STUDENT ENGAGEMENT: Are Your Test Scores Valid?
Student Engagement: Are Your Test Scores Valid?
Derrick Vargason
Senior Manager, NWEA
What if...?
Poll Question

Do you see rapid-guessing during assessments at your school?
Steve Wise, Ph.D.
Senior Research Fellow
Adaptive Tests

- MAP Growth is an *adaptive test*
  - the difficulty of the items adjust to match the student
- Items are chosen to be moderately challenging
- These types of items allow efficient testing
- Each item provides maximal information
Status and Growth

- MAP Growth produces scores, called *RITs*, that are on a vertical, equal interval, cross-grade scale.
- Measures student achievement and longitudinal growth over time.
The graph shows the performance of items over their positions, with three lines indicating different metrics:

- **Item Difficulty** represented by green color.
- **Provisional RIT** represented by purple color.
- **Final ML RIT** represented by orange dotted line.

The x-axis represents the Item Position, ranging from 2 to 50, while the y-axis represents the RIT, ranging from 120 to 280. The graph indicates variations in item performance across different positions, with the Final ML RIT line suggesting a more stable and final measure of RIT.
Test-taking Engagement

+ Tests like MAP Growth are used to measure what a particular student knows and can do
+ MAP Growth is carefully designed for this purpose
+ But, having a well-designed test simply isn’t enough to guarantee a valid score
+ It also requires a student who is engaged during the test, and tries to do his or her best
Impact of Disengagement

- Typically leads to scores that **underestimate** what the student knows and can do.

- The effects are:
  - Misleading information for educators about growth and what the student is ready to learn.
  - Students may be placed in instructional programs they don’t need.
  - Time & resources are wasted.
Acknowledging the Problem

+ The reality is that disengaged test taking occurs with MAP Growth
+ It occurs with all educational assessments
+ NWEA is committed to addressing the problem
Your questions

So, how does it work?
Rapid-guessing Behavior

Our method for detecting disengaged test taking is based on the amount of time test takers spend on test items.

Called Response Time Effort (RTE), it is a published, validated measure of test-taking engagement.

To compute RTE, each item response is classified as either solution behavior or rapid-guessing behavior.
Detecting Disengagement

- Using RTE, we are able to measure the amount of test-taking engagement exhibited during a MAP Growth test event.
- This allows us to assess overall test taking engagement.
- We can also assess rapid-guessing down to the level of individual item responses.
Percent of Students with 10% or More Rapid Guesses (Spring)

- 8TH GRADE: 7%
- 7TH GRADE: 8%
- 6TH GRADE: 5%
- 5TH GRADE: 3%
- 4TH GRADE: 2%
- 3RD GRADE: 2%
Percent of Students with 10% or More Rapid Guesses (Spring)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Reading</th>
<th>Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>8TH GRADE</td>
<td>12%</td>
<td>7%</td>
</tr>
<tr>
<td>7TH GRADE</td>
<td>14%</td>
<td>8%</td>
</tr>
<tr>
<td>6TH GRADE</td>
<td>9%</td>
<td>5%</td>
</tr>
<tr>
<td>5TH GRADE</td>
<td>6%</td>
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</tr>
<tr>
<td>4TH GRADE</td>
<td>7%</td>
<td>2%</td>
</tr>
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<td>3RD GRADE</td>
<td>6%</td>
<td>2%</td>
</tr>
</tbody>
</table>
No Disengagement

10 points of growth
Disengagement at Time 1

16 points of growth
Disengagement at Time 2

4 points of growth
Your questions

What can we do about it?
What Can Educators Do

- Emphasize to teachers the importance of student engagement
- Emphasize to students that their engagement is important to their instruction
- Administer the test in a setting free from distractions
- Enhance student ownership by developing growth goals
What NWEA Is Doing

✚ Provide data in the Student Profile report
✚ Prompt the proctor, in a live test session, of its occurrence
**Proctor Notification**

+ What does it look like?

+ A student is rapid guessing

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**TEST STUDENTS**

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Status</th>
<th>Approximate Question</th>
<th>Test Assignment</th>
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</thead>
<tbody>
<tr>
<td>Adams</td>
<td>Debbie</td>
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<td>Growth: Math 2-5 MS 2017</td>
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<td>Cassidy</td>
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<td>Samantha</td>
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Proctor Notification

+ What would it look like?
+ A student is rapid guessing

Student Engagement tracks how fast questions are being answered and determines if Proctor intervention should be taken.

The 1 student below is skipping through test questions.

Encourage the student to make their best effort.

Cassidy, Tom
1 min ago
Compared to her overall score, Mary-Margaret has strengths in Measurement and Data, Statistics, and Probability. As a student, she can take advantage of these strengths when she is learning new material.
“We know there is a connection between their engagement on a test and how they do in other areas as well.”

Emily Wolk  
Assistant Director of Research and Evaluation  
Santa Ana Unified School District, CA

Read more: nwea.us/rapidguess
Chat window

Question: What are your approaches to reduce rapid-guessing?
QUESTIONS?