WHAT HAVE WE LEARNED?
A SUMMARY OF THE CMT/CAPT SKILLS CHECKLIST
VALIDITY RESEARCH STUDIES

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Overview of the Presentation

1. Skills Checklist: The Big Picture
2. Understanding Validity
3. Review of Studies 1 – 4
4. Lessons from the 4 Studies
Understanding the Population

- Students with significant cognitive disabilities
  - 1.2% of the 298,121 students assessed in 2010

- Learner Characteristics Inventory*
  - 50% read fluently with basic understanding
  - 50% apply computational procedures to solve real-life or routine word problems from a variety of contexts
  - 64% use symbolic language to communicate
  - 46% independently follow 1-2 step directions without additional cues
  - 51% initiate and sustain social interactions

(*Based on 2010 Skills Checklist data)
What is the Skills Checklist?

- Accountability measure for students with significant cognitive disabilities
- Non-secure, working document
- Essence statements / Downward Extensions
  - 3 per Essence statements per DE
  - Listed in descending order of difficulty
- 3-point scale
  - 0 = Does not demonstrate skill
  - 1 = Developing/Support
  - 2 = Mastered/Independent
A Skills Checklist Item

Reading and Responding

A. Students use appropriate strategies before, during and after reading in order to construct meaning.

1. Activate prior knowledge, establish purposes for reading and adjust the purposes while reading. RR 7.1
   **Essence**: Indicate what is already known about the text, determine reasons for reading it and be able to adjust accordingly.

<table>
<thead>
<tr>
<th>Essence Statement</th>
<th>Downward Extensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make one or more predictions related to the grade level text</td>
<td></td>
</tr>
<tr>
<td>Generate one or more questions related to grade level text based on text features (e.g. captions, table of contents, book jacket, etc.)</td>
<td></td>
</tr>
<tr>
<td>Indicate what is known about the grade level text based on grade level text features (e.g. captions, table of contents, book jacket, etc.)</td>
<td></td>
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</tbody>
</table>
Purposes of the Skills Checklist

1. Communicate the state's academic content standards for teachers to design individualized, effective instruction for students with significant cognitive disabilities;

2. Document student achievement with respect to the state's academic content standards for students with significant cognitive disabilities;

3. Result in a greater inclusion of students with significant cognitive disabilities in general education settings.

FORMATIVE ASSESSMENT

SUMMATIVE ASSESSMENT

IMPROVED TEACHING & LEARNING
Purposes of the Skills Checklist

**PURPOSE 1**
To communicate the state's academic content standards for teachers to design individualized, effective instruction for students with significant cognitive disabilities.

**PURPOSE 2**
To document student achievement with respect to the state's academic content standards for students with significant cognitive disabilities.

**PURPOSE 3**
Result in a greater inclusion of students with significant cognitive disabilities in general education settings.

**Improved Teaching & Learning**
Understanding Validity

A Quick Overview
What is validity?

- **Technical definition**
  - Validity is the degree to which evidence and theory support the interpretations of test scores entailed by proposed uses of tests
  - Evidence + Theory = Validity Argument

- **Practical definition**
  - Is the test being used the way it was designed to be used?
Validity in Practice

TEST PURPOSE

SCORE INTERPRETATION

VALIDITY

THEORY

EVIDENCE

EVIDENCE

EVIDENCE
What is validity evidence?

1. **Test content**
   - Does the Checklist content match the CT Curriculum Framework?

2. **Response processes**
   - How do teachers evaluate and judge students’ skills and behaviors?

3. **Internal structure**
   - Does the Checklist data match our expectations for test functionality? (Quantitative analyses)

4. **Relations to other variables**
   - Are scores on the Checklist consistent with scores on similar assessments?

5. **Test consequences**
   - Are the intended benefits of the Checklist being realized?
What validity evidence exists?

- Evidence based on test content
  - Content selection by a committee of 18 special education teachers, curriculum specialists, school administrators, and parent representatives
  - Item development by a working group of 24 special education and regular education teachers and curriculum coordinators
  - Independent alignment study
Developing validity evidence

- Grant from the Office of Special Education Programs at the U.S. Department of Education
- 5 locales
  - Connecticut, Georgia, Kentucky, D.C., Puerto Rico
- 3-year investigation
- Validity evidence in the following domains
  - Response processes
  - Internal structure
  - Relations to other variables
  - Test consequences
Study 1

Evidence based on test consequences
March 2009 surveys / June 2009 focus groups
Study 1: Evidence based on test consequences

Teachers believe the Checklist

- is useful for providing access to grade-level content standards for students.
- expands teachers’ understanding of appropriate academic content.
- helps to scaffold learning.
- has positively impacted students’ communication skills.
- is useful for the development of IEP goals.
“It actually helps to drive me. It kind of helps me to think as I’m modifying how to tier the instruction, to challenge them to their greatest ability without frustrating them. That’s where the Downward Extensions on the Checklist help you design what you’re going to focus on—for instruction and for challenging them.”
Study 1: Evidence based on test consequences

- Teachers’ perspectives on stakeholders
  - Special education teachers and administrators use the Checklist and understand Checklist data.
  - General education teachers do not understand Checklist data.
  - Parents do not understand Checklist data.
  - The impact of the Checklist on a student’s education is dependent on the disposition of the cooperating teacher.
“The teacher feels more comfortable because they have a better understanding of where the individual child’s skills really are. You know, a lot of the kids present differently than what their abilities are. I find that the teacher’s having that helps them to have a better snapshot of what the kid’s, what the student’s abilities are in that particular area.”
Study 1: Evidence based on test consequences

- Teachers’ perspectives on their own training
  - SPED teachers were confident in their ability to design instruction for SSCD
  - SPED teachers were confident in their ability to design assessment tasks for SSCD
  - SPED teachers were neutral about their comfort teaching grade-level academic content to SSCD
“Those of us who are old are probably not very well prepared. [We had one] course in mental retardation in college. You’re making up tremendous amounts of your own materials because there’s just nothing out there to buy for kids who can’t write, and can’t do those kinds of things…”
Are there two subgroups of students in the SSCD population?

Evidence based on response processes

Quantitative analyses of Checklist data
Are there 2 groups of students in the 1% population?

“‘It’s interesting for a test that’s designed for a population that is supposedly proportionally so small compared to the CMT and CAPT population, within that population there’s such a broad range of ability. It’s hard to use the same tool to assess all the students who we utilize it for.’”
Latent class analysis

- Examine 2009 Checklist data using domain scores
  - MATH: Algebraic Reasoning, Geometry and Measurement, Numerical and Proportional Reasoning, Probability and Statistics
  - ELA: Reading and Responding, Exploring and Responding to Literature, Communicating with Others, English Language Conventions/Writing
3 groups of students (MATH)

Mean Skills Checklist ratings by domain (0-2 scale)

<table>
<thead>
<tr>
<th>Domain</th>
<th>Low Ratings (n = 256)</th>
<th>Moderate Ratings (n = 144)</th>
<th>High Ratings (n = 119)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algebraic Reasoning</td>
<td>0.25</td>
<td>1.10</td>
<td>1.57</td>
</tr>
<tr>
<td>Geometry &amp; Measurement</td>
<td>0.28</td>
<td>1.01</td>
<td>1.43</td>
</tr>
<tr>
<td>Numerical &amp; Prop. Reasoning</td>
<td>0.21</td>
<td>0.89</td>
<td>1.32</td>
</tr>
<tr>
<td>Probability &amp; Statistics</td>
<td>0.13</td>
<td>0.83</td>
<td>1.50</td>
</tr>
</tbody>
</table>
### Mean Access Skills ratings (0-2 scale)

<table>
<thead>
<tr>
<th></th>
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<th>Moderate Ratings (n = 144)</th>
<th>High Ratings (n = 119)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expressive Communication</td>
<td>1.13</td>
<td>1.74</td>
<td>1.88</td>
</tr>
<tr>
<td>Receptive Communication</td>
<td>1.30</td>
<td>1.84</td>
<td>1.93</td>
</tr>
<tr>
<td>Social Interactions</td>
<td>1.01</td>
<td>1.52</td>
<td>1.70</td>
</tr>
</tbody>
</table>
The Low Ratings group

- **Expressive Communication**
  - 44% use symbolic language to communicate
  - 25% use intentional communication, but not at a symbolic language level
  - 19% communicate primarily through cries, facial expressions, change in muscle tone

- **Receptive Language**
  - 19% independently follow 1-2 step directions
  - 50% require additional cues to follow 1-2 step directions
  - 14% alert to sensory input from another person BUT requires actual physical assistance
  - 5% have uncertain responses to sensory stimuli

- 39% use augmentative communication
Study 2: What did we learn?

- Approximately 50% of teachers find the content accessible for their students.
- Students with low ratings had poor communication skills, used augmentative communication as part of their instruction, and were more likely to have disability classifications of Autism or Multiple Disabilities.
- Special education teachers are challenged to deliver academic content to students with limited communication abilities.
Study 3

Do assessment tasks vary by teacher?
Data collection & expert review
Teacher interviews
Communicate the rule of a pattern/
Extend a pattern

1. I placed an AB pattern of colored wooden blocks in front of the student on a clear table. I asked, “What is the rule of the pattern?”

2. During music time, the teacher demonstrates a pattern and presents the student with 3 choices to match the pattern.

3. Gave student bag of one inch cubes, asked him to create a pattern and tell me about it.
Solve multi-step problems / Add a whole $ to a given amount

1. I asked the student to pick two dollars. I asked the student how many dollars he had in his hand. After he responded with the correct answer I said, “If you grabbed two more dollars from the pile, how many would you have now?”

2. I gave the student five one-dollar bills. I asked, “How much money do you have now?” He counted and said, “Five dollars.” I gave him five more and said, “You have five. I am giving you five more. How much do you have altogether?”
1. Showed student a book titled *Rocks and Minerals*. Prior to looking through the book, I read him the title and we looked at the cover picture. Then I asked him to make one prediction.

2. The student read the story aloud to the teacher. Every three to four pages, I asked him to pause and make a prediction. I asked the following questions: “What do you think is going to happen next?” and “What do you think they are going to do?”

3. The teacher would show the student a grade level text, *The Sun*. The teacher asked, “If there was no sun, what might happen to the Earth?”
Use expressive language to communicate/
Describe a pleasant or positive personal experience

1. I asked, the student, “Can you tell me something fun that you do at home?”

2. Given the board maker pictures to support an activity or personal experience the student liked, the student will pick out pictures that tell us what they like and what they did (noun, verbs and emotions, people, etc.).

3. Given a photo of the student taken during a preferred familiar activity that day, the student will complete the daily journal, indicating the activity pictured and a related detail.
Study 3: What did we learn?

- More difficult downward extensions had lower and more variable ratings from the expert reviewers.
- Easier downward extensions had higher and more consistent ratings from the expert reviewers.
- Teachers with lower ratings of their tasks had students with receptive language deficits.
- Teachers vary the rigor of their evaluations of students based on students’ abilities.
- Teachers do not assess every student on every item.
Study 4

Are students exposed to the breadth of content covered on the Skills Checklist in an instructional setting?
Study 4: Survey methodology

- Indicate whether or not each downward extension was introduced in an instructional setting prior to the CMT/CAPT testing window
  - Introduced / Did Not Introduce

- Response rates
  - 49% of 4th grade teachers
  - 54% of 6th grade teachers
  - 46% of 10th grade teachers

- Combine instructional survey with Skills Checklist ratings by student
  - Independent research conducted by UCONN
  - No student or teacher names
Study 4: What did we learn?

Students with Significant Cognitive Disabilities
(1% of all students in CT)
Study 4: What did we learn?

15% 0 Assmnt Rating
Received Instruction

Mean Rating of 0

45% 1/2 Assmnt Rating
Received Instruction

Mean Rating of 1 - 2

35% 0 Assmnt Rating
No Instruction

5% 1/2 Assmnt Rating
No Instruction
Study 4: What did we learn

- Teachers are more likely to introduce simpler DEs

- Examples
  - MATH: Communicate an event that has occurred or will occur on this day
  - MATH: Solve simple addition problems using pictorial representations or manipulatives
  - RDG: Initiate any communication with a peer
  - RDG: Respond to a yes/no question about what the student likes about some aspect of the grade level text
Study 4: What did we learn

- Teachers are less likely to introduce complex DEs

Examples

- MATH: Indicate the least likely outcome of a probability experiment given 10 items, 9 of which are the same
- MATH: Match a multiplication or addition equation to a given simple story problem
- RDG: Identify an experience the author might have had and make one connection to the grade level text
- RDG: Identify one characteristic from a familiar grade level text that makes it fictional
Looking across the studies

- Teachers see the Checklist as a guide to help them make grade-level content accessible for their students.
- Teachers indicated that much of the Checklist content is not addressed during the academic year.
- More basic Checklist skills are assessed more appropriately and more frequently.
- There is a divide between students who work on Access Skills and those who can engage deeply with academic content.
- Students with low Checklist ratings had poor communication skills.
Questions & Discussion