the highest overall K–8 program by EdReports.org, *Ready Mathematics* can be used as your core curriculum or to enhance your mathematics instruction.