

## Learning to Read: Kindergarten Readiness Growth in Reading Skills\*

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### ABSTRACT

Much of the research on curriculum-based measurement (CBM) in reading has focused on oral reading fluency (ORF). However, ORF is only one of five critical reading skill areas in the wider construct of reading that includes foundational skills such as phonological awareness and phonics. In this research brief, we address the construct of readiness in learning to read entering Kindergarten, and then redirect the findings to the results from learning to read over both Kindergarten and Grade 1. Our results suggest that ‘readiness’ may be defined more by social-behavioral indicators than by more strictly academic skills, and that while students enter Kindergarten with low levels of early literacy performance, on average, they appear to learn at dramatic rates.

For over 30 years, oral reading fluency (ORF) has garnered much of the attention of researchers interested in investigating reading development and growth through the use of curriculum-based measurement<sup>2</sup> (CBM). However, ORF is just one of five major areas of reading identified in the seminal Report of the Commission on Reading, in which the federal government made a nationwide call to emphasize reading in our nation’s schools<sup>3</sup>. Due primarily to No Child Left Behind Act (NCLB) accountability testing and associated federal initiatives around literacy improvement (e.g., Reading First), early reading development has begun to garner greater attention from researchers and policy makers<sup>4</sup>. For instance, researchers have found that emergent literacy skills such as letter naming, letter sounding, phonemic awareness, and word reading are key predictors of later, more conventional reading skills such as ORF and comprehension<sup>5</sup>. Furthermore, couched within a context of accountability testing that demands all students are reading proficiently

by the end of third grade, policy makers also have placed importance on early reading success, including directing attention toward improving the quality of and access to preschool education to improve Kindergarten readiness.

To explore early literacy skill development, we conducted two studies: (a) an investigation of the construct of “readiness” for students entering the public school system, and (b) documentation of student within-year growth in which student demographic characteristics predict initial status and growth in Kindergarten and first grade. We organize this research brief by sample, measures used, and analyses conducted at the Kindergarten and Grade 1 levels.

### Sample

In the first study, 1,228 Kindergarten students from 16 districts, 33 schools, and 31 teachers in a Pacific Northwest state participated in a state-sponsored readiness pilot study in 2012. In the second study, we used data from an extant database encompassing a nationwide sample. Existing data from the 2011-2012 academic year were extracted from the easyCBM district-member database; approximately 4,500 Grade K-1 students were included in Study 2.

### Measures

In the first study, data on student intra-personal and inter-personal behavior as well as early literacy skills were gathered. Teachers used a 17-item rating scale to rate students on the frequency with which various classroom behaviors were present and also administered a variety of easyCBM early literacy interim-formative assessment measures<sup>6</sup> developed from earlier empirical research on early literacy assessment shown to be important predictors of later reading skills and growth. In both studies, individually-administered measures of Letter Names,

Phoneme Segmenting, and Letter Sounds were administered. In Study 2, a Word Reading Fluency measure was also administered to students in first grade.

## Results

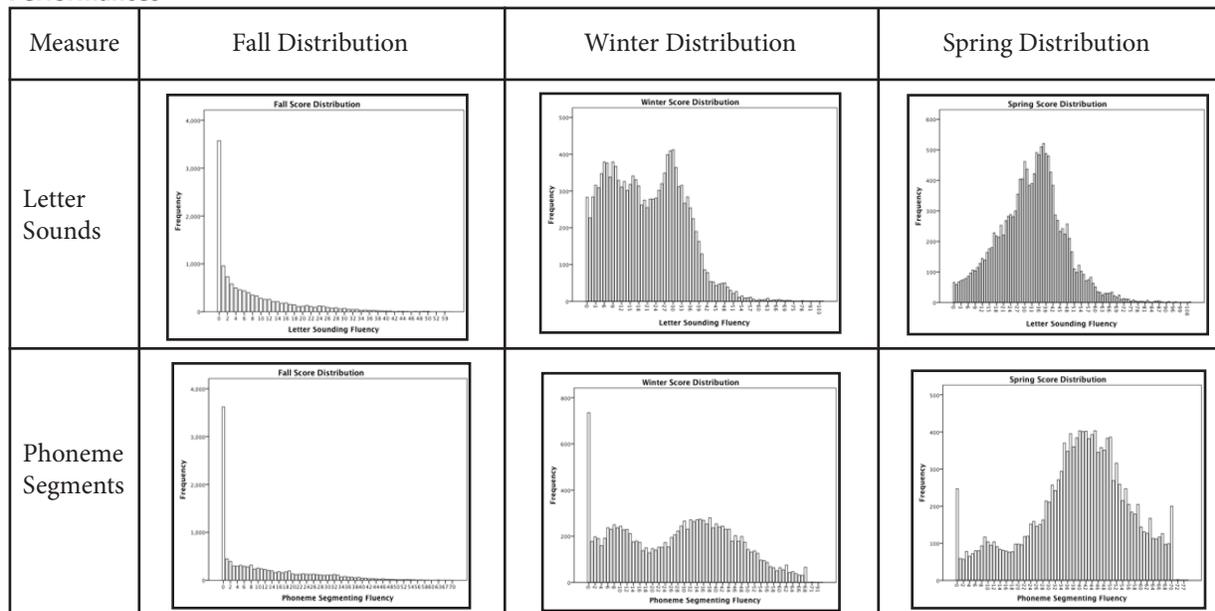
In the first study, using a combination of exploratory and confirmatory factor analysis, we found that three key factors defined the construct of Kindergarten readiness. The first factor was defined by rating scale items associated with student task behaviors (e.g., responding to teachers, following directions, being successful on task completion). The second factor was defined by student social behaviors (e.g., taking turns, complying with others, sharing, cooperating). The three early literacy skill behaviors of letter naming, letter sounding, and phoneme segmenting comprised the third factor. Of particular note in the first study were the relative importance of the two behavioral dimensions and letter sounds early literacy skill behavior as defining dimensions of the “readiness” construct.

In the second study, using simple descriptive analyses we examined student outcomes on early literacy measures administered at three seasonal time points across the school year (i.e., fall, winter and spring). Of note was the dramatic change over the year in the distributions for the two measures administered at all three time periods in Kindergarten. While initially severely positively skewed (most students performed in the low end),

the distributions for Letter Sounds and Phoneme Segments measures progress to nearly normal by the spring (Figure 1). A similar pattern was seen for first grade Word Reading, while Letter Sounds began nearly normally distributed for first-grade students in the fall and maintained the shape through spring.

As a follow-up investigation, we used hierarchical linear modeling, a technique that accounts for the nested nature of data measuring change in students over time (i.e., time and type of early literacy measurement nested in individual students), to control for individual performance at each of the seasonal testing time periods. Of note in the second analysis was the rate at which students grew on early literacy measures over the course of Kindergarten and first grade and the ways in which demographic variables influenced both initial status and growth on these measures. For example, on average, students began Kindergarten being able to produce 7 letter sounds correct per minute and grew at a rate of .75 letter sounds per week over the school year, while students in first grade began the school year correctly giving 30 letters correct per minute and improved at a rate of about .50 letter sounds per week over the year. Student demographic characteristics predicted both initial status and growth in early literacy skills over time. Of note, both receipt of special education services and English language learner status, negatively influenced initial skill levels, with students receiving special education

**Figure 1. Kindergarten Distributions for Letter Sounds and Phoneme Segments from Fall to Winter to Spring Performances**



services also generally growing at lower rates compared to those who did not.

### Implications for the Field

Overall, our results suggest that social-behavioral indicators might more heavily influence assessment of Kindergarten readiness compared to those that are more strictly academic in nature – a hypothesis that merits exploration in future empirical research. In documenting several thousand students from across the United States, it was apparent that students arrive in our schools with low levels of early literacy performance but learn at dramatic rates. As legislature focuses on Kindergarten readiness for all students, it is imperative for researchers to help guide this focus. Of critical importance is the need to better define the construct of readiness both over time and in a manner that uses valid and reliable social-behavioral and academic measures of student development.

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