SLD Identification in an RTI Framework with a Mathematics Focus: Part 2

Misty Sprague, M.A., Ed.S
Adam Scheller, PhD, NCSP
Professional Development and Consultation
Pearson Clinical Assessments

Agenda

• Need for additional assessments
• Tier 2 at the building, classroom and student level
• Case study

Disclosure: Please note that both presenters are employed Pearson Clinical Assessment. Pearson is the publisher of many RTI and comprehensive Assessment tools. Some will be used in examples in this presentation.

Multi-Level Model - General

Level 1: Benchmark Assessment and School Wide Interventions (Universal Screening)
For students on Grade Level Benchmark and All students (Effective Instructional Practices provided within the General Education Curriculum)

Level 2: Strategic and Targeted Interventions
For students at Risk for Failure
Strategic Instruction, Increased Time and Opportunity to Learn

Level 3: Intensive Interventions
For low performing students: alter curriculum, add time, support, resources, comprehensive individual assessment

Strategic Interventions for Students at Risk of Academic Failure

Level 1:
Benchmark Assessment and School Wide Interventions
(Universal Screening)
for students on Grade Level Benchmark and all students (Effective Instructional Practices provided within the General Education Curriculum)

Level 2:
Strategic and Targeted Interventions
for students at risk for failure
Strategic Instruction, Increased Time and Opportunity to Learn

Level 3:
Intensive Interventions
for low performing students: alter curriculum, add time, support, resources, comprehensive individual assessment

(Adapted from PA Training and Technical Assistance Network, 2005)
The Need for Additional Assessments Prior to Beginning Tier 2 Intervention

Additional Assessments Analogy

If you have a medical concern, you...

Go to the your doctor

If they are not sure what is wrong...

They order more tests

Additional Assessments

• Just like in the medical example.
  – Every academic concern needs more information to better plan a way to fix it.
    • For a reading difficulty is it:
      – Vocabulary?
      – Fluency?
      – Phonics?
      – Phonemic Awareness?
      – Comprehension?
    • For math...
      – Basic concepts?
      – Operations?
      – Problem solving?
### Assesments for Tier 2 Math

<table>
<thead>
<tr>
<th>Key</th>
<th>Math 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTI</td>
<td>In-depth assessment of math proficiency skills; includes alternate forms and optional intervention materials and generates growth scores for K-12.</td>
</tr>
<tr>
<td>WIAT-III</td>
<td>Wechsler Individual Achievement Test, Third Edition: In-depth assessment of early literacy, reading, written expression, fluency, math and oral language skills for ages 4 to adult. Test software generates error analysis, growth scores and intervention suggestions.</td>
</tr>
<tr>
<td>KTEA-II</td>
<td>Kaufman Test of Educational Achievement-II: In-depth assessment of early literacy, reading, written expression, fluency, math and oral language skills for ages 4 to 25. Includes alternate forms, error analysis, growth scores and intervention suggestions.</td>
</tr>
<tr>
<td>PAL-H</td>
<td>Process Assessment of the Learner — : Comprehensive, evidence-based assessment and intervention system used to evaluate and remediate the cognitive processes related to the acquisition of reading, writing, and math skills for grades K-6.</td>
</tr>
<tr>
<td>EMMA</td>
<td>Early Math Diagnostic Assessment: Measures math readiness, graph interpretation, time, money, measurement and probability for pre-K to grade 3.</td>
</tr>
<tr>
<td>BASI</td>
<td>Basic Achievement Skills Inventory: Group or individually administered norm-referenced test of vocabulary, spelling mechanics, comprehension, and mathematics for grades 3-12; administered in either paper/pencil or computer format.</td>
</tr>
</tbody>
</table>

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### Step 3: Response to Early Intervention for Math

<table>
<thead>
<tr>
<th>Grade</th>
<th>Additional Assessment to Identify and Intervene for Children at Risk in Math</th>
<th>Early Intervention for Children at Risk in Math (Step 2)</th>
<th>Progress Monitoring for Children at Risk in Math</th>
</tr>
</thead>
</table>
| K     | - PAL-II Numerical Coding  
- GELF II-RAN Color and Shapes |  
- PAL-II Numerical Coding  
- PAL-II Quantitative Working Memory  
- WISC-IV Arithmetic  
- PAL-II Math-Single Digits  
- Place Value | Repeat screening measures in Step 1 and measures in first column of Step 3 after intervention is completed. |
| 1     | - PAL-II Place Value  
- PAL-II Numerical Coding  
- PAL-II Quantitative Working Memory  
- WISC-IV Arithmetic  
- PAL-II Math-Double Digits  
- Place Value |  
- PAL-II Place Value  
- PAL-II Numerical Coding  
- PAL-II Quantitative Working Memory  
- WISC-IV Arithmetic  
- PAL-II Math-Double Digits  
- Place Value | Repeat screening measures in Step 1 and measures in first column of Step 3 after intervention is completed. |
| 2     | - PAL-II Place Value  
- PAL-II Numerical Coding  
- PAL-II Quantitative Working Memory  
- WISC-IV Arithmetic  
- PAL-II Math-Double Digits  
- Place Value Writing |  
- PAL-II Place Value  
- PAL-II Numerical Coding  
- PAL-II Quantitative Working Memory  
- WISC-IV Arithmetic  
- PAL-II Math-Double Digits  
- Place Value Writing | Repeat screening measures in Step 1 and measures in first column of Step 3 after intervention is completed. |

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Tier 2 at the building, class and student level

Tier 2 and Your Teams

STUDENT IDENTIFIED AS AT RISK AFTER UNIVERSAL SCREENING AND TIER 1 INSTRUCTIONAL INTERVENTION

Student may be reviewed at an intervention and progress monitoring team meeting (grade-level meeting, problem solving team, RTI team); might include: classroom teacher, content resource teacher/specialist, educational diagnostician, RTI specialist, school psychologist, etc. (Often the start of Tier 2)

Team determines if additional information needed to refine interventions; and/or selects Research-based intervention to implement and progress monitor after assessment. The form (type) of assessment should vary based on individual needs and questions to be Answered.

Determine Resources
**Tier 2 Within Your Building**

- Take time to develop a list of assessments, interventions and instructional materials available in your school for each content area.
- Talk to specialists and see what tools they have that may help in providing additional assessment information.

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**Example: Math Computation**

<table>
<thead>
<tr>
<th>Assessments</th>
<th>Interventions</th>
<th>Instructional materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMADE Operations and Computations</td>
<td>SuccessMaker Math</td>
<td>Envision Math</td>
</tr>
<tr>
<td>PAL-2</td>
<td>Mathematics Navigator</td>
<td>Focus Math</td>
</tr>
<tr>
<td>WIAT-3</td>
<td>Ramp Up Math</td>
<td>Math Fact worksheets</td>
</tr>
<tr>
<td>AIMSweb M-COMP</td>
<td>Fluency practice group</td>
<td>10 Minute Math</td>
</tr>
</tbody>
</table>

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**Small Group Instruction**
Tier 2

- Tier 2 and Beyond consists of general education instruction plus the following intervention: (CORE + MORE)
  - Small-group instruction (2-4 students)
  - 3-4 intervention sessions per week (30-60 minutes per session)
  - Conducted by trained and supervised personnel (does not have to be the classroom teacher)
  - Conducted in and out of the general education classroom
  - 9-12 weeks in duration (repeated, as needed)

Tier 2

- Small Groups (1:3, 1:5, 1:10)
- Point system for motivation
- Immediate corrective feedback
- Mastery of content before moving on
- More time on difficult activities
- More opportunities to respond
- Fewer transitions
- Setting goals and self-monitoring
- Special relationship with instructor

Who provides the Interventions?

- It is not important whether a certified teacher or a paraprofessional provides the instruction. But instruction should be systematic, highly explicit, and highly interactive
**Resources for Interventions**

- **Goal at Tiers 1 & 2:**
  - Strengthen core curriculum
  - Provide supplemental instruction to allow students to benefit from core curriculum
- **Helpful sites and materials**
  - [http://iris.peabody.vanderbilt.edu/resources.html](http://iris.peabody.vanderbilt.edu/resources.html)
  - [http://www.interventioncentral.org/index.php/academic-resources](http://www.interventioncentral.org/index.php/academic-resources)

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**Progress Monitoring**

- Monitor the progress of Tier 2 students at least once a month
- Use this data to determine whether students still require intervention. For those students still making insufficient progress, school-wide teams should design a tier 3 intervention plan.

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**Tier 2**

- Monitor the progress of Tier 2 students at least once a month
- Use this data to determine whether students still require intervention. For those students still making insufficient progress, school-wide teams should design a tier 3 intervention plan.
Progress Monitoring

- Schools need to monitor the progress of these students so that personnel possess information on how a student is doing in specific skills.
- It is important to use progress-monitoring data to regroup students after 6–9 weeks.
- Tier 2 students who demonstrate improvement and return to tier 1 should be carefully monitored to ensure that general classroom instruction is adequate.

How much data should be collected?

Making Data-Based Decisions With Progress Monitor

★ Typically need at least 7-10 data points (Shinn & Good, 1989) before making programming decision—and you may need to collect more if uncertain.
★ Christ & Silberglitt (2007) recommended 6-9 data points
★ As the number of data points increases, the effects of measurement error on the trend line decreases.

Frequency of Assessment Directly Related to Student Achievement

<table>
<thead>
<tr>
<th>Number of assessments/15 weeks</th>
<th>Effect Size (SD)</th>
<th>Percentile Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>.34</td>
<td>13.5</td>
</tr>
<tr>
<td>5</td>
<td>.53</td>
<td>20</td>
</tr>
<tr>
<td>10</td>
<td>.60</td>
<td>22.5</td>
</tr>
<tr>
<td>15</td>
<td>.66</td>
<td>24.5</td>
</tr>
<tr>
<td>20</td>
<td>.71</td>
<td>26</td>
</tr>
<tr>
<td>25</td>
<td>.76</td>
<td>28.5</td>
</tr>
<tr>
<td>30</td>
<td>.82</td>
<td>28</td>
</tr>
</tbody>
</table>


Similar results found by Fuchs & Fuchs (1986).
Frequency of Assessment Directly Related to Student Achievement

An effect size is a measure of the strength of the relationship between two variables in a statistical population. It is the average difference between two groups.

For interpretive purposes:
An effect size of .71 means that a student at the 50th percentile without formative evaluation would be expected to perform at the 76th percentile with formative evaluation.

General Guidelines Based on Best Practices & Research

<table>
<thead>
<tr>
<th>Progress Monitor (PM) Testing Frequency</th>
<th>R-CBM Recommendation Other measures need only one probe per session.</th>
<th>**Probable strength of PM data’s ability to reliably inform instruction:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>After 4 week period</td>
<td>After 6 week period</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2x/week</td>
<td><strong>Good</strong></td>
<td><strong>Excellent</strong></td>
</tr>
<tr>
<td>1x/week</td>
<td><strong>Fair</strong></td>
<td><strong>Fair</strong></td>
</tr>
<tr>
<td>Every ~10 days</td>
<td><strong>Poor</strong></td>
<td><strong>Poor</strong></td>
</tr>
<tr>
<td>Every 2 weeks</td>
<td><strong>Poor</strong></td>
<td><strong>Poor</strong></td>
</tr>
<tr>
<td>Every 3 weeks</td>
<td>Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>Every 4 weeks</td>
<td>Poor</td>
<td>Poor</td>
</tr>
</tbody>
</table>

* Consider all recommendations and guidelines as presented within this AIMSweb® training module, as well as other local factors that may apply.

Case Study ~ Nick

An effect size is a measure of the strength of the relationship between two variables in a statistical population.
Background

- 4th grader
- Only child, living with both parents.
- English is only language
- Has asthma and occasional misses school
- Failing grades in math
- Parents report that he is easily frustrated with math
- Decline in motivation/increased frustration
- Attended math summer school 2nd and 3rd grades
- Below the 20th% on both MCAP and MCOMP

Gather Additional Information:

- Interview teacher (Mrs. Sosa, Mrs. Martinez)
- Have them complete the ACES (Academic Competence Evaluation Scale)
- Interview parents (Mrs. Baron)
- Interview and observe student
- Review of RtI benchmark and progress monitoring data.

From this data create assessment question(s)

Observation and Interview Info

- Nick appeared engaged during lesson
- Did not volunteer to answer or ask questions
- Students were assigned 5 problems in 10 minutes
- Nick did not complete any of them
- He was not impulsive but was limited by the number of alternative strategies he used.
- He relied on verbal rehearsal to recall information
- He was unable to explain reasoning for strategies, even when response was correct.
Despite small-group supplemental instruction, Nick continues to struggle—What’s next?

Based on what you know right now, plan next steps for continued work with Nick at Tier 2:

What tools would you use?

What information are you looking for?

Moving into Tier 2: Some Assessment Questions:

• Why has Nick not shown adequate progress to Tier 1 Interventions?

• How do we make intervention more productive?

• Does he have specific needs/strengths that can the focus to improve skill acquisition?
**Tier 2 Assessment**

KeyMath 3 DA

- **Identify**
  - Diagnostic Assessment
- **Determine Need**
  - Analysis
- **Essential Resources**
  - Intervention
- **Re-assess**
  - Monitor Progress

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**NCTM Content Standards**

- **Five Content Standards**
  - Numeration and Operations, Algebra, Geometry, Measurement, Data Analysis & Probability

<table>
<thead>
<tr>
<th>KeyMath™-3 Subtests</th>
<th>Content Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numeration</td>
<td>Numeration &amp; Operations</td>
</tr>
<tr>
<td>Algebra</td>
<td>Algebra</td>
</tr>
<tr>
<td>Geometry</td>
<td>Geometry</td>
</tr>
<tr>
<td>Measurement</td>
<td>Measurement</td>
</tr>
<tr>
<td>Data Analysis &amp; Probability</td>
<td>Data Analysis &amp; Probability</td>
</tr>
</tbody>
</table>

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**NCTM Process Standards**

- **Five Process Standards**
  - Problem Solving, Connections, Communication, Representation, Reasoning & Proof
  - All 5 are incorporated into the KeyMath™-3 items throughout the 10 subtests
Tier 2 Standardized Testing

KeyMath 3 Diagnostic Assessment

<table>
<thead>
<tr>
<th>Domains</th>
<th>Score</th>
<th>Percentile Rank</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basics Concepts</td>
<td>79</td>
<td>8th</td>
<td>Below Average</td>
</tr>
<tr>
<td>Operations Score</td>
<td>78</td>
<td>7th</td>
<td>Below Average</td>
</tr>
<tr>
<td>Applications Score</td>
<td>83</td>
<td>13th</td>
<td>Below Average</td>
</tr>
<tr>
<td>Total Composite</td>
<td>79</td>
<td>8th</td>
<td>Below Average</td>
</tr>
</tbody>
</table>

Why has Nick not shown adequate progress to Tier 1 Interventions?

- He was encouraged to ask questions or receive help for solving problems.
- However, math is NOT just problem solving skills.
  - KeyMath 3 results show weaknesses across a broad range of math concepts and applications
  - Such a profile may reflect deeper needs...what’s next?

Linking Assessment to Intervention

- How do we make intervention more productive?
- Does he have specific needs/strengths that can the focus to improve skill acquisition?
- Functional Range Analysis and KeyMath 3 Essential Resources
  - Focused instruction
Monitor Progress

- KeyMath 3 ER
- KeyMath 3 DA
  - GSV
  - Standard Score
- Answer the following questions:
  - How much gain?
  - Is that gain significant?

The ASSESSMENTS we use are part of a PROCESS

- A single score is only reflective of “what” the student was able to demonstrate,
  - It doesn’t answer why the results were obtained
- Assessment results answer a referral question, are interpreted within a context, and guide us to interventions
- As clinicians, we need to think about what assessments we should use to answer the “how” and “why”

During Part 3 we will delve further into a comprehensive evaluation of Nick.

We will use a format of a School Neuropsychological Evaluation to understand Nick’s learning.
Please Join Us for Part 3:

Part 3 is: Wednesday, May 9, 2012
12:00 PM-1:00 PM EDT

http://psychcorp.pearsonassessments.com/pai/ca/training/webinars/RTIWebinarSeries.htm

adam.scheller@pearson.com
misty.sprague@pearson.com