COLLABORATIVE FOR STUDENT GROWTH

BRIEF

School Effectiveness, Summer Loss, and Federal Accountability

By Jim Soland and Yeow Meng Thum

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KEY FINDINGS

- **School effectiveness measures are sensitive to summer loss.** Schools that would be held accountable based on students' fall-to-spring growth were often not the same as those that would be held accountable using spring-to-spring growth, a common practice under ESSA.
- **More student growth is attributable to schools when summer loss is considered.** Further, more of the gains in student test scores were attributable to schools when using fall-to-spring growth rather than spring-to-spring scores.
- **Ignoring summer loss can impact which schools are identified as low-performing under ESSA.** Thus, under ESSA, schools are likely being identified as low-performing based in part on decreases in growth during the summer when students are not in school. When coupled with previous research[iii] on summer loss that finds greater summer losses for students from lower-income backgrounds, this finding suggests we may be unfairly penalizing schools serving the most marginalized students.

The Every Student Succeeds Act (ESSA) has significantly changed the nation's school accountability landscape. Increasingly, schools are being held accountable for their contributions to student academic growth, with many states weighting growth as much as, or more than, single point-in-time achievement measures. Thus, the stakes for estimating student growth in a reliable and justifiable way are higher.

Research shows that estimates of school effectiveness are sensitive to seasonal patterns in student achievement data, particularly summer loss, and whether estimates account for the time students spend out of school during the summer. Studies have shown that if accountability models do not account for summer loss, rank ordering of schools based on their contribution to growth can shift, and impact which schools are deemed effective or ineffective[i,ii].

Summer loss measure: a drop in test scores during the summer months when students are not in school.

Despite these findings, accountability plans and program evaluation methods typically ignore summer learning loss. In many cases, this omission is because of lack of data (e.g., if states test students only once per year, within-year growth from fall to spring cannot be estimated). Another main reason that summer loss is often ignored in accountability measures is that accounting for both within-year (fall-to-spring) and between-year (spring-to-spring) growth together in the same model is complicated.

In this study, we applied the Compound Polynomial, or "CP," model in a school evaluation context to address the seasonality of student achievement data. The CP model simultaneously estimates between- and within-year growth. In this context, the CP represents a powerful new statistical model that can be used to estimate school effectiveness in the presence of seasonal data.

From a policy standpoint, the study provides evidence of how much ignoring summer loss may impact school accountability determinations under ESSA and other accountability frameworks that draw evidence from student growth in achievement. Using MAP Growth assessment data from a cohort of students in a state located on the east coast who tested in reading and math in fall and spring from second grade to sixth grade, the study utilized the CP model to estimate school contributions to student growth for 570 schools and, thereby, address three questions:

1. How much did students' within-year growth shift over time as they move through school?
2. How much of the variation in growth was attributable to the school for fall-to-spring versus spring-to-spring estimates?
3. How strongly correlated were estimates of school effectiveness that used fall-to-spring versus spring-to-spring estimates?

The CP model fit the data better than traditional growth curve models by better approximating the saw-toothed pattern in student performance, characterized by growth within-year from fall-to-spring followed by declines in scores the following fall.

Our findings showed that fall-to-spring growth was higher in lower grades, where students gained 13 to 14 points on the test scale during the school year, and slowed as students progressed through elementary school by 1.4 to 3.9 points per year. Thus, evaluations of schools based on fall-to-spring growth are likely sensitive to grades served by the school without sufficient control for these differences in the model.

Measuring growth from fall-to-spring versus spring-to- spring changes which schools would be identified as ineffective.

The model showed that while the correlations between spring-to-spring and fall-to-spring growth were often relatively high (.7 or higher) this was not always the case. Further, other research suggests that correlations of school value added model estimates that fall below .90 can have substantive ramifications for schools when estimates are used for accountability. Using that standard, all of the correlations between school effectiveness estimates were low enough that failing to account for summer loss would likely lead to very different schools being identified as low-performing under ESSA.

More student growth is attributable to schools when summer loss is accounted for in the model.

This study provided further evidence of what has been found in other research: more of the variance in student achievement and growth is at the school level when using fall-to-spring gains, sometimes two or three times more than when using spring-to-spring growth. This finding makes intuitive sense: schools are more strongly associated with academic growth during the time when students are actually in school. While additional research is needed, this finding, along with similar observations by others , suggests that schools may be deemed ineffective under ESSA in part because of growth or loss outside of school, during summers. Since summer losses may be higher for students from lower-income backgrounds , the impact of ignoring these losses may be even higher for schools serving the most marginalized students.

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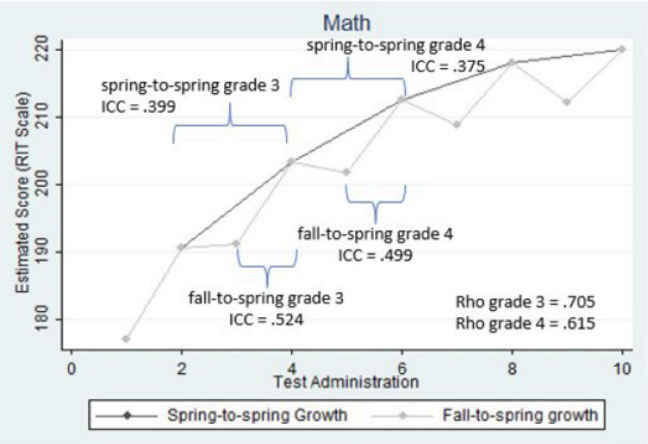

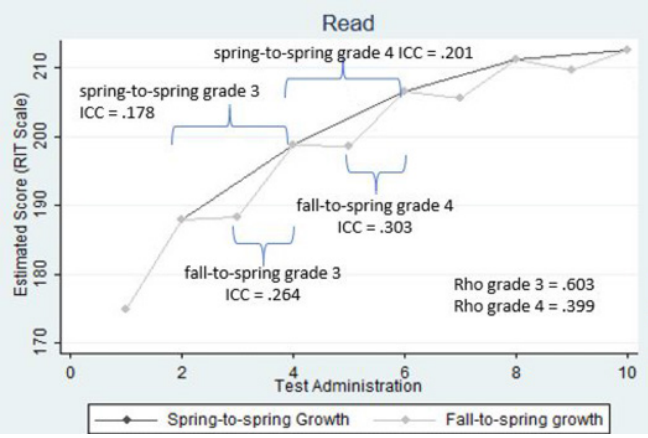

Model-based estimates of scores with correlations of Z-score estimates and Intraclass Correlations (ICCs)

RECOMMENDATIONS

Ensure policies that ignore summer loss are not punishing schools for learning patterns they cannot directly influence.

Seasonality of achievement data, including summer loss, impacts many important school effectiveness measures. Schools that would be held accountable based on students' fall-to-spring growth were often not the same as those that would be held accountable using spring-to-spring growth. This finding likely has strong implications for schools serving low-income students, who often do not have the same resources and supports during the summer.

Engage in a broader policy discussion about whether schools should be accountable for what happens during the summer.

A broader policy conversation is needed about the extent to which schools should be responsible for how learning changes during the summer months.

If policymakers do want schools to be accountable for the summer months, we also need to provide sufficient resources to serve students during those months and consider additional actions to combat summer learning loss.

[i] Gershenson, S., & Hayes, M. S. (2018). *The implications of summer learning loss for value- added estimates of teacher effectiveness.* Educational Policy, 32(1), 55–85.

[ii] McEachin, A., & Atteberry, A. (2017). *The impact of summer learning loss on measures of school performance.* Education Finance and Policy, 12(4), 468–491.

[iii] Alexander, K. L., Entwisle, D. R., & Olson, L. S. (2007). *Summer learning and its implications: Insights from the Beginning School Study.* New Directions for Youth Development, 2007(114), 11-32.

[iv] Koedel, C., & Betts, J. (2010). *Value added to what? How a ceiling in the testing instrument influences value-added estimation.* Education, 5(1), 54–81.

[v] McEachin, A., & Atteberry, A. (2017). *The impact of summer learning loss on measures of school performance.* Education Finance and Policy, 12(4), 468–491

[vi] Alexander, K. L., Entwisle, D. R., & Olson, L. S. (2007). *Summer learning and its implications: Insights from the Beginning School Study.* New Directions for Youth Development, 2007(114), 11-32.

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ABOUT THE
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The Collaborative for Student Growth at NWEA is devoted to transforming education research through advancements in assessment, growth measurement, and the availability of longitudinal data. The work of our researchers spans a range of educational measurement and policy issues including achievement gaps, assessment engagement, social-emotional learning, and innovations in how we measure student learning. Core to our mission is partnering with researchers from universities, think tanks, grant-funding agencies, and other stakeholders to expand the insights drawn from our student growth database—one of the most extensive in the world.

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