Growth in easyCBM

• PRF WITHIN all grades
• PRF ACROSS all grades
• PRF within GRADE 4
• LSF Kindergarten Growth
Growth in easyCBM

Joe Nese
PRF WITHIN all Grades

• In Search Of Average Growth: Describing Within-year Oral Reading Fluency Growth For Grades 1-8
  • Nese, Biancarosa, Cummings, Kennedy, Alonzo, Tindal
  • Journal of School Psychology, 2013
PRF WITHIN all Grades

- Rates of growth in research and aim lines in practice are used to characterize student growth; in either case, growth is generally defined as linear, increasing at a constant rate over time.
- Linearity assumption may be inaccurate.
- We examined ORF growth within-year for students in Grades 1-8.
  - Other research limited by using only 3 testing occasions.
  - Our sample included Grade 1 to 8 students, drawn from the full range of abilities within each grade level and assessed up to 8 times per year.
• Comparing the trajectories across grades, we found that a decelerating growth curve best described ORF data.

• Grade 8…different.

• On average, across grades, students, actually experience a natural decrease in growth across the year.

• Why?
  • Many potential reasons:
    • summer effect,
    • state testing at the year end,
    • BUT, we cannot answer that question here.
PRF WITHIN all Grades

- Appropriate instructional planning to reach target.
PRF WITHIN all Grades

- Planned study with a partner district
- All students assessed 8 times/year (including benchmarks)
PRF ACROSS all Grades

• Ascending The ORF Slope: Three Methods To Identify Meaningful ORF Plateaus
  • Nese, Alonzo, Sàez, Tindal

• The purpose of this study is to estimate PRF “plateau” that represents the transition from acquisition to mastery for average student.

• Efficient with resources.

• Note: One approach of many to answer this question.
PRF ACROSS all Grades

Sample easyCBM norms
PRF ACROSS all Grades
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• Based on archived data.
• Limited findings.
PRF ACROSS all Grades
PRF Within GRADE 4

• Modeling Nonlinear Growth With Three Data Points: Illustration With Benchmarking Data
  • Kamata, Nese, Patarapichayatham, Lai
  • Assessment for Effective Intervention; *Article of the Year, 2013*

• The purpose of this article was to demonstrate ways to model nonlinear growth using three testing occasions: fall, winter, and spring passage reading fluency benchmark assessments.

• 2,100 Grade 4 students.

• Unobserved classes of students.
Class 1 (average)

Class 1 represented the majority of the sample, or the “average” students, those demonstrating an average fall score (around the 46th percentile) and greater growth in the fall than spring which could be interpreted as average Grade 4 PRF trajectory.
Class 2 represented high achieving students, demonstrating high initial PRF status (around the 86th percentile) and nearly linear growth.

Class 2 (high)

Class 1 (average)

Figure 3. Estimated growth patterns for 1-class PGM and 2-class and 3-class piecewise growth mixture models (PGMM).
PRF Within GRADE 4

Class 3 represented students at risk of poor learning outcomes, demonstrating a very low mean initial PRF status (around the 7th percentile), and a lower growth trajectory than the other classes.

Figure 3. Estimated growth patterns for 1-class PGM and 2-class and 3-class piecewise growth mixture models (PGMM).
PRF Within GRADE 4

• These findings may have implications for local response to intervention (RTI) policies, including the generation of adequate expectations for growth using progress monitoring tools.
LSF Kindergarten Growth

• A Two-Step Growth Mixture Modeling Approach for Emergent and Developing Skills with Distributional Changes Over Time
  • Nese, Kamata

• Currently an increased interest by policy-makers, educators, and researchers in assessing kindergarten entry skills to understand:
  • proficiency upon entry,
  • risk,
  • disparities among student groups, and
  • growth over time.

• Extension of the unobserved classes approach to a specific issue in practice and data.
LSF Kindergarten Growth

Fall LSF scores

Winter LSF scores

Spring LSF scores
LSF Kindergarten Growth

• This trend is not interesting in itself.
• Rather, the great potential lies in the method of distinguishing between students whom begin at zero and make meaningful gains and students whom begin at zero and do not.
• The value lies in demarcating these groups before the skill disparity between them becomes readily evident.
• 6 classes discussed.
LSF Kindergarten Growth
LSF Kindergarten Growth

- Fall: Zero & Above - Class 1: 20.31
- Winter: 20th %ile Norm: 31.94
- Spring: 50th %ile Norm: 42.51
LSF Kindergarten Growth

- Zero & Above - Class 1
- Zero & Above - Class 2
- 20th %ile Norm
- 50th %ile Norm
LSF Kindergarten Growth

• Statistical and practical problems we address.
• Identification of these students for intervention.