

THE NATION'S REPORT CARD: NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

NAEP ASSESSMENT RESULTS IN READING AND MATHEMATICS DURING COVID-19 PANDEMIC

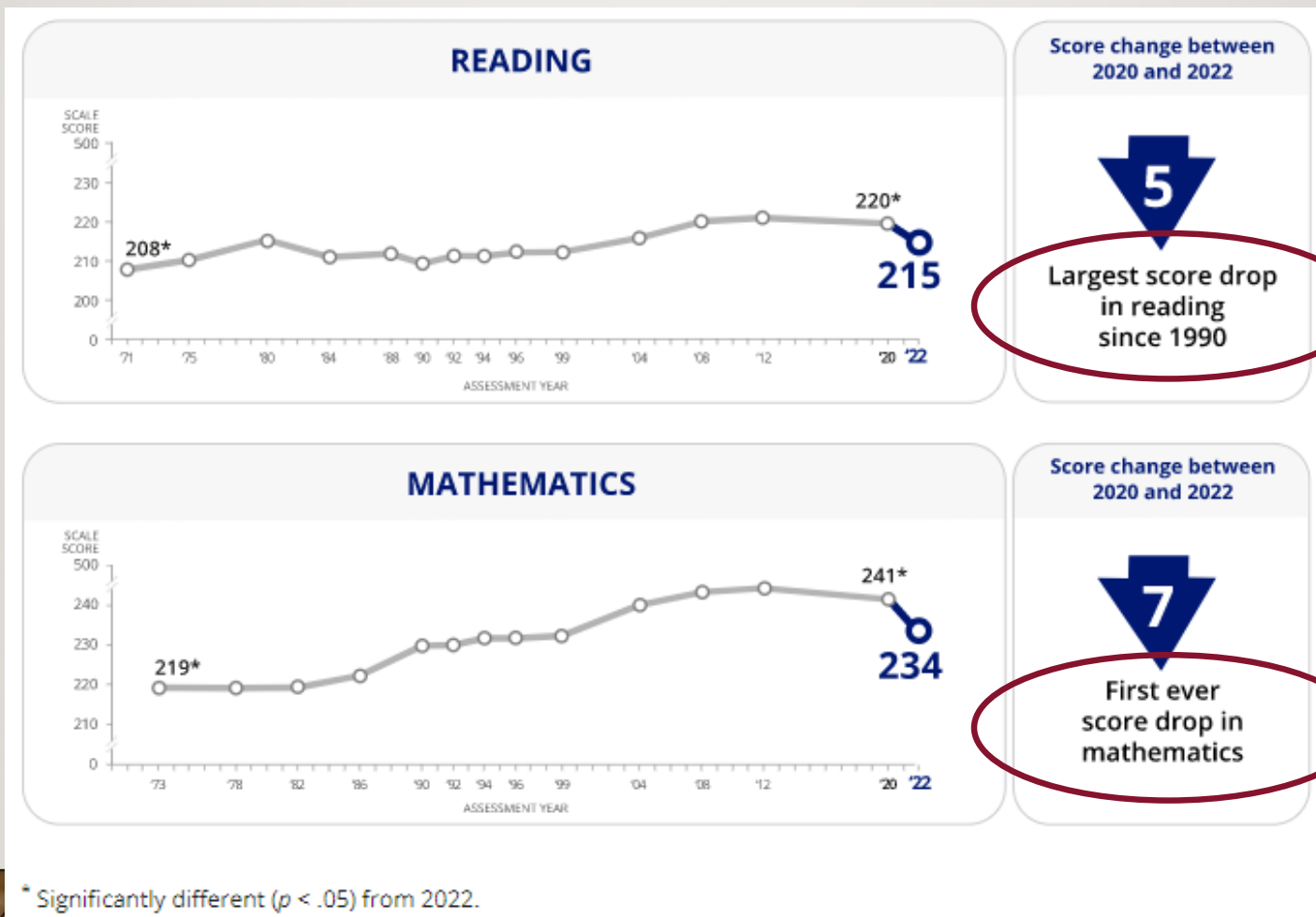
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APRIL 21, 2023

COVID-19 Affected Academic Learning

GENERAL FINDINGS: Scores across all states and all students went down in reading and math, but more so in math than reading.

“Students in fourth and eighth grade saw unprecedented declines in math and significant dips in reading achievement between 2019 and 2022...The declines were broad-based — affecting students in every state and every region of the country” (Barnum, 2022).

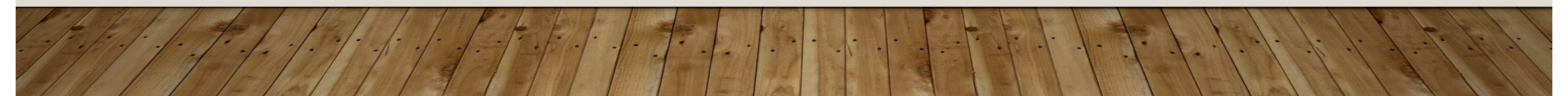
COVID-19 Affected Academic Learning



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WHY DID MATH DECLINE MORE THAN READING?

There is no consensus yet regarding why math scores dropped more than reading. However, some of it may be due to the fact that reading can, and is, easily practiced and encouraged in daily life activities, whether at home or school, and simply reading more leads to better reading. In contrast, math is not something that most students engage in or practice as a consistent leisure activity and new concepts in math, even when built upon prior knowledge, are difficult to learn independently.

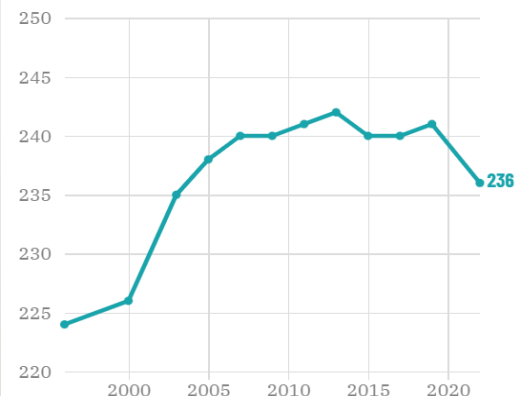


Both 4th grade and 8th grade students saw declines in reading and math and in both cases, the drops in reading were less dramatic than in math. But 4th grade reading was already trending downward starting in 2015 and starting in 2016 for 8th grade. 8th grade math was also trending downward from 2012.

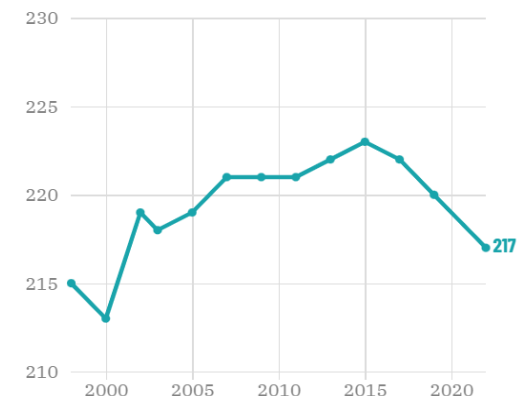
NAEP scores over time

At a national level, average scores dropped from their 2019 levels on both math and reading tests for 4th and 8th grades.

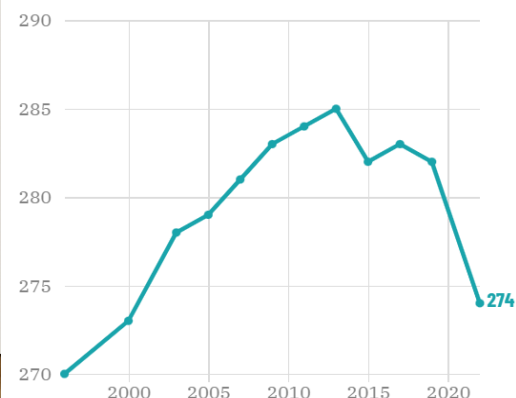
4TH GRADE MATH



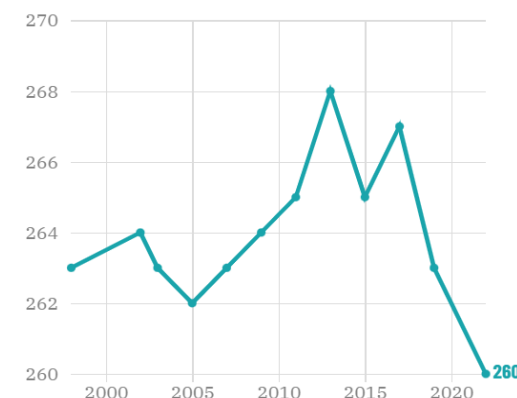
4TH GRADE READING



8TH GRADE MATH



8TH GRADE READING



Source: NCES

Credit: Kae Petrin and Thomas Wilburn / Chalkbeat

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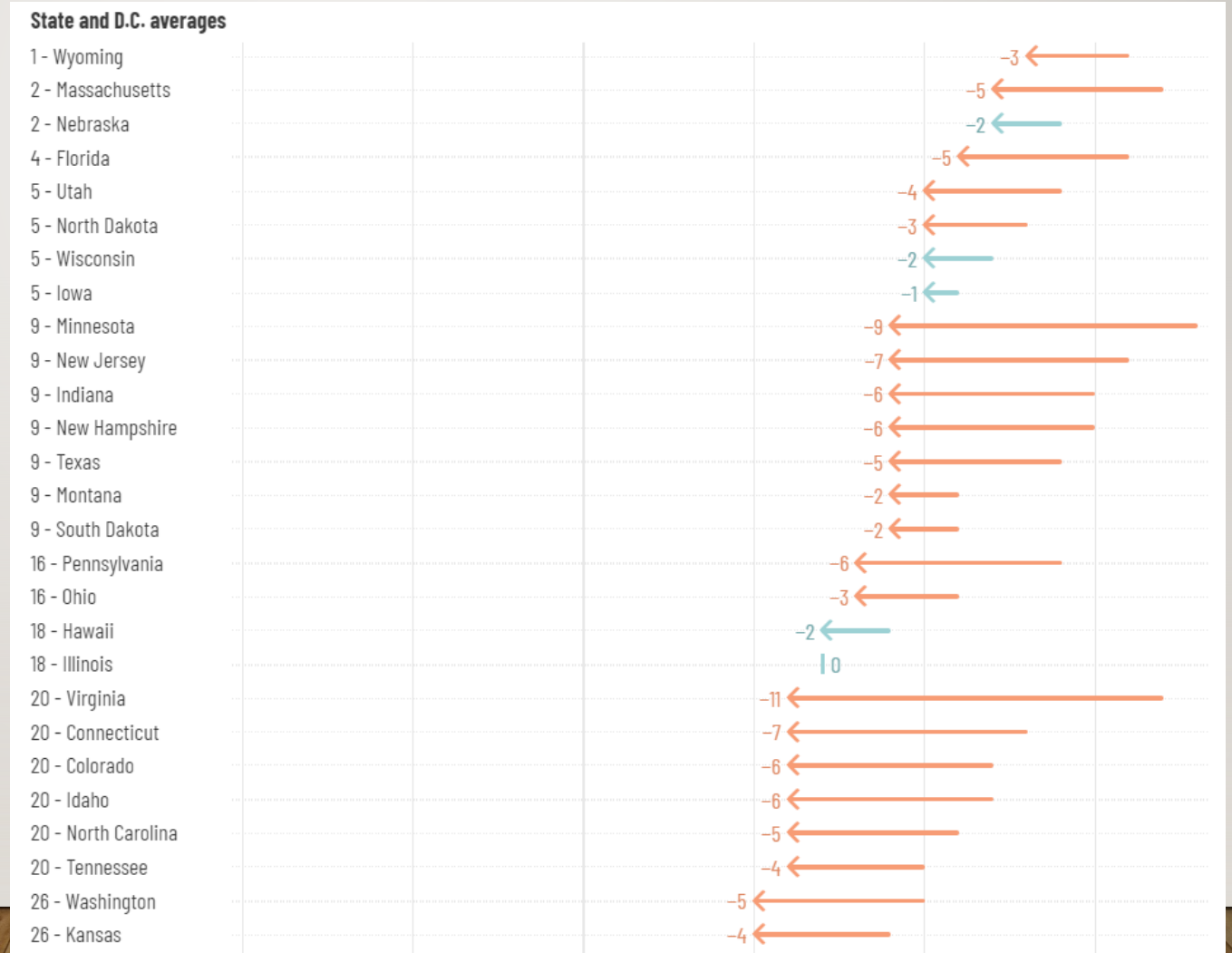
GENERAL FINDINGS: The drop in math (and reading) scores was variable across all states and all students with some states remaining the same (9) and others posting large drops of 10 scale score points or more.

The data indicate that these states had the highest drops in scale score points: New York (10 points), New Mexico (10 points), Maryland (10 points), Virginia (11 points), DC (12 points), and Delaware (13 points). Overall, larger drops were seen in the Northeast region than in other geographic regions.

DIFFERENCE IN NAEP MATH SCORES 2019-2022 BY STATE AND DC

Chart shows average scale scores ranked from highest to lowest

- Significantly lower
- No Significant Difference



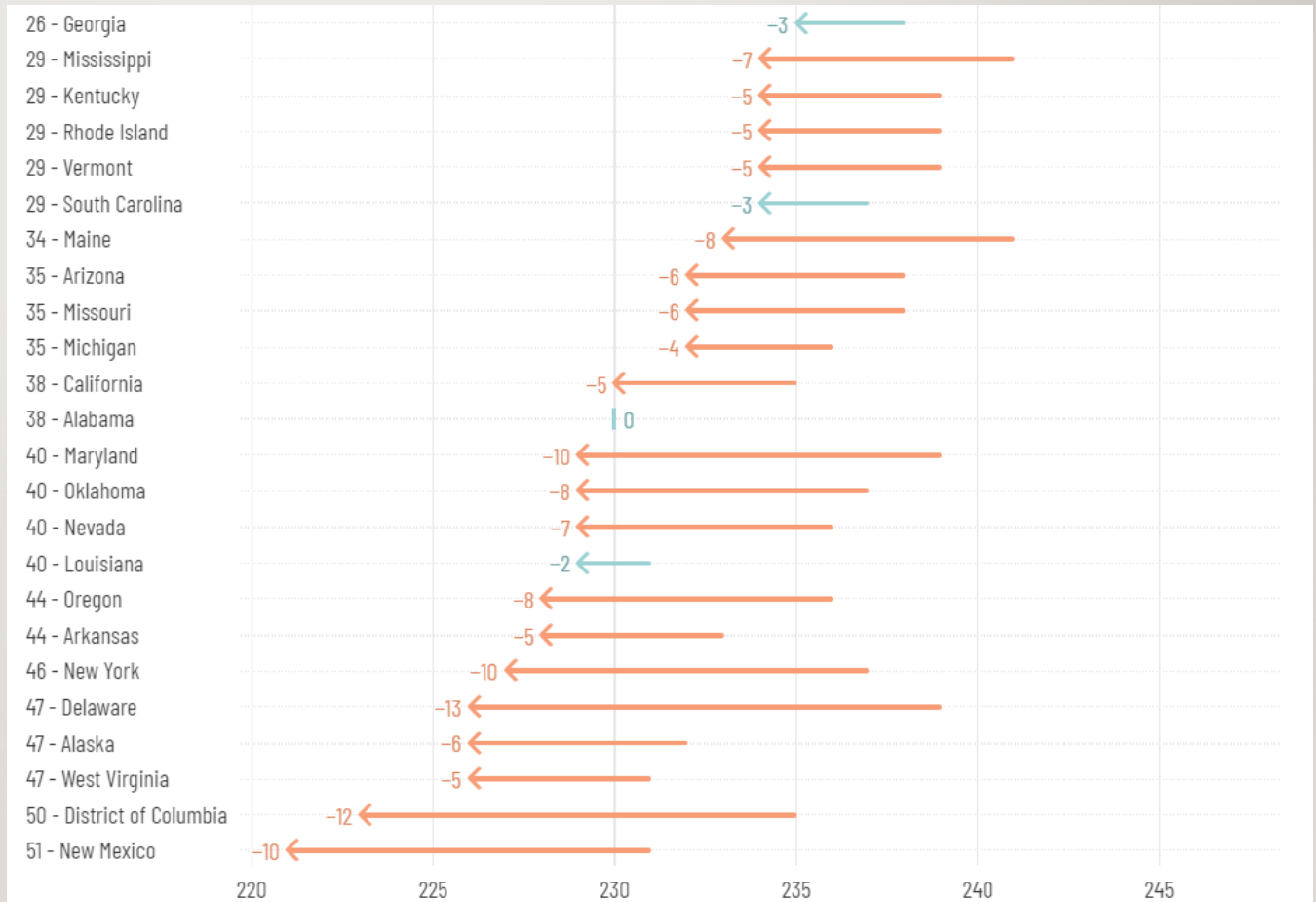
Source: NCES

Credit: Kae Petrin and Thomas Wilburn / Chalkbeat

DIFFERENCE IN NAEP MATH SCORES 2019-2022 BY STATE AND DC

Chart shows average scale scores ranked from highest to lowest

- Significantly lower
- No Significant Difference



The National Center for Education Statistics defines a score change as statistically significant when the increase or decrease exceeds the margin of error. The margin of error varies, so the same difference may be significant in some states and not in others. Point differences are based on integer scores and may round differently from some NAEP releases.

Source: NCES

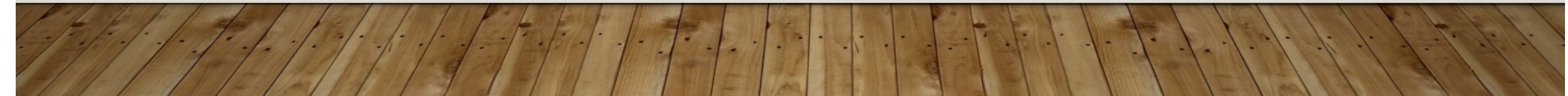
Credit: Kae Petrin and Thomas Wilburn / Chalkbeat

COVID-19 Affected Academic Learning Disproportionately

Analyses have demonstrated a disproportionate impact of COVID-19 on students on the basis of race/ethnicity (e.g., Morgan & Latham Sikes, 2022). In general, the data indicate that scores in math for white, Black, and Latino students have decreased over the last 10 years. However, the drop between 2019 and 2022 is much greater.

The largest decrease was for Asian and Pacific Islander student's (10), White students (9), Latino students (7), mixed race students (6), and African American students (5) which overall, reflected a slight decrease in the achievement gap but this is likely due to the decline in math scores for the reasons stated previously which may have limited the amount of growth obtainable by better performing students where white, Asian and Pacific Islander students are over-represented.

In contrast, the slight decrease in reading scores in 4th grade among the difference racial/ethnic groups were offset for African American and English learners who both made gains in their 8th grade reading scores between 2019 and 2022.



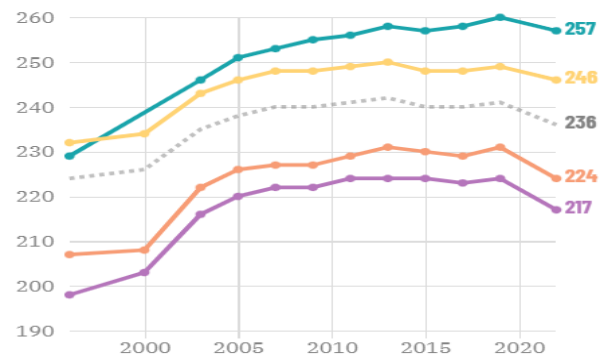
NATIONAL LONG-TERM NAEP SCORES IN READING AND MATH BY RACE AND ETHNICITY

- Asian American
- African American/Black
- Hispanic/Latino
- White
- All students

National NAEP scores by race and ethnicity

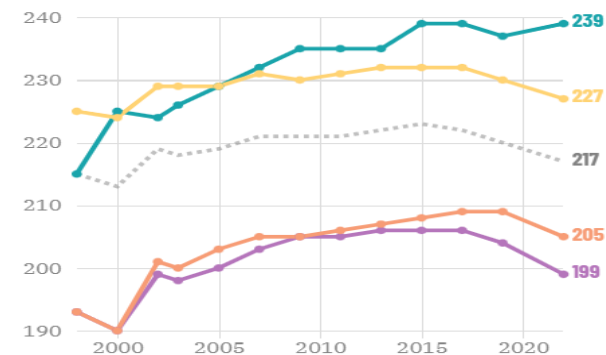
4TH GRADE MATH

■ All students
 ■ Asian American
 ■ Black
 ■ Hispanic or Latino
 ■ White



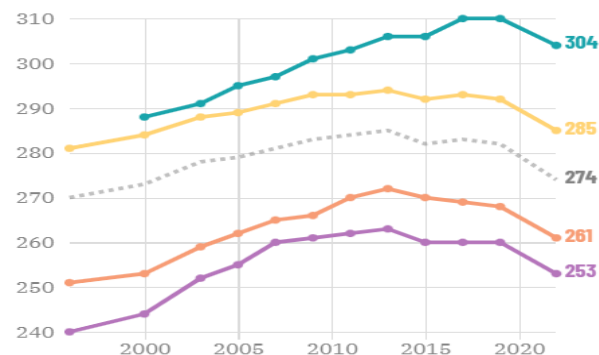
4TH GRADE READING

■ All students
 ■ Asian American
 ■ Black
 ■ Hispanic or Latino
 ■ White



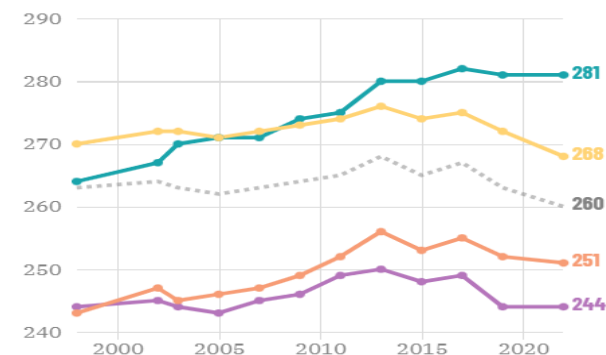
8TH GRADE MATH

■ All students
 ■ Asian American
 ■ Black
 ■ Hispanic or Latino
 ■ White



8TH GRADE READING

■ All students
 ■ Asian American
 ■ Black
 ■ Hispanic or Latino
 ■ White



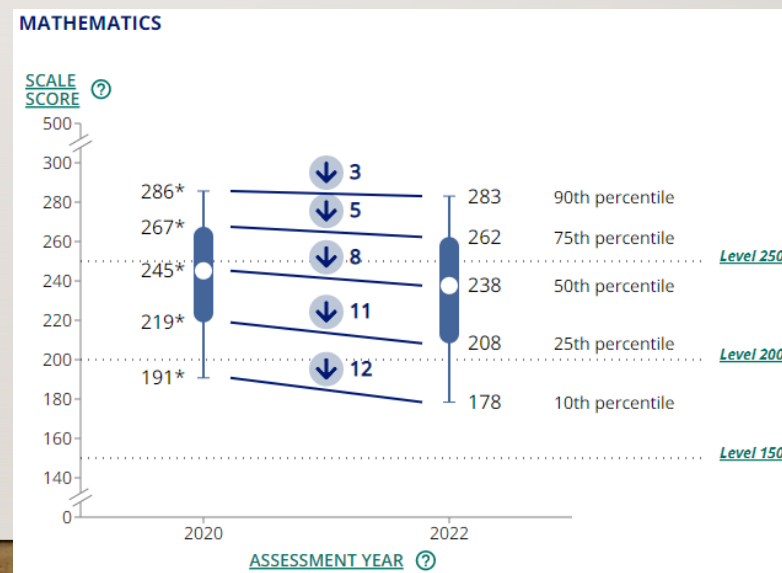
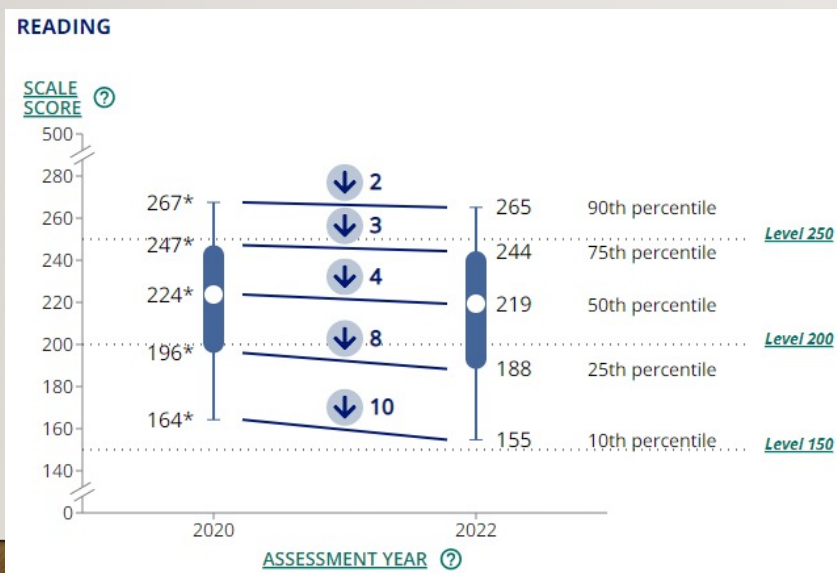
Source: NCES

Credit: Kae Petrin and Thomas Wilburn / Chalkbeat

COVID-19 Affected Academic Learning Disproportionately

A CLOSER LOOK AT DISPROPORTIONATE IMPACT

Although the gaps in achievement among various groups appears to have decreased in some cases, they largely remain the same, nonetheless. However, vulnerability to learning loss attributable to COVID-19 was not equal across the groups with higher performing students losing less learning than lower performing students.



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A CLOSER LOOK AT DISPROPORTIONATE IMPACT

From 2020 to 2021, a survey of students who were in remote learning programs indicated that higher performers (75th percentile rank or above) compared to lower performers (25th percentile rank or lower) reported: 1) greater access to a desktop computer, laptop, or tablet all the time; possession of 2) a quiet place to work available some of the time; and 3) a teacher available to help them with reading or mathematics schoolwork every day or almost every day compared to lower performers (Gilligan, 2022).

Access to Resources for Students Who Experienced Remote Learning

Click on the buttons below to see data for the different subjects:

Math Reading

Below 25th percentile At or above 75th percentile

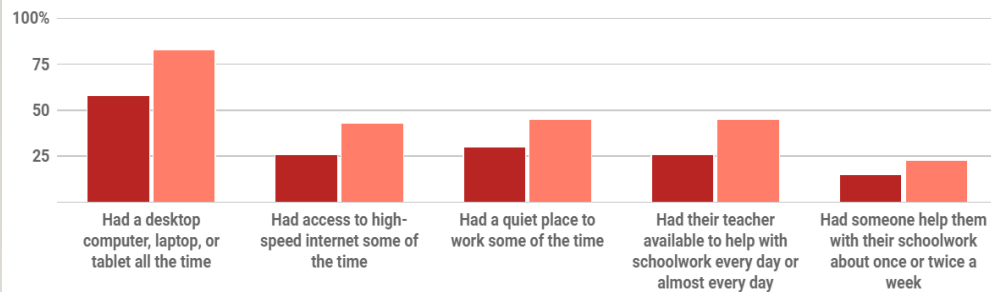


Chart: Chris Gilligan • Source: National Center for Education Statistics



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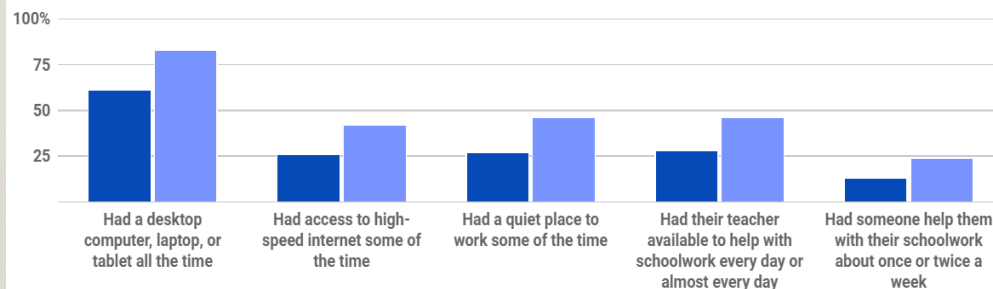


Chart: Chris Gilligan • Source: National Center for Education Statistics

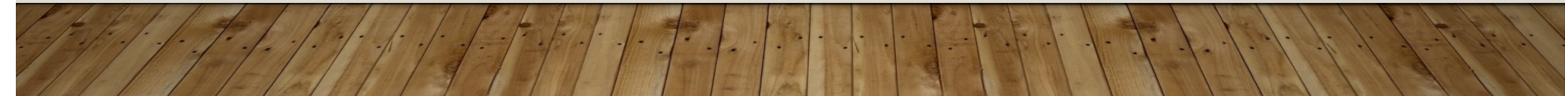


COVID-19 Affected Academic Learning Disproportionately

A CLOSER LOOK AT DISPROPORTIONATE IMPACT

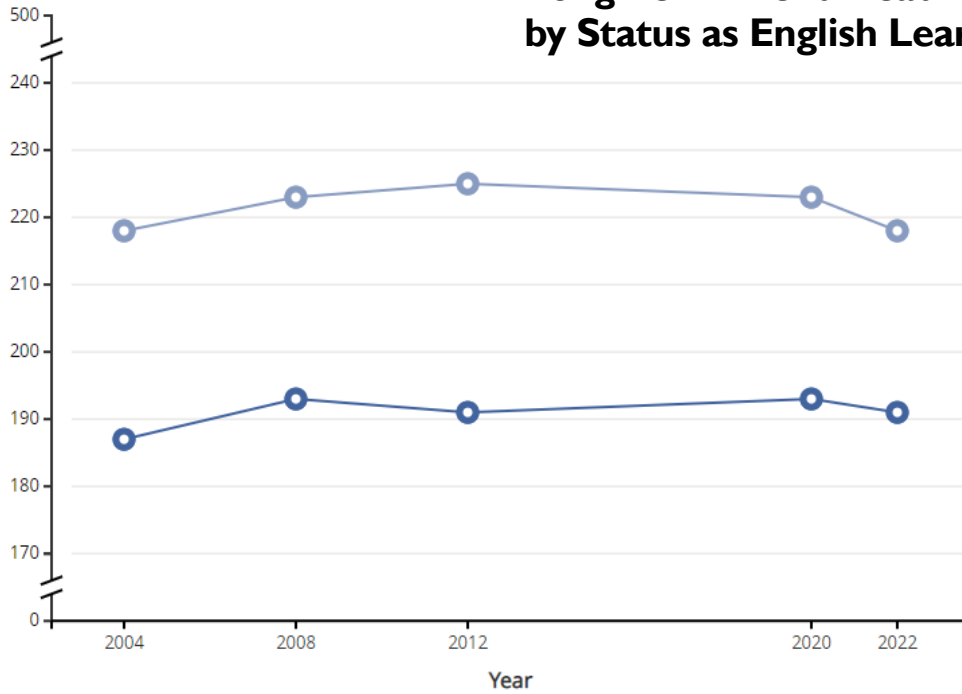
From 2004 to 2022, English learners continue to underperform as compared to non-EL (monolingual, English) speaking students. Any apparent “gains” or decreases in the gap are illusory as English learners consistently lose more ground as they advance in school.

For the only year (2012) in which data are available at ages 9, 13, and 17, the gaps were 35 points (age 9), 45 points (age 13), 54 points (age 17). The trend across other years is largely the same and shows no sign that additional schooling or current instructional practices are having any appreciable effect in raising the performance of English learners.



Average scale scores

Long-Term Trend Reading, Age 9 by Status as English Learner



● EL ● Not EL

NOTE: The NAEP Long-Term Trend Reading scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2004, 2008, 2012, 2020, and 2022 Long-Term Trend Reading Assessments.

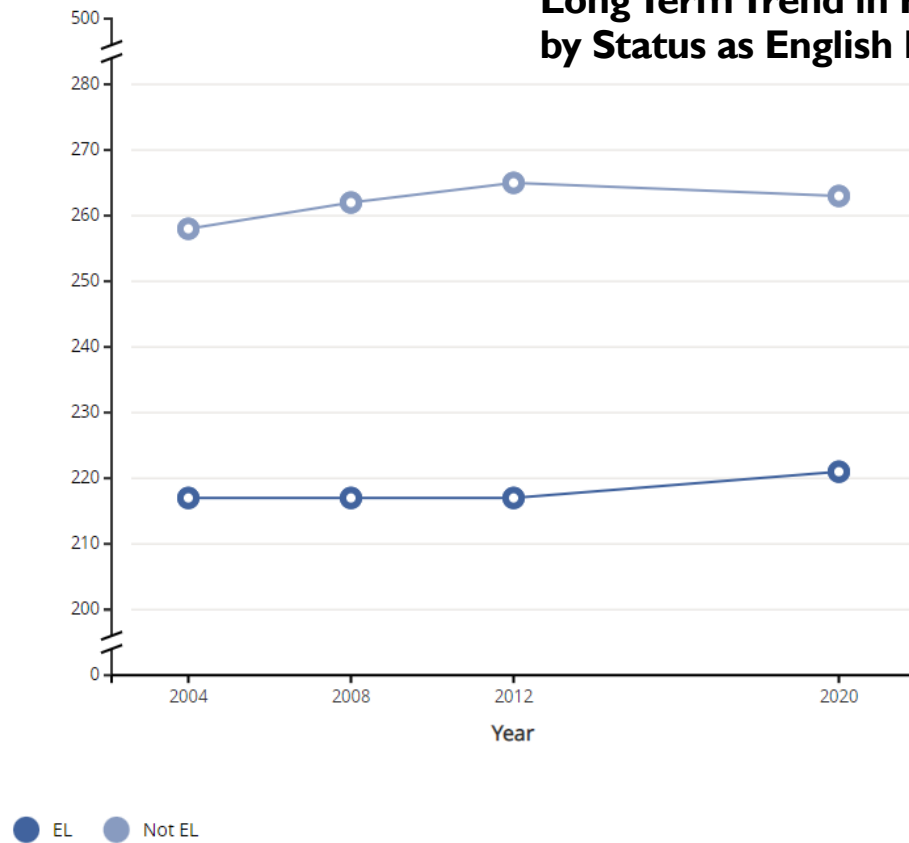
| Year | Jurisdiction | Status as English learner, 2 categories | Average scale score | |
|------|--------------|---|---------------------|----|
| 2022 | National | EL | 191 | 27 |
| | | NOT EL | 218 | |
| 2020 | National | EL | 193 | 30 |
| | | NOT EL | 223 | |
| 2012 | National | EL | 191 | 34 |
| | | NOT EL | 225 | |
| 2008 | National | EL | 193 | 30 |
| | | NOT EL | 223 | |
| 2004 | National | EL | 187 | 31 |
| | | NOT EL | 218 | |

Average difference in EL vs. Not EL performance = 30 points



Average scale scores

Long Term Trend in Reading, Age 13 by Status as English Learner



NOTE: The NAEP Long-Term Trend Reading scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

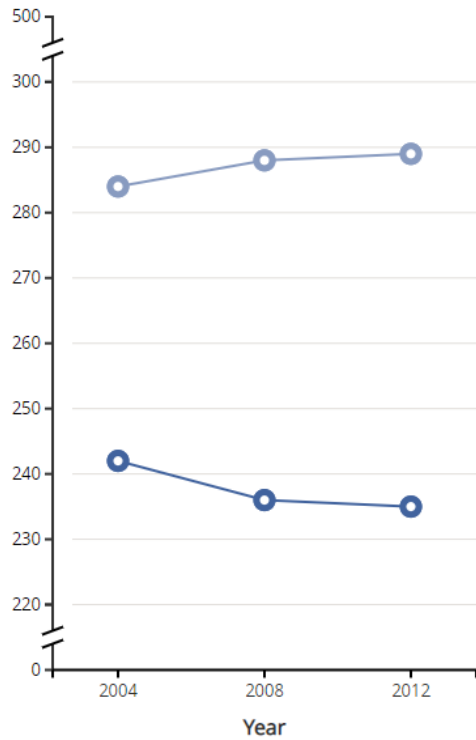
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2004, 2008, 2012, and 2020 Long-Term Trend Reading Assessments.

| Year | Jurisdiction | Status as English learner, 2 categories | Average scale score | |
|------|--------------|---|---------------------|----|
| 2020 | National | EL | 221 | 42 |
| | | NOT EL | 263 | |
| 2012 | National | EL | 217 | 45 |
| | | NOT EL | 265 | |
| 2008 | National | EL | 217 | 45 |
| | | NOT EL | 262 | |
| 2004 | National | EL | 217 | 41 |
| | | NOT EL | 258 | |

Average difference in EL vs. Not EL performance = 43 points



Average scale scores



● EL ● Not EL

NOTE: The NAEP Long-Term Trend Reading scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2004, 2008, and 2012 Long-Term Trend Reading Assessments.

Long Term Trend in Reading, Age 17 by Status as English Learner

| Year | Jurisdiction | Status as English learner, 2 categories | Average scale score | |
|------|--------------|---|---------------------|----|
| 2012 | National | EL | 235 | 54 |
| | | NOT EL | 289 | |
| 2008 | National | EL | 236 | 52 |
| | | NOT EL | 288 | |
| 2004 | National | EL | 242 | 42 |
| | | NOT EL | 284 | |

Average difference in EL vs. Not EL performance = 49 points



COVID-19 Affected Academic Learning Disproportionately

GENERAL FINDINGS: Some existing learning gaps deepened and low performing, low-SES, and EL groups were affected by COVID-19 disproportionately more than others.

Although it can be said that COVID-19 affected all students in all states, some groups were able to weather the disruption better than other groups. Because of their resources, flexibility, and entrenched higher performing status, students from upper- and middle-class families, and White families were able to manage the impact of the COVID-19 pandemic more easily than those without such advantages.

NAEP data continues to demonstrate that African American and Hispanic/Latino students lost more ground than other groups, especially in 4th grade math. With respect to reading, the decline was less, however, because they were more likely to be in a low-performing group, their drops had greater implications regarding their basic reading level and skill development.

Similarly, while students from low-income families, those with disabilities, and English learners declined the same amount or even less than students with more resources or those without disabilities, their low-performing status meant that such loss more profoundly affected their reading achievement.

Sources: Barnum, 2022; Camera, 2022; Gilligan, 2022; Morgan & Latham Sikes, 2022;

REFERENCE SOURCES:

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