Validity of a Formative Assessment Risk Ratings Feature
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Abstract
Piecewise latent class growth analysis (LCGA) with distal outcome models were used to examine growth patterns in Grades 3-5 reading comprehension and passage reading fluency on easyCBM. LCGA assumes heterogeneity of growth and may provide reliable predictions for later development. Current classification methods for identifying at-risk students are still questionable, this modeling technique could be a viable alternative classification method to identifying students at risk for reading difficulty.

Research Questions
1. Are there multiple latent classes and reading growth trajectories based on grades 3-5 reading comprehension and passage reading fluency easyCBM benchmark measures?
2. If latent classes exist, do they predict students’ initial risk status in the following grade and do they align with the easyCBM’s risk rating system?

Materials and Methods
easyCBM benchmark measures
• Multiple-choice reading Comprehension
• Passage reading fluency
Setting and Participants
• 2 districts in Pacific Northwest
• 46 schools
• Implements RTI model
• Benchmark 3x in a year
• Cohorts in Grades 3-5

Analyses
• Piecewise growth modeling
• Non-linear nature of data with three occasions (Christ et al., 2010 & Nese et al., 2012)
• Unconditional latent class growth analysis (LCGA) with distal outcome
• Capture heterogeneity in growth patterns
• Allows for the examination of the individual growth trajectories and class distribution (Jung & Wickrama, 2008)
• Mplus v6 (Muthen & Muthen, 2008)

Model Selection
• Information Criterion (AIC, BIC, ABC)
• Goodness of fit statistics (LMR, Adjusted LMR)
• Likelihood ratio test \( p < .05 \) indicate model with \( k+1 \) latent class is a better model fit
• Other factors
• Overall interpretability of the class(es)

Results

<table>
<thead>
<tr>
<th>Cohort</th>
<th>N</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Grade</td>
<td>1737-1774</td>
<td>2009</td>
<td>2010</td>
<td>2010</td>
</tr>
<tr>
<td>4th Grade</td>
<td>1759-1790</td>
<td>2009</td>
<td>2010</td>
<td>2010</td>
</tr>
<tr>
<td>5th Grade</td>
<td>939-972</td>
<td>2009</td>
<td>2010</td>
<td>2010</td>
</tr>
</tbody>
</table>

50-51% male, 15-21% SPED, and 2-5% ELL

Implications
• Viable alternative classification method
• Reading comprehension in later elementary grades
• Acceptable sensitivity, specificity, and classification accuracy
• Preliminary predictive validity of the easyCBM 2-tests risk ratings

Literature cited

For further information
Please contact clai@uoregon.edu. More information on this and related projects can be obtained at http://clai.uoregon.edu.