

**Curriculum Associates** RESEARCH

# *i-Ready Personalized Instruction* and State Assessment Performance

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Reading and Mathematics

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*i-Ready Inform*<sup>™</sup>  
is the new name  
for the *i-Ready*  
*Diagnostic* adaptive  
assessment.

# *i-Ready Personalized Instruction* and State Assessment Performance

## Introduction

State assessment performance is a key metric in accountability systems. As such, state and district leaders often require evidence of how instructional products may support this performance. Instructional products like the *i-Ready Diagnostic* and *i-Ready Personalized Instruction* (i.e., *i-Ready PI*), however, are state-agnostic and designed to serve broader populations.

To better identify how these tools aid state assessment performance, Curriculum Associates (CA) conducts complimentary lines of state-specific research. Comprehensive linking studies evaluate the correlation between the *i-Ready Diagnostic* and state assessments. These studies provide foundational evidence that the *i-Ready Diagnostic* is a valid measure of reading and mathematics, strongly overlaps with state assessments, and can be used as an indicator of student performance on state assessments.

State Impact Research (SIR) studies quantify the association between *i-Ready PI* usage and state summative exams. They are designed to evaluate whether student engagement with *i-Ready PI* (i.e., fidelity use) is associated with higher scores on state exams. Across states, grades, and subjects, students using *i-Ready PI* with fidelity—for at least 30 minutes a week, with a 70 percent pass rate, and for at least 18 weeks across the school year—tend to score higher on state summative exams in reading and mathematics than their peers.

This existing work largely focuses on states in isolation, answering questions about *i-Ready PI* and state assessments on a state-by-state basis. However, pooling data across states allows for evaluations on a broader scale, across a wider range of students, and presents new opportunities. For example, where individual state samples may be under-powered, collating data across all available state data creates samples large enough to ask new questions about “for whom, and under what conditions” *i-Ready PI* fidelity use is associated with state assessment performance.

Despite these opportunities, there are also clear challenges. Each state designs and validates their own summative assessments for reading and mathematics. This makes exam scores across states incomparable, even when they measure the same construct (e.g., reading and mathematics). To address these challenges, CA leveraged psychometric techniques to better understand the association between *i-Ready PI* and state assessment performance across all SIR studies. Specifically, student data were pooled across states and state assessment scores transformed using equipercentile linking. This linking method places students’ mathematics and reading scores on a common metric, making cross-state comparisons possible. This allows us to examine the association between *i-Ready PI* and state performance across a wide range of states and students. It also allows for a close examination of how *i-Ready PI* operates among key student groups including English Learners, students with disabilities, students who are economically disadvantaged, or from different racial and ethnic groups.

## Data and Measures

The data for the current research leveraged three sources of information: fall *i-Ready Diagnostic* scores, *i-Ready* PI usage information, and state assessment data, including performance and student demographics. For the current research, we combined 25 state assessment datasets from the 2021–2022, 2022–2023, and 2023–2024 academic years with *i-Ready* PI usage data from the corresponding year (see Table 1).

### State Assessment Variables

State-specific variables included state test scores obtained from state testing in the spring for both reading and mathematics, as well as student-level demographic information, where available. State scores are test scores on state assessments reported on state-specific scales. Demographic information includes race/ethnicity, English Learner status, disability status, and economically disadvantaged status.

*i-Ready Diagnostic*-specific variables included fall Diagnostic scores for Reading and for Mathematics. The *i-Ready Diagnostic* was developed to measure student knowledge, identify student skill level across different domains, and provide a mechanism for delivering instructional guidance (Curriculum Associates, 2018). Student results are reported as scale scores, placement levels, and norm-referenced percentile scores. *i-Ready Diagnostic* scale scores are linear transformations of logit values. For each assessment in Reading and in Mathematics, an overall score is calculated, as are domain scores for each content strand. Scale scores can range in value from 100 to 800.

### *i-Ready Personalized Instruction*

To measure *i-Ready* PI use, we created a set of summary variables to aggregate one academic year of use. To identify students who used as recommended, we created a fidelity usage variable. Specifically, we defined recommended use as meeting three criteria: 1) completed *i-Ready* PI lessons with at least a 70 percent pass rate, 2) used *i-Ready* PI for 18 or more weeks across the academic year, and 3) used *i-Ready* PI for at least 30 minutes per week. Students who met all criteria were coded as fidelity users (1), whereas all other students were coded as non-fidelity users (0). For the purposes of this research, our main analysis utilizes this definition of fidelity use.

### Data Preparation

To create the analytic sample, we matched students in state assessment datasets to their corresponding *i-Ready* PI usage data by student, subject (i.e., reading or mathematics), and academic year (i.e., 2021–2022, 2022–2023, or 2023–2024). Then, we inspected usage summary variables for outliers. To adjust for very low or very high use, we only included students whose use was within 1.5 times the interquartile range of each usage variable. Because *i-Ready* PI use varies by state, subject, and student grade level, we applied our outlier criteria to students within each grade, subject, and state combination.

Our final set of state samples included students who had fall *i-Ready Diagnostic* scores, state test data, and *i-Ready* PI usage variables within grade, subject, and state-specific ranges (within 1.5 times the interquartile range) of each usage variable. Table 1 shows sample sizes for each state and subject combination.

**Table 1. Aggregated State Assessment Sample by Study Year and State for Reading and Mathematics**

| State          | Study Year | Reading  |         |           | Mathematics |         |           |
|----------------|------------|----------|---------|-----------|-------------|---------|-----------|
|                |            | Students | Schools | Districts | Students    | Schools | Districts |
| Alaska         | 2022–2023  | 7,974    | 86      | 4         | 22,821      | 129     | 4         |
| Arizona        | 2021–2022  | 10,572   | 68      | 11        | 14,485      | 80      | 12        |
| Colorado       | 2021–2022  | 33,925   | 186     | 13        | 33,201      | 187     | 13        |
| Florida        | 2023–2024  | 33,856   | 121     | 14        | 28,607      | 115     | 12        |
| Georgia        | 2021–2022  | 58,654   | 192     | 9         | 64,806      | 222     | 10        |
| Georgia        | 2023–2024  | 70,047   | 239     | 12        | 67,783      | 233     | 11        |
| Illinois       | 2022–2023  | 10,019   | 61      | 9         | 13,945      | 72      | 10        |
| Iowa           | 2022–2023  | 10,547   | 52      | 7         | 14,180      | 64      | 11        |
| Kentucky       | 2021–2022  | 16,735   | 81      | 11        | 16,445      | 81      | 11        |
| Louisiana      | 2021–2022  | 17,031   | 108     | 17        | 33,018      | 147     | 20        |
| Maryland       | 2023–2024  | 26,600   | 207     | 5         | 18,080      | 143     | 7         |
| Massachusetts  | 2021–2022  | 7,884    | 45      | 12        | 8,094       | 45      | 12        |
| Michigan       | 2022–2023  | 25,843   | 137     | 11        | 26,732      | 136     | 11        |
| Missouri       | 2022–2023  | 23,074   | 130     | 17        | 26,060      | 135     | 19        |
| New York       | 2022–2023  | 23,333   | 125     | 22        | 29,184      | 154     | 26        |
| North Carolina | 2021–2022  | 22,432   | 102     | 11        | 32,440      | 140     | 11        |
| Ohio           | 2022–2023  | 43,517   | 181     | 14        | 42,780      | 181     | 14        |
| Ohio           | 2023–2024  | 15,369   | 96      | 2         | 15,383      | 96      | 2         |
| Pennsylvania   | 2023–2024  | 24,996   | 125     | 10        | 33,500      | 149     | 10        |
| SBAC           | 2021–2022  | 145,038  | 621     | 53        | 156,010     | 668     | 61        |
| South Carolina | 2022–2023  | 82,703   | 295     | 34        | 92,633      | 304     | 36        |
| Tennessee      | 2022–2023  | 21,427   | 183     | 10        | 23,844      | 179     | 10        |
| Texas          | 2022–2023  | 18,421   | 101     | 14        | 33,181      | 157     | 16        |
| Texas          | 2023–2024  | 50,476   | 338     | 11        | 68,158      | 355     | 12        |
| Virginia       | 2021–2022  | 785      | 5       | 2         | 10,903      | 53      | 5         |
| West Virginia  | 2022–2023  | 31,021   | 187     | 22        | 30,502      | 185     | 23        |
| Wisconsin      | 2023–2024  | 2,773    | 26      | 11        | 8,007       | 42      | 16        |

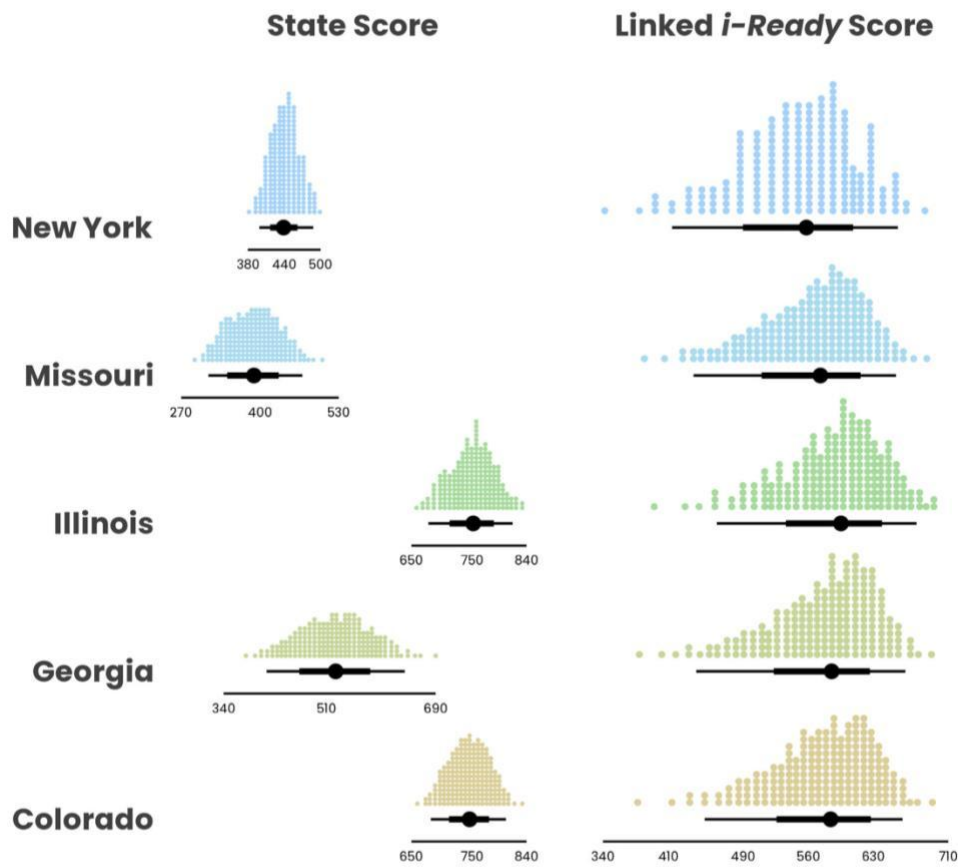
**Placing State Assessments on a Common Metric**

To make state assessment scores comparable across states, CA leveraged equipercetile linking (Kolen & Brennan, 2004). This technique can be used to convert scores on one test to the associated score on another test. It does so by finding scores on each test that have the same percentile rank. This can be used to generate a crosswalk table of scores from one test to another. Equipercetile linking is a field gold standard for linking tests scores when tests do not share the same test blueprint or items. It can handle non-linear relationships and is generally a robust method of linking.

In the current work, we leveraged findings from existing linking studies, which contain samples of students who took both the *i-Ready Diagnostic* and a state exam within the same testing window. Student scores on each test were converted to percentile ranks and used to find scores on each test with the same percentile rank. This procedure produces a crosswalk of all possible *i-Ready Diagnostic* scores and their corresponding score on the state exam. These tables allow us to

convert all state scores in the pooled SIR dataset to a common metric—the *i-Ready Diagnostic* scale (see Figure 1).

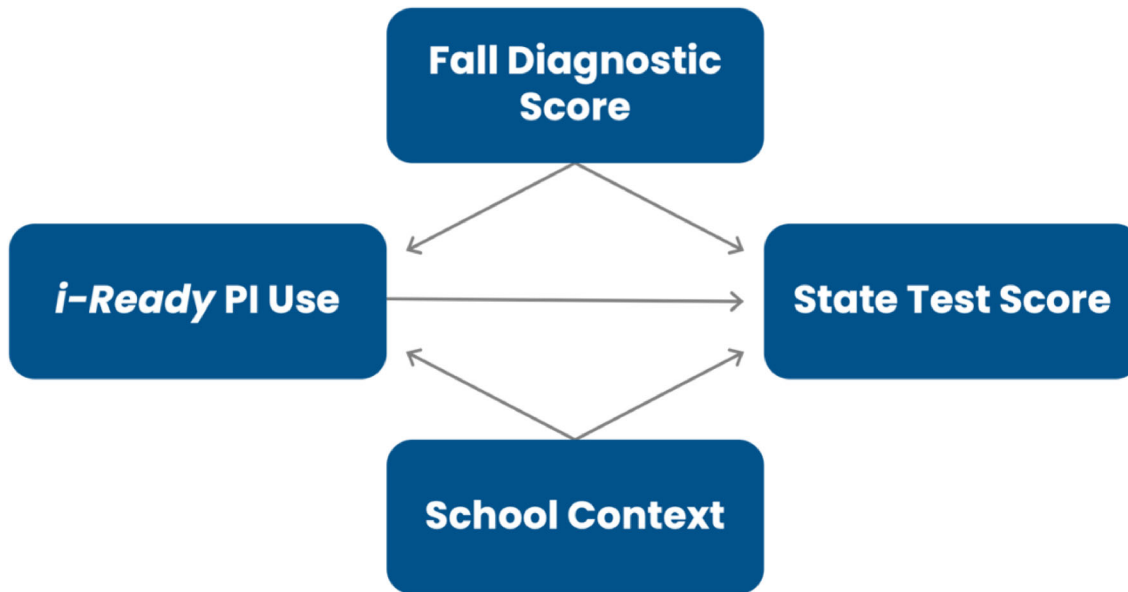
Figure 1. Example Transformation of State Assessment Scales to a Common Metric



Note: Example uses Grade 5 reading scores

## Analysis

After pooling all state data and converting state assessment scores to the *i-Ready Diagnostic* scale scores, the primary analytic goal was to test the relation between *i-Ready* PI and state assessment scores across all states. The analytic approach was nearly identical to individual state analyses with one exception. Specifically, as with individual state analyses, models included the fall *i-Ready Diagnostic* scores to account for prior student performance, and each grade level and subject was analyzed individually. However, given the larger sample sizes and increased number of schools included, data were modeled with a different technique to account for potential school-level confounds. For example, schools with high rates of *i-Ready* PI fidelity use might also implement other programs well and/or have more support and resources. Thus, the effect of student *i-Ready* PI fidelity may be conflated with a supportive school context and drive higher state assessment scores.

Figure 2. Conceptual Model for Understanding *i-Ready* PI Use and State Test Scores

To address this issue, data were modeled using a full-fixed effects approach. This approach is an alternative to mixed modeling approaches that handle nested data structures common in education research (e.g., students nesting in schools). Whereas both modeling approaches handle nested data structures, full fixed effects models use group mean centering to remove between school variation. That is, all student-level variables are adjusted for their grade, school, state, and academic year group means. In other words, all student variables are expressed as deviation scores from their school's average score. For example, a student with an adjusted state assessment score = 0 would have scored exactly average in their school. Negative values reflect scores lower than school-level averages, whereas positive values reflect higher scores than the school average. In effect, this procedure removes between school variation and focuses on estimating *within* school variation.

There are several advantages to full fixed effects models. First, compared with mixed models that included fixed and random effects for nesting variables, they are computationally very efficient. Second, they convert model estimates in a way that aids interpretation; the association between *i-Ready* PI in this type of model tests whether student state assessment scores tend to increase compared to the school average. Finally, by removing between school variation, school-level confounds that could bias the model are controlled for, including possible unmeasured school-related variables.

To explore these associations among subgroups, this analysis was repeated for across a set of student populations including English Learners, students with disabilities, economically disadvantaged students, and students in different racial/ethnic groups. Due to missing data and small subsamples, we include analyses for the following racial/ethnic groups: Asian, Black, Hispanic, Two or More Races, and White (see Table 2). These analyses were identical to the focal analysis with the addition of an interaction term to estimate the association between fidelity usage and subgroup status.

Table 2. Sample Size and Percent Missing by Subgroup

|                                     | Subgroup                          |                                     | Grade 3<br>(n = 160,831)         |         | Grade 4<br>(n = 162,154) |               | Grade 5<br>(n = 157,265) |               | Grade 6<br>(n = 131,759) |              | Grade 7<br>(n = 100,452) |        | Grade 8<br>(n = 80,620) |        |       |
|-------------------------------------|-----------------------------------|-------------------------------------|----------------------------------|---------|--------------------------|---------------|--------------------------|---------------|--------------------------|--------------|--------------------------|--------|-------------------------|--------|-------|
|                                     |                                   |                                     | n                                | %       | n                        | %             | n                        | %             | n                        | %            | n                        | %      | n                       | %      |       |
|                                     |                                   |                                     |                                  |         |                          |               |                          |               |                          |              |                          |        |                         |        |       |
| Reading                             | Disability Status                 | No                                  | 115,619                          | 71.9%   | 116,649                  | 71.9%         | 112,626                  | 71.6%         | 95,219                   | 72.3%        | 72,952                   | 72.6%  | 58,401                  | 72.4%  |       |
|                                     |                                   | Yes                                 | 21,004                           | 13.1%   | 21,573                   | 13.3%         | 20,938                   | 13.3%         | 16,596                   | 12.6%        | 11,940                   | 11.9%  | 9,169                   | 11.4%  |       |
|                                     |                                   | Missing                             | 24,208                           | 15.1%   | 23,932                   | 14.8%         | 23,701                   | 15.1%         | 19,944                   | 15.1%        | 15,560                   | 15.5%  | 13,050                  | 16.2%  |       |
|                                     | Economically Disadvantaged Status | No                                  | 50,565                           | 31.4%   | 49,919                   | 30.8%         | 48,008                   | 30.5%         | 40,546                   | 30.8%        | 30,115                   | 30.0%  | 23,905                  | 29.7%  |       |
|                                     |                                   | Yes                                 | 74,277                           | 46.2%   | 74,227                   | 45.8%         | 71,921                   | 45.7%         | 60,033                   | 45.6%        | 41,650                   | 41.5%  | 32,829                  | 40.7%  |       |
|                                     |                                   | Missing                             | 35,989                           | 22.4%   | 38,008                   | 23.4%         | 37,336                   | 23.7%         | 31,180                   | 23.7%        | 28,687                   | 28.6%  | 23,886                  | 29.6%  |       |
|                                     | English Learner Status            | No                                  | 114,018                          | 70.9%   | 115,179                  | 71.0%         | 112,751                  | 71.7%         | 95,831                   | 72.7%        | 74,037                   | 73.7%  | 60,042                  | 74.5%  |       |
|                                     |                                   | Yes                                 | 21,512                           | 13.4%   | 21,572                   | 13.3%         | 19,484                   | 12.4%         | 16,332                   | 12.4%        | 9,634                    | 9.6%   | 5,939                   | 7.4%   |       |
|                                     |                                   | Missing                             | 25,301                           | 15.7%   | 25,403                   | 15.7%         | 25,030                   | 15.9%         | 19,596                   | 14.9%        | 16,781                   | 16.7%  | 14,639                  | 18.2%  |       |
|                                     | Racial/Ethnic Group               | American Indian or Alaska Native    | 800                              | 0.5%    | 702                      | 0.4%          | 680                      | 0.4%          | 556                      | 0.4%         | 317                      | 0.3%   | 264                     | 0.3%   |       |
|                                     |                                   | Asian                               | 8,493                            | 5.3%    | 8,277                    | 5.1%          | 7,927                    | 5.0%          | 6,652                    | 5.0%         | 5,023                    | 5.0%   | 4,084                   | 5.1%   |       |
|                                     |                                   | Black                               | 32,239                           | 20.0%   | 32,887                   | 20.3%         | 32,546                   | 20.7%         | 2,7341                   | 20.8%        | 21,903                   | 21.8%  | 16,915                  | 21.0%  |       |
|                                     |                                   | Hispanic                            | 45,681                           | 28.4%   | 47,024                   | 29.0%         | 45,864                   | 29.2%         | 39,493                   | 30.0%        | 26,898                   | 26.8%  | 21,832                  | 27.1%  |       |
|                                     |                                   | Native Hawaiian or Pacific Islander | 567                              | 0.4%    | 519                      | 0.3%          | 491                      | 0.3%          | 339                      | 0.3%         | 211                      | 0.2%   | 146                     | 0.2%   |       |
|                                     |                                   | Two or More Races                   | 7,913                            | 4.9%    | 7,786                    | 4.8%          | 7,179                    | 4.6%          | 57,00                    | 4.3%         | 4,516                    | 4.5%   | 3,650                   | 4.5%   |       |
|                                     |                                   | White                               | 59,613                           | 37.1%   | 59,013                   | 36.4%         | 57,066                   | 36.3%         | 46,231                   | 35.1%        | 36,803                   | 36.6%  | 29,878                  | 37.1%  |       |
|                                     |                                   | Missing                             | 5,525                            | 3.4%    | 5,946                    | 3.7%          | 5,512                    | 3.5%          | 5,447                    | 4.1%         | 4,781                    | 4.8%   | 3,851                   | 4.8%   |       |
|                                     |                                   |                                     |                                  |         | (n = 194,736)            | (n = 194,844) | (n = 189,124)            | (n = 147,333) | (n = 114,513)            | (n = 90,738) |                          |        |                         |        |       |
|                                     | Mathematics                       | Disability Status                   | No                               | 140,350 | 72.1%                    | 141,280       | 72.5%                    | 137,262       | 72.6%                    | 108,610      | 73.7%                    | 83,775 | 73.2%                   | 67,249 | 74.1% |
|                                     |                                   |                                     | Yes                              | 26,048  | 13.4%                    | 26,772        | 13.7%                    | 26,091        | 13.8%                    | 18,647       | 12.7%                    | 14,114 | 12.3%                   | 11,252 | 12.4% |
|                                     |                                   |                                     | Missing                          | 28,338  | 14.6%                    | 26,792        | 13.8%                    | 25,771        | 13.6%                    | 20,076       | 13.6%                    | 16,624 | 14.5%                   | 12,237 | 13.5% |
|                                     |                                   | Economically Disadvantaged Status   | No                               | 62,022  | 31.8%                    | 61,861        | 31.7%                    | 60,795        | 32.1%                    | 46,972       | 31.9%                    | 36,282 | 31.7%                   | 29,194 | 32.2% |
|                                     |                                   |                                     | Yes                              | 91,991  | 47.2%                    | 91,682        | 47.1%                    | 88,794        | 47.0%                    | 69,308       | 47.0%                    | 50,450 | 44.1%                   | 41,247 | 45.5% |
|                                     |                                   |                                     | Missing                          | 40,723  | 20.9%                    | 41,301        | 21.2%                    | 39,535        | 20.9%                    | 31,053       | 21.1%                    | 27,781 | 24.3%                   | 20,297 | 22.4% |
|                                     |                                   | English Learner Status              | No                               | 135,037 | 69.3%                    | 137,252       | 70.4%                    | 134,655       | 71.2%                    | 108,393      | 73.6%                    | 86,405 | 75.5%                   | 69,691 | 76.8% |
|                                     |                                   |                                     | Yes                              | 31,565  | 16.2%                    | 31,166        | 16.0%                    | 28,353        | 15.0%                    | 18,483       | 12.5%                    | 10,392 | 9.1%                    | 7,803  | 8.6%  |
|                                     |                                   |                                     | Missing                          | 28,134  | 14.4%                    | 26,426        | 13.6%                    | 26,116        | 13.8%                    | 20,457       | 13.9%                    | 17,716 | 15.5%                   | 13,244 | 14.6% |
|                                     |                                   | Racial/Ethnic Group                 | American Indian or Alaska Native | 1,125   | 0.6%                     | 1,087         | 0.6%                     | 1,125         | 0.6%                     | 891          | 0.6%                     | 677    | 0.6%                    | 487    | 0.5%  |
| Asian                               |                                   |                                     | 9,685                            | 5.0%    | 9,506                    | 4.9%          | 9,112                    | 4.8%          | 7,038                    | 4.8%         | 5,019                    | 4.4%   | 3,431                   | 3.8%   |       |
| Black                               |                                   |                                     | 36,940                           | 19.0%   | 36,941                   | 19.0%         | 36,322                   | 19.2%         | 30,790                   | 20.9%        | 26,132                   | 22.8%  | 20,224                  | 22.3%  |       |
| Hispanic                            |                                   |                                     | 58,827                           | 30.2%   | 59,631                   | 30.6%         | 57,828                   | 30.6%         | 41,548                   | 28.2%        | 27,116                   | 23.7%  | 23,104                  | 25.5%  |       |
| Native Hawaiian or Pacific Islander |                                   |                                     | 701                              | 0.4%    | 715                      | 0.4%          | 697                      | 0.4%          | 506                      | 0.3%         | 345                      | 0.3%   | 303                     | 0.3%   |       |
| Two or More Races                   |                                   |                                     | 9,386                            | 4.8%    | 9,414                    | 4.8%          | 8,746                    | 4.6%          | 6,720                    | 4.6%         | 5,326                    | 4.7%   | 4,272                   | 4.7%   |       |
| White                               |                                   |                                     | 72,394                           | 37.2%   | 71,390                   | 36.6%         | 69,579                   | 36.8%         | 5,4387                   | 36.9%        | 44,942                   | 39.2%  | 34,561                  | 38.1%  |       |
| Missing                             |                                   |                                     | 5,678                            | 2.9%    | 6,160                    | 3.2%          | 5,715                    | 3.0%          | 5,453                    | 3.7%         | 49,56                    | 4.3%   | 4,356                   | 4.8%   |       |

Results

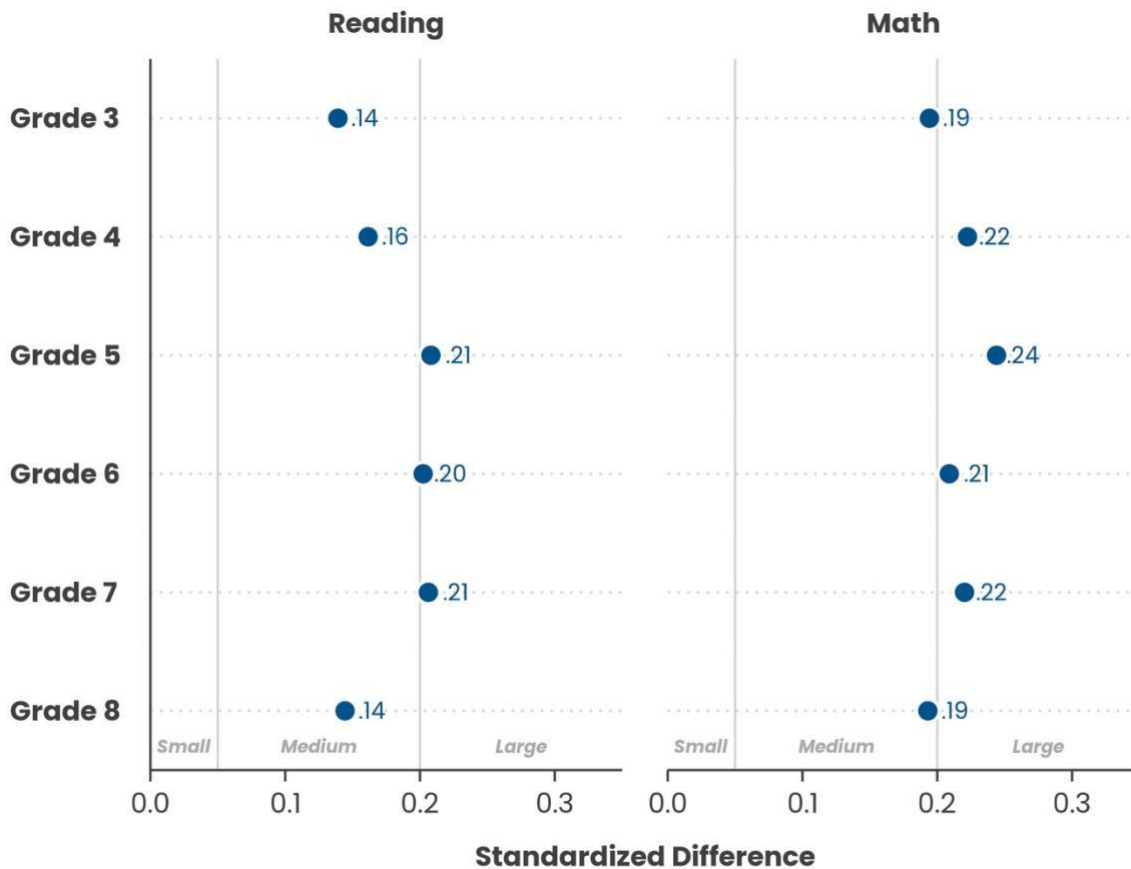
Overall Differences

Across grades and subjects, analyses revealed a consistent, positive association between use of *i-Ready* PI with fidelity and state assessments. Standardized differences between fidelity and non-

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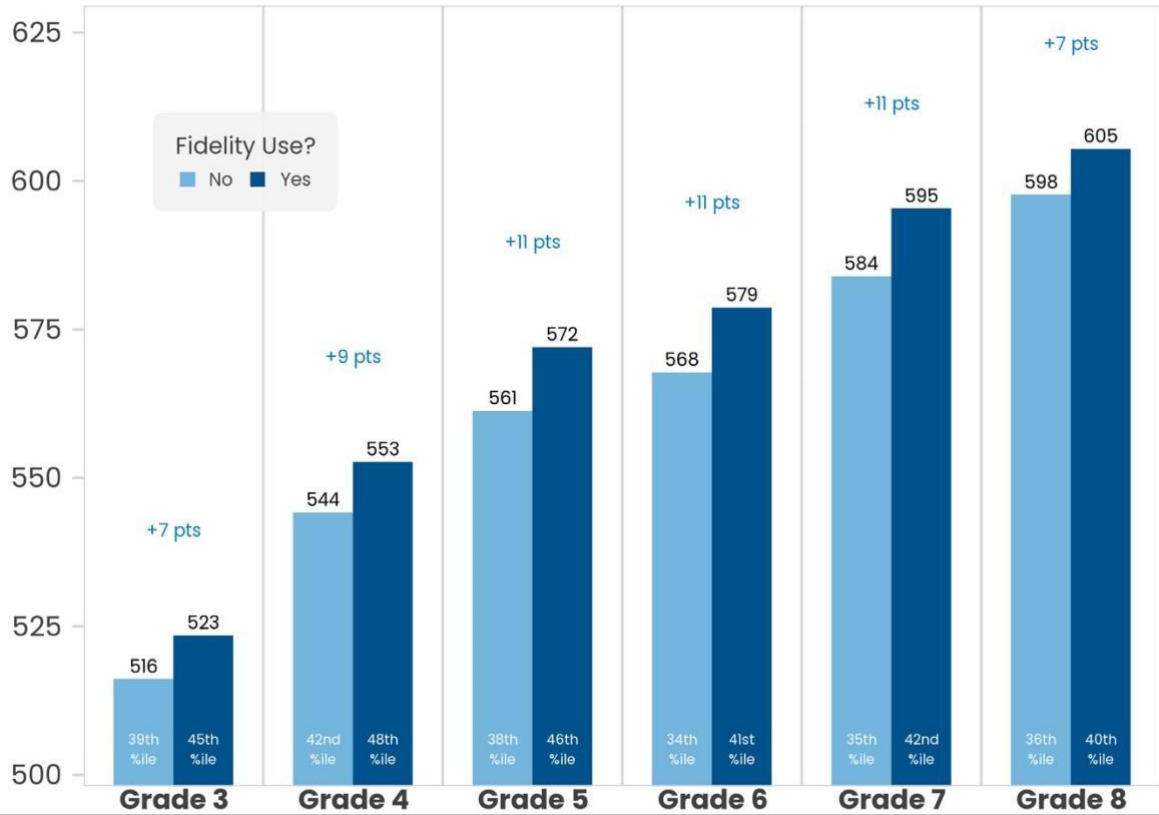
fidelity student groups ranged between .14 to .24, indicating students using *i-Ready* PI with fidelity tended to score higher on state assessments than students using less consistently, even after accounting for prior achievement and school context (see Figure 3). In education research, group differences of this magnitude are considered medium to large (Kraft, 2020).

Figure 3. Standardized Score Differences between Non-Fidelity and Fidelity *i-Ready* PI Use



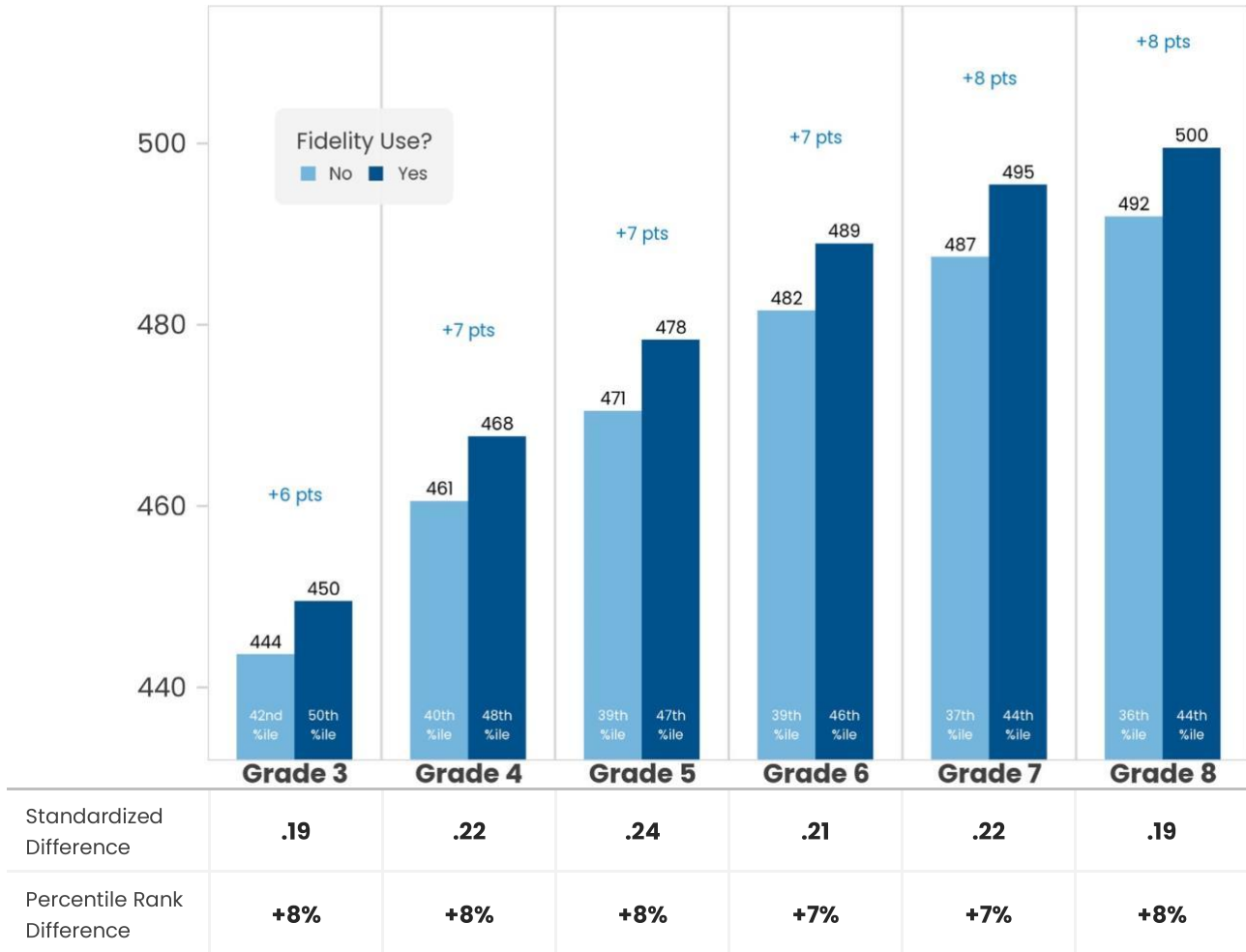
To aid interpretation, we examined the state score estimates expressed as *i-Ready Diagnostic* scores and translated them to percentiles. Students using with fidelity scored anywhere from six to 11 points higher on the *i-Ready* scale than their peers using less consistently. Expressed as percentiles, fidelity users tended to score anywhere from four to eight percentile points higher than their peers (see Figures 4 and 5).

Figure 4. Translated Reading State Scores by i-Ready PI Use



|                            |            |            |            |            |            |            |
|----------------------------|------------|------------|------------|------------|------------|------------|
| Standardized Difference    | <b>.14</b> | <b>.16</b> | <b>.21</b> | <b>.20</b> | <b>.21</b> | <b>.14</b> |
| Percentile Rank Difference | <b>+6%</b> | <b>+6%</b> | <b>+8%</b> | <b>+7%</b> | <b>+7%</b> | <b>+4%</b> |

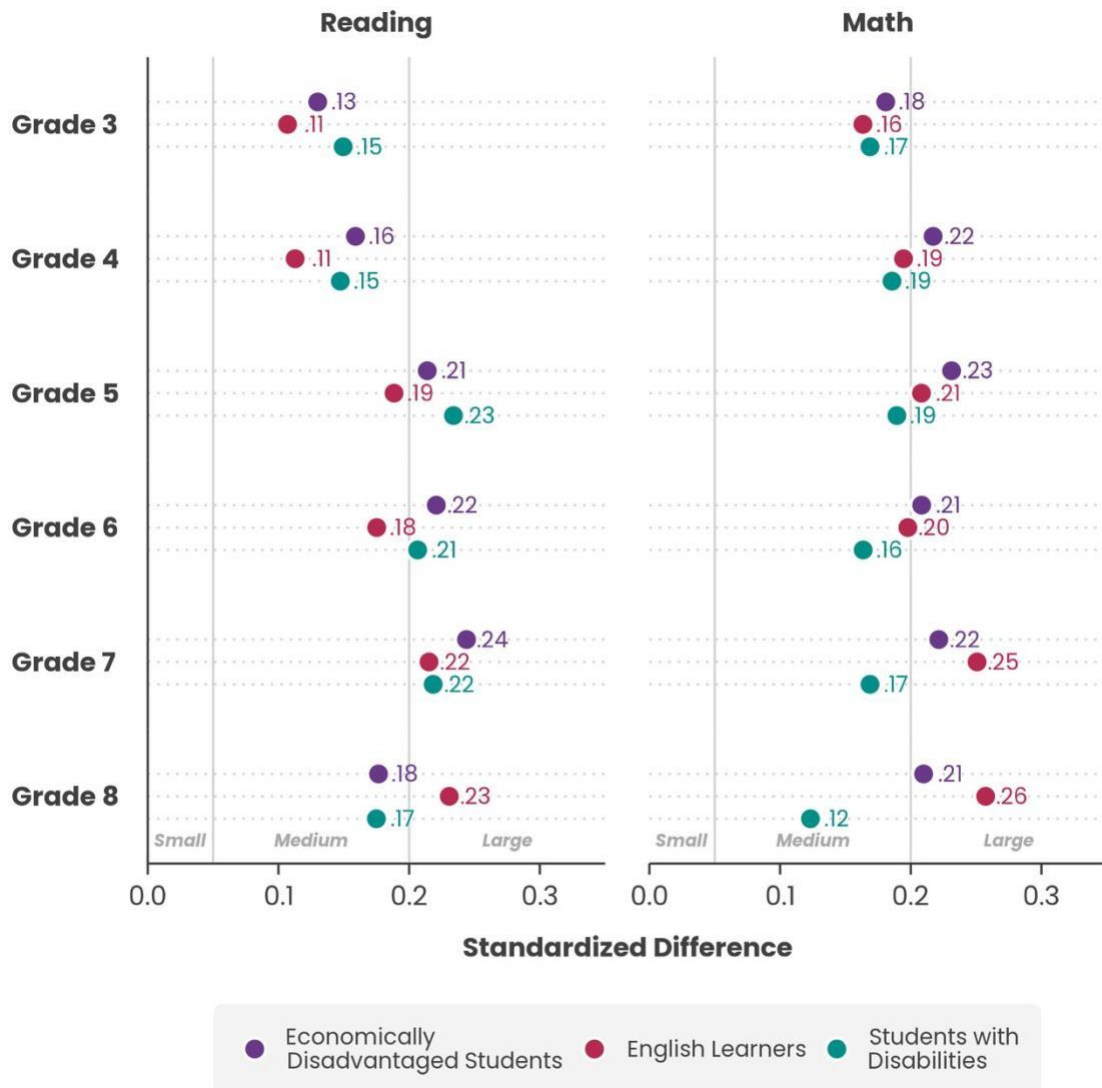
Figure 5. Translated Mathematics State Scores by *i-Ready* PI Use



### Differences by Key Student Groups

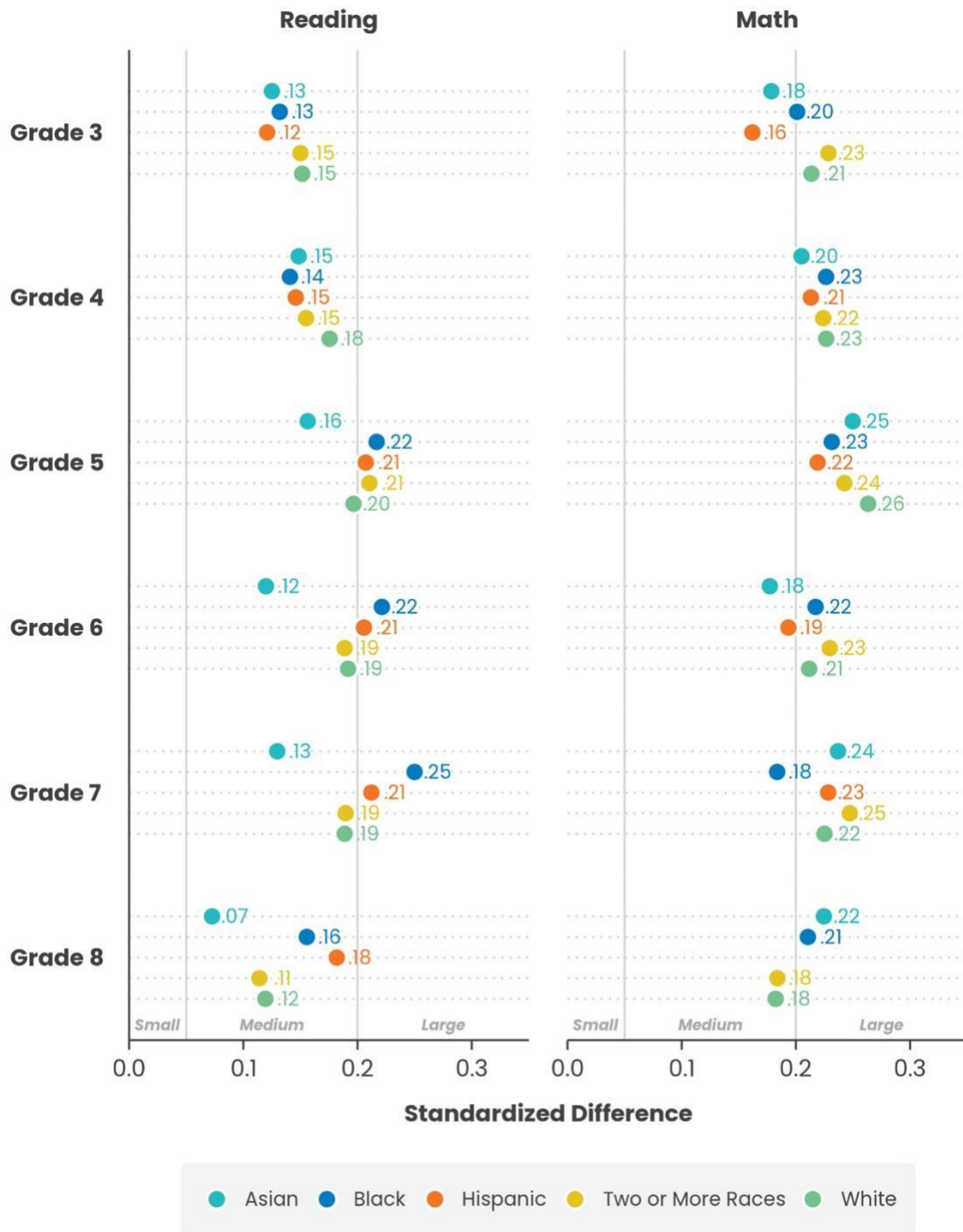
We also evaluated the association between fidelity use and state assessment performance among key student populations, including racial/ethnic groups (i.e., Asian, Black, Hispanic, Two or More Races, White), students with disabilities, English Learner students, and students who are economically disadvantaged. We conducted one analysis per subgroup type and tested how students using with fidelity compared with students who used less consistently within the same group. Findings revealed a consistent, positive association between fidelity use and state assessment performance within student subgroup. Across grades and subjects, standardized differences between fidelity and non-fidelity users were anywhere from .07 to .26, suggesting fidelity users in each group tended to score higher on state exams compared with their peers from the same group. These differences are considered small to large, with most falling in the medium to large range. Expressed as *i-Ready Diagnostic* score differences, fidelity users tended to score between four and 14 points higher than their peers from the same group (see Table 3).

Figure 6. Standardized Score Differences between Non-Fidelity and Fidelity *i-Ready* PI Use by Subpopulation



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Figure 7. Standardized Score Differences between Non-Fidelity and Fidelity *i-Ready* PI Use by Race/Ethnicity Group



Note: The Grade 8 mathematics Hispanic sample was too small to evaluate state score differences.

**Table 3. Translated Reading and Mathematics State Scores by *i-Ready* PI Use and Student Group**

| Subgroup                            | Grade | Reading      |          |                  |                         | Mathematics  |          |                  |                         |
|-------------------------------------|-------|--------------|----------|------------------|-------------------------|--------------|----------|------------------|-------------------------|
|                                     |       | Non-Fidelity | Fidelity | Point Difference | Standardized Difference | Non-Fidelity | Fidelity | Point Difference | Standardized Difference |
| Economically Disadvantaged Students | 3     | 512          | 519      | 7                | 0.13                    | 440          | 445      | 5                | 0.18                    |
|                                     | 4     | 540          | 548      | 8                | 0.16                    | 458          | 465      | 7                | 0.22                    |
|                                     | 5     | 556          | 567      | 11               | 0.21                    | 468          | 475      | 7                | 0.23                    |
|                                     | 6     | 565          | 577      | 12               | 0.22                    | 480          | 487      | 7                | 0.21                    |
|                                     | 7     | 578          | 592      | 14               | 0.24                    | 485          | 493      | 8                | 0.22                    |
|                                     | 8     | 595          | 604      | 9                | 0.18                    | 488          | 496      | 8                | 0.21                    |
| English Learners                    | 3     | 514          | 519      | 5                | 0.11                    | 444          | 449      | 5                | 0.16                    |
|                                     | 4     | 541          | 547      | 6                | 0.11                    | 460          | 466      | 6                | 0.19                    |
|                                     | 5     | 560          | 570      | 10               | 0.19                    | 469          | 476      | 7                | 0.21                    |
|                                     | 6     | 563          | 572      | 9                | 0.18                    | 478          | 485      | 7                | 0.20                    |
|                                     | 7     | 578          | 590      | 12               | 0.22                    | 486          | 495      | 9                | 0.25                    |
|                                     | 8     | 591          | 603      | 12               | 0.23                    | 491          | 501      | 10               | 0.26                    |
| Students with Disabilities          | 3     | 510          | 517      | 7                | 0.15                    | 440          | 445      | 5                | 0.17                    |
|                                     | 4     | 534          | 542      | 8                | 0.15                    | 457          | 463      | 6                | 0.19                    |
|                                     | 5     | 550          | 562      | 12               | 0.23                    | 467          | 473      | 6                | 0.19                    |
|                                     | 6     | 556          | 567      | 11               | 0.21                    | 478          | 484      | 6                | 0.16                    |
|                                     | 7     | 571          | 583      | 12               | 0.22                    | 486          | 492      | 6                | 0.17                    |
|                                     | 8     | 582          | 592      | 10               | 0.17                    | 489          | 494      | 5                | 0.12                    |
| Asian                               | 3     | 520          | 526      | 6                | 0.13                    | 448          | 454      | 6                | 0.18                    |
|                                     | 4     | 550          | 557      | 7                | 0.15                    | 465          | 471      | 6                | 0.20                    |
|                                     | 5     | 568          | 576      | 8                | 0.16                    | 475          | 483      | 8                | 0.25                    |
|                                     | 6     | 576          | 582      | 6                | 0.12                    | 486          | 492      | 6                | 0.18                    |
|                                     | 7     | 593          | 600      | 7                | 0.13                    | 492          | 500      | 8                | 0.24                    |
|                                     | 8     | 606          | 610      | 4                | 0.07                    | 499          | 508      | 9                | 0.22                    |
| Black                               | 3     | 510          | 517      | 7                | 0.13                    | 440          | 446      | 6                | 0.20                    |
|                                     | 4     | 538          | 545      | 7                | 0.14                    | 457          | 464      | 7                | 0.23                    |
|                                     | 5     | 555          | 566      | 11               | 0.22                    | 467          | 475      | 8                | 0.23                    |
|                                     | 6     | 562          | 574      | 12               | 0.22                    | 478          | 486      | 8                | 0.22                    |
|                                     | 7     | 578          | 592      | 14               | 0.25                    | 483          | 490      | 7                | 0.18                    |
|                                     | 8     | 592          | 601      | 9                | 0.16                    | 490          | 498      | 8                | 0.21                    |
| Hispanic                            | 3     | 515          | 522      | 7                | 0.12                    | 444          | 449      | 5                | 0.16                    |
|                                     | 4     | 543          | 551      | 8                | 0.15                    | 460          | 467      | 7                | 0.21                    |
|                                     | 5     | 561          | 572      | 11               | 0.21                    | 470          | 477      | 7                | 0.22                    |
|                                     | 6     | 567          | 578      | 11               | 0.21                    | 481          | 487      | 6                | 0.19                    |
|                                     | 7     | 584          | 595      | 11               | 0.21                    | 486          | 494      | 8                | 0.23                    |
|                                     | 8     | 597          | 607      | 10               | 0.18                    | -            | -        | -                | -                       |
| Two or More Races                   | 3     | 515          | 523      | 8                | 0.15                    | 443          | 450      | 7                | 0.23                    |
|                                     | 4     | 543          | 551      | 8                | 0.15                    | 460          | 467      | 7                | 0.22                    |
|                                     | 5     | 561          | 572      | 11               | 0.21                    | 470          | 478      | 8                | 0.24                    |
|                                     | 6     | 568          | 578      | 10               | 0.19                    | 481          | 489      | 8                | 0.23                    |
|                                     | 7     | 585          | 596      | 11               | 0.19                    | 487          | 496      | 9                | 0.25                    |
|                                     | 8     | 599          | 605      | 6                | 0.11                    | 494          | 501      | 7                | 0.18                    |
| White                               | 3     | 518          | 526      | 8                | 0.15                    | 445          | 451      | 6                | 0.21                    |
|                                     | 4     | 546          | 555      | 9                | 0.18                    | 462          | 469      | 7                | 0.23                    |
|                                     | 5     | 563          | 573      | 10               | 0.20                    | 472          | 480      | 8                | 0.26                    |
|                                     | 6     | 570          | 580      | 10               | 0.19                    | 484          | 491      | 7                | 0.21                    |
|                                     | 7     | 587          | 598      | 11               | 0.19                    | 490          | 498      | 8                | 0.22                    |
|                                     | 8     | 600          | 607      | 7                | 0.12                    | 496          | 503      | 7                | 0.18                    |

## Discussion

Consistent with prior research, use of *i-Ready* PI with fidelity is associated with improved performance on state assessments. Despite variability in state assessments, including scales, items, and benchmarks for proficiency, pooled results show medium to large standardized score differences between groups (i.e., non-fidelity and fidelity). This pattern held across subpopulations, indicating *i-Ready* PI may be beneficial for many student groups in improving state assessment performance.

Though results are correlational, they suggest fidelity implementation of interventions is important for student academic performance. Schools in which many students use with fidelity likely capture other beneficial academic practices (e.g., appropriately individualized instruction, strong classroom management, thoughtful scheduling). Fidelity implementation can then be viewed as an indicator of strong academic practices associated with improved academic performance while being a measurable goal for which to aim.

## Limitations

All results are correlational, testing if *i-Ready* PI use is associated with differences in state scores. Analyses were not designed to test causal effects of *i-Ready* PI on state scores. Though the modeling approach attempts to control for potential school-level confounds, it cannot completely isolate the association between *i-Ready* PI and performance. In addition, though placing all students on a common metric allows for comparison across states, this procedure is not a perfect translation and can introduce error in students' estimated scores. Finally, state assessment samples may not be representative of the state populations on a variety of metrics including but not limited to geographic locale, socioeconomic status, demographic makeup, and/or overall state proficiency levels. See state-specific reports for more information.

## References

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