Using kindergarten entry assessments to measure whether Philadelphia's students are on-track for reading proficiently

A threshold of 6 resulted in the percentage of students above the threshold matching the actual proficiency rate
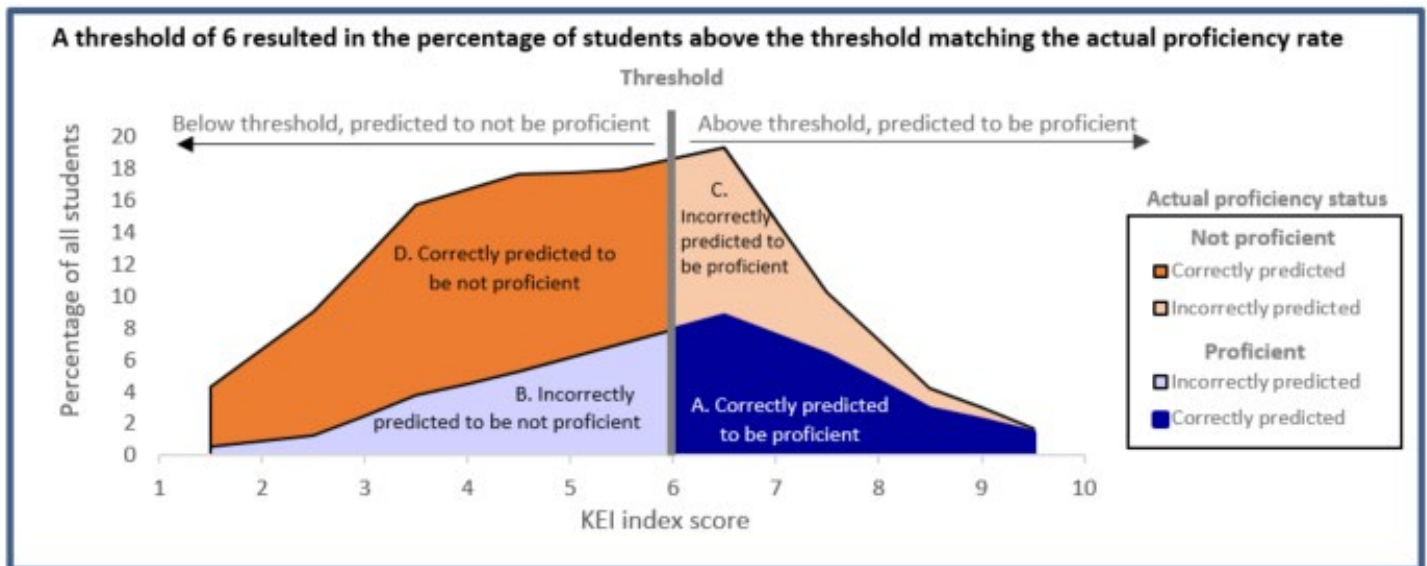
KEI is Kindergarten Entry Inventory. PSSA is Pennsylvania System of School Assessment.

Note: Analysis based on the random sample of 3,521 students with both KEI and grade 3 PSSA scores and was weighted to represent all students with KEI scores. Data were aggregated to smooth out the distribution, so no data are displayed at exactly 1 or 10.

Source: Authors' analysis based on School District of Philadelphia 2014/15 and 2017/18 data.

The School District of Philadelphia (SDP) is a partner in the Free Library of Philadelphia's _Read by 4th_, a citywide initiative that aims to substantially increase the percentage of students reading on grade level entering grade 4. To measure the percentage of entering kindergarteners on-track to meet this goal, SDP partnered with the Regional Educational Laboratory Mid-Atlantic to develop an indicator based on the Pennsylvania Kindergarten Entry Inventory (KEI). This study focused on SDP students who took the KEI in 2014/15 and the grade 3 Pennsylvania System of School Assessment (PSSA) in English language arts (ELA) in 2017/18.

KEY FINDINGS

❖ Higher Kindergarten Entry Inventory scores predicted grade 3 Pennsylvania System of School Assessment proficiency. Therefore, the study team used findings on the predictive power of the two KEI dimensions to create a 1-10 point index. In this index, the Emerging Academic Competencies (EAC) dimension received greater weight than the Learning Engagement Competencies (LEC) dimension, because a 1-point increase on the EAC was associated with a greater increase in the probability of students being proficient than a 1-point increase on LEC (25 percent more likely to be proficient versus 2 percent).

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- The study identified a threshold that accurately predicted the actual grade 3 proficiency rate for the study cohort (37 percent). However, this threshold (6 on the 1-10 point index) made incorrect predictions for roughly one-third of individual students. The threshold accurately predicts overall rates of reading proficiency because errors for individual students above and below the threshold cancel each other out in the aggregate (that is, areas C and B in the accompanying figure are equal).

- Other thresholds or measures may be more appropriate for identifying individual students for reading supports. For example, a threshold of 7 on the index of the two KEI dimensions made correct predictions for 91 percent of students who were not proficient on the PSSA, but it only made correct predictions for 29 percent of students who were proficient. In addition, students' scores on a different reading assessment (the AIMSweb) from the spring of kindergarten through grade 3 were also associated with their ELA scores on the grade 3 PSSA. The strength of the associations between AIMSweb scores and grade 3 PSSA scores generally increased from kindergarten to grade 3.