

## Using Kindergarten Entry Assessment Data to Measure Student Learning Growth from Kindergarten through Grade 3

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The early grades lay an important foundation for students' future academic success. Yet, not a single state systematically measures how well its schools support academic growth from kindergarten entry through grade 3, or K–3. The Maryland State Department of Education (MSDE) partnered with the Mid-Atlantic Regional Education Laboratory (REL) to explore whether a school-level K–3 growth measure could be constructed to more effectively guide policy and resources to improve early learning. Using a similar approach to what Maryland currently uses for later grades (based on student growth percentiles), the study measured student growth for both reading and math, based on two assessments: Maryland's Kindergarten Readiness Assessment (the KRA) and the grade 3 Partnership for Assessment of Readiness for College and Careers (PARCC) assessment. The REL team conducted analyses and provided coaching to MSDE staff so that they understand the strengths and limitations of the growth measure and can construct the growth measure using future cohorts of students. This presentation will discuss the results of the analyses and describe how the findings and analytic approaches can be used to inform stakeholders about school performance in the early grades.

The research addressed the following questions:

1. Can school-level student growth percentiles for grades K–3 be estimated using the KRA and the PARCC?
2. Are schools' K–3 growth estimates valid and precise, relative to the estimates used for accountability in later grades?
3. How does school size affect the precision of K-3 growth estimates?
4. How would administering the kindergarten assessment to a random subsample of students affect the precision of the growth estimate?

MSDE sought to investigate the feasibility of using an early-elementary growth measure to better understand the performance of elementary schools, and to consider the possibility of expanding its current accountability system to include a growth measure from kindergarten to grade 3. Growth is one of four indicators that Maryland uses in its accountability system for elementary and middle schools and is worth one-quarter of a school's accountability points. Currently, growth for elementary schools is measured only for students in grades 4 and 5 (Maryland State Department of Education, 2018). Having a growth measure from kindergarten

to grade 3 would enable MSDE and districts to identify high- and low-performing elementary schools, to help inform policies aimed at improving early learning, and (potentially) to hold elementary schools accountable for student growth in all grades, as it does for middle schools.

Analyses to address these questions used statewide administrative data provided by the Maryland State Department of Education (MSDE) on students attending Maryland public schools. The study included students with a valid 2014/15 KRA score and a valid 2017/18 grade 3 PARCC score (54,393 students were included in the math model and 54,397 students were included in the reading model, representing 86 percent of all students with a 2014/15 KRA score). Assessment score data included Kindergarten Readiness Assessment (KRA) scaled scores from the 2014/15 school year and grade 3–6 Partnership for Assessment of Readiness for College and Careers (PARCC) reading and math scaled scores from 2014/15 through 2017/18. The data also included student demographics and attendance data for students in the sample. Data were linked across files using student identification codes.

Reporting school-level K–3 growth results, with or without incorporating such a measure in Maryland’s formal accountability system, would break new ground. No other state currently measures K–3 student growth statewide for accountability purposes (O’Keefe, 2017) and few states have measured growth using a kindergarten assessment, which typically differ from later grade assessments in format and scope. Equipped with a valid K–3 growth measure, MSDE would be able to identify elementary schools with low- and high-performing early grades, and more effectively guide policy and resources to improve those schools. With more than 25 states using kindergarten entry assessments (REL Northwest, 2017), this study provides a blueprint for constructing early elementary growth measures using different assessments that are administered more than one year apart. If Maryland decides to use the growth measure for accountability, the REL is prepared to provide support to MSDE staff in replicating the analyses annually.

MSDE is reviewing the findings and discussing them internally. Findings are embargoed by U.S. Department of Education’s Institute of Education Sciences until the study is published in October 2019, but will be available to share at SREE.