



NEW EFFICACY RESEARCH

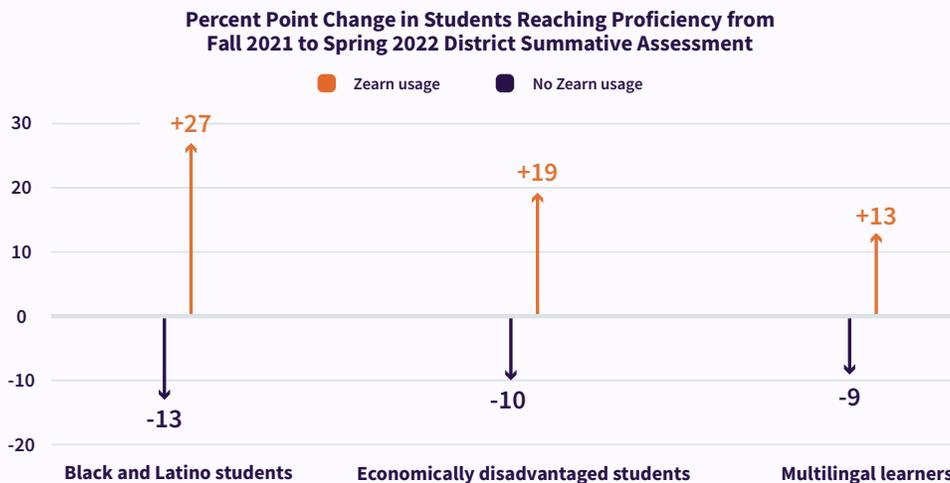
# Economically disadvantaged students, multilingual learners, and Black and Latino students experience double-digit increases in proficiency on 2022 end-of-year assessments with consistent Zearn usage.

While disruptions to student learning as a result of the pandemic were widespread, their impact has not been evenly distributed: the toll of pandemic interruptions on math learning for students in historically marginalized communities has been greater and recovery more gradual.<sup>1</sup> As we continue our collective work to recover learning, it is imperative we ensure our efforts do not entrench pre-existing opportunity gaps, but rather work to help all students catch up and move forward.<sup>2</sup>

A new, quasi-experimental design research study shows Black and Latino, multilingual, and economically disadvantaged students experienced significant growth with Zearn. Across multiple districts, consistent Zearn usage resulted in a double-digit increase in proficiency on 2022 end-of-year assessments in each student subgroup.

FIGURE 1: DISTRICT A, 2021–2022 SCHOOL YEAR

**After one year of consistent Zearn usage, students in each subgroup in a large urban district in the south saw a double-digit increase in proficiency on summative district assessment, while similarly matched peers who did not use Zearn experienced declines in proficiency.**



**District A: Large Urban District in South**

78 schools | 30K+ students | 23% Black | 37% Latino  
38% Multilingual learners | 79% Economically disadvantaged

**District B: Large Urban District in Midwest**

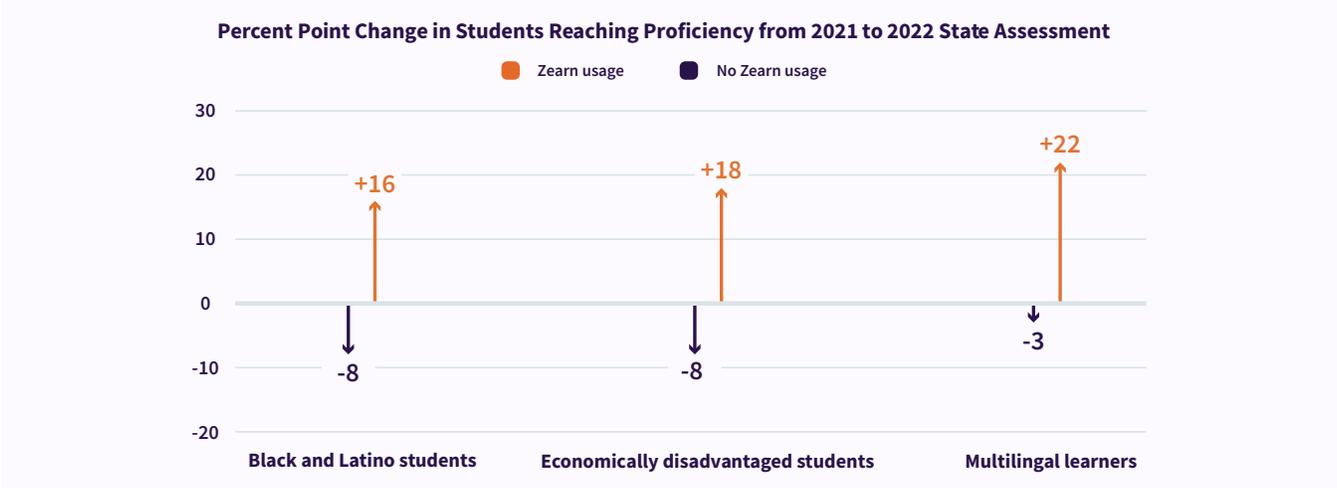
110 schools | 50K+ students | 25% Black | 38% Latino  
19% Multilingual learners | 80% Economically disadvantaged

This finding is based on quasi-experimental design studies of two large urban districts. The studies used a two-step coarsened exact matching process to isolate and measure the effect of consistent Zearn usage on student math learning. Researchers rigorously matched students who consistently used Zearn with low- or non-Zearn users who had similar starting assessment scores and overlapping student characteristics.<sup>3,4</sup> Across student subgroups, students who used Zearn scored higher on end-of-year assessments in 2022 than similarly matched non-users.

Black and Latino students saw significant gains—a 27 percent point increase in proficiency on the end-of-year district summative assessment—after using Zearn alongside their curriculum during the 2021–2022 school year. In comparison, similarly matched Black and Latino students who did not use Zearn experienced a 13 percent point decline in proficiency. This trend held across each subgroup: while economically disadvantaged students who did not use Zearn experienced a ten percent point decline in proficiency, their matched peers who consistently used Zearn had a 19 percent point increase in proficiency. Finally, multilingual learners experienced a 13 point increase in proficiency on the district summative assessment after one year of learning with Zearn.

**FIGURE 2: DISTRICT B, 2021–2022 SCHOOL YEAR**

**In a large urban district in the midwest, consistent Zearn usage resulted in a double-digit increase in proficiency on the 2022 state assessment for students in each subgroup, while similarly matched peers who did not use Zearn experienced declines in proficiency.**



Between spring 2021 and spring 2022, a large urban district in the midwest saw a significant increase in the percentage of students meeting proficiency on the state assessment among students who consistently used Zearn: a 16–22 percent point increase in the number of Black and Latino students, multilingual learners, and economically disadvantaged students meeting proficiency. In contrast, there was a decline in the number of students meeting proficiency levels on 2022 state assessments for students in each of these subgroups who used a traditional curriculum alone. Consistent Zearn usage over the 2021–2022 school year was particularly effective for multilingual learners—these students experienced a 22 percent point increase in reaching proficiency on the 2022 state assessment.

While many factors influence student achievement, one factor is clear: consistent Zearn usage is strongly associated with outsized achievement gains for students in historically marginalized subgroups. As we work collectively to eliminate opportunity gaps that have only been exacerbated by the disruptions of the pandemic, this research study provides promising evidence that Zearn’s approach helps all students catch up and move forward in math.

## Endnotes

<sup>1</sup> NAEP. (2022). *NAEP Long-Term Trend Assessment Results: Reading and Mathematics*. Retrieved September 2022 from <https://www.nationsreportcard.gov/highlights/ltr/2022/#performance-trends-by-student-group>.

<sup>2</sup> Kane, Thomas. (2022, May 22.) *Kids Are Far, Far Behind in School*. The Atlantic. <https://www.theatlantic.com/ideas/archive/2022/05/schools-learning-loss-remote-covid-education/629938/>

<sup>3</sup> 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 3+ Zearn digital lessons each week during the 2021-22 school year. The “Control” group was selected from other students in the district who completed an average of <1 lesson per week. Using CEM, “Treatment” students were put into matching strata with “Control” students that were in the same grade and within 5 national percentile points on Fall Math & ELA scores. Then, within strata, treatment students were matched to control students with whom they shared at least 4 of 7 other student characteristics: school, gender, race/ethnicity, special education status, English language proficiency, gifted status and economic disadvantage.

<sup>4</sup> Zearn uses only de-identified data to identify insights and improve students’ learning experiences. For more information on how we protect student privacy, visit [about.zearn.org/privacy](https://about.zearn.org/privacy).

Zearn is the 501(c)(3) nonprofit educational organization behind Zearn Math, the top-rated math learning platform used by 1 in 4 elementary-school and 1 million middle-school students nationwide. Everything we do is driven by the belief that every kid is a math kid. Learn more at [about.zearn.org](https://about.zearn.org).