When Every Second Counts: Using Problem Solving to Improve Secondary Student Outcomes

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Kelly Justice, Regional Coordinator
Session Objectives

- Participants will increase their knowledge and understanding of how comprehensive, data-based problem solving can improve learning outcomes for secondary students.
- Participants will engage in a collegial discussion of the potential barriers to and strategies for enabling educators to engage in student-centered problem solving at the secondary level.
- Participants will use a sample case scenario to practice the application of 4-step problem solving to address student need(s).
Special Thanks...

for their technical assistance and contributions

✧ Mrs. Joy Bridwell
   Hendry County District Schools

✧ Dr. Shelby Robertson
   Florida PS/RtI Project
THE IMPORTANCE OF EFFECTIVE PROBLEM SOLVING AT THE SECONDARY LEVEL
Compelling “why’s”

- Graduation rates: Celebrate
- Hidden graduation rates: Not good
- Impact of drop-out rates--$$
- “Expectations Gap”
- College and Career Ready (CCR)
Compelling “why’s”

• Policy
• Importance of 9\textsuperscript{th} grade transition
• Role of Middle School in drop-out prevention
• Problem Solving can occur at any level
• Addressing “All students can learn”
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.
Multi Tiered System of Support: Multiple Tiers of Instruction/Intervention

- **Standards Based Instruction**
- **Assessments to inform instruction**
- **Enables efficient use of school resources**
- **Evidence-based programs and practice**
- **Focus on integration & alignment with core (Academic & Behavior)**
- **Frequency & intensity of instruct/intervention match to student need**
Multi Tiered System Support: Problem Solving Process

- Consistent 4-step PS process
- Education decisions (e.g. intervention effectiveness) are measured by student growth
- Team-based
- Decision protocols; decision-rules
- Frequency & intensity of assessment & problem solving match to student need
# Aligned Inquiry

<table>
<thead>
<tr>
<th><strong>PLC Crucial Questions</strong></th>
<th><strong>4-Step Problem Solving</strong></th>
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</thead>
</table>
| 1. What do we want each student to learn? | 1. **Problem Identification/Goal Identification**
  What do we want students to know and be able to do? |
| 2. How will we know when each student has learned it? | 2. **Problem Analysis**
  Why do they not know it or are they not able to do it? |
| 3. How will we respond when a student experiences difficulty in learning? | 3. **Intervention Design**
  What are we going to do about it? |
| 4. How will we respond when students have already learned it? | 4. **Response to Intervention**
  Is it working? |
Tier 1 Questions

1. What percentage of our students are meeting expectations?
2. Which students will require additional intervention?
3. Are Tier 1* interventions effective?
4. To what degree is instruction being implemented with fidelity?

* Interventions or core changes designed to target all students
RESEARCH IMPLICATIONS OF PROBLEM SOLVING AND IMPROVED STUDENT OUTCOMES
Attending to Fidelity

Positive outcomes for students may be attributed to three aspects of fidelity:

• Degree to which instruction/interventions are research-based

• *Fidelity of implementation of the problem-solving process*

• Integrity of intervention implementation

(Johnson et al., 2006)
PS and student outcomes

• Greater implementation of quality indicators produces better outcomes for students
  
  (Flugum & Reschly, 1994)

• Students performed better in schools that implemented the team PS process at high levels consistently
  
  (Kovaleski et al, 1999)

• Positive correlation found between ratings of student outcomes and ratings of PS components
  
  (Telzrow et al., 2000)
Research indicates...

- A positive correlation between number of PS steps followed and effectiveness
- PS is more effective when problems are identified using data instead of perceptions
- PS is more effective when team is multi-disciplinary
PS Model/PS Teams

• Research supports effectiveness of team-based PS model as part of MTSS/RtI framework

• **Procedural integrity** refers to the consistency with which teams implement the PS process (Kratochwill, 2009)

• Multi-disciplinary, collaborative teams are included in “exemplars” of large-scale PS (Burns & Ysseldyke, 2005)
Turn and Talk

In spite of compelling evidence of the impact that Problem Solving has on student outcomes, other research suggests schools are often slow to embrace research-recommended team practices.

• What are barriers to school teams engaging in structured PS at the secondary level?
• What are strategies to facilitate teams engaging in PS at the secondary level?
OVERVIEW OF PROBLEM SOLVING AND PRACTICE ACTIVITIES
Step 1 - Problem Identification
What’s the problem?

Step 2 - Problem Analysis
Why is it occurring?

Step 3 - Intervention Design
What are we going to do about it?

Step 4 - Response to Intervention
Is it working?
Step 1 – What’s the Problem?

- **Expected/benchmark level of performance**
- **Current level of performance**

\[ P = E - C \]

Problem = Expected – Current
## Data by Tier

<table>
<thead>
<tr>
<th>Tier</th>
<th>Expected Level</th>
<th>Current Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1</td>
<td>Approx. 80%</td>
<td>% of students achieving benchmark</td>
</tr>
<tr>
<td>Tier 2</td>
<td>Benchmark AND Approx. 70%</td>
<td>Individual student’s current level of performance % of student in the supplemental group achieving benchmark</td>
</tr>
<tr>
<td>Tier 3</td>
<td>Benchmark</td>
<td>Individual student’s current level of performance</td>
</tr>
</tbody>
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Practice Activity--
Step 1: What is the problem?
Step 2—Why is it occurring?

PROBLEM ANALYSIS

• Develop hypotheses
• Develop predictions/assessment
Generate Hypotheses

**Hypotheses**

- State reasons for why the replacement behavior is not occurring
- Should be based on research relevant to the target skills
  - Focus on alterable variables
  - Should be specific, observable, and measurable
  - Should lead to intervention
## Domains for Hypotheses

<table>
<thead>
<tr>
<th>HYPOTHESIS DOMAINS</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction (I)</td>
<td>Frequency of interaction, Reinforcement, Presentation Style</td>
</tr>
<tr>
<td>Curriculum (C)</td>
<td>Difficulty, Presentation, Length, Format, Relevance</td>
</tr>
<tr>
<td>Environment (E)</td>
<td>Peers (Expectations, Reinforcement, Values, Support), Classroom (Rules, Distractions, Seating, Schedule, Physical Plant), Home/Family Support</td>
</tr>
<tr>
<td>Learner (L)</td>
<td>Skills, Motivation, Health</td>
</tr>
</tbody>
</table>
Hypothesis & Prediction Statement

Hypothesis:
The Problem is occurring because
_________________________________.

Prediction Statement:
If ___________________ would occur, then
the problem would be reduced.
<table>
<thead>
<tr>
<th></th>
<th>DOMAINS</th>
<th>R Review</th>
<th>I Interview</th>
<th>O Observe</th>
<th>T Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I</strong></td>
<td>Instruction</td>
<td>Permanent products, e.g., written pieces, tests, worksheets projects</td>
<td>Teachers’ thoughts about their use of effective teaching and evaluation practices, e.g., checklists</td>
<td>Effective teaching practices, teacher expectations, antecedent conditions, consequences</td>
<td>Classroom environment scales, checklists and questionnaires; Student opinions about instruction and teacher</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>Curriculum</td>
<td>Permanent products, e.g., books, worksheets, materials, curriculum guides, scope &amp; sequence</td>
<td>Teacher &amp; relevant personnel regarding philosophy (e.g., generative vs. supplantive), district implementation and expectations</td>
<td>Classroom work, alignment of assignments (curriculum materials) with goals and objectives (curriculum). Alignment of teacher talk with curriculum</td>
<td>Level of assignment and curriculum material difficulty; Opportunity to learn; A student’s opinions about what is taught</td>
</tr>
<tr>
<td><strong>E</strong></td>
<td>Environment</td>
<td>School rules and policies.</td>
<td>Ask relevant personnel, students &amp; parents about behavior management plans, class rules, class routines</td>
<td>Student, peers, and instruction; Interactions and causal relationships; Distractions and health/safety violations</td>
<td>Classroom environment scales, checklists and questionnaires; Student opinions about instruction, peers, and teacher</td>
</tr>
<tr>
<td><strong>L</strong></td>
<td>Learner</td>
<td>District records, health records, error analysis, Records for: educational history, onset &amp; duration of problem, teacher perceptions of the problem, pattern of behavior problems, etc.</td>
<td>Relevant personnel, parents, peers &amp; students (what do they think they are supposed to do; how do they perceive the problem?)</td>
<td>Target behaviors – dimensions and nature of the problem</td>
<td>Student performance; find the discrepancy between setting demands (instruction, curriculum, environment) and student performance</td>
</tr>
</tbody>
</table>
Practice Activity--
Step 2: Problem Analysis
Step 3: What are we going to do about it?

- Effective teaching strategies consider both \textit{what} to teach and \textit{how} to teach it.

- Making good decisions will increase student progress.

- It is critical that the instruction be matched to the problem.
The problem is occurring because ________________.

If ______________ would occur, then the problem would be reduced.
## Intervention Planning Form

Who is the intervention plan being developed for?: ____________________________

What is the replacement behavior?: ________________________________________

What is the expected level of performance?: ______________________________

What is the current level of performance?: ________________________________

<table>
<thead>
<tr>
<th>Verified Hypotheses</th>
<th>Intervention Plan</th>
<th>Support Plan</th>
<th>Implementation Assessment Plan</th>
<th>Monitoring Plan for Determining Student Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Who is responsible?</td>
<td>Who is responsible?</td>
<td>Who is responsible?</td>
<td>Who is responsible?</td>
</tr>
<tr>
<td></td>
<td>What will be done?</td>
<td>What will be done?</td>
<td>What will be done?</td>
<td>What data will be collected and how often?</td>
</tr>
<tr>
<td></td>
<td>When will it occur?</td>
<td>When will it occur?</td>
<td>When will it occur?</td>
<td>How will we decide if the plan is effective?</td>
</tr>
<tr>
<td></td>
<td>Where will it occur?</td>
<td>Where will it occur?</td>
<td>How will data be shared?</td>
<td></td>
</tr>
</tbody>
</table>

* Developed by the Florida PS/RTI Statewide Project

http://florida.rti.usf.edu
Practice Activity--
Step 3: Intervention Design
Making instructional decisions based on the review and analysis of student data

Progress monitoring always includes graphing
Decision-making

How do we decide if a plan is or isn’t working? Decisions will be made based on the following:

- Level of skill
- Rate of progress
- Decision rules
Decision Rules: What is a “Good” Response to Intervention?

- **Positive Response**
  - Gap is closing
  - Can extrapolate point at which target student will “come in range” of peers—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.
Positive Response to Intervention

Expected Performance

Observed Performance

Performance

Fall  Winter  Spring
Decision Rules: What is a “Questionable” Response to Intervention?

- **Positive Response**
  - Gap is closing
  - Can extrapolate point at which target student will “come in range” of peers—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.
Questionable Response to Intervention

Performance

Expected Performance

Observed Performance

Fall  Winter  Spring
Decision Rules: What is a “Poor” Response to Intervention?

- **Positive Response**
  - Gap is closing
  - Can extrapolate point at which target student will “come in range” of peers--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.
Poor Response to Intervention

Expected Performance

Observed Performance

Fall

Winter

Spring
Practice Activity—
Step 4: Is it working?
Connect with Us!

Florida’s Problem-Solving/Response to Intervention Project

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