NCAASE Work with NC Dataset: Initial Analyses for Students with Disabilities

Ann Schulte

NCAASE Co-PI

schulte@ncsu.edu

THANK YOU!

- North Carolina Department of Public Instruction for your
  - foresight in developing a growth-based testing program in the 90s
  - willingness to make data available to researchers
- North Carolina Education Research Data Center and Spencer Foundation for
  - creating a repository and codebooks
  - de-identifying data and organizing annual datasets

Brief Intro and Overview

- My background
  - View from the ground and the ivory tower
  - It all started in the 90's…
- Overview
  - Key issues for students with disabilities (SWD)
  - Initial analyses from the Cornerstone study
  - Next steps

Special Education and NCLB

- "…special education is the single biggest reason schools are judged failing under federal law" (NYT, 2006)
- Eckes and Swando (2009) review of NCLB data from 3 states confirmed that schools fail to make AYP most often because of the SWD subgroup
- Part of difficulty is the achievement gap for SWDs, approaches that hold schools accountable for student GROWTH have the most potential to address this issue

Complexities

- Identification as a SWD is not stable from year-to-year (Ysseldyke & Bielinski, 2002)
  - *Export* the success stories to general ed
  - *Import* struggling students from general ed
- Small sample sizes by school = greater variability in results across years
- Mobility and grade retentions affect interpretation of outcomes, and SWDs are likely to have elevated levels of both

More Complexities

- Test error more likely with extreme scores
- Use of accommodations, and which accommodations, may change from year to year affecting growth estimates
- Grade level general education standards (and tested content) are not applicable to all students with disabilities
- "High, but appropriate expectations" may differ depending on the student and his/her disability

Have I forgotten any?

Cornerstone Study
NCAASE

- Basic questions about the population of students with disabilities and their achievement growth have yet to be answered
- This information needed to form the basis for an accountability system that includes SWDs, but actually captures schools' performance with the students, not construct irrelevant variance

Dataset

- NC Education Research Data Center
- Build longitudinal database consisting of 5 cohorts, grades 3-8, with reading and mathematics End of Grade test scores
- Approximately 100,000 students per cohort
- Developmental scales for both reading and mathematics
- Alternate assessments to be considered later
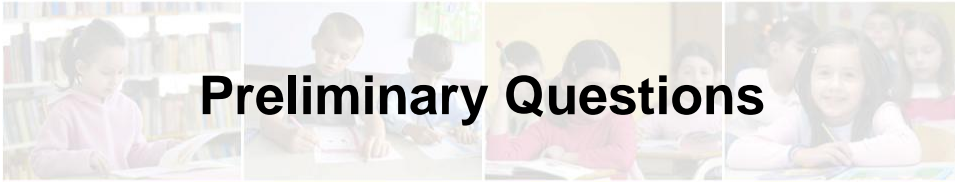
Preliminary Questions

1.1 Defined as at least one year where an individual received special education services, what is the "lifetime" prevalence of SWDs in grades 3-8?

1.2 How do the odds of being in special education, and in particular exceptional children's categories (e.g., speech/language impaired) vary by grade?

1.3 What are the modal entrance and exit patterns for special education?

1.4 How stable are classifications to the various exceptionality categories?

1.5 How do students with disabilities differ from students without disabilities on basic demographic variables that may affect interpretation of outcomes, including changes in schools, grade retentions, retests, and absences?
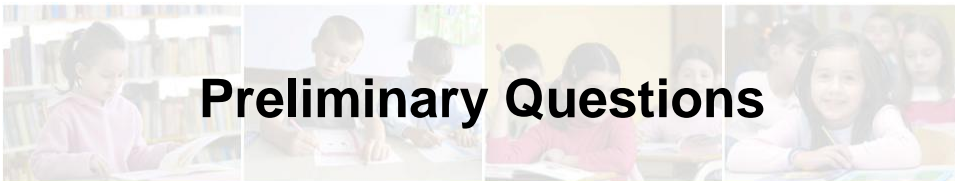
Preliminary Questions

- 1.6 What are the conditional and unconditional distributions of current grade level developmental scale scores based upon students' test results in the previous grade?

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- 1.7 What is the typical cohort size by school and grade for SWDs at the elementary and middle school level?

- 1.8 Do school-level variations in who receives special education affect school outcomes for SWD? For example, are schools with a high propensity to label more likely to identify higher achievers, and as a result show higher percentages of SWDs functioning on grade level?

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- Answers to these questions will help guide 2 and 3 level HLM analyses of achievement growth

Cornerstone Study: Initial Considerations

- Technical issues
  - Quality of data
    - Tracking students across years and linking data across years
    - Accuracy of special education data
  - Equivalence of scores across test editions, curriculum changes
  - Changes in variables and their availability across years
- Describe sample on issues likely to affect disability population
  - Retention
  - Mobility
  - Changes in exceptionality classification across years
  - Change in use of accommodations from year to year
 - Moves in and out of alternate and general assessment

View from the 2001 Cohort

- 2001
  - 106,759 total third graders
  - 3,636 repeaters = 103,123 beginning of cohort
- 2006
  - Grade 5, n = 1
  - Grade 6, n = 254
  - Grade 7, n = 6,684
  - Grade 8, n = 77,330
  - Grade not determinable, n = 4
  - Total present in 2006 = 82%

Special Ed Prevalence by Year

Year	Modal Grade for Year	% Sped Prevalence
2001	3	13.9
2002	4	14.8
2003	5	14.7
2004	6	14.2
2005	7	13.6

Years in NC by Special Ed Status in Grade 3
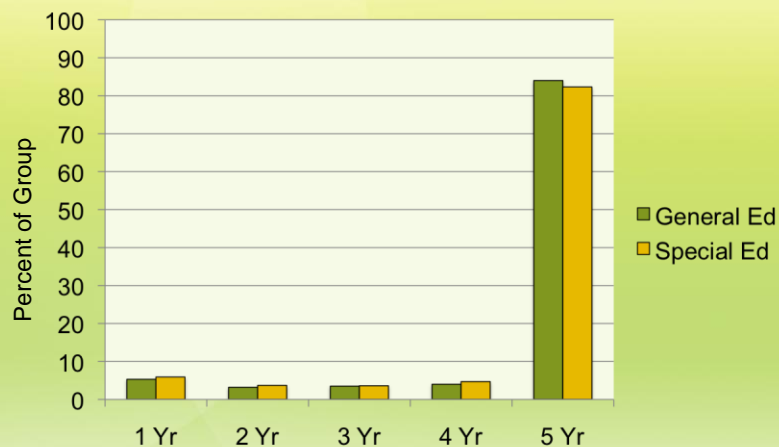
Special Education Membership Grades 3-7

Group	Percent
Always in special education	8.8
Spec ed, but in general ed at least one year	10.4
Ever in special education	(19.2)
Never in special education	80.8

Categorical Changes-Example

- Even most stable categories of exceptionality show movement
- 5 year classification history for 250 children with autism in third grade who are in NC system all 5 years:
- Year 1, Autism = 250
- Year 2, Autism = 246, Other sped = 3, Gen ed = 1
- Year 3, Autism = 241, Other sped = 3, Gen ed = 2
- Year 4, Autism = 233, Other sped = 3, Gen ed = 5
- Year 5, Autism = 227, Other sped = 4, Gen ed = 2
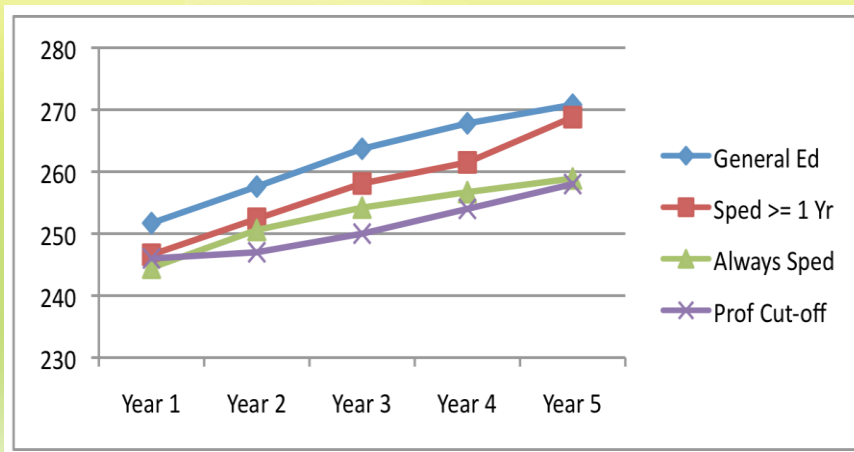
THE GRADE 3 LD DIASPORA

Yr	Gen ED					OHI					LD					EMH					BEH				
1													5,272												
2	403					154					4,544					85					36				
3	299	14	85	14	2	4	111	36	2	1	410	85	3,927	48	28	3	0	22	59	1	2	2	3	0	29

Yr	Gen ED					OHI					LD					EMH					BEH				
3													3,927												
4	423					60					3,347					43					20				
5	355	5	57	3	0	4	38	16	0	1	283	45	2,667	20	18	1	0	19	23	0	1	1	3	0	14

Means Across Grades by Sped Group

Planned Growth Modeling -1

- Two level MLM (grades 3-8, occasion & student)
    - Are we assessing unitary construct for achievement across grades?
    - How to handle missing data?
    - Is special education status best treated as time varying covariate or student characteristic?
    - What are predictors of growth?
    - Do growth and its predictors differ by special education status?
    - What is impact on changes in accommodations across testing occasions?

Planned Growth Modeling -2

- Three level MLM (grade 3-5, 6-8, occasion, student, school)
- Estimation of school level results
    - OLS and EB approaches
    - How do annual results compare to longitudinal results?

Comparisons Among Models

- All growth models (residual, VAM, MLM) vs. status model
- Simplest that accurately represents student growth
- Inclusive preferred over separate models for students with and without disabilities
- Replications across states

References

Eckes, S. E., & Swando, J. (2009). Special education subgroups under NCLB: Issues to consider. *Teachers College Record, 111*, 2479-2504.

Tindal, J., Schulte, A. C., Elliott, S. E., & Stevens, J. J. (2010). *National Center on Assessment and Accountability for Special Education* (NCAASE, www.NCAASE.com)

Ysseldyke, J., & Bielinski, J. (2002). Effect of different methods of reporting and reclassification on trends in test scores for students with disabilities. *Exceptional Children, 68*, 189-200.

Contact info: ann_schulte@ncsu.edu