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Risk-Category Transition Patterns for Students in Grades 2 to 4*
By: Bitnara Jasmine Park, University of Oregon

ABSTRACT
Early identification of students who are at-risk for reading difficulties (RD) is critical for successful and effective RTI implementation. A large group of students were followed for three years (grades 2 to 4) to investigate transition patterns of risk-categories across three years. Results indicated that although students identified at high-risk for RD in earlier grades make similar growths to their peers who are not at-risk, they are highly likely to stay in the high-risk categories. Also, low-risk students with flat growth from fall to winter are at greater risk for RD in the later grades. Providing additional instruction to students at-risk regardless of their growth in earlier grades may prevent them from lagging behind further from their peers.

Response to Intervention (RTI) has been widely implemented by schools as an approach to identify struggling readers and to maximize the efficiency and effectiveness of resources and instruction (Fuchs & Fuchs, 2006; Wright, 2005). Oral Reading Fluency (ORF) has been widely used as a screening measure (Petscher & Kim, 2011; Reschly, Busch, Betts, Deno, & Long, 2009) because it allows educators to make early identifications of students at-risk for reading difficulties as early as the first couple years of their formal education (Catts, Compton, Tomblin, & Bridges, 2012). Although the identification procedure has been enhanced with the RTI approach, screening with a lack of understanding of reading growth and development can lead to failure to detect students who may present reading challenges in later grades (Catts et al., 2012; Speece, 2005).

Understanding within-year growth in ORF is helpful for modifying instruction for students. Also, understanding growth across multiple years could help to identify patterns in students' growth trajectories that suggest greater levels of future risk for reading deficiencies and help teachers to predict sooner which students are more likely to struggle with reading (Boscardin et al., 2008; Catts et al., 2012). To investigate reading development across multiple academic years, the following research questions have been posed:

(a) To what extent do students in the high-risk category stay in the same category across three years?

(b) To what extent do students in the high-risk category based on their spring benchmark score start the following school year in the high-risk category?

Method

Approximately, 1500 students from two school districts in the Pacific Northwest were followed for three years (Grades 2 to 4). Students were classifed into three risk categories based on their fall easyCBM (Alonzo, Tindal, Ulmer, & Glasgow, 2006) Passage Reading Fluency benchmark scores in each school year: high-risk (HR; below the 20th percentile), low-risk (LR; between the 20th and 50th percentiles), and high-achieving (HA; above the 50th percentile). Then, the transition probabilities of being one of the risk-categories across the three years were analyzed using crosstabulation analysis.

Findings

(a) Predicting the risk categories in Grades 3 and 4 (see Table 1)

- Approximately, 77%, 67%, and 70% of students stayed in the same risk categories between grades 2 and 3, 2 and 4, and 3 and 4, respectivvely.

- Approximately, 70%, 51%, and 65% of students who were in the HR category stayed in the same categories between grades 2 and 3, 2 and 4, and 3 and 4, respectively.

- Approximately, 6.5%, 13.2%, and 13.3% of students who were in the LR category transitioned to the HR category between grades 2 and 3, 2 and 4, and

3 and 4, respectively.
- Approximately, 86%-91% of students who were in the HA categoray stayed in the same category across three years.

(b) Predicting the fall risk categories using the

likely to be at HR in the following school years depiste the similar growths they make compared to their peers who are not at HR; thus, providing more intense instruction as early as possible is strongly recommended (see Figure 1).

Table 1. Transition Patterns of Risk-Categories Between Fall of Grades 2, 3, and 4

Grade 2 Fall	Grade 3 Fall			Grade 4 Fall			Grade 3 Fall	Grade 4 Fall		
	High-achieving	Low-risk	High-risk	High-achieving	Low-risk	High-risk		High-achieving	Low-risk	High-risk
High-achieving (672)	609 (90.6%)	61 (9.1%)	2 (0.3%)	575 (85.6%)	92 (13.7%)	5 (0.7%)	High-achieving (758)	655 (86.4%)	96 (12.7%)	7 (0.9%)
Low-risk (433)	132 (30.5%)	273 (63.0%)	28 (6.5%)	155 (35.8%)	221 (51.0%)	57 (13.2%)	Low-risk (435)	112 (25.7%)	265 (60.9%)	58 (13.3%)
High-risk (385)	17 (4.4%)	101 (26.2%)	267 (69.4%)	44 (11.4%)	144 (37.4%)	197 (51.2%)	High-risk (297)	7 (2.4%)	96 (32.3%)	119 (65.3%)
	Stayers (77%) Movers (23%)			Stayers (67%) Movers (33%)				Stayers (70%) Movers (30%)		

Note. High-achieving=above 50th percentile. Low-risk=between 20th and 50th percentile. High-risk=below 20the percentile.

spring risk categories (see Table 2)
- Approximately, 81% and 71% of students in the HR category in spring of grades 2 and 3, respectively, were identified as at HR in fall of the following school year.
- Approximatelty, 10% to 13% of students in the LR category in spring of grades 2 and 3, respectively, were identified as at HR in fall of the following school year.
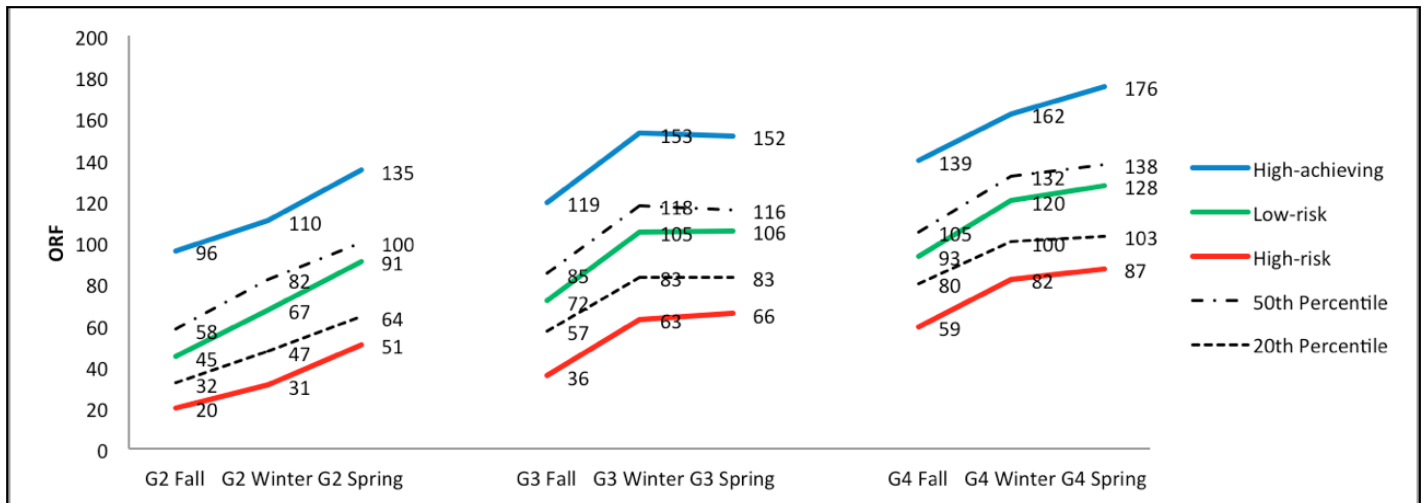
Implications
- Student performance on the ORF benchmark were stable across the three years across all three risk categories.
- Students identified at HR in grade 2 are highly

- Students in the HR category in spring are highly likely to start the following year as at HR; thus, providing supplementary academic supports during summer and/or as soon as the following school year begins is highly encouraged.

- Students at LR who transitioned to the HR category the following year have (a) a smaller grwoth from fall to winter and (b) a greater summer drop compared and to their peers who stayed in the LR categories. Thus, providing additional instruction to students who are making a "flat" growth from fall to winter may prevent these students to lag behind in the following year.

Table 2. Transition Patterns of Risk-Categories Between Spring of Previous Years and Fall of Subsequent Years

Grade 2 Spring	Grade 3 Fall			Grade 3 Spring	Grade 4 Fall		
	High-achieving	Low-risk	High-risk		High-achieving	Low-risk	High-risk
High-achieving (773)	647 (88.3%)	85 (11.6%)	1 (0.1%)	High-achieving (803)	678 (84.4)	119 (14.8)	6 (0.7)
Low-risk (451)	108 (23.9%)	296 (65.6%)	47 (10.4%)	Low-risk (406)	94 (23.2)	258 (63.5)	54 (13.3)
High-risk (306)	3 (1.0%)	54 (17.6%)	249 (81.4%)	High-risk (281)	2 (0.7)	80 (28.5)	199 (70.8)
	Stayers (80%) Movers (20%)				Stayers (76%) Movers (24%)		

Note. High-achieving=above 50th percentile. Low-risk=between 20th and 50th percentile. High-risk=below 20the percentile.

Figure 1. Student ORF growth rates between Grades 2 and 4.

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