Recovery Analysis of COVID-19 on Public School Units, Students and Families

Webinar for North Carolina's PSU Leaders about Recovery Analysis and Results

#MakeYourDataWork

"Data is not about adding more to your plate. Data is about making sure you have the right things on your plate."

~Paul Fleming, Education Scotland

Background

EVAAS Team at SAS and NCDPI Partnership

- Provide analysis and insight about the pandemic's impact on student learning and students' subsequent recovery.
- Summary reports for state-level and LEA-level are available for 2020-21 and 2021-22.
- District/School/Student recovery results are available in the EVAAS web application but are **different** from EVAAS growth measures used for District/School/Teacher Growth.

Purpose of Analysis for LEAs

The summary state and LEA-level reports provide information to answer these key questions:

1. To what extent do students' pre-pandemic trajectories and their actual performance results from 2021-22 vary by student group and contextual factors?
2. How do any observed differences compare to 2020-21 as well as pre-pandemic historical trends?

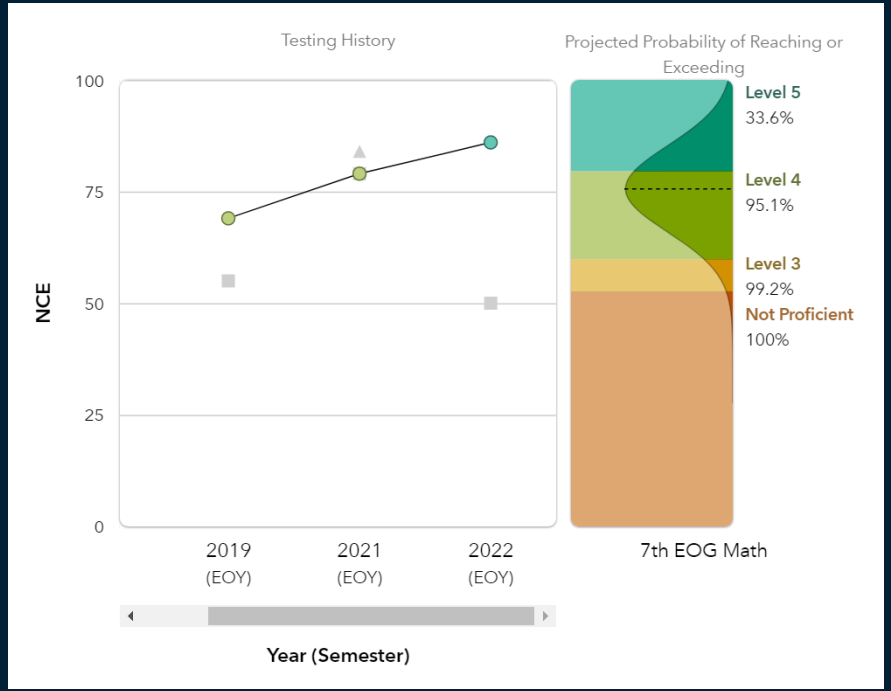
This report is a "diagnosis" tool, not a "prescription" tool.

General Approach

- One way to quantify the pandemic's effects on student learning.
- Compare students' *projected* performance prior to the pandemic to their *actual* performance on state assessments.
- Aggregate comparisons across all students and for certain student groups.
- Assess whether the students under-performed relative to projections.

Projection Refresher

- Projected score represents students' trajectory prior to the pandemic.
- Model uses two key pieces of information:
  - Prior testing history for a student who has not yet taken an assessment
  - Testing histories for all students who took that assessment



How to Interpret Results

Effect Sizes

- Standardized metric that indicates magnitude or practical significance.
- How to interpret:
  - Small: Effect size less than 0.05
  - Medium: Effect size ranges from 0.05 to 0.20
  - Large: Effect size greater than 0.20*
- Effect size can be positive or negative

*Kraft MA. “Interpreting Effect Sizes of Education Interventions.” *Educational Researcher*. 2020; 49 (4):241-253.

Measuring the Impact of Lost Instructional Time

Last Year's Analysis Using Data through the 2020-21 School Year

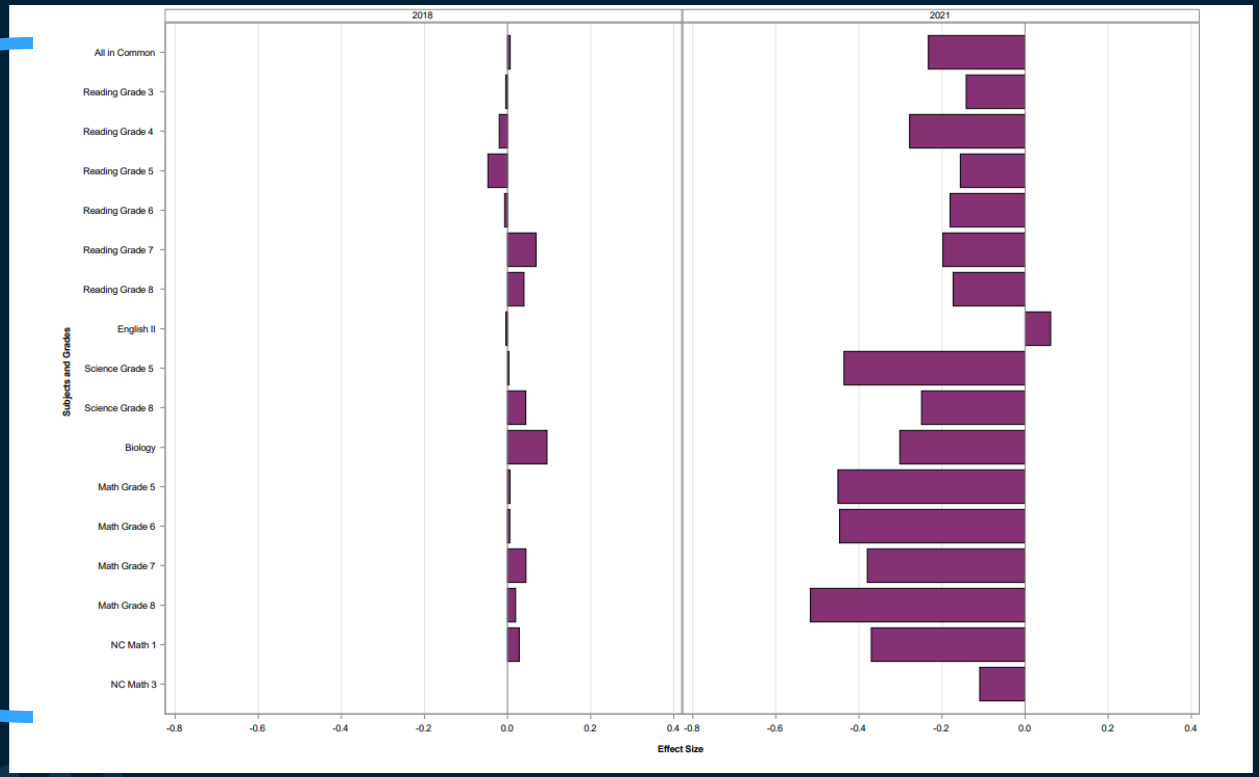
- The most recent cohort of students from the 2018-19 school year is used to establish the pre-pandemic experience.
- Students' prior assessment data (2018-19 and earlier) is used to establish a projected or expected score on a future assessment (2020-21).
- Projected scores represent students' expected or average progress trajectories prior to the pandemic.
- Using assessment data from the 2020-2021 school year, compare a student's trajectory prior to the pandemic to the student's 2020-21 performance.
- Individual student data can be aggregated to assess the pandemic's impact on specific student groups.

2020-21 Results presented in Average Effect Sizes

2018
Historical Comparison

2021
Pandemic Impact

Assessments by Subject/Grade



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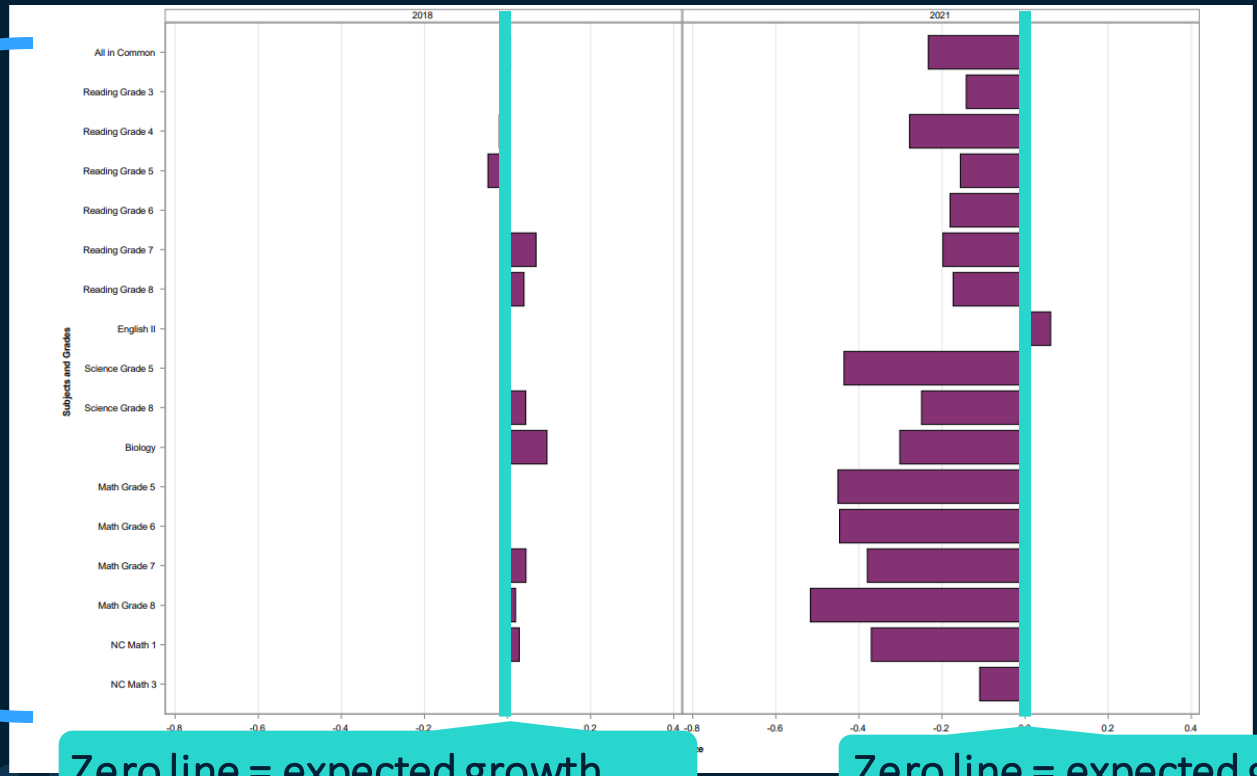

Zero line = expected growth

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2020-21 Results presented in Average Effect Sizes

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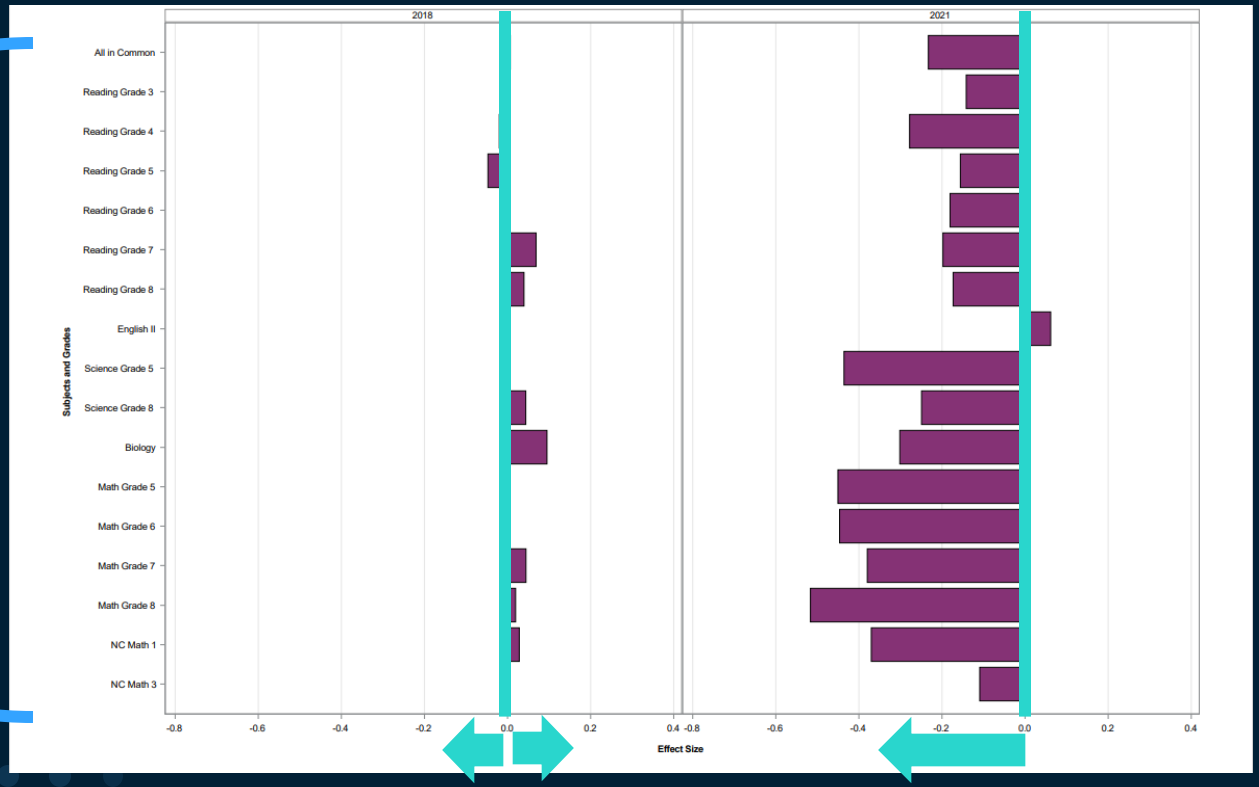


Measuring Learning Recovery

This Year's Analysis Using Data through the 2021-22 School Year

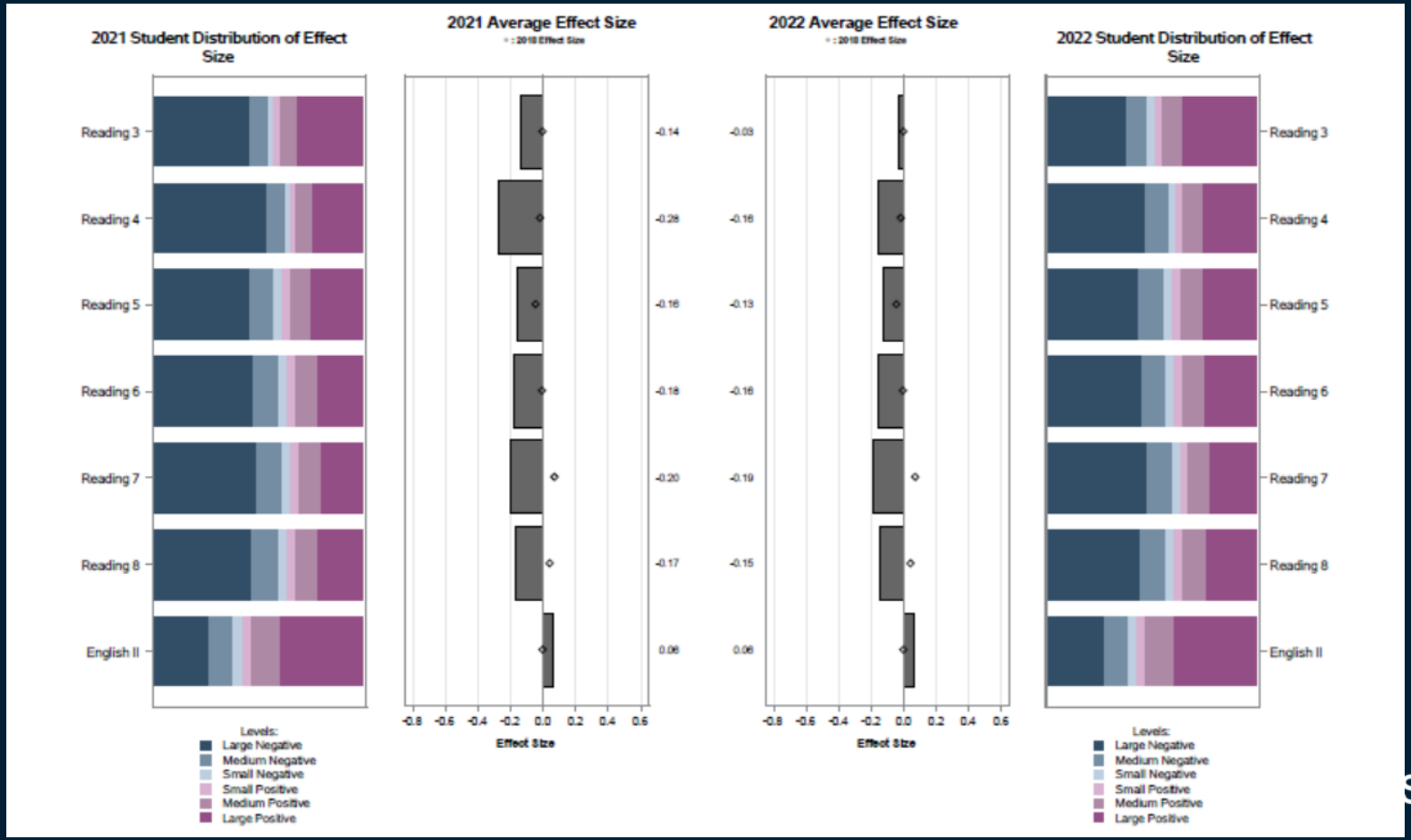
- Similar idea to last year, but now project to the 2021-22 school year because we have 2021-22 assessment data.
- Projections made *three* years in advance – from 2019 to 2022.
- Now the results include three years of data:
  - 2017-18 Historical Comparison
  - 2020-21 Pandemic Impact
  - 2021-22 Learning Recovery

Measuring Learning Recovery

This Year's Analysis Using Data through the 2021-22 School Year

- The additional year takes into account the post-pandemic academic experience.
- Comparing the 2022 results with the 2021 results and historical comparison yields insight into students' recovery.
- Also important to consider the distribution of student-level effect sizes within the state average effect size.
  - In other words, what is the proportion of students with a large positive, medium positive, small positive, small negative, medium negative, and large negative effect size.

2021-22 Results – Learning Recovery

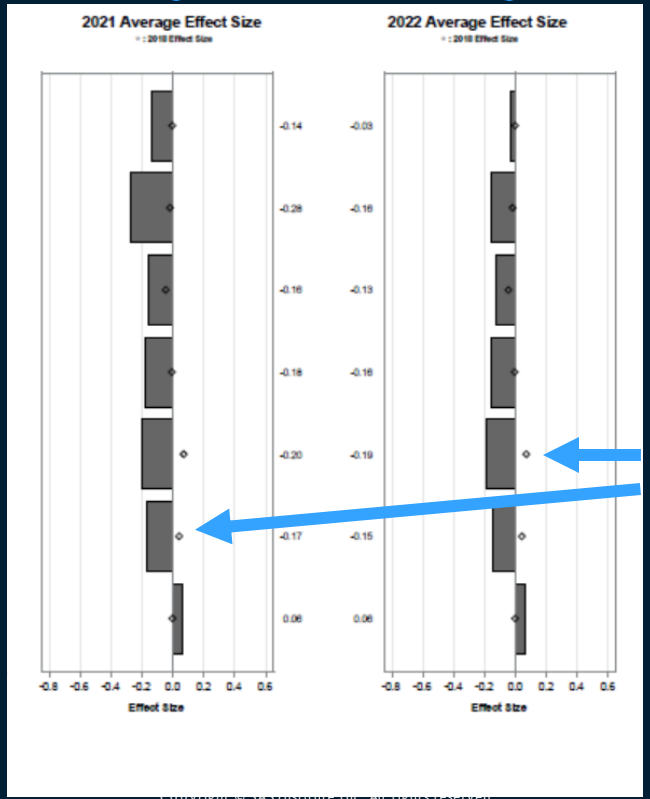


2021-22 Results presented in Average Effect Sizes

2021
Pandemic Impact

2022
Learning Recovery

Assessments by Subject/Grade



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2021-22 Results presented in Average Effect Sizes

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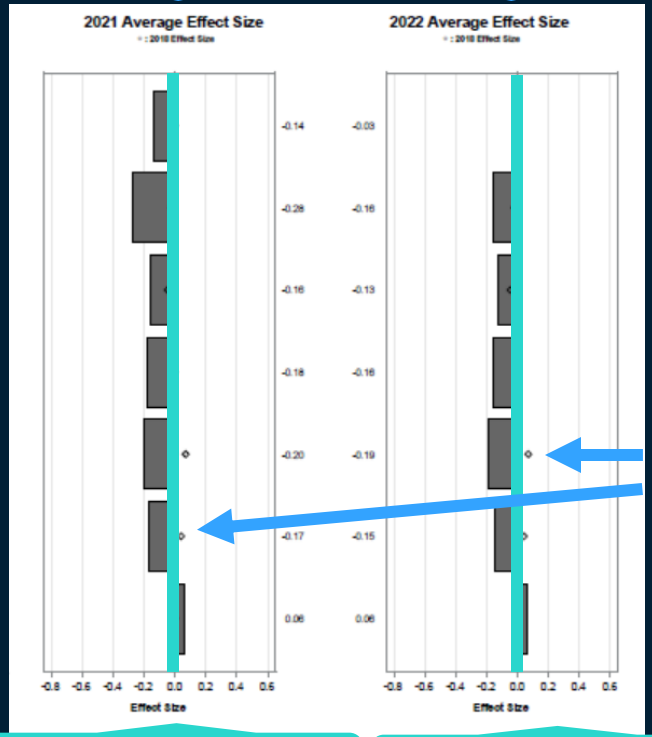

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2021-22 Results presented in Average Effect Sizes

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Pandemic Impact

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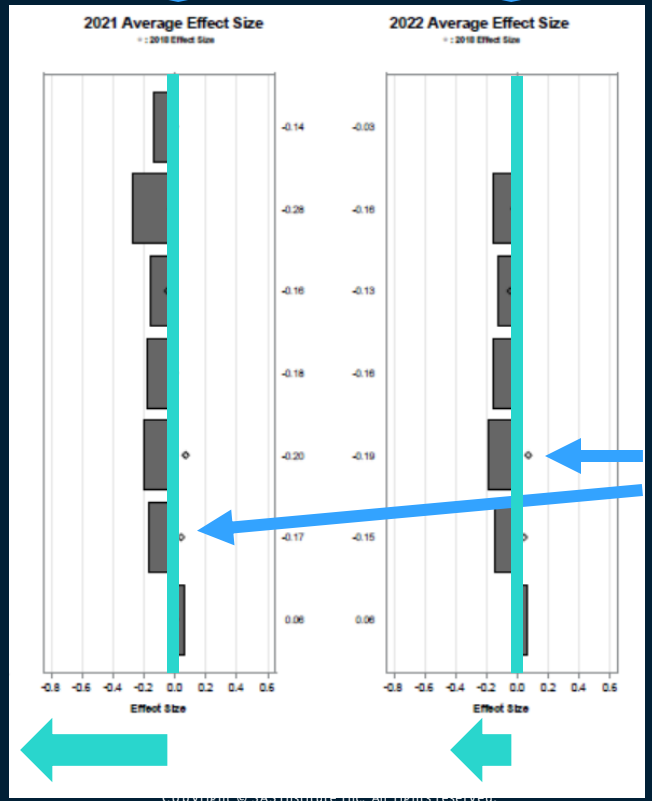
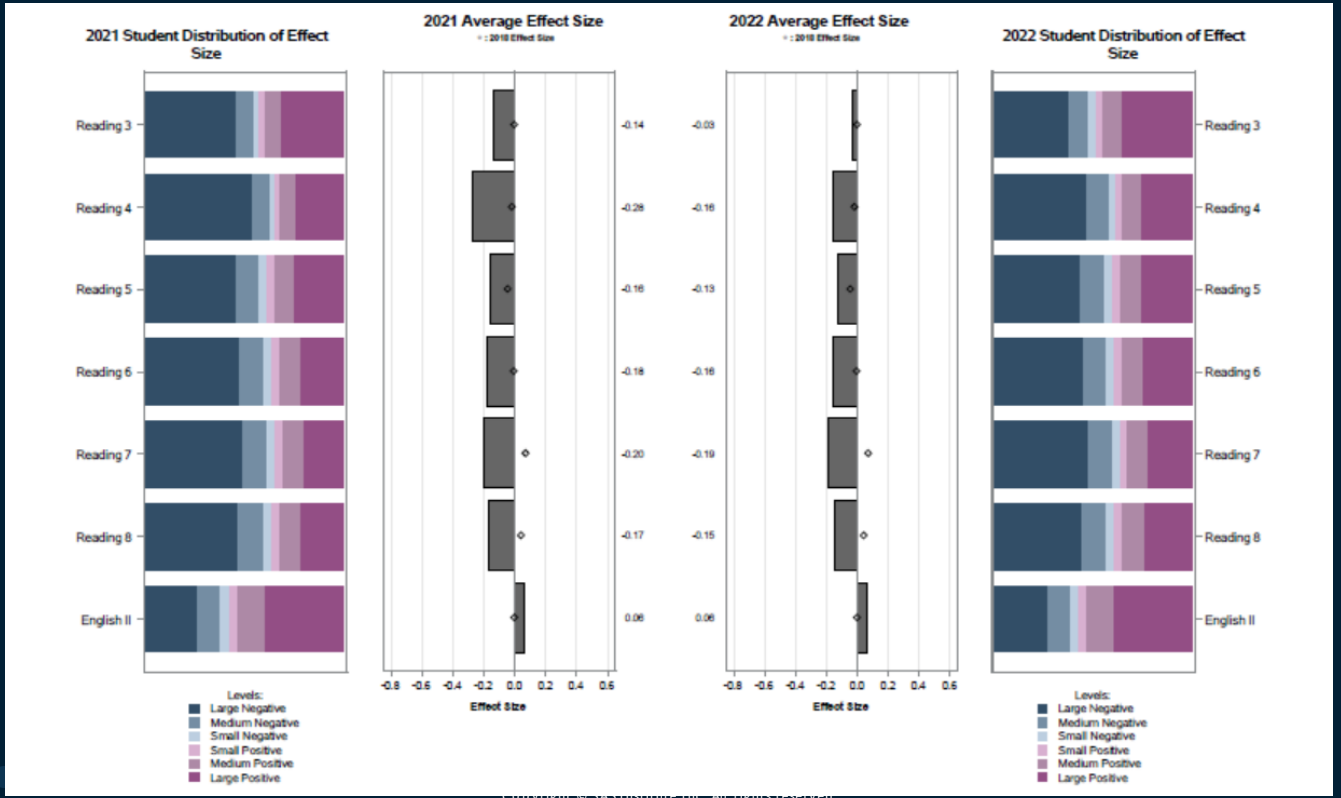
Assessments by Subject/Grade



2018
Historical Comparison

2021-22 Results – Learning Recovery



2021-22 Results presented in Distribution of Effects

2021
Pandemic Impact

2022
Learning Recovery

Assessments by Subject/Grade

Levels:
- Large Negative
- Medium Negative
- Small Negative
- Small Positive
- Medium Positive
- Large Positive

Assessments by Subject/Grade

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Summary State and LEA-Level Recovery Analyses

Key Questions

1. To what extent do students' pre-pandemic trajectories and their actual performance results from 2021-22 vary by student group and contextual factors?
2. How do any observed differences compare to 2020-21 as well as pre-pandemic historical trends?

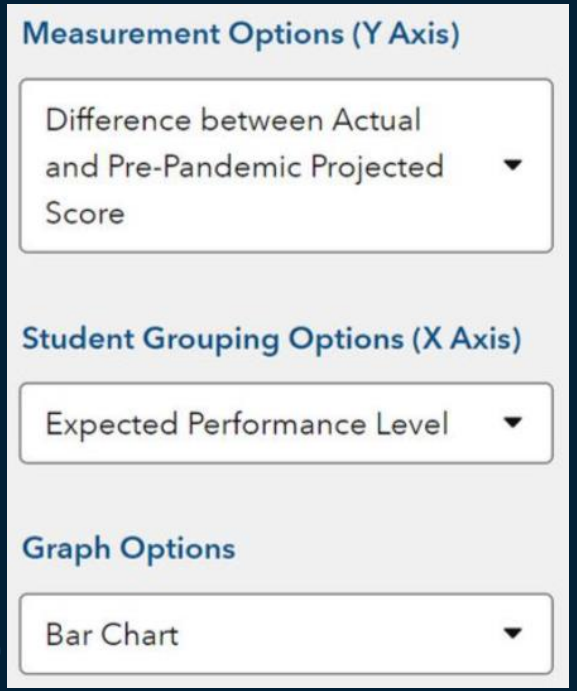
Consider your LEA's results compared to the state results, different subjects/grades, different student groups, differences between historical trends, etc.

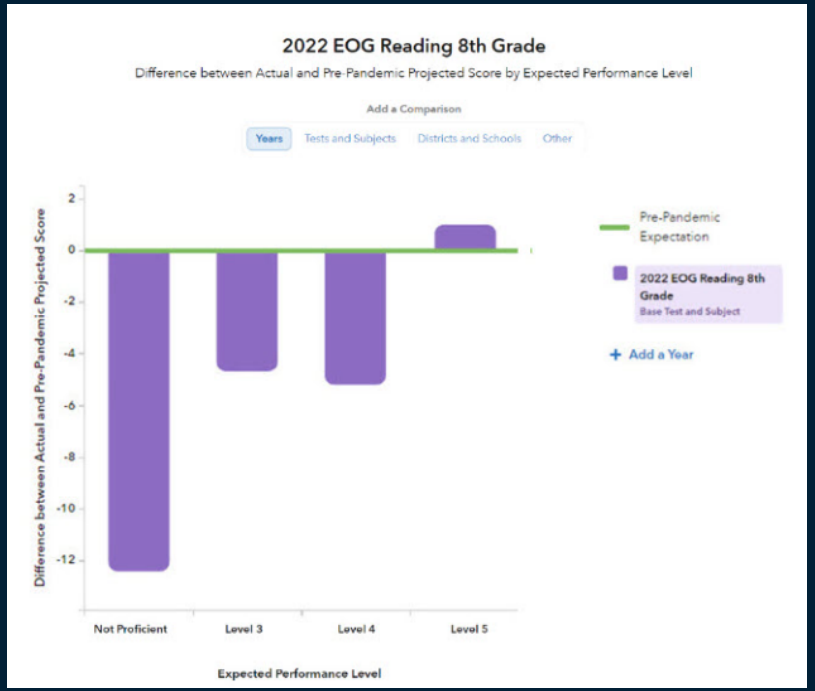
Where to find more information

- State-level Recovery Analysis Report
- Your own LEA Recovery Analysis Report
- EVAAS Web Application
  - District/school diagnostic reports (select “Difference between Actual and Pre-Pandemic Score” as the Measurement Option)
  - Student reports (select “Past Projected” in the Testing Information tile)
  - Reference guide on NC EVAAS login page: https://evaasresources.sas.com/nc-road-to-recovery-resource-v0-2/full-view.html

Where to find more information

District/School Diagnostic Report with DBAPPS Selected

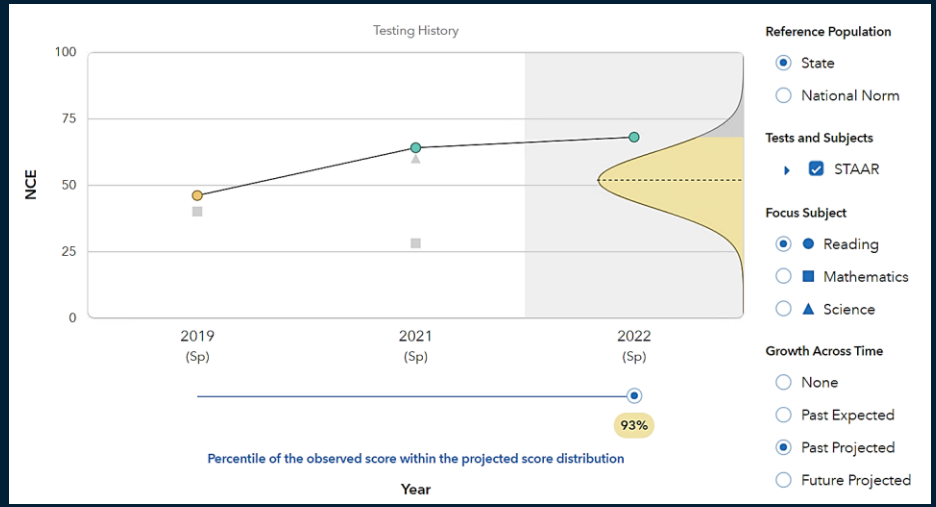




Where to find more information

Sample Student Report with Past Projected Selected

- Calculations used student's past testing history and the prior cohort of test takers in this grade and subject or course
- Curve represents the possible range of likely scores for this student
- Dotted line represents the most likely score for this student
- Circle represents the actual reading score
- Shaded yellow area displays the actual score that was in the 93rd percentile of possible scores for this student



Difference between EVAAS Growth and Impact/Recovery Measures

	EVAAS	Lost Instructional Time/Recovery
What does it measure?	**For EOG Math and Reading:** The change in relative achievement from one point in time to the next (i.e., 2021 to 2022). **For EOG Science and EOCs:** The difference between actual and expected achievement, where expected achievement is based on students' prior test scores and the average learning experience observed in the state.	**For EOG Math, Reading, and Science, and EOCs:** The difference between students' actual and projected scores in 2021 or 2022, where projected scores are based on students' prior test scores and the typical school experience observed in the state in a pre-pandemic baseline year
What does expected growth measure?	Average growth observed in the state between the SY20-21 and the SY21-22.	Average progress observed in the state in a pre-pandemic year, which represents a baseline or typical school year (i.e., 2019).
What does the distribution of results look like?	Statewide, the results are centered around expected growth (zero) because the growth measures are relative to the state average for 2022. *Your LEA might show a different pattern.*	Statewide, the results for most assessments have more districts/schools below expected growth (zero) because the Lost Instructional Time measures are relative to the pre-pandemic state baseline. *Your LEA might show a different pattern.*

Questions?

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