DATA BASED DECISION MAKING IN THE RTI PROCESS: WEBINAR #3
RATE OF IMPROVEMENT & GAP ANALYSIS

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NYS RtI TAC
Agenda

• Key Decisions When Analyzing Universal Screening Data
  • Key Decisions When Analyzing Progress Monitoring Data
  • Basic Concepts of Rate of Improvement
  • Calculating Rate of Improvement
  • Conducting a Gap Analysis
  • Progress Monitoring ROI
  • Interpreting Progress Monitoring Data
General Strengths of CBM for Progress Monitoring

- Measures are generally short and efficient (1 minute for Reading individually administered, 8 minutes for math that can be group administered)
- Reading is General Outcome Measure, cuts across reading skills, strong correlations to state assessments
- Measures remain sensitive to growth within grades across the year
CBM is NOT only Measure for Progress Monitoring

- Concepts of Rate of Improvement apply to all monitoring measures
- Nature of calculations and specifics may need to be adapted for different measures
- Measures that provide growth rates can be used for ROI calculation and determination
Why ROI?

- RTI is about identifying whether a student responds or does not respond to instruction and intervention
- Key assumption – fidelity of core instruction and intervention must be strong for ROI to have meaning
- Requires determining a student’s **Rate** of Response to Instruction and Intervention
- Determining Response involves two key items against peer expectations:
  - How LOW?
  - How SLOW?
How Low? How Slow?

• How Low = Level
  • How different is the student from their peers in terms of reaching the expected **benchmark scores**?

• Benchmark Scores
  • Cut scores that mark predicted low risk category
  • Represent the **minimum** score students should achieve
  • National vs local benchmarks

• How Slow = Growth
  • How different is the students’s RATE of growth compared to what is expected for peers who grow at **benchmark rates**?
Key Resource

• Introduce key resource
Grade 2- How Slow? Or Benchmark Rate of Improvement (ROI)

- How Slow?
  - How different is the student from their peers in terms of the Rate of Improvement for expected benchmark scores?
  - How different is the student from their peers in terms of the Rate of Improvement for progress monitoring scores?
- ROI = Change Over Time
Grade 2 Student – How Low?

Difference from Benchmark - Fall

52
72
87

Difference from Benchmark - Spring

20
50

Key Terms in ROI

• TYPICAL Rate of Improvement (ROI)
  • Expected rate of progress of students from benchmark to benchmark

• TARGET Rate of Improvement
  • Rate of improvement of from the starting point of the student below benchmark to the next benchmark point

• ATTAINED Rate of Improvement
  • Rate of improvement (slope) actually attained by the student in progress monitoring
ROI Benchmark Calculations

• Benchmark Scores (DIBELS Next) – Grade 2
  • Typical ROI
    • From 52 to 87 in 36 weeks = (87 − 52)/36 = 0.97 wcpm/week
  • Target ROI
    • From 20 to 87 in 36 weeks = (87 − 20)/36 = 1.86 wcpm/wk
  • Attained ROI
    • From 20 to 50 in 36 weeks = (50 − 20)/36 = 0.83 wcpm/week

• DIBELS Next ROI

• AIMSweb ROI
## DIBELS Next ROI

DIBELS Next benchmarks & ROI (ROI based on 18 weeks between benchmarks, 36 total weeks)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Fall</th>
<th>Winter (Fall-Win ROI)</th>
<th>Spring (Win-Spr ROI)</th>
<th>Total Year ROI</th>
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</thead>
<tbody>
<tr>
<td>K-FSF</td>
<td>10</td>
<td>30 (1.1)</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>K-PSF</td>
<td>0</td>
<td>20 (1.1)</td>
<td>40 (1.1)</td>
<td>1.11</td>
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<tr>
<td>K-NWF</td>
<td>0</td>
<td>17 (.9)</td>
<td>28 (.6)</td>
<td>0.78</td>
</tr>
<tr>
<td>1 – NWF (CLS)</td>
<td>27</td>
<td>43 (.9)</td>
<td>58 (.8)</td>
<td>0.86</td>
</tr>
<tr>
<td>1 - ORF</td>
<td>0</td>
<td>23 (1.3)</td>
<td>47 (1.3)</td>
<td>1.31</td>
</tr>
<tr>
<td>2 - ORF</td>
<td>52</td>
<td>72 (1.1)</td>
<td>87 (.8)</td>
<td>0.97</td>
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<tr>
<td>3 – ORF</td>
<td>70</td>
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<tr>
<td>4 - ORF</td>
<td>90</td>
<td>103 (.7)</td>
<td>115 (.7)</td>
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<tr>
<td>5 – ORF</td>
<td>111</td>
<td>120 (.5)</td>
<td>130 (.6)</td>
<td>0.53</td>
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<tr>
<td>6 – ORF</td>
<td>107</td>
<td>109 (.1)</td>
<td>120 (.6)</td>
<td>0.36</td>
</tr>
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</table>
# AIMSweb ROI

## AIMSweb® National Norms Table

**Reading - Curriculum Based Measurement**

<table>
<thead>
<tr>
<th>Grade</th>
<th>%ile</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
<th>Group ROI</th>
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<tbody>
<tr>
<td></td>
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<td>Num</td>
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<td>90</td>
<td>38282</td>
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<td>140</td>
<td>156</td>
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<tr>
<td></td>
<td>75</td>
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<td>88</td>
<td>115</td>
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<td>50</td>
<td></td>
<td>62</td>
<td>88</td>
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<td></td>
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<td>35</td>
<td>64</td>
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<td></td>
<td>10</td>
<td>17</td>
<td>39</td>
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<tr>
<td></td>
<td>Mean</td>
<td>64</td>
<td>90</td>
<td></td>
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<tr>
<td></td>
<td>StdDev</td>
<td>37</td>
<td>38</td>
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<td>3</td>
<td>90</td>
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<td>143</td>
<td>162</td>
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<td>75</td>
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<td>152</td>
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<td>50</td>
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<td>87</td>
<td>111</td>
<td>127</td>
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<td>90</td>
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<td>178</td>
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<td>134</td>
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<td>168</td>
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<td>125</td>
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<td></td>
<td>Mean</td>
<td>109</td>
<td>126</td>
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<td>140</td>
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<tr>
<td></td>
<td>StdDev</td>
<td>39</td>
<td>40</td>
<td></td>
<td>42</td>
</tr>
</tbody>
</table>

**Num** = Number of Students  
**WRC** = Words Read Correct  
**ROI** = Rate Of Improvement  
ROI is Spring Score minus Fall Score (or Winter minus Fall) divided by 36 weeks (or 18 weeks)

User norms will be used when national norms are unavailable.
Grade 2 Student – How Slow?
Benchmark ROI

Typical Benchmark ROI = 0.97 wcpm/wk

Target Benchmark ROI = 1.86 wcpm/wk

Attained Benchmark ROI = 0.83 wcpm/wk

Difference from Benchmark - Fall

Difference from Benchmark - Spring
Benchmark ROI Interpretation

Gap Analysis

• Student needs to move at a rate faster than typical student’s rate to close the gap.
• Student is moving at a rate about 20% slower than typical students rate.
• Gap between the student and what is expected has gotten larger, student is NOT responding to instruction and intervention.
Gap Analysis

- Simple quantitative way to describe how low and how slow.
- Discrepancy between expected and attained performance translated into empirical value
  - Divide performance at point of referral to the expected benchmark performance of same age/grade peers
  - Can be done for both benchmark assessments and rate of improvement

Not Discrepant

Toward SLD Determination

1.0

?? Critical Value?
Example- Calculate Benchmark ROI

- Grade 3 DIBELS Next Benchmark

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>70</td>
</tr>
<tr>
<td>Winter</td>
<td>86</td>
</tr>
<tr>
<td>Spring</td>
<td>100</td>
</tr>
</tbody>
</table>

- Grade 3 Attained Scores

<table>
<thead>
<tr>
<th></th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
</tr>
<tr>
<td>Winter</td>
<td>56</td>
</tr>
<tr>
<td>Spring</td>
<td>71</td>
</tr>
</tbody>
</table>

- Calculate Typical ROI, Target ROI, Attained ROI
  - Fall to Spring
Results- Benchmark ROI

- Typical ROI
  Fall to Spring \( \frac{100 - 70}{36} = 0.83 \text{ wcpm/wk} \)

- Target
  Fall to Spring \( \frac{100 - 40}{36} = 1.67 \text{ wcpm/wk} \)

- Attained ROI
  Fall to Spring \( \frac{71 - 40}{36} = 0.86 \text{ wcpm/wk} \)

- Student moving at slightly higher rate as peers but at low level.
- Student NOT closing the gap between themselves and peers.
Typical Benchmark
Fall to Spring ROI = 0.83 wcpm/wk

Attained Benchmark
Fall to Spring = 0.86 wcpm

Target Benchmark
Fall to Spring = 1.67 wcpm
### Worksheet - Discrepancy of Gap Analysis

<table>
<thead>
<tr>
<th>DIBELS Next Benchmarks for 4th grade</th>
<th>Student’s Scores on Benchmark Assessment Probes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall =</td>
<td>Fall =</td>
</tr>
<tr>
<td>Winter =</td>
<td>Winter =</td>
</tr>
<tr>
<td>Spring =</td>
<td>Spring =</td>
</tr>
</tbody>
</table>

**Typical F-Sp ROI =**  
**Target F - Sp ROI =**  
**Attained F-Sp ROI =**

<table>
<thead>
<tr>
<th>Calculation</th>
<th>Gr 4</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level Discrepancy Analysis (How low?) (winter data)</strong></td>
<td>Discrepancy = Benchmark /Attained</td>
<td></td>
</tr>
<tr>
<td>% Expected Performance = 100 - (((Benchmark - Attained) / Benchmark) * 100)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Performance Against Typical</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ROI Benchmark Discrepancy Analysis (How slow?)</strong></td>
<td>Discrepancy = Targeted ROI/Attained ROI</td>
<td></td>
</tr>
<tr>
<td>% targeted growth = 100 - [Targeted ROI–Attained ROI/Targeted ROI]</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rate Against Target (did the gap close?)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ROI Discrepancy Analysis (How slow?)</strong></td>
<td>Discrepancy = Typical ROI/Attained ROI</td>
<td></td>
</tr>
<tr>
<td>% typical growth = 100 - [Typical ROI–Attained ROI/Targeted ROI]</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Against Typical (did the gap close)</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Worked Example - Discrepancy of Gap Analysis

<table>
<thead>
<tr>
<th>Calculation</th>
<th>Gr 3</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level Discrepancy Analysis</strong></td>
<td>Discrepancy = Benchmark / Attained</td>
<td></td>
</tr>
<tr>
<td>(How low?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Performance Against Typical</strong></td>
<td>% Expected Performance = % Expected Performance = 100 - (((Benchmark - Attained) / Benchmark) * 100)</td>
<td></td>
</tr>
<tr>
<td>(Did the gap close?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ROI Benchmark Discrepancy Analysis</strong></td>
<td>Discrepancy = Targeted ROI / Attained ROI</td>
<td></td>
</tr>
<tr>
<td>(How slow?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rate Against Target</strong></td>
<td>% Targeted Growth = 100 - (((Target ROI - Attained ROI) / Target ROI) * 100)</td>
<td></td>
</tr>
<tr>
<td>(Did the gap close?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ROI Discrepancy Against Typical</strong></td>
<td>Discrepancy = Typical ROI / Attained ROI</td>
<td></td>
</tr>
<tr>
<td>(How slow?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Against Typical</strong></td>
<td>% Typical Growth = 100 - (((Typical ROI - Attained ROI) / (Typical ROI) * 100)</td>
<td></td>
</tr>
<tr>
<td>(Did the gap close?)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DIBELS Next Benchmarks for 3rd Grade
- Fall = 70
- Winter = 86
- Spring = 100

### student’s Scores on Benchmark Assessment Probes
- Fall = 40
- Winter = 56
- Spring = 71

**Typical F-Sp ROI = 0.83**

**Target F-Sp ROI = 1.67**

**Attained F-Sp ROI = 0.86**

### Calculation Results

- (May Data) 100 / 71 = **1.41**
- 100 - (((100 - 71) / 100) * 100) = **71%**
- 1.67 / 0.86 = **1.94**
- 100 - (((1.67 - 0.86) / 1.67) * 100) = **51.5%**
- .83 / 0.86 = **0.97x**
- 100 - (((0.83 - 0.86) / (0.83) * 100) = **103.6%**
Interpretation of Worked Example

• How LOW?
  • Against expected grade level benchmarks, performing at end of the year 1.4x under expectations, or 71% of the performance expected by grade level peers

• How SLOW? (Catch Up Growth)
  • Against TARGETED GROWTH over the year to close the gap against grade level peers, remained 1.94x behind expected growth or made 51.5% of expected growth

• How SLOW? (Actual Growth)
  • Against growth of TYPICAL grade level peers, grew at rate slightly faster than peers, or 103.6% of typical performing peers

• Conclusions
  • Although student is growing at a good pace for second graders, his catch up growth remains substantially behind what would be desired.
Gap Analysis

- Discrepancy between expected and attained performance translated into empirical value

Not Discrepant

1.0

Toward SLD Determination

?? Critical Value?
### Interpretation Example

<table>
<thead>
<tr>
<th><strong>Is the student’s progress slow?</strong></th>
<th>Core Only</th>
<th>Core + Up to 20 minutes (Classroom Based Flexible Groups – Tier 1)</th>
<th>Core + Up to 45 Minutes of Supplemental Intervention (Standard Protocol – Tier 2)</th>
<th>Core + 45 Minutes of Supplemental Intervention (Standard Protocol – Tier 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 150% of expected rate of growth</td>
<td>Core Only</td>
<td>Core + Up to 20 minutes (Classroom Based Flexible Groups – Tier 1)</td>
<td>Core + Up to 45 Minutes of Supplemental Intervention (Standard Protocol – Tier 2)</td>
<td>Core + 45 Minutes of Supplemental Intervention (Standard Protocol – Tier 3)</td>
</tr>
<tr>
<td>110 – 150% of expected rate of growth</td>
<td>Core Only</td>
<td>Core + Up to 20 minutes (Classroom Based Flexible Groups – Tier 1)</td>
<td>Core + Up to 45 Minutes of Supplemental Intervention (Standard Protocol – Tier 2)</td>
<td>Core + 45 Minutes of Supplemental Intervention (Standard Protocol – Tier 3)</td>
</tr>
<tr>
<td>95 – 110% of expected rate of growth</td>
<td>Core Only</td>
<td>Core + Up to 20 minutes (Classroom Based Flexible Groups – Tier 1)</td>
<td>Core + Up to 45 Minutes of Supplemental Intervention (Standard Protocol – Tier 2)</td>
<td>Core + 45 Minutes of Supplemental Intervention (Standard Protocol – Tier 3)</td>
</tr>
<tr>
<td>81 – 95% of expected rate of growth</td>
<td>May Need More Support</td>
<td>May Need More Support</td>
<td>May Need More Support</td>
<td>May Need More Support</td>
</tr>
<tr>
<td>80% or less of expected rate of growth</td>
<td>Needs More</td>
<td>Needs More</td>
<td>Needs More</td>
<td>Needs More</td>
</tr>
</tbody>
</table>
Progress Monitoring in RtI

• Key to data based decision making

• Use PM data as basis for continue tiered instruction, increase goals, change instruction

• Use PM data as basis for potential consideration down the road for eligibility decisions
Key Terms in ROI Progress Monitoring

• TYPICAL Rate of Improvement
  • Expected rate of progress of students from benchmark to benchmark

• TARGET Rate of Improvement
  • Rate of improvement from the starting point of the student’s benchmark to the next benchmark point

• ATTAINED Rate of Improvement
  • Rate of improvement (slope) actually attained by the student in progress monitoring
Calculating ATTAINED ROI for Progress Monitoring

- Three Main Ways to calculate
  - Two point ROI
  - Modified two point ROI
  - Ordinary Least Squares (OLS) calculation
Two Point Attained ROI Calculation

- Similar to Benchmark ROI
- Use the starting and ending point of the data set
- Use the number of weeks across which progress monitoring is collected
- Example – Note that student scores on Benchmark Assessment Probes are being used here as starting and ending points
  - Ending point = 92
  - Starting point = 37
  - ROI = 92 – 37/36 weeks = 1.53

- Tool Available
  - Iris Vanderbilt Slope Calculator
What does it look like graphically?

Dynamic Indicators of Basic Early Literacy Skills
Progress Monitoring Graphs

Legend
- Benchmark Assessment
- Progress Monitoring Assessment
- Target Bar
- Target Goal
- Score Above Graph Bounds
- Score At or Above Aimline
- Score Below Aimline
- Consider Adjusting Intervention

Oral Reading Fluency (Grade-Level Passage: Second Grade)

Correct Words Per Minute

Benchmark Scores:
- September: 37
- October: 59
- November: 92

Progress Monitoring Scores
- Week 1: 60
- Week 2: 46
- Week 3: 50
- Week 4: 61
- January: 50
- February: 59
- March: 66
- April: 80
- May: 59
- June: 59
## Advantage/Disadvantage with Two Points

### Attained ROI Calculation

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple to calculate</td>
<td>Very vulnerable to single outliers</td>
</tr>
<tr>
<td>- By calculator</td>
<td>- If last data point was 60 instead of 92, ROI would be =0.7</td>
</tr>
<tr>
<td>- Use of Slope calculator</td>
<td>- “End of school year drop”</td>
</tr>
<tr>
<td>Easy to understand</td>
<td>- If first data point was 60 instead of 37, ROI would be = 0.9</td>
</tr>
<tr>
<td></td>
<td>- “Beginning of school year motivation”</td>
</tr>
<tr>
<td></td>
<td>Does not account for entire set of PM data</td>
</tr>
<tr>
<td></td>
<td>May prefer a more precise method high stakes diagnostic decision making</td>
</tr>
</tbody>
</table>
Outlier Data Point at End

Dynamic Indicators of Basic Early Literacy Skills
Progress Monitoring Graphs

Legend
- Benchmark Assessment
- Target Bar
- Progress Monitoring Assessment
- Target Goal
- Score Above Graph Bounds
- Score At or Above Aimline
- Score Below Aimline
- Consider Adjusting Intervention

Oral Reading Fluency (Grade-Level Passage: Second Grade)

Correct Words Per Minute

- September
- October
- November
- December
- January
- February
- March
- April
- May
- June

Benchmark Scores:
- September
- October
- November
- December
- January
- February
- March
- April
- May
- June

60

Progress Monitoring Scores

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>46</td>
<td>50</td>
<td>59</td>
</tr>
<tr>
<td>50</td>
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<td>66</td>
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<tr>
<td>59</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
</tbody>
</table>
Outlier Data Point at Beginning
Modified Two Point Solution

- Use MEDIAN (Middle) score first 3 data points
- Use MEDIAN (Middle) score last 3 data points
- Calculate the two point ROI
  - Median first 3 = 60
  - Median last 3 = 80
  - ROI = 80 - 60/36 = 0.6
What does it look like graphically?

![Graph of Dynamic Indicators of Basic Early Literacy Skills Progress Monitoring Graphs]

- **Median = 60**
- **Median = 80**
Advantage/Disadvantage with Modified Two Point Attained ROI Calculation

**Advantages**
- Controls for outliers at beginning of year
- Controls for outliers at end of year
- Simple to calculate
- Use of slope calculator

**Disadvantage**
- Does not take into account the entire set of PM data
- May prefer a more precise method high stakes diagnostic decision making
Ordinary Least Squares (OLS) Attained ROI Calculation

- Uses linear regression
  - Mathematical process for establishing the straight line that cuts through all the data points
  - Establishes the LINEAR TREND in the data
- Takes into account ALL data points in the series
- Requires mathematical calculation best left to software to do!
- Some commercial software (AIMSweb) does it for you.
- Some commercial software (DIBELS) gives you the ability to do it.
- EXCEL can do it! (But you need a moderate level of EXCEL comfort level)
OLS Calculation of Attained ROI

• Spreadsheet must be set up to do this
• Demonstration here is with an established spreadsheet using the same DIBELS data
• Demonstrate using spreadsheet
  • $y = bx + a$
  
  Rate of Improvement
  (Slope)

• Excellent resource for OLS Calculation
  • Caitlin Flinn, Andrew McCrae, Mathew Ferchalk
  • Rate of Improvement
OLS Calculation with DIBELS Data

Words Correct Per Min

Attained ROI = 1.0 wcpm/wk
OLS Calculation with DIBELS Data

Target ROI = 1.47 wcpm/wk

Attained ROI = 1.0 wcpm/wk
Let’s Compare Calculations

- Typical ROI = 90 - 44/36 = 1.28
- Targeted ROI = 90 - 37/36 = 1.47
- Attained ROI
  - Two Point Calculation = 1.53
  - Modified Two Point Calculation = 0.56
  - OLS Calculation = 1.00
- Different approaches result in different outcomes
- Recommended approach in literature is OLS
Interpreting Progress Monitoring Data
How Many Data Points?

- 10 data points are a minimum requirement for a reliable trendline (Gall & Gall, 2007)
- 7-8 is minimum for using the Tukey Method (Wright, 1992)
- 8-9 for stable slopes of progress in early writing (McMaster, 2011)
- Take-away: The more data points the more stable the slope (Christ, 2006; Hintze & Christ, 2004)
## Results Summary

<table>
<thead>
<tr>
<th>Dataset Quality</th>
<th>Very Good</th>
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<td>Residual ($r_{ij}$)</td>
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<td>CBMs-R per Occasion</td>
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### Schedule of Occasions

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<th>Number of Weeks&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Pre-Post Mean</th>
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<th>Pre-Post Mean</th>
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<sup>a</sup> The table uses symbols to indicate whether the criteria are met. For example, a circle with a dot inside indicates that the AUC is 0.85 or above for that combination of weeks and schedule of occasions. The legend is as follows:

- ○: Does not meet criteria
- ○: AUC .85 or above
- ○: AUC .85 or above + Validity .70 or above
- ○: AUC .85 or above + Validity .70 or above + Reliability .70 or above
- ○: AUC .85 or above + Validity .70 or above + Reliability .70 or above + RMSE .35 or below
Standard Error – Interpreting Trend

• All measures have error
• Change in performance over time must be interpreted by considering error
• If change from one point to next is within error, no big deal
• If change from one point to next is larger than error, need to check whether change is “real” or “accidental”
  • Easier or harder passage than one before
  • Student was physically ill
  • Student just clicked away on the computer
• CBM ORF SEM = 10 wcpm (range 5-15)
Grade 2 = Real or Error?
SEM = 10

ROI = 0.60 wcpm/week
Goal = 98 (25th %tile)
Initial Data = 46 (<10th %tile)
Grade 2 = Real or Error?
SEM = 10

ROI = .60 wcpm/week
Aim Line = 1.86 wcpm/week
(98 - 46/28 weeks)

Initial Data = 46 (<10th %tile)
Grade 2 = RCBM PM Example

- **Initial Data**: 46 (<10th %tile)
- **Goal**: 98 (25th %tile)
- **Aim Line**: 1.86 wcpm/week
- **ROI**: 0.60 wcpm/week
- **y = 0.0855 * 7 days = 0.60**
Grade 3 – Real or Error?

SEM = 10

ROI = 2.52 wcpm/week

Goal = 82 (25th %tile)

Aim Line = 1.5 wcpm/week

Initial Data = 40 (10th %tile)
Grade 3 – Real or Error?
SEM = 10
Guidelines for Decision Making

- Examples from one school district
- Used to guide decisions toward evaluation consideration
Incorporating Discussion of ROI into Tier Movement

- Schools in NY have developed decision rules regarding tier movement
Without Data…

It’s ONLY An Opinion!
End day 3

• Next Webinar- Monday, January 12, 2015 4 – 5:30 pm

• Practical Suggestions for Using Data Based Decision Making in Your School

• Q & A with participants