Validation Studies on the Curriculum Indicators Survey (CIS): Preliminary Results

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Overall Project Goals

- Part of National Alternate Assessment Center (funded by U.S. Department of Education, Office of Special Education Programs, No. H324U040001)
- 5-year project:
  - Develop and use alignment methodology with states that have alternate assessments based on alternate achievement standards
  - Intervention studies with teachers, improving alignment of instruction with assessment and standards in order to improve student learning as measured by AA

Understanding Alignment

Background and Federal Legislation

- IDEA and NCLB require students with significant cognitive disabilities be taught and assessed in academic subjects; expectations are aligned with grade level content standards but may be extended. Student performance judged based on alternate achievement standards
- Difficulty in creating general curriculum access for the population
  - Prerequisite skills
  - Idea of grade level link
  - Limited research base for academic instruction strategies
  - Special educators’ limited understanding/acceptance of general education academics
  - Academic instruction for NCLB vs. curricular priorities in IEP

Curriculum Indicators Survey (CIS)

- Designed to measure the enacted curriculum for students with significant cognitive disabilities
  - English language arts, math, science
- Teacher self-report measures
  - Responses based on curriculum for a single target student during current school year
- Used at state level in alignment studies and with teachers for self-assessment in the context of professional development
- Long form: fine grain size for detailed information
- Short form: coarse grain size with reduced response burden

Co-investigators for this study:
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National Alternate Assessment Center
Sample CIS Items

For each content area:
- Intensity of coverage (# of lessons within a year)
- Highest performance expectation (depth of knowledge)
- Grade level(s) from which materials, activities, and contexts were adapted

Initial CIS Development: Issues

- Expert review: content was comprehensive; conceptualization consistent with original SEC measures
- Pilot testing:
  - Instructions, formatting clear
  - Minor issues with wording of specific items
  - Relevant for population
- Response burden for long form
- Teachers “stretching” academic content
- Skepticism among researchers about teacher self-report measures of instruction

Purpose of Presentation

Describe preliminary findings from two validation studies:
1. Criterion measures
2. Cognitive interviews

Study 1: Criterion Measures

- 7 teachers participated in 3-month study
- Daily Instruction Surveys (DIS)
  - Randomly selected days, ~ 20% of instructional days during study period
  - Content of academic instruction
  - Performance expectation
  - Info about instructional delivery
- Day-long observation
  - Items paralleling DIS
  - Narrative of teacher-student interactions during each academic lesson; coded for content and DOK
- Comparison with intensity, DOK reported by teachers on CIS

CIS vs. Daily Instruction Surveys

<table>
<thead>
<tr>
<th></th>
<th>ELA</th>
<th>Math</th>
<th>Science</th>
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</thead>
<tbody>
<tr>
<td>n</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Lesson topics identified in DIS</td>
<td>38</td>
<td>21</td>
<td>27</td>
</tr>
<tr>
<td>Topics with CIS match</td>
<td>24</td>
<td>63.2</td>
<td>24</td>
</tr>
<tr>
<td>Total CIS matches</td>
<td>37</td>
<td>38</td>
<td>34</td>
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Depth of Knowledge

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<th>ELA</th>
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<th>Science</th>
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<tbody>
<tr>
<td>Exact match</td>
<td>19</td>
<td>51.4</td>
<td>27</td>
</tr>
<tr>
<td>CIS &gt; DIS</td>
<td>13</td>
<td>35.1</td>
<td>10</td>
</tr>
<tr>
<td>CIS &lt; DIS</td>
<td>5</td>
<td>13.5</td>
<td>10</td>
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</table>

CIS vs. Observation

<table>
<thead>
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<th>ELA</th>
<th>Math</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Number of lessons</td>
<td>20</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Total topics within lessons</td>
<td>10</td>
<td>90.2</td>
<td>90.5</td>
</tr>
<tr>
<td>Depth of Knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exact match</td>
<td>22</td>
<td>44.0</td>
<td>4</td>
</tr>
<tr>
<td>CIS &gt; Obs</td>
<td>10</td>
<td>25.0</td>
<td>2</td>
</tr>
<tr>
<td>CIS &lt; Obs</td>
<td>10</td>
<td>25.0</td>
<td>2</td>
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</table>
Study 2: Cognitive Interviews

- Five teachers
  - Current responsibility for alternate assessments
  - 4 elementary, 1 HS from 4 districts; variety of student types
  - think aloud interviews with in vivo probes
  - semi-structured debriefing interview questions
  - Completed 2 ELA, 2 math, 1 science (also two partial ELAs)

Study 2: Findings

Intensity
- evidence for accurate differentiation in the intensity of instruction for concepts within a strand
- comparisons about the relative emphases between similar items

DOK
- accurate understandings of the levels in the scale and what the students were expected to do
- using the example verbs provided for each DOK level

Potential problem areas re: content
- Overlap among similar items
  - “story elements” and “characters in text”
- Extension
  - Time = waiting patiently
- Content viewed as inaccessible
  - Teachers’ own limitations
  - Limited understanding about how to adapt “newer” content areas
  - Judged to be inappropriate based on student’s disability / communication mode

Study 3: Long and Short Forms

Data collection still in progress
- (reported here based on n = 11 teachers from two states)
- Counterbalanced design
- 2-week interval
- Agreement @ strand level

Study 3: Results (Math only)

<table>
<thead>
<tr>
<th>Math Strands</th>
<th>Strand Agreement</th>
<th>DOK Correlations</th>
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<tbody>
<tr>
<td>Numbers &amp; Operations</td>
<td>100%</td>
<td>.69</td>
</tr>
<tr>
<td>Patterns, Relations, and Algebra</td>
<td>91%</td>
<td>.74</td>
</tr>
<tr>
<td>Measurement</td>
<td>91%</td>
<td>.79</td>
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<tr>
<td>Geometry</td>
<td>91%</td>
<td>.93</td>
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<tr>
<td>Data Analysis/Statistics/Probability</td>
<td>45%</td>
<td>N/A</td>
</tr>
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</table>

Implications and Next Steps

- Reasonable content match (especially math & science)
  - Need to investigate reasons for mismatch (e.g., teacher familiarity with certain subjects; level of specificity within strand targeted vs. whole group instruction)
- DOK match lower, for several potential reasons
  - Mid-year vs. end of year expectations
  - Need to shift gears due to student absences
  - May reflect higher expectations vs. stagnation
Implications and Next Steps

- Using data sources across studies to help interpret findings
  - Cognitive interviews → understand content mismatches by criterion study participants
- Practitioners: addressing inaccessibility of content
  - Professional development targeting underutilized domains, adaptations
  - Convincing teachers about possibilities vs. limitations (and relevance of academics)