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## Predictive ability of KRA-L on third grade reading proficiency in Cleveland

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Over the last two decades there has been rising interest in strategies to improve children's preparedness to learn upon kindergarten entry (RAND, 2005). The notion of 'kindergarten readiness' reflects the competencies and skills children need to possess to thrive in the kindergarten year (Kagan & Rigby, 2003).

In Ohio, kindergarten readiness is directly assessed for all children entering kindergarten using the KRA-L (Kindergarten Readiness Assessment – Literacy), which is administered by kindergarten teachers during the first three weeks of the fall term (Ohio Department of Education, 2014). The KRA-L was first implemented in public school districts beginning in 2007. It has a value of 0-29 and has three score bands: Band 1=0-13 (Assess broadly for intense instruction), Band 2=14-23 (Assess for targeted instruction), and Band 3=24-29 (Assess for enriched instruction). Children scoring in Band 1 may be at serious risk of being unprepared for the kindergarten experience.

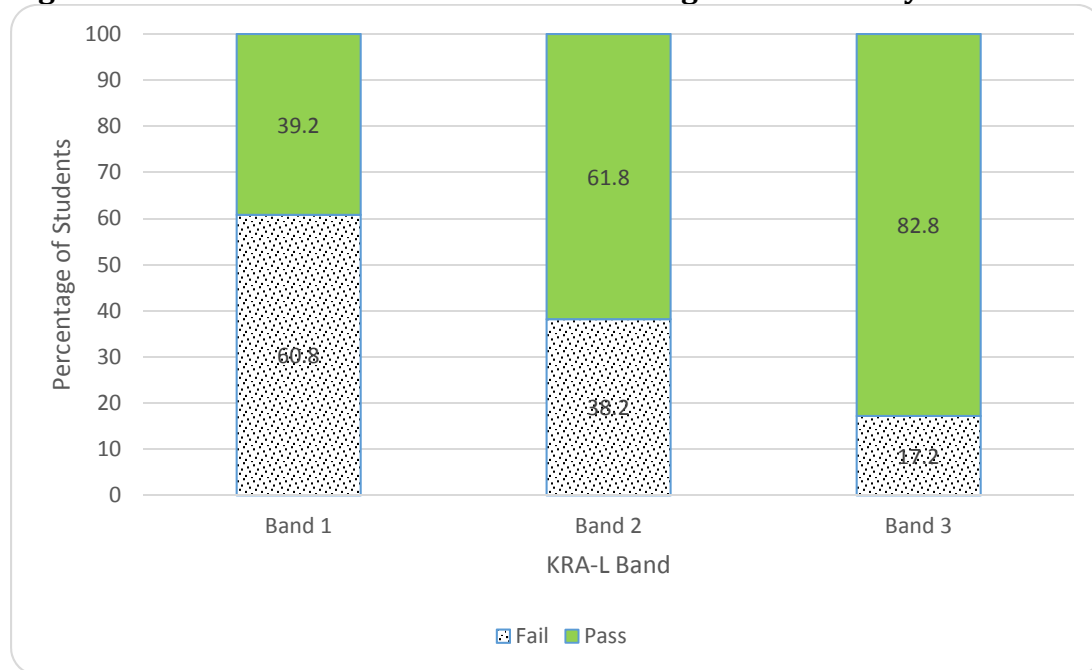
Though the KRA-L has been in use in Ohio since 2007, there has been little information available about its validity as a measure of literacy skills. One aspect of validity is the consistency with which the measure is predictive of other indicators of literacy, such as the third grade reading assessment in the Ohio Achievement Assessment (OAA). Recently, researchers at The Ohio State University completed a study of the predictive ability of the KRA-L on third grade reading based on students who entered kindergarten in the Columbus School District between 2005-2009 (Logan, Justice, & Pentimonti, 2014). Overall, Logan et al. (2014) reported a strong positive correlation between the KRA-L and the OAA Reading Assessment ( $r=.47$ ,  $p<.001$ ). Specifically, five of the six KRA-L subtests were significantly related to third grade reading scores. In addition, they found KRA-L bands were predictive of a student's likelihood of passing the OAA Reading Assessment.

The present study was undertaken to replicate, in part, the Columbus study using a sample of children enrolled in the Cleveland Metropolitan School District (CMSD). The focus here, however, is on the overall predictive ability of the KRA-L score, rather than that of the subtests. Previous studies of high quality early learning strategies in Cuyahoga County have shown that participating children arrive at kindergarten with mean KRA-L scores 2.5 points higher than unserved children (Fischer, Lalich, & Coulton, 2013). This finding raises the question about what increments on the KRA-L might tell us about students' future success, especially when the increment does not change the KRA-L band in which the student falls.

As part of a study funded by the Ohio Education Research Center, KRA-L scores and 3rd grade OAA reading scores were linked for three cohorts of kindergarteners in CMSD (2008-2010). The final sample size is 5,273 students.

Overall, KRA-L bands strongly and positively predict OAA reading assessment passage. See Figure 1. Among children who scored in Band 1 on the KRA-L, 61% did not pass the OAA reading assessment in third grade. The pattern is reversed for children scoring in Band 3 of the KRA-L in that 83% of these students did pass the OAA third grade reading assessment. Among children scoring in Band 2 on the KRA-L 62% later passed the third grade reading assessment.

**Figure 1: Performance on Third Grade Reading Assessment by KRA-L Band**



Using logistic regression to predict OAA reading passage, the results show that a 1 point increase in KRA-L is associated with 12.1% increase in the odds of passing OAA 3rd grade reading assessment (Beta=0.1138, Odd ratio=1.121, p<.001). This result did not control for any covariates.

This finding suggests that incremental improvements on the KRA-L may well equate to academically significant changes in a student's future performance. For example, among students in the Cuyahoga County UPK program where the mean KRA-L is 2.5 points higher than non-UPK students, this equates to a 30% higher odds of passing the third grade reading assessment. In light of this, early childhood practitioners, providers, and funders should see the KRA-L not as an end in itself but as a marker of later academic success for the children they serve.

## Sources

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