MTSS & The 4-Step Problem Solving Process

Summit on School Climate and Culture

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Explore the 4-Step Problem Solving process as a critical backbone of MTSS
The single greatest determinant of learning is not socioeconomic factors or funding levels is instruction.

A bone-deep, institutional acknowledgement of this fact continues to elude us.

Schmoker, 2006
**Critical Components of MTSS**

- **Multiple Tiers of Instruction & Intervention**
- **Problem Solving Process**
- **Data Evaluation**
- **Communication & Collaboration**
- **Leadership**
- **Capacity Building Infrastructure**

*MTSS is a framework to ensure successful education outcomes for ALL students by using a data-based problem solving process to provide, and evaluate the effectiveness of multiple tiers of integrated academic, behavior, and social-emotional instruction/intervention supports matched to student need in alignment with educational standards.*
MTSS & the Problem-Solving Process
Academic and Behavior Systems

Tier 3: Intensive, Individualized Interventions & Supports.
The most intense (increased time, narrowed focus, reduced group size) instruction and intervention based upon individual student need provided in addition to and aligned with Tier 1 & 2 academic and behavior instruction and supports.

Tier 2: Targeted, Supplemental Interventions & Supports.
More targeted instruction/intervention and supplemental support in addition to and aligned with the core academic and behavior curriculum.

Tier 1: Core, Universal Instruction & Supports.
General academic and behavior instruction and support provided to all students in all settings.
Problem-Solving is the Engine That Drives Instruction and Intervention

It is the MOST Critical Skill A Leader Can Possess

K. Leithwood, 2007
## Problem Solving Process: Levels of Implementation

<table>
<thead>
<tr>
<th>Level of Implementation</th>
<th>Problem Solving Team</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Individual Teacher and/or Teacher Teams</td>
<td>Student is continually absent from class</td>
</tr>
<tr>
<td>Classroom</td>
<td>Individual Teacher and/or Teacher Teams</td>
<td>A large number of students in one classroom failed the unit test</td>
</tr>
<tr>
<td>Grade/Department Level</td>
<td>Teacher Teams and/or Instructional Leadership Team</td>
<td>A majority of students in grade 9 Algebra did not perform well on the mid-year assessment</td>
</tr>
<tr>
<td>School Level</td>
<td>Instructional Leadership Team</td>
<td>Low overall percentage of students meeting growth targets</td>
</tr>
<tr>
<td>District Level</td>
<td>District Senior Leadership Team</td>
<td>Increase in expulsions across schools</td>
</tr>
</tbody>
</table>
Problem Solving Process

**Define the Problem. Identify the goal**
- What do we want students to know and be able to do?

**Implement Plan**
- What are we going to do about it?
  - Implement as Intended
  - Progress Monitor
  - Modify as Necessary

**Evaluate**
- Did it work?
  - Response to Instruction & Intervention

**Problem Analysis**
- Why is the goal not being attained?
  - Validating Problem
  - Identify Variables that contribute to Problem
  - Hypotheses/Data Collection
Steps in the Problem-Solving Process

1. Define the Problem (What is the Goal?)
   - Determine the gap or difference between the expectation and what is actually occurring in terms of student performance or behavior

2. Problem Analysis (Why is it occurring)?
   - Hypothesize possible root causes
   - Analyze supplemental data to support or refute each hypothesis
   - Validate whether your hypothesis is true based on the additional data

3. Implement Plan (What can be done to solve it?)
   - Select the intervention(s) or strategies that will address the problem
   - Develop and implement the plan with fidelity

4. Evaluate (Did it work?)
   - Collect and use school-wide, small group, and individual student data to determine if the plan is working to address the problem
   - Progress monitor and modify, if necessary
   - Evaluate the response: good, questionable, poor
Steps in the Problem-Solving Process

1. Goal Identification
   - Identify replacement behavior
   - Data- current level of performance
   - Data- benchmark level(s)
   - Data- peer performance
   - Data- GAP analysis

2. Analysis
   - Develop hypotheses (brainstorming)
   - Develop predictions/assessment
Problem Identification

Peers

Benchmark

Current Level of Performance
Problem Identification

Current Level of Performance

Benchmark

Peers
Problem Identification

Current Level of Performance

Benchmark

Peers

Current Level of Performance
Step 2 Problem Analysis
(Why is it occurring?)

- Develop root cause hypotheses
- Using data validate or invalidate hypotheses
"I think you should be more explicit here in step two."
Developing a Hypothesis involves...

- **Answering**: Why isn’t the goal being attained?
- **Identifying** possible root causes
- **Analyzing** and validating supplemental data to support or refute each hypothesis
Developing a Hypothesis

Developing informed statements about why the desired behavior(s) are not occurring.

Example:

The (desired behavior) is not occurring because…

39% of students are not passing Math I because…
Develop Hypothesis

Instruction
(strategies, pacing, etc.)

Curriculum
(order, materials, etc.)

Environment
(schedule, group size, culture, etc.)

Learner
Testing Hypotheses using...

ICEL by RIOT Matrix
<table>
<thead>
<tr>
<th>Key Domains of Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Instruction</strong></td>
</tr>
<tr>
<td><strong>Curriculum</strong></td>
</tr>
<tr>
<td><strong>Environment</strong></td>
</tr>
<tr>
<td><strong>Learner</strong></td>
</tr>
</tbody>
</table>
## Test and Validate Hypotheses

<table>
<thead>
<tr>
<th>R</th>
<th>eview</th>
<th>Review of historical records and products</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>nterview</td>
<td>Interviews of key stakeholders</td>
</tr>
<tr>
<td>O</td>
<td>bserve</td>
<td>Observe performance in real time functional settings</td>
</tr>
<tr>
<td>T</td>
<td>est</td>
<td>Test through careful use of appropriately matched measurement strategies/methods</td>
</tr>
</tbody>
</table>
### Problem-Solving using the ICEL/RIOT Matrix

<table>
<thead>
<tr>
<th>Domain</th>
<th>Variables</th>
<th>Review</th>
<th>Interview</th>
<th>Observe</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction</td>
<td>Instructional decision making regarding selection and use of materials</td>
<td>Unit/Lessons Plans</td>
<td>Stakeholders about: Effective teaching practices</td>
<td>Teachers’ instructional styles/preferred styles of presenting</td>
<td>Classroom environment survey</td>
</tr>
<tr>
<td></td>
<td>Use of progress monitoring</td>
<td></td>
<td>Instructional decision making regarding choice of materials, placement of students, instructional strategies</td>
<td>Clarity of instructions/directions</td>
<td>Develop checklists on effective instruction</td>
</tr>
<tr>
<td></td>
<td>Explicit Instruction</td>
<td></td>
<td>Sequencing/pacing of instruction</td>
<td>Effective teaching practices</td>
<td>“Things to Look For” and “Ask About”</td>
</tr>
<tr>
<td></td>
<td>Differentiated Instruction</td>
<td></td>
<td>Choice of screening, diagnostic and formative assessments</td>
<td>Communication of benchmarks/expectations and criteria for success</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sequencing of lesson designs to promote success</td>
<td></td>
<td>Product methods (e.g., dictation, oral retell, paper pencil, projects)</td>
<td>How new information is presented</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of a variety of practice and application activities</td>
<td></td>
<td>Grouping structures used</td>
<td>Percent of time with direct instruction, whole group instruction, practice time, differentiated instruction, etc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pace and presentation of new content</td>
<td></td>
<td>Accommodations/modifications used</td>
<td>How teachers gain/maintain student attention</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Block of time allotted per subject</td>
<td></td>
<td>Reinforcement management/engagement strategies</td>
<td>Academic engaged time</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>Instructional decision making regarding placement of the student in groups</td>
<td>Allowable repetition for mastery/understanding</td>
<td></td>
<td>Transitions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of progress monitoring Communication of expectations and criteria for success</td>
<td>Who is providing the supplemental/ intensive instruction</td>
<td></td>
<td>Large group instruction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Differentiated Instruction Direct instruction with explanations and cues</td>
<td>Use of supportive technology</td>
<td></td>
<td>Small group instruction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of a variety of practice and application activities</td>
<td>Patterns of performance errors/behavior</td>
<td></td>
<td>Independent work time</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pace and presentation of new content</td>
<td></td>
<td>Setting(s) where behavior is problematic</td>
<td>Group work time</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Significance of academic, speech, social, task or motor difficulties</td>
<td>Teachers use of positive reinforcement, student-teacher interaction quality/quantity, (use of direct observation protocols)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Onset and duration of problem</td>
<td>Time on task</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Consistency from day to day, subject to subject</td>
<td>External supports necessary to sustain engagement</td>
<td></td>
</tr>
</tbody>
</table>
Even though grade 9 scores on the ELA benchmark indicate some growth, students are not showing accelerated growth because classroom behaviors detract from consistent delivery of instruction.

Freshman office referrals are high because teachers are not directly teaching the skills on the school-wide behavior matrix.

The 10th grade benchmark scores are low because the pacing guides do not include all standard assessed for the benchmark.
Happy High School

School Graduation Trend and District Goals

<table>
<thead>
<tr>
<th>Year</th>
<th>School Graduation Rate</th>
<th>District Goal</th>
<th>Aimline</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>67%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>65%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>67%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>69%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>89%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
<td>92%</td>
</tr>
</tbody>
</table>

- School Graduation Rate
- District Goal
- Aimline
- Linear (School Graduation Rate)
Happy High School

Percent of Students On-Track by Graduation Cohort

<table>
<thead>
<tr>
<th></th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
<th>9th</th>
<th>10th</th>
<th>11th</th>
<th>Graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010 Cohort</td>
<td>82%</td>
<td>76%</td>
<td>74%</td>
<td>52%</td>
<td>58%</td>
<td>64%</td>
<td>67%</td>
</tr>
<tr>
<td>2011 Cohort</td>
<td>84%</td>
<td>78%</td>
<td>79%</td>
<td>53%</td>
<td>57%</td>
<td>62%</td>
<td>65%</td>
</tr>
<tr>
<td>2012 Cohort</td>
<td>81%</td>
<td>72%</td>
<td>74%</td>
<td>50%</td>
<td>59%</td>
<td>67%</td>
<td>72%</td>
</tr>
<tr>
<td>2013 Cohort</td>
<td>84%</td>
<td>75%</td>
<td>76%</td>
<td>54%</td>
<td>56%</td>
<td>68%</td>
<td>72%</td>
</tr>
<tr>
<td>2014 Cohort</td>
<td>88%</td>
<td>78%</td>
<td>79%</td>
<td>56%</td>
<td>63%</td>
<td>69%</td>
<td></td>
</tr>
</tbody>
</table>
Happy High School

<table>
<thead>
<tr>
<th>9th Grade Data</th>
<th>39% (1 of more F’s)</th>
<th>61% (No F’s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Failures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA</td>
<td>22% (Less than 2.0)</td>
<td>78% (2.0 or Greater)</td>
</tr>
<tr>
<td>Attendance</td>
<td>17% (Less than 95%)</td>
<td>83% (95% or Greater)</td>
</tr>
<tr>
<td>Course</td>
<td>Failure Rate 2009-2010</td>
<td>Failure Rate 2010-2011</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Common Core Math I</td>
<td>45%</td>
<td>47%</td>
</tr>
<tr>
<td>Math Intervention (Elective)</td>
<td>27%</td>
<td>21%</td>
</tr>
<tr>
<td>English 9</td>
<td>14%</td>
<td>8%</td>
</tr>
<tr>
<td>World History</td>
<td>13%</td>
<td>9%</td>
</tr>
</tbody>
</table>
Problem Identification

39% of students become off-track in 9th grade due to course failures. The mathematics content area resulted in the greatest percent of course failures for 9th grade students.
### Step 1: Define the Problem/Identify Goal (*What is the problem?*)

<table>
<thead>
<tr>
<th><strong>Identify initial concern (What data raised concerns?)</strong></th>
<th>Graduation rate lags behind overall district grad rate and target. Analysis Early Warning System (EWS) – shows that Math I is a predominant course failure for large #s of 9th graders.</th>
</tr>
</thead>
</table>
| **What is the desired replacement behavior?**           | - Graduation rate will equal or exceed District target  
- First time 9th graders will pass all courses. |
| **Using data, what is the current level of performance?** | Current grad rate 69%  (Target 92%) |
| **Using data, what is the benchmark level?**             | Grad rate will increase at least 10% or more (92% grad rate by 2018)  
Pass rate of Math I at least 80%; Math I intervention at least 70% |
| **Using data, what is the peer performance?**            | NA  
Note: Freshman students are falling off track within the first semester of 9th grade with 1 or more course failures. |
| **What is the gap?**                                     | Current gap for grad rate = 23%  
Gap for Passing rate for Math I = 100 - 61%; = 39%  
Gap for Pass rate for Math I Intervention = 100 - 73% = 27% |
39% of students become off-track in 9th grade due to course failures. The mathematics content area resulted in the greatest percent of course failures for 9th grade students. The problem is occurring because _______________. 

Brainstorm hypotheses and write on stickies.
<table>
<thead>
<tr>
<th>Instruction</th>
<th>Curriculum</th>
<th>Environment</th>
<th>Learner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction is how curriculum is taught.</td>
<td>Curriculum refers to what is taught.</td>
<td>The environment includes the classroom/school, family/community, and peers.</td>
<td>The learner is who is being taught.</td>
</tr>
<tr>
<td>How content is presented to students can vary in many different ways:</td>
<td>Scope and sequence would be included here as well as pacing within and between topics.</td>
<td>How is the environment impacting learning?</td>
<td>This is the last domain that is considered and is only addressed when the curriculum and instruction are found to be appropriate and the environment is accommodating.</td>
</tr>
<tr>
<td>- Level of instruction</td>
<td>- Instructional techniques</td>
<td>- What may distract or inhibit student learning</td>
<td>Variables include motivation, attendance, prerequisite skills, organization/study habits, abilities, impairments, and history of instruction.</td>
</tr>
<tr>
<td>- Rate of instruction</td>
<td>- Presentation of instruction</td>
<td>- Peers</td>
<td></td>
</tr>
<tr>
<td>- Presentation of instruction</td>
<td>- Instructional techniques</td>
<td>- Home/family support</td>
<td></td>
</tr>
<tr>
<td>Is the curriculum being differentiated to meet the needs of the learners?</td>
<td>- Teaching methods</td>
<td>- Expectations</td>
<td></td>
</tr>
<tr>
<td>Consider:</td>
<td>- Materials provided</td>
<td>- Beliefs/attitudes</td>
<td></td>
</tr>
<tr>
<td>- Instructional techniques</td>
<td>- Difficulty</td>
<td>- Transience</td>
<td></td>
</tr>
<tr>
<td>- Presentation style</td>
<td>- Length</td>
<td>- Attendance/tardies</td>
<td></td>
</tr>
<tr>
<td>- Questioning</td>
<td>- Format</td>
<td>- Class size</td>
<td></td>
</tr>
<tr>
<td>- Feedback technique</td>
<td>- Relevance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Happy High School

Hypothesis

The problem is occurring because _____________.

teacher and student relationships do not support or encourage participation or academic risks

insufficient instruction is not maintaining high levels of student engagement

excessive absenteeism during 1st period

the grading policy is not implemented consistently in all classes

school-wide classroom behavior expectations are not well defined and taught

insufficient instruction is not maintaining high levels of student engagement

teachers do not implement high yield instructional practices
Step 2: Problem Analysis *(Why is it occurring?)*
Generate multiple hypotheses addressing what you think is at the root of the identified issue.

**Hypothesis sentence frame:** *The problem is occurring because _____.*

<table>
<thead>
<tr>
<th><strong>HYPOTHESIS 1</strong></th>
<th>The difference between expected and current levels of performance in Common Core Math I exist <strong>because of excessive absenteeism during 1st period</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prediction</strong></td>
<td>If... then... If students came to school regularly and on time to period 1, then they would perform at the expected level of performance on Common Core Math I</td>
</tr>
<tr>
<td><strong>Relevant Data</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Validated?</strong></td>
<td><strong>Yes/No</strong></td>
</tr>
</tbody>
</table>
### Step 2: Problem Analysis *(Why is it occurring?)*
Generate multiple hypotheses addressing what you think is at the root of the identified issue.

**Hypothesis sentence frame:** The problem is occurring because ______.

<table>
<thead>
<tr>
<th>Hypothesis 1</th>
<th>The difference between expected and current levels of performance in Common Core Math I exist because of excessive absenteeism during 1&lt;sup&gt;st&lt;/sup&gt; period</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prediction</strong></td>
<td>If students came to school regularly and on time to period 1, then they would perform at the expected level of performance on Common Core Math I</td>
</tr>
<tr>
<td>Relevant Data</td>
<td>Review of attendance of all Math I classes show that students are attending at a rate of 95% or greater. Further analysis shows that some students that are attending at a lower rate (80-89%) are not performing any differently from those attending at a higher rate.</td>
</tr>
<tr>
<td>Validated? Yes/No</td>
<td>No</td>
</tr>
</tbody>
</table>
Model: Happy High School

OBSERVE: Conducted Walkthrough

Instruction Component: Percent of Intervals Observed

- Communicate
- Instructional Purpose: 0%
- Explicit Instruction: 24%
- Modeled Instruction: 27%
- Guided Practice with Teacher Support: 13%
- Guided Practice with Peer Support: 13%
- Independent Practice: 6%
- Reflection, Integration and Extension: 13%
Student Survey Data: Productivity: The ILT collected survey data from all current students to better understand the barriers that impede productivity (work completion).

<table>
<thead>
<tr>
<th>About how often do you not complete your classwork?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Everyday</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>6%</td>
</tr>
</tbody>
</table>

When you do not complete your classwork, it is because...

<table>
<thead>
<tr>
<th>I don’t understand how to do it</th>
<th>I need my teacher to show me more examples of how to do it</th>
<th>I need my teacher to watch me work and correct my mistakes</th>
<th>The classwork is boring</th>
<th>It doesn’t matter if I do my classwork, I will fail anyway</th>
</tr>
</thead>
<tbody>
<tr>
<td>49%</td>
<td>23%</td>
<td>31%</td>
<td>39%</td>
<td>9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>About how often do you not complete your homework?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Everyday</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>9%</td>
</tr>
</tbody>
</table>

When you do not complete your homework, it is because...

<table>
<thead>
<tr>
<th>I don’t understand how to do it</th>
<th>I don’t have help to do it</th>
<th>I didn’t write down the assignment correctly</th>
<th>I didn’t bring home the right materials</th>
<th>No one is checking to see if I did my homework</th>
<th>I always complete my homework without trouble</th>
</tr>
</thead>
<tbody>
<tr>
<td>66%</td>
<td>43%</td>
<td>12%</td>
<td>13%</td>
<td>3%</td>
<td>43%</td>
</tr>
</tbody>
</table>
Step 2: Problem Analysis (*Why is it occurring?*)
Generate multiple hypotheses addressing what you think is at the root of the identified issue.

**Hypothesis sentence frame:** The problem is occurring because _____.

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<td>Relevant Data</td>
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</tr>
<tr>
<td>Validated? Yes/No</td>
<td>No</td>
</tr>
</tbody>
</table>
# MTSS/RtI Problem-Solving Protocol

**HYPOTHESIS 2**  
**ICEL**  
The difference between expected and current levels of performance in Common Core Math I exist because teachers do not implement effective instructional practices.

**Prediction**  
If teachers used effective instructional practices (e.g. guided and independent practice, checking for understanding etc) then student would be meeting expected levels of performance.

**Relevant Data**  
RIOT  
Conducted walk throughs and analyzed the results – that show student engagement and effective strategies are not being consistently implemented at a high level.

**Validated? Yes/No**  
Yes

---

**HYPOTHESIS 3**  
**ICEL**  
The difference between expected and current levels of performance in Common Core Math I exist because insufficient instruction is not maintaining high levels of student engagement.

**Prediction**  
If teachers actively engage students in mathematic instruction, then students would be performing at expected levels.

**Relevant Data**  
RIOT  
Student focus groups revealed and reinforced the walk through findings that explicit strategies to engage students as well as checking for understanding is not occurring.

**Validated? Yes/No**  
Yes
Step 3: Develop & Implement Plan (What can be done to solve it?)

• Select the intervention(s) or strategies that will address the problem and meet the goal

• Develop and implement the plan with fidelity

Fidelity = Sufficiency + Support
Interventions

- **What** will be done?
- **Who** will do it?
- **When** will it be implemented and for how long?
- **What** data will be collected to monitor intervention on student performance
- **How** often will the data be reviewed?
Principles of Intervention Design

Interventions should be designed to adjust what is being taught and/or how it is taught.
Principles of Intervention Design

Intervention is…

• **Explicit** - strategy/instruction to be used are specified clearly (What, who, when, where, how long)

• **Focused on instructional environment** - actions taken to modify the environment *not* the individual

• **Operationalized** – target behavior that is observable and measureable, includes conditions and criteria for success (how know effective?)

• **Interventions must be linked** to Tier 1 focus, materials, performance criteria
Criteria for Interventions

- Evidence-based
- Delivered with Integrity
- Implemented for Sufficient Time
- Evaluated Frequently
- Integrated Across Tiers
Plan Development

Lots of different formats, but some critical elements needed
## Plan Development

### Description of Intervention & Expected Outcomes

<table>
<thead>
<tr>
<th>Tier 1</th>
<th>Tier 2</th>
<th>Tier 3</th>
</tr>
</thead>
</table>

### Implementation
- **Frequency (How Often):**
- **Amount of Time (Duration):**
- **When:**
- **Who:**

### Support
- **Who:**
- **How Often:**
- **Description/Type:**

### Data Collection
- **Type:**
- **Frequency:**
- **Review Dates:**
- **Responsible Party:**
- **Expected Performance on Review Dates:**

### Review:
- **Data:**
- **Decision:** Positive  Questionable  Poor

### Next Steps
Plan Development

Description of Intervention

Math department teachers will use at least 2 student engagement activities during instructional delivery to check for understanding. Consensus around weekly strategies will include: Turn and talk, Partner share, Think, pair, share, Thumbs up/down, Quick writes (and share).

Implementation

Frequency (How Often): Daily (beginning Jan 26), each Math class will provide at least 3 student engagement strategies/opportunities.

Amount of Time (How Long): 60m class periods

When: During all Math classes -- begin, middle, and end of class

Who: Math teachers

Support

Who: Math teachers (and/or Math Coach) will conduct one peer observation every 2 weeks to check for use of strategies and level of student engagement.

How Often: bi-weekly observations

Description/Type: Utilize the observation form to record strategy used and student impact. Math teachers will meet to review the data during PLT, identify impact and/or difficulties with implementation of strategy and monitor and adjust as necessary.
Data Collection

Type: Level of student engagement per observation form (beh of students changed?)

Improved academic performance via results of common assessments, homework assignments show that 80% of students are reaching 75% or better on both (did acad perf improve?)

Frequency: Bi-Weekly, Weekly and Daily as appropriate

Review Dates: PLT time bi-weekly

Expected Performance on Review Dates:
- Students will demonstrate one additional or improved engagement behavior per week
- Improved mastery evidenced on assessments and HW

Responsible Party: Math teachers across the department, peer observers/coach
Step 4: Evaluate 
*(Did it work?)*

- Collect and use school-wide, small group, and individual student data to determine if the plan is working to address the problem/goal
- Progress monitor and modify, if necessary
- Evaluate the response to intervention: Good, Questionable, Poor
Evaluating the Effectiveness of Intervention

- Is the intervention evidence-based?
- How “intense” is the intervention?
- What can we “expect” the intervention to do?
- Was the intervention implemented as planned?
- How effective is the intervention with students from similar and different backgrounds?
Good, Questionable, Poor RtI
Decision Rules:
What is a “Good” Response to Intervention?

• **Positive Response**
  
  – Gap is closing
  
  – Can extrapolate point at which target student(s) will “come in range” of target—even if this is long range
  
  – Level of “risk” lowers over time

• **Questionable Response**
  
  – Rate at which gap is widening slows considerably, but gap is still widening
  
  – Gap stops widening but closure does not occur

• **Poor Response**
  
  – Gap continues to widen with no change in rate.
Positive Response to Intervention

Performance

Expected Trajectory

Observed Trajectory

Time
Decision Rules:
Linking RtI to Intervention Decisions

• Positive
  • Continue intervention with current goal
  • Continue intervention with goal increased
  • Fade intervention to determine if student(s) have acquired functional independence.
Decision Rules:
What is a “Questionable” Response to Intervention?

• **Positive Response**
  – Gap is closing
  – Can extrapolate point at which target student(s) will “come in range” of target--even if this is long range

• **Questionable Response**
  – Rate at which gap is widening slows considerably, but gap is still widening
  – Gap stops widening but closure does not occur
  – Level of “risk” remains the same over time

• **Poor Response**
  – Gap continues to widen with no change in rate.
Questionable Response to Intervention

Performance

Expected Trajectory

Observed Trajectory

Time
Decision Rules:
Linking RtI to Intervention Decisions

• **Questionable**
  
  – Was intervention implemented as intended?
  
  • If no - employ strategies to increase implementation integrity
  
  • If yes -
    
    – Increase intensity of current intervention for a short period of time and assess impact. If rate improves, continue. If rate does not improve, return to problem solving.
Decision Rules:
What is a “Poor” Response to Intervention?

• **Positive Response**
  
  – Gap is closing

  – Can extrapolate point at which target student(s) will “come in range” of target--even if this is long range

• **Questionable Response**
  
  – Rate at which gap is widening slows considerably, but gap is still widening

  – Gap stops widening but closure does not occur

• **Poor Response**
  
  – Gap continues to widen with no change in rate.

  – Level of “risk” worsens over time
Poor Response to Intervention

![Graph showing expected and observed trajectories over time. The expected trajectory is a solid line, while the observed trajectory is represented by red dots.]
Happy High School
Evaluating Intervention Plan

- Was the $H_0$ Confirmed?

*The difference between expected and current levels of performance in Common Core Math I exist because insufficient instruction is not maintaining high levels of student engagement*

- Was intervention/instruction effective for students?

- Do you have clear direction for intervention revision?
Happy High School
Step 4: Evaluate Response to Instruction

Percentage of Alg 1 Students Engaged/Passing

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Quarter 1</th>
<th>Quarter 2</th>
<th>Quarter 3</th>
<th>Quarter 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engaged</td>
<td>67%</td>
<td>71%</td>
<td>76%</td>
<td>81%</td>
<td>88%</td>
</tr>
<tr>
<td>Passing</td>
<td>61%</td>
<td>73%</td>
<td>77%</td>
<td>83%</td>
<td>87%</td>
</tr>
</tbody>
</table>
Step 4: Did it Work?

Review/Evaluation of Progress:

**Data:** Improvement on formative assessments, teacher-made assessment, and both homework completion rates and performance. Student engagement has continued to improve as a result of instructional changes.

**Decision:** Positive

Questionable

Poor

(See Chart)

Next Steps:

- Continue instruction and engagement strategies with current goal for the next 5 weeks.

Students that are not making at least 75% progress/growth will be grouped at least 1x per week during class for preview, review, reteach opportunities; cooperative learning activities will be strategically utilized to ensure modeling and opportunities to practice with peers more proficient on specific content in need to support. As needed other ‘reinforcement time’ will be created to ensure students are given sufficient time to build skills and conceptual understanding.
Why Problem Solving Matters...

Those individuals and organizations that are most effective do not experience fewer problems, less stressful situations, and greater fortune, they just deal with them differently.

Fullan
National Resources to Support District and School MTSS Implementation

- www.floridarti.usf.edu
- www.florida-rti.org
- www.nasdse.org
- www.rtinetwork.org
- www.rti4success.org
RtI Innovations in Education Conference 2016

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