

Readiness for Entering Kindergarten: The Impact on Future Academic Achievement

Study Summary

About the Research: “Readiness for Entering Kindergarten: The Impact on Future Academic Achievement” study¹ was headed by Lynn Fielding, co-author of the books *The 90% Reading Goal* and *Annual Growth, Catch-Up Growth*, using one of the largest kindergarten to fifth grade longitudinal datasets in existence.

Data: The data analyzed consisted of a set of fall and spring math and language & literacy (reading) scores for 380,000 U.S. students (anonymous) from first through fifth grade, and included nearly 62,000 students with kindergarten scores.

Study Findings Highlights

Kindergarten literacy and math entry skill levels may be the single strongest factor in subsequent academic achievement.

1. Range. Students do not begin kindergarten with the same level of language and literacy skills. On day one, there is a wide range of abilities – as much as five years – in skills like vocabulary, letter sound and shape recognition, and sight word recognition.

2. Impact. Entering kindergarten scores account for 28 percent of the range in reading and 35 percent of the range in math by fifth grade.

- Students who start ahead tend to stay ahead. More than three quarters (76%) of students who started in the top 20 percent are still in the top (or second to the top) 20 percent entering fifth grade.
- Students who start behind tend to stay behind. The majority (71%) of students who began in the bottom 20 percent are still in the bottom (or second to the bottom) 20 percent entering fifth grade.

3. Movement in kindergarten. Students move up and down from their kindergarten entry scores, yet in terms of *net movement*, kindergartners will have moved about 85 percent as far by the first grade as they will by the eighth grade.

- Of children who start kindergarten in the lowest 20 percent and subsequently escape, 50 percent of them will do so during kindergarten.
- Only 12 percent of kindergarten students who start in the top 20 percent fall below the 40th percentile by fifth grade.
- Only 12 percent who start in the bottom 20 percent score above the 60th percentile by fifth grade.
- Two-thirds of students entering fifth grade are within ± 26 percentile points from the percentile they entered kindergarten.

When students enter kindergarten with very high or very low skill-levels and then make normal academic growth annually, the five-year range in skill levels continues. Without specific diagnostic intervention, the range carries all the way through eighth grade.

This data also suggests a school’s most effective teachers and discretionary resources will have more impact on students (and on subsequent district scores) at kindergarten, and to a slightly lesser extent at first grade, than in later grades.

When communities and families assure most students enter kindergarten at or above grade level, this problem is minimized for their districts.

4. Summer gain and loss. While individual reading gain or loss varies widely, as a group, students entering kindergarten below the 50th percentile will lose the equivalent of a half a year, while students in the top 20 percent will gain a half a year.

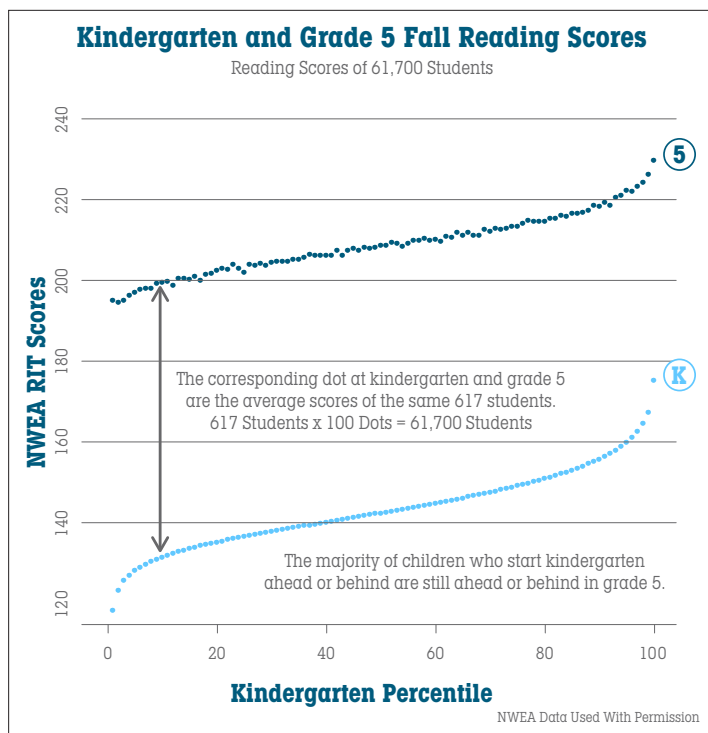
5. The reading/math relationship. Most children (88%) who enter kindergarten reading in the highest 20 percent also score in the highest (64%) or the second highest (24%) 20 percent in math. The majority of children (85%) who read in the lowest 20 percent also score in the lowest (60%) or the second lowest (25%) 20 percent in math.

6. Science. Science scores in fifth grade can be predicted almost as accurately as reading scores using entering kindergarten reading and math scores.

7. Correlations. The graph below is formed in four simple steps. First, by sorting the 61,700 kindergarten students from high to low by their Northwest Evaluation Association (NWEA) RIT Score. Second, by dividing them into 100 groups of 617 students each (percentile groups). Third, by averaging the scores of the students in each percentile group at kindergarten AND at fifth grade. Fourth, by graphing each kindergarten percentile group score at kindergarten and fifth grade. The correlations below are calculated by comparing the value of each percentile groups at kindergarten and fifth grade. Again, each percentile group (or dot) are the scores of the same 617 students.

The correlation between fall kindergarten and fall fifth grade language and literacy scores (reading) is 0.531 when calculated on an individual student basis, and above 0.950 when calculated on a group basis as shown in the graph.

According to Cohen’s standard, correlations between .10 and .29 are weak; between .30 and .49 are of medium strength and .50 and above are strong.



Download the Study at [ReadingFoundation.org/Research](https://www.readingfoundation.org/research)



¹Study by The Children’s Reading Foundation, January 2019. Analysis of Northwest Evaluation Association (NWEA) student test data by Lynn Fielding, Jay Maidment, and Christian Anderson. The Northwest Evaluation Association provides standardized testing tools for more than 9,500 school districts and educational agencies throughout 145 countries. NWEA data used with permission.