ESSA Level 3
Efficacy Research

i-Ready

The Impact of *i-Ready Personalized Instruction* during the 2020–2021 School Year

Evidence to Support Historically Marginalized Student Groups

Curriculum Associates Research Brief | March 2022

Research Overview

This study examined the impact of *i-Ready Personalized Instruction* ("*i-Ready*") on different Grades K–5 student populations, including historically marginalized student populations (e.g., economically disadvantaged students, students of color, English Learners) during the 2020–2021 school year. Across all grades, subjects, and demographic groups, students who used *i-Ready* with fidelity scored significantly higher on the spring *i-Ready Diagnostic* ("Diagnostic") than those who did not. This study provides evidence that students from historically marginalized student groups are positively impacted by *i-Ready* when used with fidelity.

Introduction

As the COVID-19 pandemic surged across our nation and the world during the 2020–2021 school year, many students across America experienced unprecedented disruption in their personal, social, and academic lives as they were suddenly forced to seamlessly shift between in-school, hybrid, and fully remote learning environments throughout the school year. In addition, vast inequities in learning that have routinely plagued many students from low-income households and communities of color were exacerbated in the wake of unfinished learning (Curriculum Associates, 2021a). During the 2020–2021 school year, *i-Ready* was one of many tools used by school districts across the nation to help students combat the challenges of unfinished learning during school closures.

i-Ready Personalized Instruction lessons are sequenced to support students' strengths and areas for growth. Moreover, specific lessons can be assigned by educators, when needed, to help every student reach or exceed grade-level proficiency. This research includes data for all *i-Ready* lessons, whether from the personalized path or teacher assigned. A growing number of studies have demonstrated the positive impact of *i-Ready* across various subjects, grade levels, academic years, and populations (Curriculum Associates, 2020; Evaluation and Training Institute, 2019; Randal et al., 2020a; Randal et al., 2020b; Seabolt, 2018).

The purpose of this study was to seek to understand the impact of *i-Ready* for historically marginalized groups, which were defined as economically disadvantaged students, students of color, students with disabilities, and/or English Learners for the purposes of this research. The current study furthers previous work by demonstrating the impact of using *i-Ready* with fidelity for these historically marginalized student groups during the 2020–2021 school year and is in line with Curriculum Associates' commitment to helping every student access grade-level work and succeed at grade level.

In this paper, we will use the term "students of color" to refer to the racial and ethnic categories of Black or African American, Latino, and Asian, and we will use the term "English Learner" to refer to students who are not yet proficient in English whether they are newcomers, long-term English Learners, multilingual learners, or otherwise. In addition, we will use the term "economically disadvantaged" to refer to students who are eligible for Free and Reduced-Price Lunch. We recognize that language changes with time and that each demographic group described is not monolithic, nor is each individual within any designated demographic group in agreement on preferred language. As a company, we will continue to review, reflect on, and evolve the terminology with the goal of using bias-free, inclusive, and sensitive language labels.

Research Questions

The overarching goal of this research study was to gain a better understanding of the following questions, which together summarize the analytic research questions found in the Appendix Table 1:

1. Across grades and subjects, did students who used *i-Ready Personalized Instruction* with fidelity perform better on the spring Diagnostic than students who did not use *i-Ready*?
2. Within diverse student groups, did students who used *i-Ready Personalized Instruction* with fidelity perform better on the spring Diagnostic than students who did not use *i-Ready*?

Program Overview

i-Ready Personalized Instruction ("*i-Ready*") is a research-based program for students in Grades K–8 with an individualized plan for instruction based on each student's performance on the online, adaptive *i-Ready Diagnostic* ("Diagnostic"). Once students complete the Diagnostic, *i-Ready* builds a unique lesson plan with a differentiated starting point for every learner based on their overall and domain-level placement. *i-Ready* provides evidence-based instruction across five domains in reading: Phonics, Phonemic Awareness, High-Frequency Words, Vocabulary, and Reading Comprehension and four domains in Mathematics: Number and Operations, Algebra and Algebraic Thinking, Measurement and Data, and Geometry. Across both subjects, *i-Ready* gives teachers the flexibility to add lessons and adjust an individual student's position in the lesson sequence. *i-Ready* is aligned to college- and career-ready standards and embeds multimedia instruction and progress monitoring into online lessons. Lessons provide explicit instruction and extensive practice, offer supportive feedback, and build conceptual understanding for learners of all levels. To learn more about the research behind *i-Ready*, visit CurriculumAssociates.com/Research.

Curriculum Associates recommends that each student using *i-Ready* maintains 30–49 minutes of Lesson Time-on-Task per subject per week with at least 70% of lessons passed for the year. In addition, Curriculum Associates recommends administering the Diagnostic three times per year (i.e., beginning, middle, and end of year) with 12–18 weeks between each administration. For the purposes of this study, students had to use *i-Ready* for a minimum of 30 minutes on average per week of instruction with at least 18 distinct weeks of instruction and have an overall lesson pass rate of 70% or higher during the 2020–2021 school year.

Outcome Measure

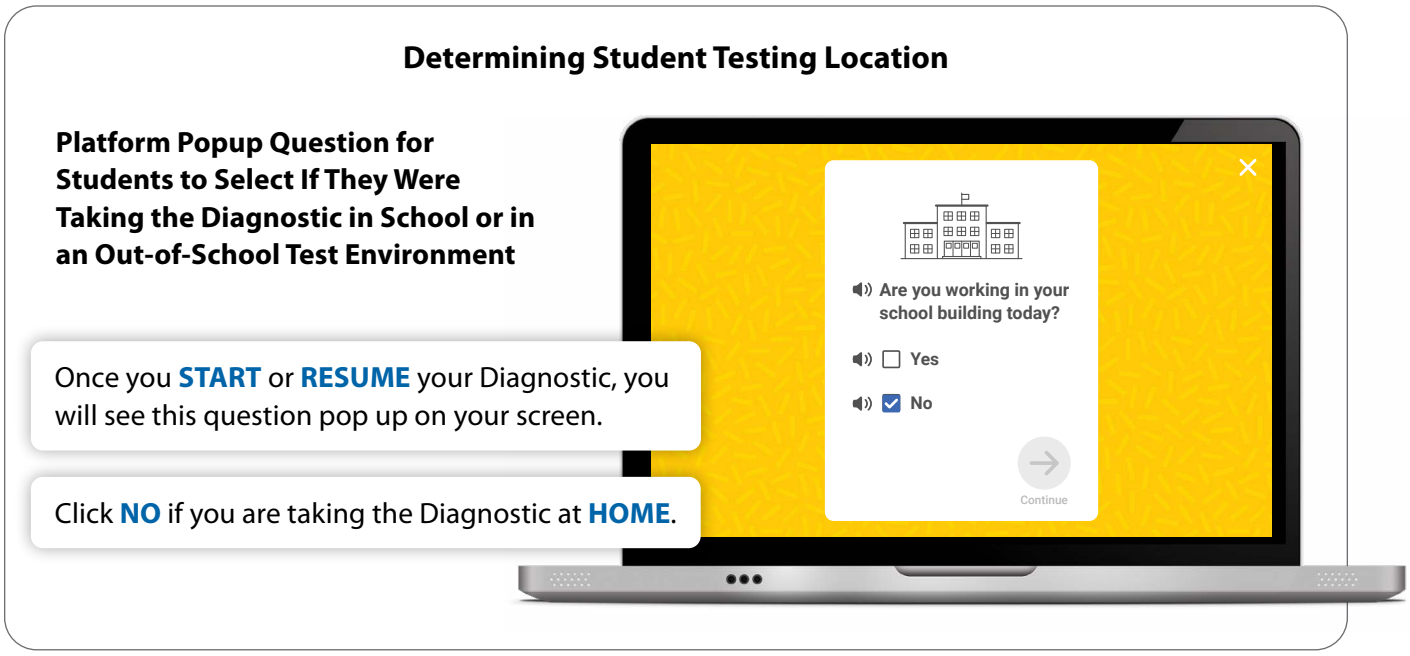
The Diagnostic is a valid and reliable computer-adaptive interim assessment for students in Grades K–12. The Diagnostic starts each student at a difficulty level based on an educated guess that is derived from their chronological grade level. As students answer questions correctly or incorrectly, the test adjusts up or down with questions of varying difficulty until the assessment reaches the level of difficulty that is "just right" for each student. The Diagnostic can be administered at three time points during the school year—typically during fall, winter, and spring. Many studies have been conducted to support the reliability and validity of the Diagnostic for Reading and for Mathematics as well as their consistency with state content standards used across the United States. The Diagnostic received high ratings from the National Center on Intensive Intervention for use as an academic screening and progress monitoring tool for both reading and mathematics. To learn more about the Diagnostic, visit CurriculumAssociates.com/Diagnostic.

Methodology

This research used a sample of student groups that used *i-Ready* instruction with fidelity (Figure 1) during the 2020–2021 school year and took their Diagnostic in school. Students were categorized into seven specific student groups: Asian students, Black students, Latino students, White students, economically disadvantaged students, students with disabilities, and English Learners. Due to the COVID-19 pandemic, many students participated in remote schooling during the study year.

We found that while out-of-school testing data consistency improved over the course of the 2020–2021 school year, in-school testing data remained the closest "true" comparison to prior-year achievement. Hence, the Curriculum Associates Research team decided to focus on the in-school testing data for the current research study because in-school testing locations are more consistent with historical testing conditions, vary less from student to student, and provide a more valid comparison to historical performance than out-of-school testing data. It is important to note that while we have insight into students' testing location based on self-reported data, we do not know where students were completing their *i-Ready* lessons (i.e., in-school or out-of-school test environment).

Figure 1. How Was Location Determined?



To estimate the impact of *i-Ready* on student learning across student demographic groups, multilevel models were used. For each grade (e.g., K–5), subject (e.g., reading and mathematics), and demographic group combination, two models were run—one using students' spring Diagnostic scale scores as the outcome and the other model using students' percentage of Typical Growth achieved as the outcome. In all, the Curriculum Associates Research team conducted 168 multilevel models to estimate the impact of *i-Ready* on learning for Asian students, Black students, Latino students, White students, economically disadvantaged students, students with disabilities, and English Learners. Across all grades, the final analytic sample for reading consisted of 452,565 students in the *i-Ready* group and 118,142 students in the comparison group, and the final analytic sample for mathematics consisted of 595,710 students in the *i-Ready* group and 106,388 students in the comparison group. The number of students by grade, subject, and demographic group are available in the Appendix Tables 1 and 2.

Figure 2. How was the student sample collected?

To be included in the treatment group, students must:	To be included in the comparison group, students must:
• Belong to one or more of the following demographic groups: Asian students, Black students, Latino students, White students, economically disadvantaged students, students with disabilities, English Learners • Be enrolled in Grades K–5 during the 2020–2021 school year • Have completed the *i-Ready Diagnostic* in school, both in the fall and spring • Have used *i-Ready Personalized Instruction* for an average of at least 30 minutes a week across a minimum of 18 academic weeks • Have an overall lesson pass rate of 70%	• Belong to one or more of the following demographic groups: Asian students, Black students, Latino students, White students, economically disadvantaged students, students with disabilities, English Learners • Be enrolled in Grades K–5 during the 2020–2021 school year • Have completed the *i-Ready Diagnostic* in school, both in the fall and spring • Have not used *i-Ready Personalized Instruction* during the 2020–2021 school year

Results

The current study examined the impact of *i-Ready* on students' Diagnostic performance comparing both changes in scale scores (using a measure of Typical Growth) from fall to spring within the treatment and comparison groups to each other as well as the difference between the spring scale scores of the treatment and comparison groups as outcome measures. The analysis looked at students overall as well as students by demographic group. Within the demographic groups, the researchers were most interested in the performance of historically marginalized students. In this section, we will discuss the overall results for Grades K–5 as well as the demographic results for Grade 3. The Appendix has results for all grades by demographic group.

Typical Growth

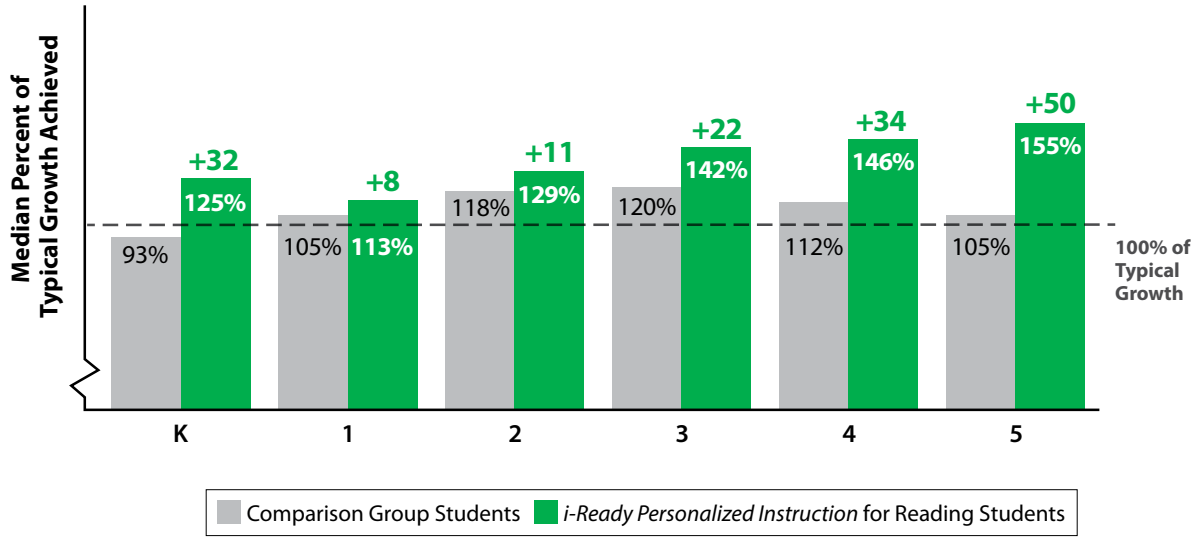
Reported within *i-Ready*, Typical Growth is the median percentage of average annual growth achieved by students at each grade and placement level as measured by their fall-to-spring Diagnostic gains during an academic year with 30 weeks of instruction. Typical Growth provides a practical growth goal that allows educators to see how a student is growing compared to average student growth at the same grade and initial grade-level placement. Students who achieve 100% of their Typical Growth have met their Typical Growth target, while students who achieve more than 100% of their Typical Growth have exceeded their Typical Growth target.

Students Using *i-Ready* Achieved Higher Typical Growth in Reading and Mathematics

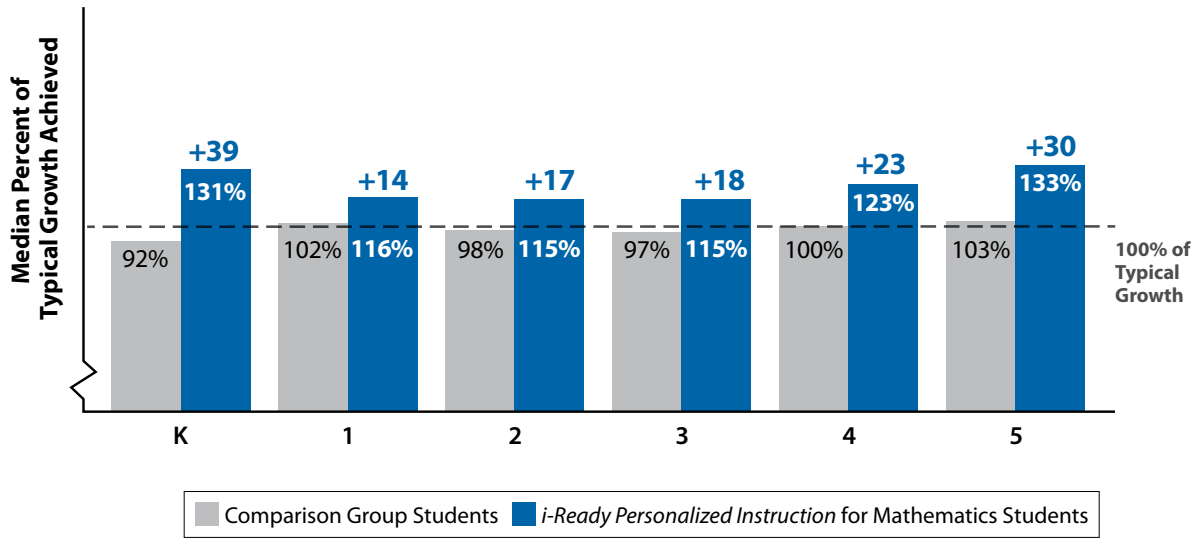
Across all grades, subjects, and demographic groups, students who used *i-Ready* as recommended achieved a higher percentage of Typical Growth targets as well as higher spring scale scores on both the Diagnostic for Reading and for Mathematics assessments in spring 2021 than their counterparts who did not use *i-Ready*.

Graphs 1 and 2 show how students in the *i-Ready* treatment group achieved higher median percent of Typical Growth than students who did not use *i-Ready* in all grade levels in both reading and mathematics. In Grade 3, for example, students in the *i-Ready* treatment group achieved 142% of their Typical Growth targets, whereas students in the comparison group achieved 120% of Typical Growth. In mathematics, Grade 3 students in the *i-Ready* treatment group achieved 115% of Typical Growth compared with 97% for the comparison group.

Graph 1. Median Percent of Typical Growth Achieved in Reading, K–5



Graph 2. Median Percent of Typical Growth Achieved in Mathematics, K–5

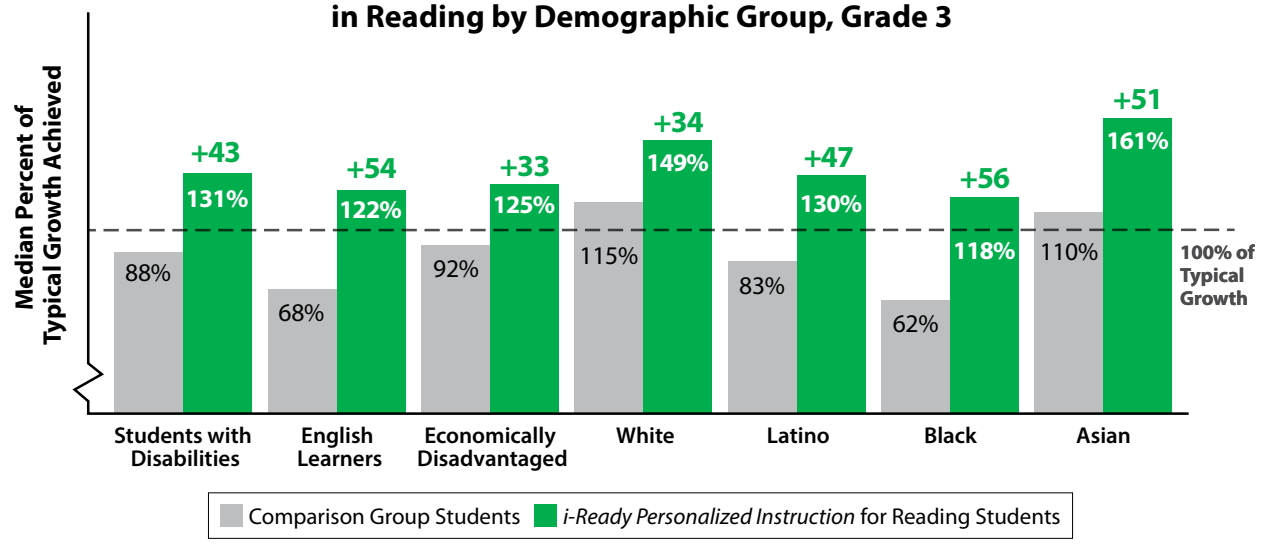


Students from Historically Marginalized Populations Using *i-Ready* Achieved Higher Typical Growth

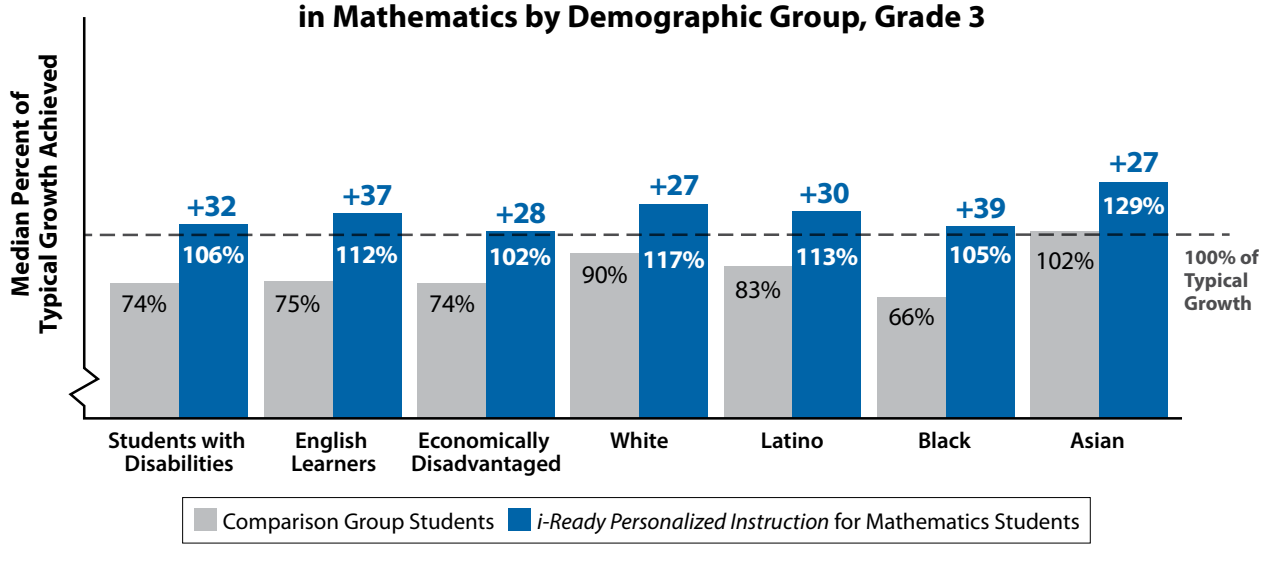
These results held across all grade levels and subjects for students in the various demographic groups, including those students in historically marginalized groups such as students who are Black, Latino, and have economic disadvantages. Graph 3 presents the results for students in Grade 3. Results by demographic group for Grades K–5 are available in Appendix Tables 5 and 6.

In this section, results for Grade 3 students will be illustrated as Grade 3 is a pivotal year for student learning, and research shows performance in Grade 3 is predictive of high school outcomes (Hernandez, 2011). Results for all demographic groups, grade levels, and subjects are available in the Appendix.

Graph 3. Median Percent of Typical Growth Achieved in Reading by Demographic Group, Grade 3



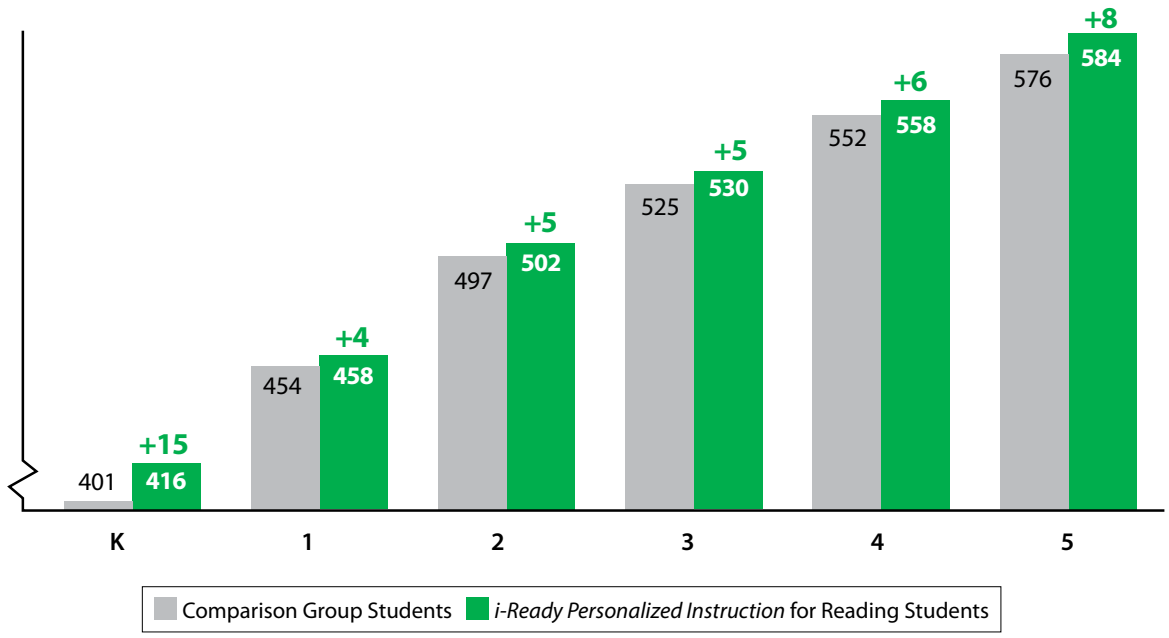
Graph 4. Median Percent of Typical Growth Achieved in Mathematics by Demographic Group, Grade 3



Students Using *i-Ready* Achieved Higher Spring Diagnostic Scale Scores

Across all grades, subjects, and demographic groups, students who used *i-Ready* as recommended demonstrated higher scores on both the Diagnostic for Reading and for Mathematics in spring 2021 than their counterparts who did not use *i-Ready*. The researchers found not only that historically marginalized students using *i-Ready* scored statistically significantly higher on their spring Diagnostic compared to their peers who did not use *i-Ready* in reading or mathematics but also that the effect sizes were medium to large. Together, these results indicate that *i-Ready* can enhance learning gains for students in these populations.

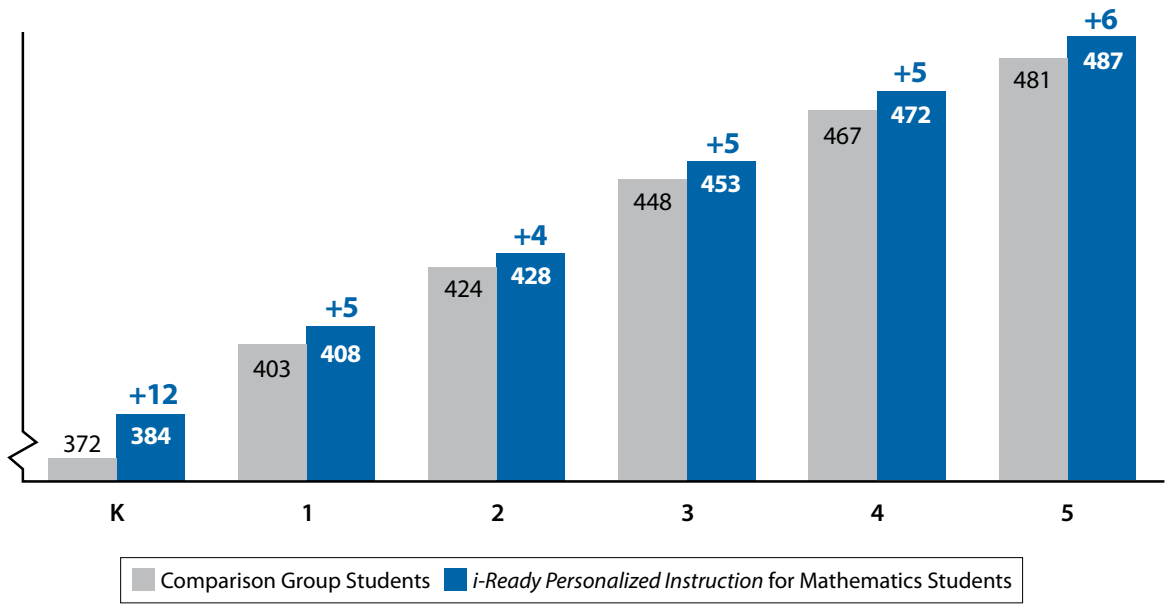
Graph 5. Students Using *i-Ready Personalized Instruction* Achieved Higher Spring Scores in Reading, Grades K–5



Note: Results for Grades K–5 were all statistically significant.

Graphs 5 and 6 show how students in the *i-Ready* treatment group demonstrated statistically significantly higher spring Diagnostic scores than students who did not use *i-Ready* in all grade levels in both reading and mathematics. In Grade 3, for example, students in the *i-Ready* treatment group scored 5 scale points higher on the spring Diagnostic for Reading than their peers who did not use *i-Ready* (i.e., *i-Ready* students scored an average of 530 scale score points while students who did not use *i-Ready* scored an average of 525 scale score points). Similarly, Grade 3 students in the *i-Ready* treatment group also scored 5 scale points higher than their non-*i-Ready* peers on the spring Diagnostic for Mathematics (i.e., *i-Ready* students scored an average of 453 scale score points while comparison group students scored an average of 448 scale score points).

Graph 6. Students Using *i-Ready Personalized Instruction* Achieved Higher Spring Scores in Mathematics, Grades K–5

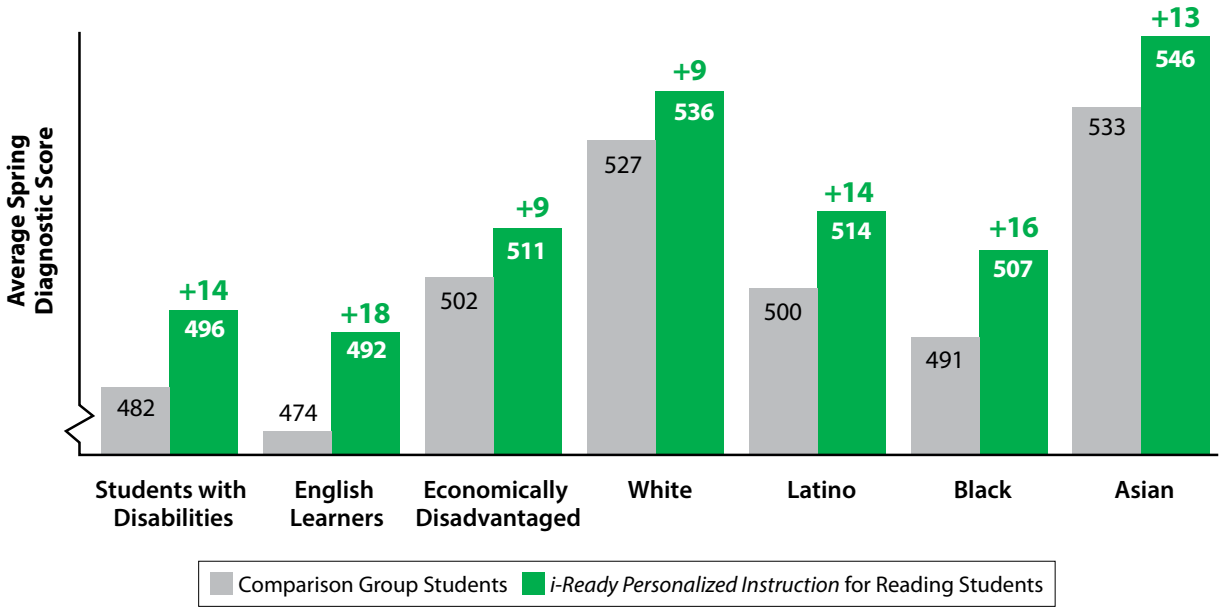


Note: Results for Grades K–5 were all statistically significant.

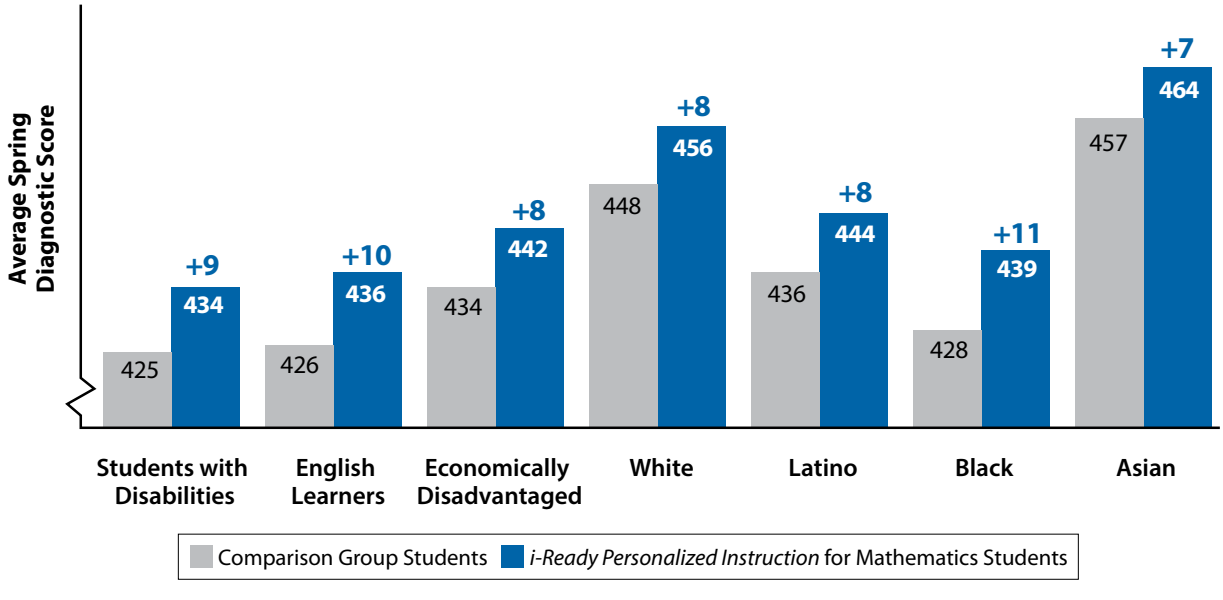
Students from Historically Marginalized Populations Using *i-Ready* Achieved Higher Spring Diagnostic Scores

Graphs 7 and 8 display the results for Grade 3 students in each of the demographic groups examined. Grade 3 students in historically marginalized groups demonstrated higher spring scores after using *i-Ready* compared with students in the same populations who did not use *i-Ready*. Results by demographic group for all grades and subjects are available in Appendix Tables 5 and 6.

Graph 7. Average Spring Diagnostic Score for Students Using *i-Ready* Compared to Students Not Using *i-Ready* in Reading by Student Demographic Group, Grade 3



Graph 8. Average Spring Diagnostic Score for Students Using *i-Ready* Compared to Students Not Using *i-Ready* in Mathematics by Student Demographic Group, Grade 3



Effect Size

To measure the strength of using *i-Ready*, effect sizes were calculated. An effect size represents the magnitude of the difference in scores. In this case, the effect size represents the extent of thedifference between the spring scores of students in the *i-Ready* treatment group and their counterparts in thecomparison group. The impact of *i-Ready* on students of color and White students, English Learners, students with disabilities, and economically disadvantaged students was analyzed. Across all grades, subjects, and demographic groups, students who used *i-Ready* with fidelity had higher spring scores than students who did not use *i-Ready*. The study's authors found the effect sizes varied by grade, subject, and demographic group and ranged from .09 (for White first and second graders) to .57 (for kindergarteners with disabilities) in reading and from .09 (for economically disadvantaged fifth graders) to .45 (for Black kindergarteners) in mathematics. See Appendix Tables 5 and 6 for more details.

Table 1. Results for *i-Ready* Treatment Group Reading and Mathematics in Grades K–5

	Reading		Mathematics	
Grade	**Effect Size**	**# of Weeks of Instruction**	**Effect Size**	**# of Weeks of Instruction**
K	.37	8	.30	7
1	.19	5	.18	5
2	.15	6	.17	5
3	.18	10	.17	5
4	.17	12	.16	6
5	.18	14	.15	8

What Is Effect Size?

How to Interpret Effect Sizes

An effect size is a quantitative measure of the magnitude of an experimental effect. In education research, effect size usually refers to the magnitude of the "treatment" or "intervention" program or practice on student or teacher outcomes.

Effect sizes are reported in standard deviation units as opposed to the original unit of measurement to allow for comparisons across studies or outcome measures. They are often categorized into "small," "medium," and "large" effects in which the larger the effect size, the stronger the impact of the treatment or intervention on the outcome of interest. Research shows that effect sizes in experimental studies of typical education interventions range from .03 to .17 and suggests that an effect size less than .05 can be considered small, .05 to .20 can be considered medium, and greater than .20 can be considered large (Kraft, 2019). Based on this interpretation, the effect size for *i-Ready* in this particular study ranges from medium to large, depending on the grade level and subject.

Translating Effect Sizes

In order to make the effect sizes more educationally meaningful, the subject and grade-level effect sizes were translated into the number of weeks of instruction as an improvement index. The number of weeks of instruction represents the number of additional weeks of instruction that *i-Ready* students gained over the comparison group based on the magnitude of the difference between the *i-Ready* students' score gains and the comparison group students' score gains. For example, an effect size of .18 for Grade 3 students in reading translates into 10 weeks of additional instruction growth that a student using *i-Ready* would gain over a comparison group student. Note that the average amount of growth per grade and subject varies, so the same effect size can translate into a different number of weeks of instruction based on the subject and grade level. In addition, this translation is not meant to be precise, but it can provide a general idea of the difference.

The results of this study suggest *i-Ready* has a positive impact on historically marginalized student groups when used with fidelity.

Conclusion

Findings from this study provide evidence that students who reported testing in school and used *i-Ready* per the recommended guidance (i.e., at least 30 minutes per week with a lesson pass rate of 70% or higher) performed better than their peers who did not use *i-Ready*. Hence, *i-Ready* helped students across all of the demographic groups we studied achieve higher scores.

More specifically, *i-Ready* proved to be beneficial for historically marginalized student groups. Students from historically marginalized populations who reported testing in school and used *i-Ready* with fidelity outperformed their peers from historically marginalized populations who did not use *i-Ready*. Given the fact that the 2020–2021 school year was plagued by pandemic-related challenges that significantly impacted Black, Latino, and economically disadvantaged students, in particular, the results from this study suggest *i-Ready* can be an effective intervention for these and other historically marginalized student groups.

Appendix

Research Questions

1. How do **Asian students** who use *i-Ready Personalized Instruction* perform relative to Asian students who do not use *i-Ready Personalized Instruction*? How large is this effect?
2. How do **Black students** who use *i-Ready Personalized Instruction* perform relative to Black students who do not use *i-Ready Personalized Instruction*? How large is this effect?
3. How do **Latino students** who use *i-Ready Personalized Instruction* perform relative to Latino students who do not use *i-Ready Personalized Instruction*? How large is this effect?
4. How do **White students** who use *i-Ready Personalized Instruction* perform relative to White students who do not use *i-Ready Personalized Instruction*? How large is this effect?
5. How do **economically disadvantaged students** who use *i-Ready Personalized Instruction* perform relative to economically disadvantaged students who do not use *i-Ready Personalized Instruction*? How large is this effect?
6. How do **students with disabilities** who use *i-Ready Personalized Instruction* perform relative to students with disabilities who do not use *i-Ready Personalized Instruction*? How large is this effect?
7. How do **English Learners** who use *i-Ready Personalized Instruction* perform relative to English Learners who do not use *i-Ready Personalized Instruction*? How large is this effect?

Appendix Table 1. Sample Size for Reading by Demographic Group and Grade Level

	K	1	2	3	4	5	All Grades
Asian							
Used *i-Ready*	1,034	1,388	1,463	1,156	881	812	**6,734**
Did Not Use *i-Ready*	235	284	336	389	305	315	**1,864**
Black							
Used *i-Ready*	6,801	11,897	12,548	10,074	6,800	5,248	**53,368**
Did Not Use *i-Ready*	1,016	778	905	745	874	885	**5,203**
Latino							
Used *i-Ready*	9,396	15,500	16,132	13,571	9,555	7,564	**71,718**
Did Not Use *i-Ready*	1,465	1,681	1,647	1,678	1,854	2,080	**10,405**
White							
Used *i-Ready*	32,389	54,394	57,174	44,150	32,564	28,867	**249,538**
Did Not Use *i-Ready*	8,410	9,409	9,812	9,512	9,581	10,517	**57,241**
Economically Disadvantaged							
Used *i-Ready*	1,965	5,459	6,571	7,715	5,901	4,853	**32,464**
Did Not Use *i-Ready*	653	927	889	886	888	976	**5,219**
English Learners							
Used *i-Ready*	2,207	4,565	5,530	4,977	3,196	2,087	**22,562**
Did Not Use *i-Ready*	453	490	550	497	422	492	**2,904**
Students with Disabilities							
Used *i-Ready*	2,047	4,117	4,790	5,365	5,088	4,134	**25,541**
Did Not Use *i-Ready*	651	815	820	845	811	826	**4,768**

Appendix Table 2. Sample Size for Mathematics by Demographic Group and Grade Level

	K	1	2	3	4	5	All Grades
Asian							
Used *i-Ready*	1,143	1,355	1,504	1,588	1,372	1,239	**8,201**
Did Not Use *i-Ready*	180	204	212	268	267	236	**1,367**
Black							
Used *i-Ready*	7,466	11,163	11,938	11,523	10,100	7,768	**59,958**
Did Not Use *i-Ready*	1,436	1,158	1,240	950	804	873	**6,461**
Latino							
Used *i-Ready*	10,782	15,323	15,820	16,334	14,729	11,354	**84,342**
Did Not Use *i-Ready*	1,562	1,674	1,568	1,453	1,444	1,483	**9,184**
White							
Used *i-Ready*	35,126	52,057	56,901	56,949	53,141	45,017	**299,191**
Did Not Use *i-Ready*	8,341	9,029	8,632	8,562	8,223	8,766	**51,553**
Economically Disadvantaged							
Used *i-Ready*	3,058	6,442	7,383	10,040	9,686	7,892	**44,501**
Did Not Use *i-Ready*	1,104	1,015	999	942	976	1,039	**6,075**
English Learners							
Used *i-Ready*	3,558	5,425	6,000	5,866	4,904	3,385	**29,138**
Did Not Use *i-Ready*	444	511	539	467	336	425	**2,722**
Students with Disabilities							
Used *i-Ready*	2,047	4,117	4,790	5,365	5,088	4,134	**25,541**
Did Not Use *i-Ready*	651	815	820	845	811	826	**4,768**

Results by Subject, Demographic Group, and Grade Level

Appendix Table 3. Median Percent of Typical Growth Achieved in Reading by Demographic Group and Grade Level

		K	1	2	3	4	5
Asian							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	132%	117%	126%	161%	169%	193%
	Did Not Use *i-Ready*	101%	96%	115%	110%	112%	145%
% Difference (Adjusted)		+31%*	+21%	+11%	+51%	+57%	+48%
Black							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	121%	98%	106%	118%	117%	125%
	Did Not Use *i-Ready*	69%	74%	85%	62%	67%	45%
% Difference (Adjusted)		+52%	+24%	+21%	+56%	+50%	+80%
Latino							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	121%	102%	118%	130%	138%	148%
	Did Not Use *i-Ready*	63%	73%	90%	83%	88%	82%
% Difference (Adjusted)		+58%	+29%	+28%	+47%	+50%	+66%
White							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	128%	113%	133%	149%	152%	160%
	Did Not Use *i-Ready*	90%	94%	113%	115%	106%	100%
% Difference (Adjusted)		+38%	+19%	+20%	+34%	+46%	+60%
Economically Disadvantaged							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	120%	101%	120%	125%	130%	143%
	Did Not Use *i-Ready*	82%	80%	94%	92%	91%	106%
% Difference (Adjusted)		+38%	+21%	+26%	+33%	+39%	+37%
English Learners							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	120%	94%	112%	122%	130%	143%
	Did Not Use *i-Ready*	43%	44%	75%	68%	66%	52%
% Difference (Adjusted)		+77%	+50%	+37%	+54%	+64%	+91%
Students with Disabilities							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	124%	99%	111%	131%	128%	140%
	Did Not Use *i-Ready*	57%	64%	68%	88%	80%	85%
% Difference (Adjusted)		+68%	+35%	+44%	+43%	+48%	+55%

*Percentage point differences are rounded to the nearest whole number.

Appendix Table 4. Median Percent of Typical Growth Achieved in Mathematics by Demographic Group and Grade Level

		K	1	2	3	4	5
Asian							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	124%	116%	124%	129%	132%	150%
	Did Not Use *i-Ready*	84%	95%	101%	102%	106%	128%
% Difference (Adjusted)		+40%*	+21%	+23%	+27%	+26%	+22%
Black							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	120%	99%	103%	105%	104%	114%
	Did Not Use *i-Ready*	63%	74%	72%	66%	64%	64%
% Difference (Adjusted)		+57%	+25%	+31%	+39%	+40%	+50%
Latino							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	120%	104%	113%	113%	116%	125%
	Did Not Use *i-Ready*	63%	69%	79%	83%	78%	84%
% Difference (Adjusted)		+58%	+35%	+34%	+30%	+38%	+41%
White							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	131%	117%	118%	117%	124%	132%
	Did Not Use *i-Ready*	83%	90%	92%	90%	90%	96%
% Difference (Adjusted)		+48%	+27%	+26%	+27%	+34%	+36%
Economically Disadvantaged							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	123%	103%	108%	102%	110%	121%
	Did Not Use *i-Ready*	68%	72%	73%	74%	68%	95%
% Difference (Adjusted)		+55%	+31%	+35%	+28%	+42%	+26%
English Learners							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	113%	94%	108%	112%	113%	122%
	Did Not Use *i-Ready*	56%	43%	60%	75%	78%	73%
% Difference (Adjusted)		+57%	+51%	+48%	+37%	+35%	+49%
Students with Disabilities							
% of Typical Growth Achieved (Adjusted)	Used *i-Ready*	122%	107%	111%	106%	102%	107%
	Did Not Use *i-Ready*	63%	69%	77%	74%	80%	68%
% Difference (Adjusted)		+59%	+38%	+34%	+32%	+22%	+39%

*Percentage point differences are rounded to the nearest whole number.

Appendix Table 5. Effect of *i-Ready Personalized Instruction* for Reading by Demographic Group and Grade Level

		K	1	2	3	4	5
Asian							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	428	471	513	546	572	596
	Did Not Use *i-Ready*	414	461	508	533	561	588
Mean Difference (Adjusted)		14	10	5	13	11	8
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .05$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	8.49	5.87	1.07	9.16	7.26	4.80
	High	19.34	14.85	8.95	16.28	15.29	11.51
Effect Size (Hedge's *g*)		.23	.17	.10	.26	.24	.20
Black							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	410	443	483	507	528	528
	Did Not Use *i-Ready*	385	431	475	491	517	544
Mean Difference (Adjusted)		25	12	8	16	11	14
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	22.46	9.13	4.93	13.20	8.59	11.95
	High	27.40	14.71	9.99	18.64	13.96	17.09
Effect Size (Hedge's *g*)		.49	.19	.13	.26	.18	.25
Latino							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	412	447	488	513	540	566
	Did Not Use *i-Ready*	384	433	477	500	529	554
Mean Difference (Adjusted)		28	14	11	13	11	12
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	25.24	12.53	9.67	11.16	8.95	10.38
	High	29.55	16.60	13.30	15.08	12.50	13.80
Effect Size (Hedge's *g*)		.46	.22	.19	.20	.19	.22
White							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	419	460	506	536	565	589
	Did Not Use *i-Ready*	400	451	498	527	556	579
Mean Difference (Adjusted)		19	9	8	9	9	10
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	17.00	8.20	6.95	8.10	7.78	9.18
	High	19.64	10.85	9.17	10.29	9.82	11.12
Effect Size (Hedge's *g*)		.23	.09	.09	.11	.12	.14

Appendix Table 5. Effect of *i-Ready Personalized Instruction* for Reading by Demographic Group and Grade Level, Cont'd.

		K	1	2	3	4	5
Economically Disadvantaged							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	407	444	486	511	537	567
	Did Not Use *i-Ready*	389	434	476	502	528	560
Mean Difference (Adjusted)		18	10	10	9	9	7
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	14.20	6.61	7.23	5.64	5.76	4.29
	High	22.82	14.46	12.61	12.45	11.86	9.35
Effect Size (Hedge's *g*)		.26	.11	.13	.10	.11	.11
English Learners							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	406	434	472	492	511	539
	Did Not Use *i-Ready*	370	410	455	474	495	518
Mean Difference (Adjusted)		36	24	17	18	16	21
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	31.94	20.61	13.12	14.01	12.22	16.64
	High	40.25	27.55	19.58	21.32	19.65	24.40
Effect Size (Hedge's *g*)		.49	.32	.23	.22	.23	.27
Students with Disabilities							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	410	440	471	496	508	532
	Did Not Use *i-Ready*	378	422	453	482	497	521
Mean Difference (Adjusted)		32	8	19	14	11	11
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	28.57	13.96	15.75	10.29	8.12	7.84
	High	36.29	21.16	22.14	17.12	14.63	14.40
Effect Size (Hedge's *g*)		.57	.25	.29	.17	.15	.14

Appendix Table 6. Effect of *i-Ready Personalized Instruction* for Mathematics by Demographic Group and Grade Level

		K	1	2	3	4	5
Asian							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	387	413	436	464	483	499
	Did Not Use *i-Ready*	375	407	430	457	477	496
Mean Difference (Adjusted)		12	6	6	7	6	3
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	8.18	2.28	3.10	4.78	2.99	0.96
	High	15.64	8.73	8.97	9.88	8.06	5.95
Effect Size (Hedge's *g*)		.29	.14	.17	.22	.17	.11
Black							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	376	395	416	439	457	471
	Did Not Use *i-Ready*	359	388	407	428	447	461
Mean Difference (Adjusted)		17	7	9	11	10	10
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	15.85	5.90	7.09	9.01	7.86	7.93
	High	18.95	9.22	10.10	12.25	11.08	10.96
Effect Size (Hedge's *g*)		.45	.18	.22	.26	.24	.25
Latino							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	378	399	421	444	463	477
	Did Not Use *i-Ready*	360	389	411	436	454	469
Mean Difference (Adjusted)		18	10	10	8	9	8
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	15.90	8.77	8.06	6.64	7.74	6.51
	High	18.85	11.62	10.69	9.24	10.24	8.91
Effect Size (Hedge's *g*)		.38	.21	.21	.17	.20	.19
White							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	386	410	431	456	475	489
	Did Not Use *i-Ready*	371	402	424	448	467	482
Mean Difference (Adjusted)		15	8	7	8	8	7
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	14.12	7.32	6.28	6.57	7.12	6.04
	High	15.94	9.06	7.83	8.13	8.67	7.45
Effect Size (Hedge's *g*)		.24	.12	.11	.11	.12	.11

Appendix Table 6. Effect of *i-Ready Personalized Instruction* for Mathematics by Demographic Group and Grade Level , Cont'd.

		K	1	2	3	4	5
Economically Disadvantaged							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	378	398	419	442	462	477
	Did Not Use *i-Ready*	361	390	410	434	452	472
Mean Difference (Adjusted)		17	8	9	8	10	5
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	14.42	6.09	6.95	5.71	7.78	3.13
	High	19.50	11.21	12.05	10.07	11.97	6.85
Effect Size (Hedge's *g*)		.28	.13	.14	.13	.17	.09
English Learners							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	372	393	414	436	452	464
	Did Not Use *i-Ready*	355	378	401	426	443	455
Mean Difference (Adjusted)		17	15	13	10	9	9
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	14.23	11.70	10.31	7.92	5.93	6.64
	High	20.01	16.80	15.33	12.72	10.83	11.19
Effect Size (Hedge's *g*)		.29	.23	.21	.18	.16	.18
Students with Disabilities							
Mean Spring Diagnostic Score (Adjusted)	Used *i-Ready*	375	396	415	434	447	457
	Did Not Use *i-Ready*	356	385	406	425	442	450
Mean Difference (Adjusted)		19	11	9	9	5	7
Significance (*p*-value)		$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$	$p < .001$
95% Confidence Interval	Low	16.31	8.75	7.34	6.77	3.34	5.31
	High	21.18	13.48	11.41	10.97	7.30	9.25
Effect Size (Hedge's *g*)		.36	.19	.19	.16	.10	.14

Typical Growth Targets

Appendix Table 7. Typical Growth Chart for Reading by Grade and Placement Level

Reading									
Fall Diagnostic Placement Level	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
On Grade Level, Mid, Late, or Above	43	37	22	17	12	7	4	4	4
On Grade Level, Early	44	47	29	22	17	13	9	6	4
One Grade Level Below	49	49	39	26	20	16	12	10	9
Two Grade Levels Below	-	54	44	33	23	20	14	12	12
Three or More Grade Levels Below	-	-	-	36	28	26	19	17	18

Appendix Table 8. Typical Growth Chart for Mathematics by Grade and Placement Level

Mathematics									
Fall Diagnostic Placement Level	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
On Grade Level, Mid, Late, or Above	21	21	18	21	19	14	13	11	9
On Grade Level, Early	24	26	22	25	23	18	13	12	9
One Grade Level Below	32	29	26	26	23	18	14	12	9
Two Grade Levels Below	-	36	29	27	23	18	14	13	10
Three or More Grade Levels Below	-	-	-	30	24	20	15	13	12

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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*, please visit CurriculumAssociates.com/Research.

The Impact of *i-Ready Personalized Instruction* during the 2020–2021 School Year: Evidence to Support Historically Marginalized Student Groups (Curriculum Associates Research Report No. 2022-04). North Billerica, MA: Author. | 03/22 1.5K

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