Using Test Scores from Students with Disabilities in Teacher Effectiveness Indicators

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Background

• 38 states plus the District of Columbia mandate the use of student outcome data in teacher evaluation.

• Approximately 13% of K-12 students receive special education services and the majority spending 80% or more of their time in regular classrooms.

• To date, no consensus of how to treat scores from students with disabilities (SWDs) in teachers’ scores.
Possible concerns

- SWDs’ scores are often very low and likely less reliable
- Reliability issues become compounded when teachers have large numbers of SWDs
- Accommodation use may inflate or deflate estimates of growth
Possible ways to deal with these concerns

1) Include scores from students with disabilities with no additional disability-related covariates

2) Include student scores from students with disability and disability-related covariates

3) Remove these entirely when estimating teachers’ value-added scores.
Research Questions

• Across multiple model specifications, what are the consequences of including/excluding SWDs on teachers’ VA scores?
• Across multiple model specifications, how do VA scores change when we include disability-related covariates?
• Do consequences of model selection vary across general education and special education teachers?
Sample

- We drew on a single state’s administrative data from 2007-2009
- We included both general and special educators who taught 4th grade or 5th grade in 2009
- Our final sample included 3,189 teachers and 61,063 students
- We excluded teachers with greater than 30 students and fewer than 10 students
Models

1) Student Growth Percentiles

2) VAM (one-stage)
   1) No covariates
   2) + Student covariates
   3) + Student covariates + Special ed. covariates

3) VAM (two-stage)
   1) + Student covariates + aggregate covariates
   2) + Student covariates + aggregate covariates
      + Special ed. covariates

Note:

a) Differences examined across three groups of teachers: with no SWDs, those with all SWDs, and those with a mix of students
b) Special ed. covariates include: inconsistent accommodation use and special education status
Does Excluding Students with Disabilities Matter?

Regardless of model choice, including scores from students with disabilities does not change the relative ranking of most teachers.

- Pearson correlation coefficients range from 0.97 to 0.98 in ELA
- Pearson correlation coefficients were all ~ 0.99 in Math
- Even in classrooms with larger numbers of SWDs, the correlations were all over 0.95
Does Model Choice Matter?

Including indicators for special education and consistency in accommodation use across year allows for fairer evaluations for teachers with many students with disabilities in their class.

1. Special education teachers’ scores appear to be adversely affected by the decision to exclude special ed. specific covariates

2. Most general education teachers’ scores are not affected by model choice, but for those with large numbers of SWDs in their classes, model choice matters.
Regardless of model choice, including scores from students with disabilities does not change the relative ranking of most teachers.

### Table 1

*Correlation between Teacher Scores and Classroom Covariates, Math*

<table>
<thead>
<tr>
<th></th>
<th>Grade 5</th>
<th>Grade 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% special education</td>
<td>% special education</td>
</tr>
<tr>
<td><strong>One-Stage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VAM, no student covariates</td>
<td>-0.15</td>
<td>-0.18</td>
</tr>
<tr>
<td>VAM, student covariates</td>
<td>-0.13</td>
<td>-0.14</td>
</tr>
<tr>
<td>VAM, student covariates + special education</td>
<td>-0.02</td>
<td>-0.03</td>
</tr>
<tr>
<td>VAM, student covariates + special education + accommodations</td>
<td>0.00</td>
<td>0.01</td>
</tr>
<tr>
<td><strong>Two-Stage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VAM, no student covariates</td>
<td>-0.13</td>
<td>-0.16</td>
</tr>
<tr>
<td>VAM, student covariates</td>
<td>-0.12</td>
<td>-0.12</td>
</tr>
<tr>
<td>VAM, student covariates + special education</td>
<td>-0.01</td>
<td>-0.02</td>
</tr>
<tr>
<td>VAM, student covariates + special education + accommodations</td>
<td>0.00</td>
<td>0.01</td>
</tr>
<tr>
<td>VAM, individual and aggregate student covariates</td>
<td>-0.04</td>
<td>-0.06</td>
</tr>
<tr>
<td>VAM, individual and aggregate student covariates + special education</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>VAM, individual and aggregate student covariates + special education + accommodations</td>
<td>0.00</td>
<td>-0.01</td>
</tr>
</tbody>
</table>
Special education teachers’ scores appear to be adversely affected by the decision to exclude special ed. specific covariates.
For general education teachers, as the number of SWDs increases, the greater the importance of model choice.
Conclusions

• For the majority of teachers, the inclusion or exclusion of SWDs does not impact VAM scores, across all model specifications.

• Disability-related covariates contribute independent information beyond the variables typically included in VA models.

• Specifically, accommodation use and special education status allow for fairer evaluations for teachers with many SWDs in their class.
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