North Carolina's Road to Recovery: Research to Inform Comprehensive K–12 Planning, Strategic Investments, and Charting a Path Forward

Presentation to the NC House Education Committee
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2021-2022 "Magnitude of Recovery"
Recovery Analysis of COVID-19 on Public School Units, Students and Families (ESSER II, ESSER III)

Full Report Available on NCDPI’s Research & Recovery Roundup
Wrapping Up 2020-21 Lost Instructional Time Report
Wrapping Up the 2020-21 *Lost Instructional Time* Report

- Technical Report Submitted to JLEOC December 15 ([link](#))
- Releasing a series of white papers focused on:
  - New data added for Science Grade 5 and ACT
  - New interactions including gender, region, race, urbanicity, student groups (i.e., AIG, SWD, EDS, ML)
  - New findings related to:
    - Teacher and principal effectiveness and longevity ([link](#))
    - Chronic absenteeism
District and School Supports

From February-March 2023, NCDPI hosted 8 regional sessions to support awareness and use of new local recovery data reports

• Overview of state and regional data results
• Aggregated data files based on their LEA and schools
• Documentation and supports on how to interpret results
• Recommended clearinghouses of vetted resources to guide local investment decisions
Framing the 2021-22 Recovery Analysis Results

• This data is unique to North Carolina as it is individual, student level data (~1.4M students) and not based on sample sizes which means all differences are statistically significant.

• This data goes beyond how many students met grade level proficiency and presents the difference between where we expected students to perform and how they actually performed.
  – 2018 provides a reference for "business as usual"
  – Effect size graphs compare 2021 and 2022 to provide an estimate of "magnitude of recovery"
  – Vertical 0 line means students in those groups are performing as we would expect. They are on track based on past performance.
Main Effects for Student Groups

- Summary of All Tested Subjects
- Sex
- Race/Ethnicity
- Economically Disadvantaged Students
- Chronically Absent
- Academically or Intellectually Gifted
- Students with Disabilities
- Multilingual Learners

- Student Experiencing Homelessness
- Military Connected
- Foster Students
- Migrant Students
- Entering Achievement by Quintile
- Urbanicity
- Percentage Connectivity
- 2021 Remote Days by Quintile
Interactions and School Type

- Race/Ethnicity Split by Sex
- Race/Ethnicity Split by Urbanicity
- Race/Ethnicity Split by AIG
- Sex and EDS Split by Race/Ethnicity
- Urbanicity Split by EDS
- Urbanicity Split by AIG
- Urbanicity Split by Multilingual Learners
- Urbanicity Split by Students with Disabilities
- Student Remote Split by Race/Ethnicity
- State Board of Education Region
- Race/Ethnicity Split by SBE Region
- Urbanicity Split by SBE Region and Economically Disadvantaged
- School Designation
- A-F Grade
Understanding Effect Sizes

• Standardized metric that indicates magnitude or practical significance of a research outcome. A large effect size means that a research finding has practical significance, while a small effect size indicates limited practical applications.

• 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

2021-2022 "Magnitude of Recovery"
2021-2022 "Magnitude of Recovery"

Within-student effect size differences, 2022 - 2021

- Mathematics: Large
- ELA: Small
- Science: Medium
2021-22 Recovery Analysis: “Months”
Q&A
Recovery Analysis Report Interpretation Guide

Full Report Available on NCDPI’s Research & Recovery Roundup
*NEW* 2021-22 Recovery Analysis

Distributions of student-level effect sizes within each subject and grade or course.

2020-21 Results

2021-22 Results

Average Effect Sizes

Open diamond outlined in black shows the average effect size for 2017-18 school year.
## 2021-22 Recovery Analysis

### Effect Size by Subject Grade - 2022

<table>
<thead>
<tr>
<th>SBE Region</th>
<th>North Central</th>
<th>Northeast</th>
<th>Northwest</th>
<th>Piedmont Triad</th>
<th>Sandhills</th>
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<td><strong>Std Error of Effect Size</strong></td>
<td><strong>N</strong></td>
<td><strong>Effect Size</strong></td>
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2021-22 Recovery Analysis - ELA
2021-22 Recovery Analysis - Math

Diagram showing student distribution of effect size and average effect size for Math 5 to Math 8, as well as NC Math 1 and NC Math 3.
2021-22 Recovery Analysis - Science