A new study analyzing the impact of District of Columbia Public Schools’ (DCPS) partnership with Zearn Math offers research-backed evidence that Zearn Math drives score growth for all students.

Researchers studied how DCPS students in Grades 1–6 performed on the i-Ready Diagnostic assessment across three academic years. The research, which uses quasi-experimental matching techniques to isolate the impact of Zearn Math on student achievement, compares a sample of 990 students who consistently completed three or more Zearn lessons each week with a control sample of 990 matched students who did not consistently use Zearn. Unlike a standard correlational analysis, this method allows differences in outcomes to be more confidently attributed to Zearn Math and not to other variables.

Researchers found:

- Students who consistently used Zearn Math outscored matched peers by 7.5 scale score points on the Spring i-Ready Diagnostic, gaining 11 more weeks of math learning in one academic year.

- Zearn’s impact was even greater for students who initially placed two or more grade levels below; these students scored 17.4 scale score points higher than matched peers—equivalent to an additional 24 weeks of math learning in one academic year.

- Across subgroups, students who consistently used Zearn Math scored significantly higher on the i-Ready Diagnostic than matched peers who did not use Zearn.

- Black and/or Latino students, at-risk students, multilingual learners, and students in special education who consistently used Zearn exceeded the i-Ready Diagnostic interim assessment benchmark for typical growth, while matched students who did not use Zearn fell short of expected growth.

- Across all i-Ready Diagnostic placement levels, students who consistently used Zearn Math were more likely to improve their placement level on the spring i-Ready Diagnostic.
Students who consistently used Zearn Math outscored matched peers by 7.5 points on the spring i-Ready Diagnostic. Zearn’s impact was even greater for students who placed two or more grade levels below on the fall i-Ready Diagnostic; these students scored 17.4 scale score points higher than matched peers.

Students who consistently used Zearn Math gained an additional 11 weeks of math learning compared to matched peers. Students two or more grade levels below gained 24 more weeks of math learning with Zearn.

Across all placement levels, DCPS students who consistently used Zearn Math throughout the school year exceeded the i-Ready Diagnostic’s 30-week benchmark for typical growth. Students who placed two or more grade levels below on the fall assessment outpaced the i-Ready Diagnostic typical growth by 21 weeks.
Across subgroups, students who consistently used Zearn Math scored significantly higher on the i-Ready Diagnostic than matched peers who did not use Zearn.

Students in special education who consistently used Zearn increased an average of 34 points on the spring diagnostic—23.2 points higher and more than double the growth of matched peers who did not use Zearn.

**FIGURE 3**

Impact of Zearn Math on Spring i-Ready Diagnostic Scores by Student Subgroup

<table>
<thead>
<tr>
<th></th>
<th>Zearn usage</th>
<th>No Zearn usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>All students</td>
<td>474.7</td>
<td>451.4</td>
</tr>
<tr>
<td>Black and/or Latino students</td>
<td>458.5</td>
<td>451.4</td>
</tr>
<tr>
<td>Students in special education</td>
<td>445.7</td>
<td>438.7</td>
</tr>
<tr>
<td>Multilingual learners</td>
<td>468.9</td>
<td>457.7</td>
</tr>
<tr>
<td>At-risk students</td>
<td>482.2</td>
<td>459.5</td>
</tr>
</tbody>
</table>

**FIGURE 4**

Black and/or Latino students, at-risk students, multilingual learners, and students in special education who consistently used Zearn exceeded the i-Ready Diagnostic interim assessment benchmark for typical growth, while matched students who did not use Zearn fell short of expected growth.

Across each subgroup, students who consistently used Zearn Math during the school year surpassed typical growth, while matched students who did not use Zearn fell short of one-year typical growth benchmarks.
Students who placed two or more grade levels below were 1.5 times more likely to move up at least one placement level on the spring i-Ready Diagnostic with consistent Zearn usage. Ninety-two percent of these students moved up a full level or more.
Endnotes

1 For this efficacy study, we utilized terminology, including at-risk students and students in special education, to reflect terminology utilized by DCPS. DCPS designates “at-risk students” in K–8 as students who qualify for Temporary Assistance for Needy Families (TANF), the Supplemental Nutrition Assistance Program (SNAP), have been identified as homeless during the academic year, and/or who are under the care of the Child and Family Services Agency (CFSA or Foster Care). All other subgroup terminology included is the terminology generally accepted by the field.

2 This efficacy analysis used a two-step Coarsened Exact Matching (CEM) method with optimal matching to create a control group that was as similar as possible to the treatment group of consistent Zearn users. The treatment group was composed of students who completed three or more Zearn digital lessons each week during the 2018–2019, 2020–2021, and/or 2021–2022 school years. The control group was selected from other students in the district who completed an average of less than one lesson per week. Using CEM, consistent Zearn Math users were matched with low- or non-users in the same grade and based on starting math and English Language Arts (ELA) achievement scores, along with seven student characteristics.

3 Zearn uses only de-identified data from our platform to identify insights and improve students’ learning experiences. All student-level data used in this study was provided by DCPS under the terms of a data-sharing agreement. For more information on how we protect student privacy, visit about.zearn.org/privacy.

Technical Appendix

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