ASSESSING THE VALIDITY OF THE GROWTH INDICATOR ON THE OKLAHOMA SCHOOL REPORT CARDS

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Background

In February of 2019, the Oklahoma State Department of Education (OSDE) published the Oklahoma School Report Cards (www.oklaschools.com), which represented a complete overhaul of the state's accountability system as required by the Every Student Succeeds Act (ESSA). Included in this new system is a measure of student growth on state assessments in Mathematics and English Language Arts (ELA). Schools received an overall growth score on a scale of 0 to 2, with 1 corresponding to an average of one year's worth of growth. More information regarding Oklahoma's growth measure can be found on OSDE's accountability website.

Because accountability is the most informative when schools are evaluated on outcomes for which they have some control, it is imperative to establish the validity of the actual accountability measures against that goal. Thus, the accountability growth score was compared to the average relative student growth for each school.

Relative Student Growth

In 2018, SAS, a worldwide leader in analytics software, partnered with OSDE to produce estimates of relative student growth on the 2018 state assessments. Relative student growth is a predictive measure that compares a student's assessment score to a predicted score based on the pattern of performance of students with the same testing history. Relative student growth is then defined as the extent to which a student scored higher or lower relative to their predicted score. By accounting for previous assessment performance, this measure almost completely removes the influence of a student's demographics (e.g., economically disadvantaged status; SAS, 2016). Thus, this measure effectively controls for factors that are beyond a school's control.

A relative growth score of zero for a school indicates students, on average, scored as predicted. Positive scores provide evidence that students within a school are performing at a higher level than other students with similar ability. Negative growth scores provide evidence that students within a school are under-performing compared to their similar peers.

Correlation Analysis

Scatterplots that show the relationship between relative student growth and school report card growth for both Math (*Figure 1*) and ELA (*Figure 2*) can be found on the subsequent page. For Math, the correlation between school report card growth and relative student growth was 0.84. For ELA, the correlation was 0.71, both strong correlations. For context, these correlations are similar to the correlations between assessment scores taken by the same student within the same subject (ranging from 0.77 to 0.81). Thus, the size of these correlations indicate significant overlap in the two different growth measures.

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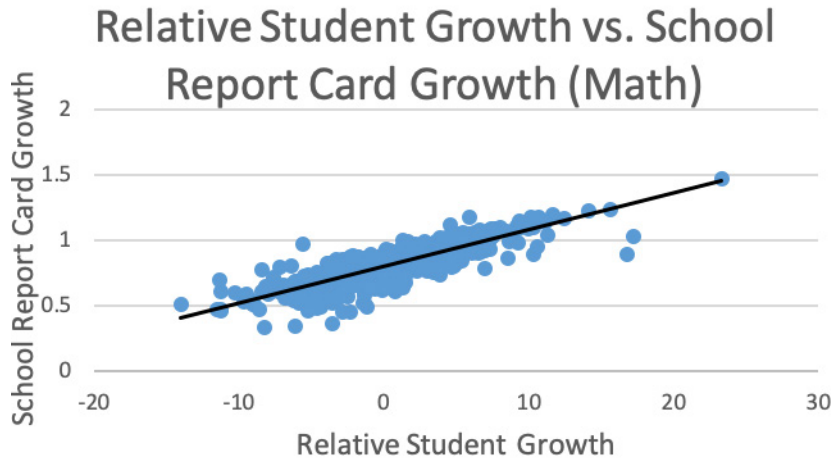
Figure 1. Scatterplot showing the correlation between the two growth measures in Mathematics.
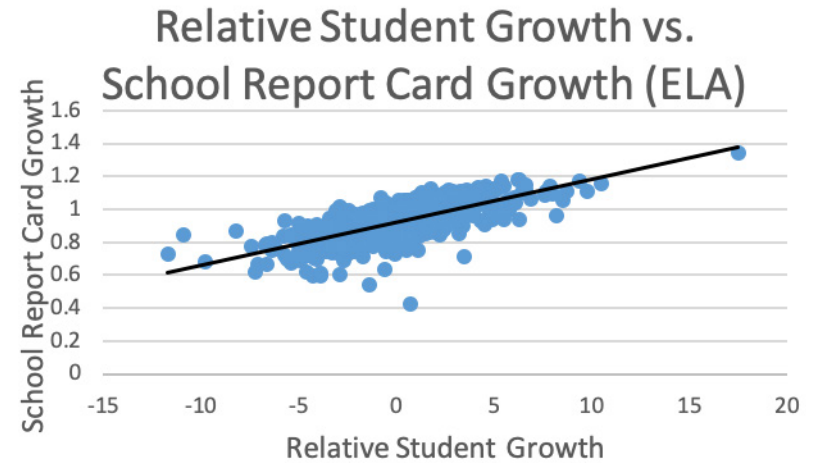
Figure 2. Scatterplot showing the correlation between the two growth measures in English\Language Arts.

Conclusions

The strength of the correlation for both subjects provides evidence that the growth measure used on the Oklahoma School Report Card provides information about a school that is very similar to a more sophisticated statistical model of relative student growth that explicitly adjusts for prior performance. Schools that had low relative student growth also had lower scores for growth on the school report card. Likewise, schools that had high relative student growth also had higher growth scores on the school report card. Overall, this correlation affirmation supports the validity of the school report card growth score as a fair and reliable measure of student improvement within a school.

It is also important to note that the school report card growth measure is far easier to understand then SAS's relative student growth model. In fact, with tools provided by OSDE, any school can replicate their growth score at any step. This replication process leads to Oklahoma's school report card growth measure being much more transparent than other growth models while conveying much of the same information.

References

SAS Institute. (n. d.). *SAS® EVAAS® for K-12 statistical models.* Retrieved May 29, 2019, from https://www.sas.com/content/dam/SAS/en_us/doc/whitepaper1/sas-evaas-k12-statistical-models-107411.pdf.

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