

Additional support mitigated learning loss among economically disadvantaged students

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In this post, OLR describes variation in student academic progress during the 2020-2021 school year, focusing on economically disadvantaged (ED) students. Many ED students exceeded academic expectations and, on average, schools that better supported progress before the pandemic also better supported progress during the pandemic. ED students attending “Comprehensive/Targeted Support and Improvement” schools experienced less learning loss than ED students in other schools. We conclude with two considerations for policy and practice.

Data

This analysis utilizes student-level differences between projected and actual academic performance during school years 2017-2018 and 2020-2021, expressed as effect sizes. Values from 2017-2018 represent a “typical” school year while values from 2020-2021 represent the pandemic. We classify these effect sizes by absolute value using guidelines suggested by Kraft (2020): 0-.05, .05-.20, and greater than .20, or “small”, “medium,” and “large.” See [here](#) for more information.

We specifically discuss outcomes for ED students, which comprise 45% and 39% of our 2017-2018 and 2020-2021 assessment samples, respectively. Finally, we identify schools that received additional support in 2020-2021 as part of North Carolina’s federally designated “Comprehensive Support and Improvement (CSI)” and “Targeted Support and Improvement (TSI)” programs. In 2021, 68% of test-takers attended a CSI or TSI school. CSI/TSI eligibility and exit criteria are available [here](#), and additional information is given in an appendix.

Many students exceeded expectations during the 2020-2021 school year

The pandemic challenged academic expectations. However, many students exceeded expectations and most who exceeded expectations did so by wide margins (Figure 1). Like those studying the pandemic in other contexts (Goldhaber et al, 2021; Kogan, 2022), we find that many ED students exceeded academic expectations, although at a lower rate than their non-ED peers (Figure 2). For example, in 2021, ED students exceeded expectations on 36% of their end-of-year assessments, while non-ED students exceeded expectations on 42% of their end-of-year assessments. These differences are greatest in Math, where ED students were 25% less likely to exceed expectations than their non-ED peers. This suggests that the pandemic was generally more challenging for ED students, but also that certain schools better mediated the pandemic’s challenges, even for students with greater pre-pandemic challenges.

Schools with greater pre-pandemic academic progress experienced less pandemic-related learning loss

To explore this idea, we calculate average effect sizes by school and economic status. Positive school-level effect sizes indicate that the school’s average student exceeded academic expectations. On average, across all tested

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subjects and for each subject individually, schools that promoted greater academic progress before the pandemic also promoted greater academic progress during the pandemic (Figure 3). Although ED students experienced greater pandemic-related learning loss than their non-ED peers attending schools with similar levels of pre-pandemic progress, some schools better supported ED students during the pandemic and, on average, these schools were the same schools that better promoted ED progress before the pandemic.

Pre-existing support may have mitigated loss among economically disadvantaged students

Strong pre-pandemic support systems may have supported academic progress during the pandemic. To explore this possibility, we measure differences in average effect sizes for ED students between 2018 and 2021 among four federally designated school groups receiving additional support from NCDPI (i.e., parent communication, professional development, performance monitoring, and funding): CSI-Low Performing (CSI-LP), CSI-Low Graduation Rate (CSI-LG), TSI- Additional Targeted Support for ED students (TSI-AT, EDS), TSI-Continually Underperforming for ED students (TSI-CU, EDS). We present schools not designated as CSI or TSI as a fifth group for comparison (“Others”).

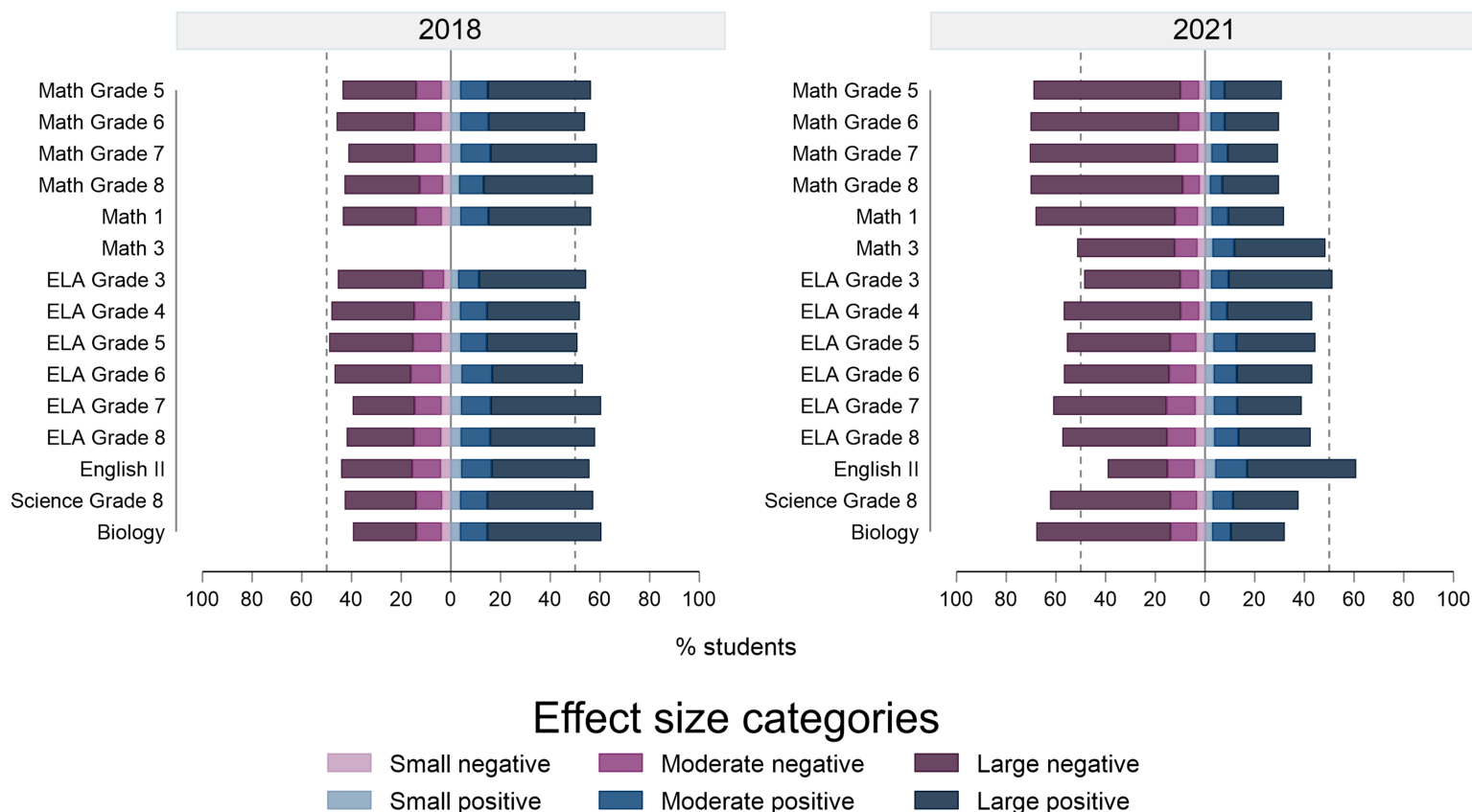
All five school groups, including these four CSI/TSI federal designations, experienced declines in average ED academic progress between 2018 and 2021, ending the 2020-2021 school year with negative average outcomes. However, as compared to their pre-pandemic ED peers attending the same school group, ED students within CSI-LP, CSI-LG, TSI-AT (EDS), and TSI-CU (EDS) schools experienced less learning loss than economically disadvantaged students in “Other” schools, overall and within each subject (Figure 4). ED students in CSI-LG schools experienced less loss overall than ED students in any other school group, and schools within CSI/TSI groups experienced 43% less loss across all subjects than schools not receiving CSI/TSI support. This suggests that pre-existing additional support may have helped schools at least partially offset the pandemic’s particular challenges for ED students.

Conclusion

These results can shape policy and practice in at least two ways. First, understanding variation across students can help better target resources to those with disproportionate need. For example, within nearly all tested subjects, ED students were less likely to exceed academic expectations than their non-ED peers, and some ED students demonstrate greater need than others. Second, additional support structures may help ease future challenges, especially among disadvantaged students, implying that supports can be effective when used proactively. OLR will continue to investigate characteristics that may have mitigated learning loss during the 2020-2021 school year and beyond.

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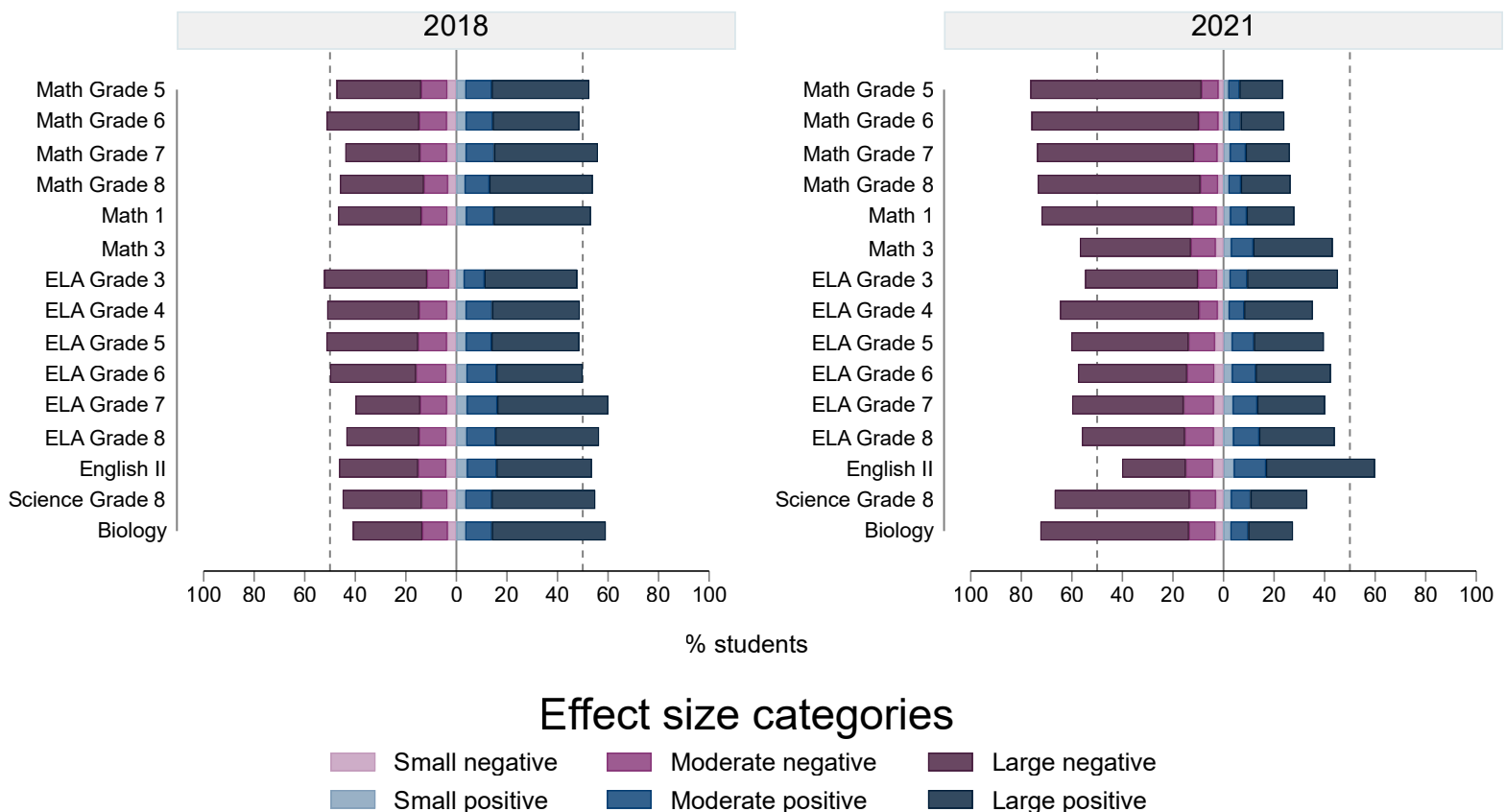
Figure 1. Effect size variation, all students (2018 & 2021)



Notes: figure displays the percent of test-taking students scoring within each effect size category listed in the legend, for each subject in each year. Negative effect sizes extend left while positive effect sizes extend right. For example, 56% of test-takers exceeded academic expectations in Math Grade 5 during 2018, while 31% did so in 2021. Effect sizes are categorized according to absolute value. "Small:" 0-.05; "Moderate:" .05-.20; "Large:" greater than .20. Dashed vertical lines indicate 50%. Sample contains 938,786 and 928,987 students in 2018 and 2021, respectively. Math 3 was not tested in 2018.

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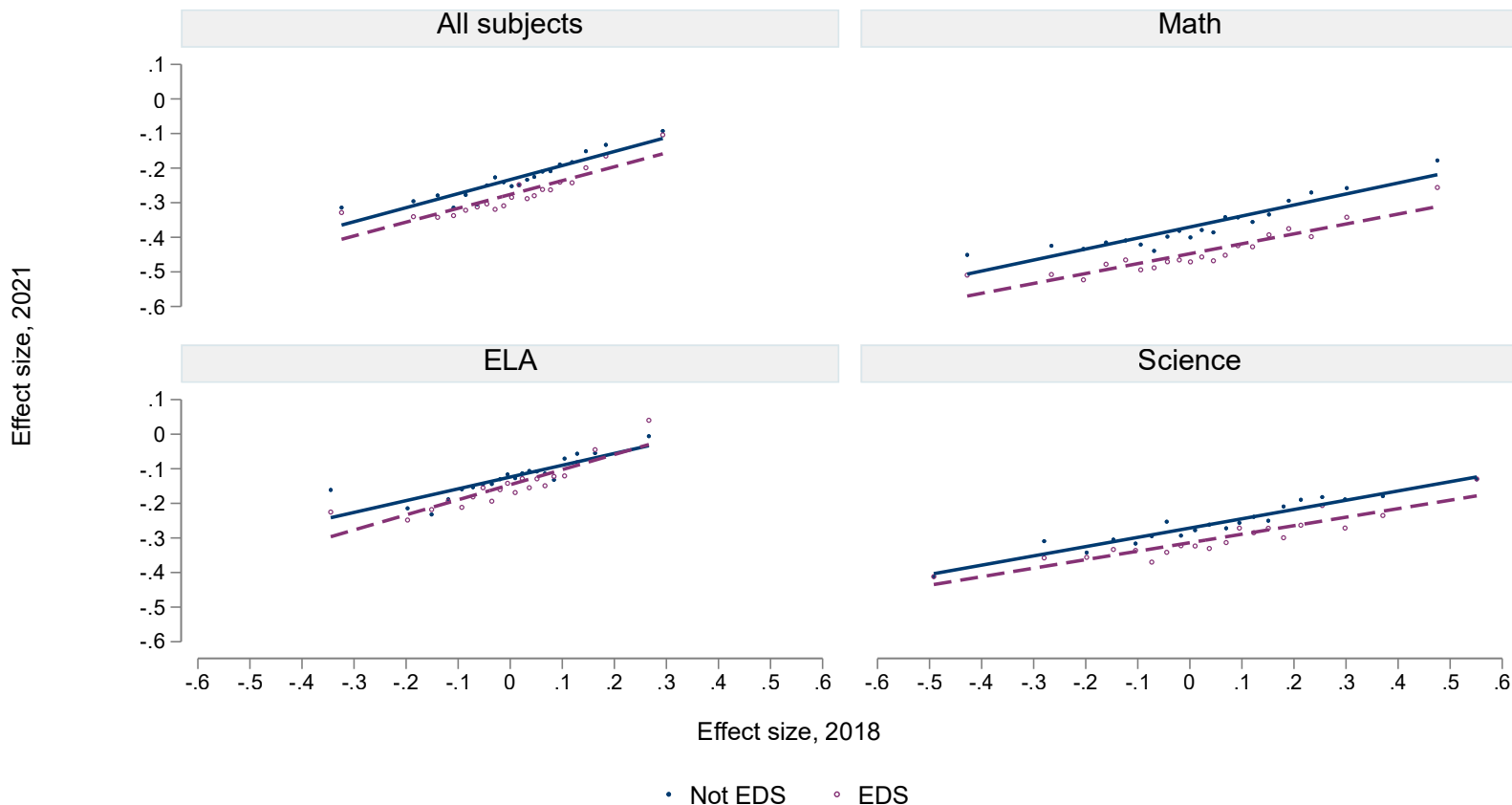
Figure 2. Effect size variation, economically disadvantaged students only (2018 & 2021)



Notes: figure displays the percent of test-taking economically disadvantaged students scoring within each effect size category listed in the legend, for each subject in each year. Negative effect sizes extend left while positive effect sizes extend right. For example, 53% of ED test-takers exceeded academic expectations in Math Grade 5 during 2018, while 24% did so in 2021. Effect sizes are categorized according to absolute value. "Small:" 0-.05; "Moderate:" .05-.20; "Large:" greater than .20. Dashed vertical lines indicate 50%. Sample contains 421,310 and 358,131 economically disadvantaged students in 2018 and 2021, respectively. "Economic disadvantage" was defined as eligibility for free or reduced-price lunch during the 2018 and 2021 school years. Math 3 was not tested in 2018.

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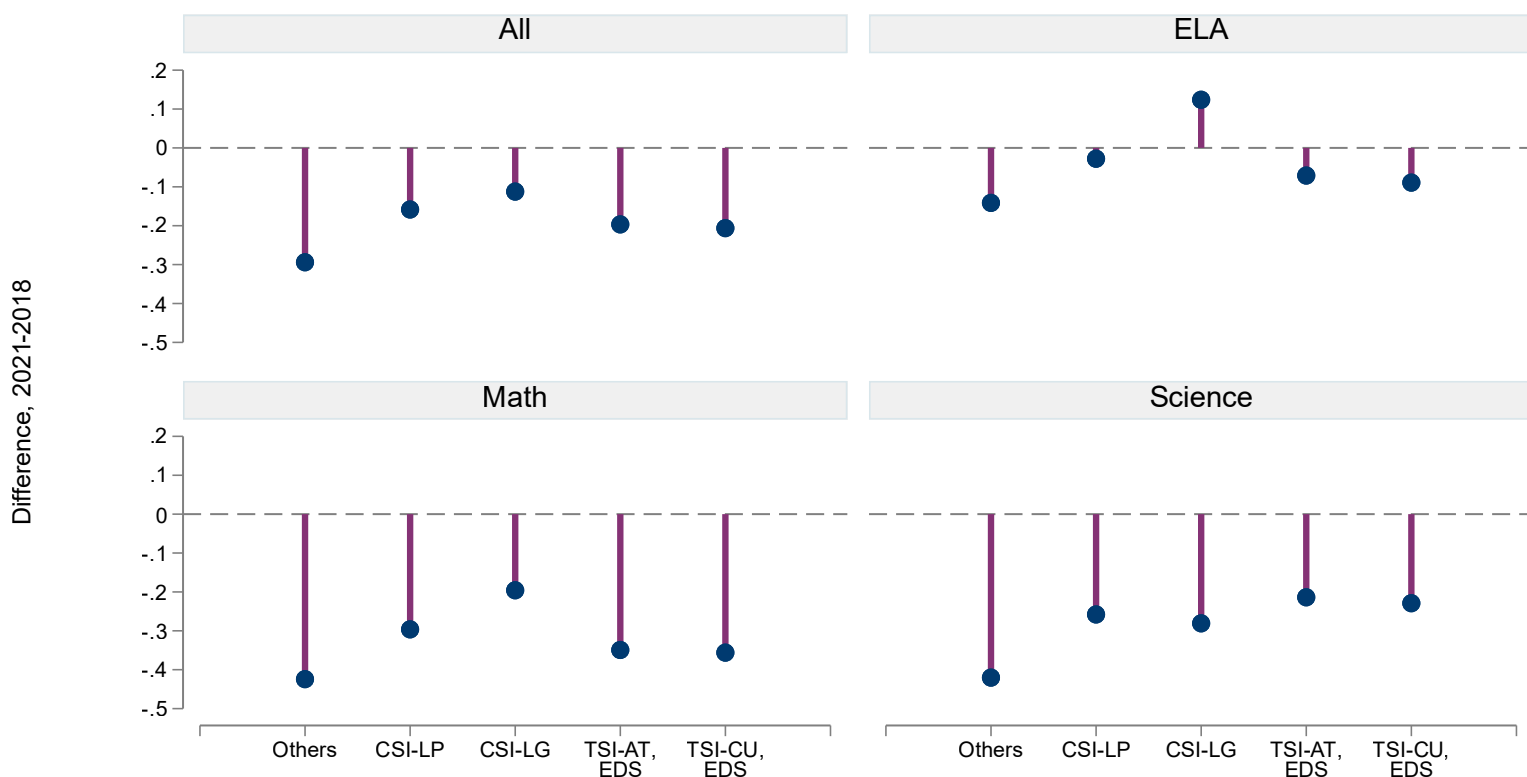
Figure 3. Association between pre-pandemic academic progress and pandemic-era academic progress



Notes: figure displays the association between school-level academic progress in 2018 and 2021 by economic status, across all tested subjects and for each subject separately. “All subjects:” average effect size across all tests, whether Math, ELA, or Science. Within each panel, schools are sorted into 20 equal sized groups according to their academic progress in 2018. Values on the x-axis represent the average academic progress of each school group during 2018, while values on the y-axis represent the average academic progress of each school group during 2021. Here, average differences between ED and non-ED students are -.04, -.08, -.02, and -.04 in “All subjects,” Math, ELA, and Science, respectively.

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Figure 4. Between-cohort differences in academic progress, economically disadvantaged students only



Notes: figure displays differences in average academic progress between 2021 and 2018 cohorts within five school groups, across all tested subjects and for each subject separately. “Other:” any school not designated as CSI or TSI. See [here](#) for more information on CSI and TSI schools. Negative measures indicate that 2021’s cohort made less progress than 2018’s cohort; positive measures indicate that 2021’s cohort made more progress than 2018’s cohort.

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Appendix. Support provided to CSI and TSI schools by NCDPI's Office of Federal Programs

See [here](#) for more information regarding school improvement efforts led by the Office of Federal Programs.

CSI: Comprehensive Support and Improvement

- Parent notification letter
- On-site support visits
- Office hours
- Additional funding, [PRC 105](#)
- Feedback on comprehensive plan submitted fall/spring through [NCStar](#)
- For schools not exiting CSI
 - o Consolidated monitoring
 - o Beginning 2023-2024: Support convenings
 - o Beginning Spring 2023: 60-day data report, including (if applicable) dropout rate, in-school suspensions, out of school suspensions, student attendance, certified staff attendance, four- and five-year graduation rate, and composite proficiency rates (whether on grade-level or college and career ready) for all subjects as well as Math I, English II, and Biology, separately

TSI-AT: Targeted Support and Improvement, Additional Targeted Support

- Parent notification letter
- Consolidated monitoring
- Consolidated funding from Title I, II, and IV

TSI-CU: Targeted Support and Improvement, Continually Underperforming

- Recommended additional planning and feedback through NCStar
- Consolidated funding from Title I, II, and IV

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