Critical Issues in Studying Growth on State Tests for Students with Disabilities

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Session Outline

- National Center on Assessment and Accountability for Special Education (NCAASE)-Context and overview
- NCAASE Findings to Date-Selected highlights
  - Methodological findings related to studying growth for students with disabilities
  - Growth in students with disabilities
  - Understanding the determinants of growth-Opportunity to learn study
- Ongoing Work
NCAASE 2011-2016: Our Key Research Questions

1. What is the natural developmental progress in achievement for students with disabilities?
2. What models best characterize achievement growth for students with disabilities who are participating in general achievement tests?
3. How do various growth models represent school effects for students with and without disabilities, and how do results compare to those derived from the status models now in use?
4. How do results from different types of interim assessments of students’ achievement meaningfully contribute to a model of academic growth for students with disabilities?
5. How can information about opportunity to learn and achievement growth be used to enhance academic outcomes for students with disabilities?
Research <-> Practice Data Cycle

- Teachers & Students
- NCAASE
- State Dept. of Education
Looking Back to the Beginning of Standards-based Reform...

- 40-50% of students with disabilities (SWDs) excluded from national and state assessments

- Concern that exclusion of SWDs distorting reform and accountability efforts for all students, and leaving SWDs behind
The Issues Faced in Moving Toward Growth Models…

- We have very little information about typical achievement growth for SWDs
  - 81% of published growth studies omit special education in analysis, 94% do not distinguish exceptionality categories

- SWDs pose unique and multiple challenges, particularly for growth-based assessment
  - Diversity of disabilities
  - Wider range of cognitive and academic functioning
  - Variability in assessments and testing conditions across years
Students with Disabilities…

- Enter and exit services throughout their careers
- Change disability classifications
- May take general or alternate assessment
- May be members of other groups where achievement gaps are a concern (e.g., poverty, English language learner)
- All of these pose new challenges for assessing growth
## Stability Across Three Years in NC

<table>
<thead>
<tr>
<th></th>
<th>Spec ed 3rd gr</th>
<th>Gen ed 3rd gr</th>
</tr>
</thead>
<tbody>
<tr>
<td>First time in 3rd grade in 2001 (n)</td>
<td>14,380</td>
<td>88,429</td>
</tr>
<tr>
<td>In a NC school following 2 years (n, %)</td>
<td>12,731 88.5</td>
<td>79,841 94.9</td>
</tr>
<tr>
<td>Same school (%), all subsequent figures based on n of students present all 3 years</td>
<td>63.7</td>
<td>69.4</td>
</tr>
<tr>
<td>Retained (%)</td>
<td>14.0</td>
<td>7.4</td>
</tr>
<tr>
<td>Same sped status (Y/N) across yrs (%)</td>
<td>76.3</td>
<td>95.0</td>
</tr>
<tr>
<td>Same ec category across years (%)</td>
<td>64.6</td>
<td>---</td>
</tr>
<tr>
<td>Took general assessment all three yrs</td>
<td>69.7</td>
<td>98.3</td>
</tr>
<tr>
<td>Reading (%)</td>
<td>69.7</td>
<td>98.3</td>
</tr>
<tr>
<td>Math (%)</td>
<td>76.3</td>
<td>98.4</td>
</tr>
<tr>
<td>Use/nonuse of accommodations consistent across years (%)</td>
<td>61.0</td>
<td>92.2</td>
</tr>
</tbody>
</table>
Looking at Outcomes Longitudinally Matters

Mathematics Achievement Gap

- ▲ Special Education in Current Year SWD
- ● Special Education at Wave 1 SWD
Multiple Testing Opportunities

a) Math

b) Reading

<table>
<thead>
<tr>
<th>Test Opportunity</th>
<th>Probability of passing</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Reference*</td>
</tr>
<tr>
<td>2</td>
<td>Bubble*</td>
</tr>
<tr>
<td>3</td>
<td>BelowBubble*</td>
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<tr>
<td></td>
<td>Bubble, LEP*</td>
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<td></td>
<td>LEP*</td>
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<tr>
<td></td>
<td>Bubble, SpEd*</td>
</tr>
<tr>
<td></td>
<td>SpEd*</td>
</tr>
</tbody>
</table>

NCAASE National Center on Assessment and Accountability for Special Education
Advancing research on growth measures, models, and policies for improved practice
Mathematics Growth for Students with LD
Risk Factors for Low Achievement

Interact

![Graph showing mean mathematics achievement by grade for different groups (GExNoFRL, GExFRL, LDxFRL, LDxNoFRL). The graph illustrates the trend of mean achievement across grades.]
Mathematics Growth by Exceptionality

![Graph showing mathematics growth by exceptionality across grades 3 to 7. The x-axis represents grade levels 3 to 7, and the y-axis represents mean math scale scores. Different lines represent various exceptionality categories: General Education, Academically Gifted, Emotional Disturbance, Hearing Impaired, Educable Mentally Handicapped, Other Health Impaired, Speech–Language Impaired, Specific Learning Disabled, and Autistic. Each category shows a trend line indicating growth over the grades.]
Reading Growth by Exceptionality

The graph illustrates the mean reading scale score for different grades and exceptionality categories. Each line represents a different exceptionality category, as follows:

- General Education
- Academically Gifted
- Emotionally Disturbed
- Hearing Impaired
- Educable Mentally Handicapped
- Other Health Impaired
- Speech–Language Impaired
- Specific Learning Disabled
- Autistic

The x-axis represents the grade level, ranging from 3 to 7, while the y-axis represents the mean reading scale score, ranging from 230 to 310.
Growth for SWSCD

Alternate Assessment Reading Score

Grade 3 Proficient
Proficiency Cut Score
Unconditional Growth
Grade 3 Below Proficient
GenEd < 40%

Grade

3  4  5
Definition: Opportunity to Learn

The degree to which a teacher dedicates instructional time and content coverage to the intended curriculum objectives emphasizing higher-order cognitive processes, evidence-based instructional practices, and alternative grouping formats.

(Kurz, 2011)

A unified conceptualization of OTL based on 50+ years of empirical research.
Multiple Measures Study
Four 2-year Longitudinal Cohorts: 4-5, 5-6, 6-7, & 7-8

State Achievement Test 2013

Classroom Instruction
Grades 4 - 8

Daily MyiLOGS Records Class-wide
Sample of 30-45 days for Target Students

Easy CBM BM 1
Easy CBM BM 2
Easy CBM BM 3
Easy CBM BM 1

State Achievement Test 2014
Multiple Measures Study: Year 1 Findings

- Teachers (N = 69) and students (N = 261; 136 SWD + 125 SWoD) from AZ & OR schools grades 4<sup>th</sup>-8<sup>th</sup>.

- A regression analysis showed OTL, easyCBM, grade, and special education status predicted nearly 67% of the variance in students’ end of year mathematics achievement as measured by the OR Assessment of Knowledge & Skills in Math. By comparison, this same set of measures accounted for 61% of the variance in students’ end of year mathematics achievement on the AZ Instructional Measurement of Skills test.

- Inspection of the regression results showed
  - CBM measures are the best single predictor of end-of-year achievement (46% of the variance)
  - OTL indices of time, content, cognitive processes, and instructional practices contributed an additional 10% to the prediction of end of year achievement for students in mathematics.

- More information to come from this study as we finish Year 2; we will have achievement growth data for all these students!
Summary of Findings to Date

- Growth for students with disabilities in reading and math follows the same curvilinear pattern seen in students without disabilities.
- Overall, achievement gaps for students with disabilities remain similar; they do not close or widen markedly across grades.
- However, there are large differences in achievement outcomes and size of gaps among exceptionalities.
- Achievement risk factors interact.
- Within-student changes in status can substantially affect outcomes reported for the students with disabilities subgroup.
- Multiple testing opportunities benefit students with disabilities.
- Increasing instructional time and focusing on tested content standards is associated with overall test
Ongoing and Planned Studies

- Replication of NC growth studies with remaining states
- Examination of performance of different growth models in representing schools’ impact on students with and without disabilities
- What accelerates growth for students with disabilities?
Questions? Comments?

What are the most salient assessment and accountability issues your states are facing with respect to SWDs?
Thank you and stay in touch:

NCAASE web site: http://www.ncaase.com/

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