

## **Partnering to Conduct Research on Using Kindergarten Entry Assessments to Track City Progress in Promoting Reading Proficiency**

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Increasingly, states are using Kindergarten Entry Assessments (KEAs) to measure children's school readiness when they enter kindergarten. KEAs can be used by policymakers to inform policy decisions about early learning systems and by teachers to identify children's skills (Regenstein, Connors, Romero-Jurado, & Weiner, 2017). The School District of Philadelphia wanted to explore another potential use for their KEA – as an interim measure of later reading proficiency to track citywide progress toward substantially increasing the percentage of students who can read on grade level by the end of grade 3. School District of Philadelphia staff recognized that research was needed to determine whether their KEA could be used as an indicator of later reading proficiency and approached the Mid-Atlantic Regional Educational Laboratory (to partner in addressing this research question. Over the course of one and a half years, the REL team conducted analyses and provided coaching to School District of Philadelphia staff so that they can conduct similar analyses in the future. This presentation will discuss the results of the analyses and describe how the analyses and skills learned will be used to inform decision-making.

To develop the indicator of being on-track for reading proficiency, we addressed the following questions:

1. What is the relationship between children's competencies at the start of kindergarten and their reading skills in grade 3?
2. What threshold score on the KEA most accurately predicts reading proficiency at the end of grade 3? What threshold score on the KEI would be most accurate for identifying individual students who are at risk of not being proficient in ELA on the grade 3 PSSA?

Analyses to address these questions used district data on 3,521 kindergarteners with scores on two validated dimensions of the state's KEA (Emerging Academic Competencies and Learning Engagement Competencies) and the 3rd grade state reading assessment. We first randomly selected "training" and "testing" data to check that the results are not unique to the sample used. We then weighted the analytic sample that included kindergarteners with KEA and 3rd grade reading scores to reflect the characteristics of all students with scores on the KEA. We

then assessed sensitivity (the rate of accurately identifying students who are proficient) and specificity (the rate of accurately identifying students who are not proficient) for models that set a threshold on the Emerging Academic Competencies, Learning Engagement Competencies, or a combination of both scales based on coefficients from a logistic regression. REL staff worked with School District of Philadelphia to select a threshold that accurately predicted the proportion of proficient students in the kindergarten cohort. We then assessed the accuracy of the selected threshold in the “testing” data. We also explored alternative thresholds that might be more appropriate for other purposes, such as identifying individual students for additional testing to determine whether they need additional supports.

The research team complemented the analyses with technical support to School District of Philadelphia research and policy staff to understand the analyses and to make critical decisions, such as where to set the threshold for identifying students as on-track. Notably, technical support was also designed to support School District of Philadelphia staff to independently apply the threshold to future cohorts of students, and to use the data analysis programs to conduct similar analyses using student assessment data from two points in time. For example, additional analyses could use alternative kindergarten assessments, assessments from later years, or more recent cohorts of kindergarteners to set thresholds to track reading proficiency and identify students who need additional testing to determine if they need reading supports. This goal of “transferring the technology” distinguishes the REL partnership from many other partnerships as it aims to support the data analytic capacity of School District of Philadelphia staff so that the approach can become part of their regular data analysis and district improvement efforts.

The School District of Philadelphia will use the KEA threshold in future cohorts of kindergarteners to measure changes over time in the percentages of students entering kindergarten who are on-track for reading proficiently in grade 3. The indicator can provide useful information on the progress of families and organizations across the city in promoting children’s early development from birth to kindergarten entry and can inform the city’s continued investments in early education. The School District of Philadelphia could also use the KEA to identify schools and students who may require additional supports.

Overall, the study provides a basis for an important use of KEAs that other states or districts could consider. Many other states are in the process of understanding how to use KEAs to inform instruction, identify students in need of additional support, and measure children’s school readiness and progress in early grades (Shields, Cook, & Greller, 2016). Links between teacher-reported early learning skills and children’s reading proficiency in later grades support the use of KEAs as an aggregate indicator of children’s later skills and provide important insight into how early teacher-rated skills relate to later, direct assessments of reading.

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.