Using Data to Make Decisions

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1. Define the elements of effective decision-making

2. How to transform “data” into useful information

3. One rubric for using data in decision-making

4. Considerations for the data your team needs?
Big Idea:

Data are necessary but insufficient

Build “Decision-Systems” not Data Systems

The data will guide you to ask the right questions, but your knowledge about the children, system, faculty, and families is critical for effective academic and social decisions.
**Collective Goal:**
Improve the effectiveness and efficiency with which school teams use data to make academic and behavior support decisions.

**Assumptions:**
Every school has teams that meet regularly to improve academic and behavior support
* 2500+ primary and secondary schools in New Zealand
* 450,000 person-hours/year spent in meetings.

Decisions will be more effective, efficient, and culturally sensitive if they are based on local, accurate, timely information

The data available to teams is increasing in **amount, quality and precision** (academic and behavior support)

To scale-up PB4L we need not just better data, but better protocols for team-based decision-making.
Challenge: Data Overload
Challenge: The Black Hole of Administrivia
One Approach: Team Initiated Problem Solving (TIPS)

Critical Features of Team-Initiated Problem Solving (TIPS II)

- Identify Goal for Change
- Identify Solution and Create Implementation Plan with Contextual Fit
- Identify Solution and Create Implementation Plan with Contextual Fit
- Make Summative Evaluation Decision
- Monitor Impact of Solution and Compare against Goal
- Implement Solution with High Integrity
- Collect and Use Data

Meeting Foundations

Team Initiated Problem Solving (TIPS) Training Materials www.pbis.org
DORA: Problem Solving Score ($t_{O2} = 3.03$, $df = 36$, $p < .05$, $ES = .87$)

DORA: Proportion of Teams Implementing Solutions with Integrity ($X^2 = 6.21, p < .05, V = .34$)
DORA: Proportion of solutions benefiting students

\( (X^2 = 4.40, \ p < .05, \ V = .28) \)
Effective Decision-making

Team

Data

Process

Effective Decision-Making

Implementation

Student Outcomes

Membership, Responsibility, Authority, Opportunity

Information, Decision-Making

Identify “Problems”
Select Solutions/Action Plans

Resources, Review, Adaptation
• Decision Making
Identification of a problem
School pattern, classroom pattern, group pattern, student pattern

Develop Solutions / Action Plan
Prevention, teaching, reward, extinction, correction, evaluation

Implement and Adapt Solutions
Fidelity, effect, efficiency, alterations
Problem Solving

• **Identify** current status

• **Problem Solving** starts by defining a problem with precision

  What
  • behaviors are a barrier and **how often** are they performed?

  Where
  • are the behaviors most and least likely

  When
  • are the problem behaviors most and least likely

  Who
  • is engaging in the behaviors

  Why
  • do the behaviors keep occurring?

A “Problem” is any observed difference between what is expected (desired) and what is actual
• A major error is to launch into problem solving BEFORE the problem has been defined with precision.

• **Selecting solutions without precise problem statement**
  • What we did last year
  • What my cousin did with her son
  • What I can buy (or download) as a package on the internet
  • What I can buy from a training from "an expert"

• **These solutions**
  • Often do not work
  • Usually are more expensive
  • Typically do not “fit” the context.
Defining a Problem with Precision
Defining a Problem with Precision

Primary

Indicates a difference between what is happening and what is desired.

Too much aggression in cafeteria

Precise

What, Who, Where, When, Why, and How Often

3-5 ODRs for aggression per day from 5-8 students who yell and hit in the cafeteria after they are done with lunch. Appears related to getting peer attention
Defining a Problem with Precision

- **Primary Statements**
  - Too many referrals
  - September has more suspensions than last year
  - Gang behavior is increasing
  - The cafeteria is out of control
  - Student disrespect for teachers is outrageous

- **Precision Statement**
  - There are twice as many ODRs for aggression on the playground than last year. These are most likely to occur during first recess, with a large number of students, and the aggression is related to getting access to the new playground equipment.
Defining a Problem with Precision

Who, What, Where, When, Why
(How often)

• Darin uses sexually explicit language in the classroom. This is creating a climate of disrespect and incivility.

• Tantrums in the van are creating unsafe travel.
• James D. is hitting others in the cafeteria during lunch at least five times a week, and his hitting is maintained by peer attention.

• Boys are engaging in sexual harassment.

• Three 5th grade boys are name calling and touching girls inappropriately during recess in an apparent attempt to obtain attention. This is occurring at least 5 times a week.
Defining a Problem with Precision

• Define a **PRIMARY** problem

• Transform that description into **PRECISE** problem statement.
  • Who
  • What
  • Where
  • When
  • Why
  • How Often

Define a Precise Academic Problem
Effective Problem Solving Using Data

1. First identify if there is a problem
   *Difference between observed and expected behavior.*

2. Define the problem with precision
   *Who, What, Where, When, Why & (How often)*

3. Build solution that is practical, instructional and functional.
   *Based on behavioral function, comprehensive, and fits with team values, skills, resources and administrative support.*
Gilbert Decision Hierarchy

- Problem?
- What, Who, Where, Why and How Often
- Unique Features of Local Setting: Individual Office Discipline Referrals
Using Data to Solve Problems:

Define with Precision

(Who, What, Where, When, Why and How Often)

- Admin. Decision
- Motivation
- Grade Level
- Others Involved
- Gender
- Ethnicity
- IEP
- Time Range
- Date Range
Define with Precision
(Who, What, Where, When, Why and How Often)

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Total Office Discipline Referrals as of January 10

Data in the right format for decision-making???
Average Office Discipline Referrals per day per month as of January 10

<table>
<thead>
<tr>
<th>Month</th>
<th>Average Referrals Per Day Per Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>August</td>
<td>1.4</td>
</tr>
<tr>
<td>September</td>
<td>1.8</td>
</tr>
<tr>
<td>October</td>
<td>2.7</td>
</tr>
<tr>
<td>November</td>
<td>2.5</td>
</tr>
<tr>
<td>December</td>
<td>2.75</td>
</tr>
<tr>
<td>January</td>
<td>3.49</td>
</tr>
</tbody>
</table>
Questions to Ask of the Data

What is happening?
What is typical?
What is possible?
What is needed?

Use the data to tell a story.

A story gives meaning to data by attaching the data to something we value.
### SWIS Summary 2016-17 (Majors Only)

5586 Schools, 2,500,992 Students

<table>
<thead>
<tr>
<th>Grade Range</th>
<th>Number of Schools</th>
<th>Mean Enrollment per School</th>
<th>Mean ODRs per 100 Students/School Day</th>
<th>Median ODRs per 100 Students/School Day</th>
<th>25&lt;sup&gt;th&lt;/sup&gt; Percentile ODR/100 Students/School Day</th>
<th>75&lt;sup&gt;th&lt;/sup&gt; Percentile ODR/100 Students/School Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-6</td>
<td>3580</td>
<td>468</td>
<td>.34 (.60)</td>
<td>.20</td>
<td>.09</td>
<td>.39</td>
</tr>
<tr>
<td>6-9</td>
<td>1023</td>
<td>643</td>
<td>.48 (.67)</td>
<td>.30</td>
<td>.15</td>
<td>.57</td>
</tr>
<tr>
<td>9-12</td>
<td>526</td>
<td>931</td>
<td>.48 (.71)</td>
<td>.28</td>
<td>.16</td>
<td>.53</td>
</tr>
<tr>
<td>PreK-8</td>
<td>365</td>
<td>427</td>
<td>.55 (1.04)</td>
<td>.27</td>
<td>.12</td>
<td>.51</td>
</tr>
<tr>
<td>PreK-12</td>
<td>92</td>
<td>308</td>
<td>.88 (.211)</td>
<td>.26</td>
<td>.15</td>
<td>.65</td>
</tr>
</tbody>
</table>
Do we have a problem?

- What is pattern
- What is typical
- What is possible
- What is needed
Elementary School 1500 Students (1500/100 = 105 * .22 = 3.3)
Describe the narrative for this school
Describe the narrative for this school
Describe the narrative for this school

**Average Referrals Per Day Per Month**

- **Months:** August, September, October, November, December, January, February, March, April, May, June, July
- **Average Referrals Per Day Per Month:**
  - August: 0.4
  - September: 0.5
  - October: 0.3
  - November: 0.6
  - December: 0.7
  - January: 0.8
  - February: 1.0
  - March: 1.2
  - April: 1.6
  - May: 1.4
  - June: 1.2
  - July: 1.0

The graph shows the average referrals per day per month, with a peak in April and a trough in October. The referrals are highest in April, indicating a significant increase in referrals during this month.
Describe the narrative for this school.
Describe the narrative for this school
Effective Problem Solving

1. First identify if there is a problem
   *Difference between observed and expected behavior.*

2. Define the problem with precision
   *Who, What, Where, When, Why & (How often)*

3. Build solution that is practical, instructional and functional.
   *Based on behavioral function, and fits with the values, skills, resources and administrative support.*
What Behavior(s)

1. Are most common behavior problems (a) Student-Student, or (b) Adult-Student related?

2. Are problem behaviors MAJOR or MINOR or BOTH?
What Behavior(s)

Referrals by Problem Behavior
All, Sep 1, 2012 - Aug 21, 2013

Phys Aggress

Number of Referrals

Problem Behavior
Questions:
1. What location(s) are associated with the most ODRs?
2. Sort by “structured” settings and “non-structured” settings
   (Classroom & Gym vs. Commons, Cafeteria, Hall, Playground)
Where

Referrals by Location
All, Sep 1, 2012 - Aug 21, 2013

Number of Referrals

Location

Office  Other  Special  Park  Bus  Gym  Bus  Bathrm  Library  Common  Hall  Cafe  Plygd  Class
Who

Referrals by Student
All, Sep 1, 2012 - Oct 31, 2012, At Least 1 Referrals

Question:
1. Are there many, a few, or one student associated with the problem?
Who

Referrals by Student
All, Sep 1, 2011 - Oct 31, 2011, At Least 1 Referrals

Number of Referrals

Students

[Bar chart showing referral numbers by student ID]
When?

Questions:
1. Are problem behaviors more likely at some times of the day?
2. What is happening during periods when problems are most likely?
When
When

Referrals by Time
All, Sep 1, 2007 - Aug 21, 2008

Number of Referrals

Time
Why?

ODR from Classroom ONLY

Referrals by Perceived Motivation

Drill Down

Motivation

Referrals

Unknown | Avoid a | Avoid wrk | DK | Avoid p | Ob itm | Ob a attn | Ob p attn | Avoid task

0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 300
Referrals by Perceived Motivation

ODR from Playground ONLY

Motivation

Avoid wrk  DK  Avoid p  Ob i'm  Ob a attn  Avoid task  Ob p attn

Referrals
Are we Implementing with Fidelity?  Are Students Engaging in Problem Behavior?

• Decision Making

Are Students Meeting Reading Expectations  Are Students Meeting Math Expectations?
Academics

- Decision Making

Use the same decision-making logic for academics

Define the problem with precision before making a decision
Name: Johnson Noto
Class: Grade
Grade: Third
Year: 2003-2004
School: Thompson Elementary
District: Granada Public Schools

Dynamic Indicators of Basic Early Literacy Skills
Student Report

Suggestion:
Provide supplemental alphabetic instruction

At or Above Goal
Below Goal

Individual Student Report

Steve Goodman
Individual Student Report

**Name:** Wilson, Jim

**Grade:** Third

**Year:** 2003-2004

**School:** Thompson Elementary

**District:** Greene Public Schools

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**Suggestion:** Provide supplemental fluency instruction

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At or Above Goal

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Below Goal

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Steve Goodman
Building Solutions
Solutions

• Key Features
  
  • Technically Sound
    • Solution is based on “precise” problem statement
    • Solution involves building competence, not just removing problem
    • Solution is logically associated with removing rewards for problem
    • Uses “evidence-based” practices

  • Contextual Fit
    • Practical, doable, efficient
    • Consistent with values of those who must perform the solution
    • Administrative support
### Solution Development

#### Elements of an Effective Solution

<table>
<thead>
<tr>
<th>Solution Component</th>
<th>Action Step(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention</td>
<td></td>
</tr>
<tr>
<td>Teaching</td>
<td></td>
</tr>
<tr>
<td>Recognition</td>
<td></td>
</tr>
<tr>
<td>Extinction</td>
<td></td>
</tr>
<tr>
<td>Corrective Consequence (only if needed)</td>
<td></td>
</tr>
<tr>
<td>Data collection</td>
<td></td>
</tr>
</tbody>
</table>

**Safety**
Self Assess

- Effective Decision-making

1. Do we have teams with:
   - The right people, clear responsibility, adequate authority, regular meeting schedule and time to perform?

2. Do we have the data we need to make effective decisions?

3. Do we have a clear process for defining problems, building solutions, and building action plans?

4. Do we actually implement solutions / plans? And do we use data to adapt over time?