Objectives

• Why collect data?

• What can data do for you?

• What data should you collect?

• What do your data do for everyone else?
Point of Clarification

SWPBIS = SWPBS = RtI for Behavior = RtII for Behavior = SWEBS = …..

Why Collect Data?

- Why are data essential for problem-solving at the school level?

- How do we identify the critical data needed for solving academic and behavior concerns?

- How can we use data to our advantage?

From Kincaid, Gaunt, and Robertson (n.d.)
Why are Data Essential for Problem-solving?

...for planning?

“Research has found that up-front planning helped make data collection and use more efficient in many case study schools by clarifying what data were needed, aiding with integration of multiple data sources, and ensuring that data collection processes were on track (Keeney, 1998; Lachat, 2001).”

...for legal reasons?

- Some data we are required to collect (e.g., NCLB, 2002):
  - But why?
  - What questions do these “required data” potentially help answer?
  - Can these data be used in our problem-solving efforts?

- Schools are required to use “evidence”, collect and analyze data, and use those data to make decisions for education improvement. (Coburn & Talbert, 2006; Halverson et al., 2005; Honig & Coburn, 2008; Mills, 2011; Young, 2006)

...to identify solutions to problems!!!

- Not all data we are asked to collect will be useful for solving local problems.
- Compliance vs. problem-solving
- **Main question:** What data should we collect for problem-solving?
- Tied to what questions are being asked
  - Types of data: Screeners, diagnostic measures, progress monitoring measures, outcome or summative measures.
  - Each has a function and potential to answer particular types of questions.

From Kincaid, Gaunt, and Robertson (n.d.)
Decision-making – Need Data

• Assumptions:
  • The appropriate data are needed for school-level problem-solving
  • No matter how useful the data may be, they are NOT helpful if they are not used.
• Data Chaos!
  • To teach others about data that are important and NOT important for our purposes

From Kincaid, Gaunt, and Robertson (n.d.)

Objectives

• Why collect data?

• What can data do for you?

• What data should you collect?

• What do your data do for everyone else?
Evaluating Our Efforts

- Without data, we have no idea if our efforts are working

To Reinforce Efforts that Work

- Share our successes with everyone!
Identify Areas to Target for Improvement

- Dedicate limited resources where they are needed more
- Continuous re-generation

Identify What We Can STOP Doing

- Why do things that don’t work?
- Add 1; Take Away 2
Sustainability

- Local-level
- District-level
- State-wide level
- National-level

Objectives

- Why collect data?
- What can data do for you?
- What data should you collect?
- What do your data do for everyone else?
Consensus on Data? (Coburn & Talbert, 2002)

- What does “data-based problem-solving” mean to you?
- Do you know what to collect?
- Do you know why the data are being collected?
- Do you know for what the data are used?
- Do you know what to do after you have the data? After you analyze it?

- How aligned is your assessment system with answering key questions and how valuable are your district’s data to solve what problems?

From Kincaid, Gaunt, and Robertson (n.d.)

Current Practices.....

- What data do you ALREADY collect?

- WHY do you collect them?

- The decision about what data to collect should always begin with a purpose
  1. What Questions do we want to answer?
  2. THEN: What data do we need to answer those questions?
Are Your Data Useful? For What?

Data source(s) should:

• Answer the key purpose questions
• Provide sufficient information to select appropriate services and supports.
• Allow you to group students with similar needs
• Match the nature of the problem, the target responses/knowledge identified for change, and key problem-solving questions.

Adapted from Kincaid, Gaunt, and Robertson (n.d.)

ACTIVITY - Data Audit

• What data do you presently collect?

• Why do you collect those data?
  • What question is each set of data attempting to answer?
What Questions Should We Be Asking of Our SWPBIS Framework?

Some Ideas: How Does SWPBIS Affect.....

- ODRs
- OSS
- Instructional time
- Opportunities to learn
- Safety / Climate
- Referrals to Special Education
- LRE
- Out of School Placements
- Academic performance

But all of these need to be considered in the context of **HOW WELL ARE WE ACTUALLY IMPLEMENTING SWPBIS?**
#1 Question to Answer within SWPBIS Framework

ANY GUESSES?

How Well Are We Implementing SWPBIS?

Fidelity Measures

- Universal - Summative
  - SET
  - BoQ

- Universal – Progress Monitoring
  - TIC
  - PIC
  - Walkthrough

- Secondary
  - Benchmarks for Advanced Tiers (BAT)

- Tertiary
  - Individual Student Systems Evaluation Tool (ISSET)
School-wide Evaluation Tool (SET)

- Designed to assess and evaluate the critical features SWPBIS

- Information is gathered through multiple sources

- Results are used to:
  - Assess features that are in place
  - Design and revise procedures as needed
  - Determine annual goals for SWPBIS implementation
  - Compare efforts toward school-wide effective behavior support from year to year

- Resource-intensive; many not be practical on annual basis

Sample Results – SET Overall Score
Sample Results – SET Subscales

Benchmarks of Quality (BoQ) – v. 2

- Used to evaluate the status of SWPBIS
- Provides a way to assess and identify areas of strength and need
- Data used for action planning
- Efficient and psychometrically sound (Cohen, Kincaid, & Child, 2007)
Benchmarks of Quality (BoQ) – v. 2

- The BoQ lists 53 benchmarks of quality in SWPBIS programs with 10 critical elements:
  - PBSTeam
  - Faculty Commitment
  - Effective Procedures for Dealing with Discipline
  - Data Entry & Analysis Plan
  - Expectations & Rules Developed
  - Rewards/Recognition Program Established
  - Lesson Plans for Teaching Expectations/Rules
  - Implementation Plan
  - Classroom Systems
  - Evaluation

Sample Results – BoQ Overall

![Graph showing sample results for BoQ Overall score from 2007/08 to 2011/12, with data points for 6/10/2008, 6/10/2009, and 5/20/2011.]
Sample Results – BoQ Critical Elements

SET and BoQ - Summative

- But wouldn’t it be nice to have data throughout the year to evaluate implementation efforts?
Progress Monitoring Tools - TIC

- *Team Implementation Checklist* (TIC; Sugai, Horner, & Lewis-Palmer, 2001) used to PM toward the *Schoolwide Evaluation Tool* (SET; Sugai, Lewis-Palmer, Todd, & Horner, 2001)

- Logistical problems (i.e., resources) related with wide-scale adoption of SET

- Psychometric properties are questionable at best

- Rx: Don’t use this

Progress Monitoring toward SET

- Recently developed *PBSWalkthrough* (White, George, Childs, & Martinez, 2009)

- Adapted from the SET

- Independent auditor conducts walkthrough of building and can provide feedback to the PBS Team

- Potentially completed by a peer PBS IC / EC
Psychometric Properties of PBS Walkthrough

- Still under investigation

- Preliminary results indicate $r = .58$ ($p < .0001$) with BoQ Total Score

Progress Monitoring Tools – Another Option

- Realistically, schools will be using *Benchmarks of Quality* (BoQ, Kincaid, Childs, & George, 2010) for their annual implementation fidelity check

  - Occasional SET validation (~5 years)

- But remember, *PBS Walkthrough* PM toward SET
- We need a PM measure for BoQ
PBS Implementation Checklist (PIC; Childs et al., 2009)

- Provides a snapshot of where schools are in terms of implementing critical elements of SWPBIS and associated components of Tiers 2 and 3

- 44 Questions – completed by Internal Coach
- Guides Action Planning and Team Activities

PIC Logistics

- Internal Coach completes
- Completed 3 and 6 months into the school year

- Team and Coach review data and action plan

- Two types of Scores:
  - 6 Factors of PBIS Implementation (3-tiered model)
  - 8 Critical Elements of SWPBIS
Factors of PIC

6 Factors of PIC (3-tiered model):
• Preparation
• Initiation
• Implementation
• Maintenance
• Extension to Tier 2
• Extension to Tier 3

• Strong internal consistency for all factors (range .79-.97)
• Correlation with BoQ = .72 ($p$<.0001)

Factor Score Results of PIC

From: George (2011)
SWPBIS Critical Elements of the PIC

- **Coach and Team**
- Buy-In
- Expectations
- Rewards
- Data-Based Decision-Making
- Discipline
- Training
- Parents / Community

Next slide shows sample items of this Critical Element

Sample Critical Items: “Coach and Team”

PIC Critical Elements: 
Coach and Team

1. School-level administrators support PBS – active involvement, funding allocated, etc.
2. PBS Team has been established and trained - full staff representation, team meeting schedule established; attended FL/PBS trainings, has a current action plan.
3. PBS Coach has been trained - attends summer trainings; attends coaches and regional meetings; knowledgeable about PBS, Behavioral Theory, and data-based decision making; skilled in facilitation, problem solving process, and public speaking.
4. PBS Team meets at least once a month.
5. PBS Coach attends those meetings.
6. PBS Team shows a good working relationship with the Coach.
7. Discipline data are used in PBS Team meetings to identify problems and guide school decisions.
Results of PIC Critical Elements

School Tier 1 Critical Elements
(elementary school - PIC)

From: George (2011)

Using PIC Data for Action Planning

• Use results to Action Plan for implementation of 3-tiered model

• Additionally, focus on Critical Elements as a means to improve and then sustain implementation of SWPBIS

• Task analyze what needs to be done

• Assign roles, time frames, and measurable outcomes to indicate achievement of objectives
In Conclusion

- Plan very purposefully, your schedule to assess fidelity of implementation
  - Option A: PIC 2-3 times a year; BoQ in Spring
  - Option B: PBS Walkthrough 2-3 times a year; SET in Spring
  - Option C: Nothing

- Option C is not a good idea!

Once You Have Fidelity Data

- Then you can attribute changes in any other data to SWPBIS implementation!
Estimated Instructional Time Saved

- Reduction of 1.055 ODRs / 100 students / School Day
- Average size of school in Cohort 1 was ~600 students
- Therefore, 6.33 fewer ODRs per day

- Assume 180 school days
- Therefore, 1,139 fewer ODRs per year
- How much time is saved?

- 1 ODR = 20 minutes lost by student; 10 minutes lost by teacher; 10 minutes lost by administrator (Scott & Barrett, 2004)
Estimated Instructional Time Saved

- 1,139 fewer ODRs per year for 600 students
- Time Saved for the Cohort School
  - 2 minutes = 379.9 hours
  - her minutes = 189.8 hours
  - administrator minutes = 189.9 hours

Problem Solving Process

Define the Problem
What Are the Data Telling Us?

Problem Analysis
Why?

Implement Plan
What Are WE Going To DO About It?

Evaluate
Did It WORK?
(Response to Intervention – RtI)

From Kincaid, Gaunt, and Robertson (n.d.)
Guiding Questions and Data

Step 1 – Problem Identification
• What are the data telling us?

Step 2 – Problem Analysis
• What are the root causes of the problem?

Step 3 – Plan Development and Implementation
• What strategies or interventions will be used?
• What resources are needed to support implementation of the plan?
• How will sufficiency and effectiveness of intervention be monitored over time?
• How will fidelity be monitored over time?
• How will “good”, “questionable,” and “poor” responses to intervention be defined?

Step 4 – Plan Evaluation of Effectiveness
• Have planned improvements to core been effective?

From Kincaid, Gaunt, and Robertson (n.d.)

ODRs By Location – Tri-Community Elementary School
(Aug. 27th – Oct. 5th = 28 school days)

Referrals By Location

[Graph showing referrals by location]
STAR Bus Program

- Starting Oct. 10th:
  - Bus Cool Tool booster session by all staff
  - Golden Ticket each bus each day worth 5 Bulldog Bucks
  - Monthly drawing of Golden Ticket for prizes and recognition on website

ODRs by Location: Intervention Phase
(Oct. 10th – Nov. 16th = 28 days)
Bus Referrals Over Time

![Bar chart showing a significant reduction in bus referrals from baseline to intervention phase.]

ODRs by Location: Intervention Phase – Program Maintenance (Oct. 10th – Feb. 20th = 82 days)

![Custom graph showing referrals by location with a significant increase in referrals for the location marked as "Bus."
ODRs by Location – Adjusted
(Aug. 27th – Feb. 20th)

Objectives

- Why collect data?

- What can data do for you?

- What data should you collect?

- What do your data do for everyone else?
Annual SWPBIS Evaluation

- Demonstrate outcomes associated with SWPBIS
- Promotes sustainability and expansion
- Advocacy with key stakeholders
- Contribute to empirical base of SWPBIS

Evaluation Framework

- Based off Algozinne et al. (2010)
  - OSEP Blueprint for SWPBIS Evaluation

- Five Broad Domains
  - Context
  - Input
  - Fidelity
  - Impact
  - Sustainability, Replication, Improvement
### Schools By Grade Level

<table>
<thead>
<tr>
<th></th>
<th>Preschool</th>
<th>Elementary (K 5)</th>
<th>Middle (6 8)</th>
<th>High School (9 12)</th>
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<tbody>
<tr>
<td>Cohort 1</td>
<td>2</td>
<td>23</td>
<td>9</td>
<td>5</td>
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<tr>
<td>Cohort 2</td>
<td>13</td>
<td>114</td>
<td>88</td>
<td>28</td>
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<tr>
<td>Combined</td>
<td>15</td>
<td>137</td>
<td>97</td>
<td>33</td>
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</table>

### Cross Sectional Analysis of Cohort 1 Implementation Fidelity

<table>
<thead>
<tr>
<th>Time</th>
<th>Number of Schools</th>
</tr>
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<tbody>
<tr>
<td>Spring 2007</td>
<td>Before Training</td>
</tr>
<tr>
<td>Fall 2007</td>
<td></td>
</tr>
<tr>
<td>Spring 2008</td>
<td></td>
</tr>
<tr>
<td>Spring 2009</td>
<td></td>
</tr>
<tr>
<td>Spring 2010</td>
<td></td>
</tr>
<tr>
<td>Spring 2011</td>
<td></td>
</tr>
</tbody>
</table>

- Unknown
- Not
- Partial
- Full

N = 33
Twelve years (Spring 2008 and Spring 2011) correspond to approximately one year after large scale trainings were offered.

**Cross Sectional Analysis of Cohort 2 Implementation Fidelity**

<table>
<thead>
<tr>
<th>Time</th>
<th>Unknown + Not</th>
<th>Partial</th>
<th>Full</th>
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<tbody>
<tr>
<td>Spring 2009</td>
<td>0</td>
<td>1</td>
<td>165</td>
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<td>Spring 2010</td>
<td>29</td>
<td>0</td>
<td>131</td>
</tr>
<tr>
<td>Spring 2011</td>
<td>26</td>
<td>33</td>
<td>107</td>
</tr>
</tbody>
</table>

N = 166

**Cross Sectional Analysis of Full Implementation Status for Combined Cohorts**

<table>
<thead>
<tr>
<th>Time</th>
<th>Number of Schools Achieving Full Implementation Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2007</td>
<td>2</td>
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<tr>
<td>Spring 2008</td>
<td>16</td>
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<tr>
<td>Spring 2009</td>
<td>23</td>
</tr>
<tr>
<td>Spring 2010</td>
<td>22</td>
</tr>
<tr>
<td>Spring 2011</td>
<td>45</td>
</tr>
</tbody>
</table>
Significantly higher ratings of Protective Factors in Years 2 and 3 compared to Year 1 ratings.

Significant differences between Elementary and Secondary ODR Triangle Data at all ODR rates.

Comparison of Cross Sectional Mean ODR Triangle Data by Grade Level - Cohort 1.
Academic Outcomes

- PSSA Reading and Math – Cohort 1
  1. Full v. State Averages
  2. Full v. Partial

Percentage of Students Scoring "Below Basic or Basic" on PSSA Reading for Fully Implementing Schools vs. Pennsylvania State Average

<table>
<thead>
<tr>
<th>Year</th>
<th>State Averages</th>
<th>Fully Implementing Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>31</td>
<td>33.27</td>
</tr>
<tr>
<td>2008</td>
<td>30</td>
<td>31.05</td>
</tr>
<tr>
<td>2009</td>
<td>29</td>
<td>25.39</td>
</tr>
<tr>
<td>2010</td>
<td>29</td>
<td>24.18</td>
</tr>
</tbody>
</table>
By 4/19/2012

Years 2 & 3, fully implementing schools had significantly HIGHER percentages of students in Proficient + Advanced on the PSSA Reading compared to State averages.

From 2008 to 2010, fully implementing schools had significantly LOWER percentages of students in Below Basic + Basic on the PSSA Math compared to State averages.

---

**Percentage of Students Scoring "Proficient or Advanced" on PSSA Reading for Fully Implementing Schools vs. Pennsylvania State Average**

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Averages</td>
<td>69</td>
<td>70</td>
<td>71</td>
<td>72</td>
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<tr>
<td>Fully Implementing Schools</td>
<td>66.75</td>
<td>68.35</td>
<td>74.6</td>
<td>75.83</td>
</tr>
</tbody>
</table>

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**Percentage of Students Scoring "Below Basic or Basic" on PSSA Math for Fully Implementing Schools vs. Pennsylvania State Average**

<table>
<thead>
<tr>
<th>Year</th>
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<th>2008</th>
<th>2009</th>
<th>2010</th>
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</thead>
<tbody>
<tr>
<td>State Averages</td>
<td>32</td>
<td>28</td>
<td>27</td>
<td>25</td>
</tr>
<tr>
<td>Fully Implementing Schools</td>
<td>30.44</td>
<td>24.63</td>
<td>20.25</td>
<td>15.79</td>
</tr>
</tbody>
</table>
4/19/2012

Schools that fully implement SWPBIS demonstrate significantly stronger outcomes on PSSA Reading and Math compared to State Averages across three years.
From 2008 to 2010, fully implementing schools had significantly lower percentages of students in Below Basic + Basic on the PSSA Reading compared to partially implementing schools.

From 2008 to 2010, fully implementing schools had significantly higher percentages of students in Proficient + Advanced on the PSSA Reading compared to partially implementing schools.

### Comparison of the Percentage of Students Scoring “Below Basic or Basic” on PSSA Reading Between Partially Implementing Schools and Fully Implementing Schools

<table>
<thead>
<tr>
<th>Year</th>
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<th>Partially Implementing Schools</th>
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<tbody>
<tr>
<td>2007</td>
<td>38.27</td>
<td>33.27</td>
</tr>
<tr>
<td>2008</td>
<td>33.05</td>
<td>33.79</td>
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<td>2009</td>
<td>25.89</td>
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<td>68.95</td>
<td>66.21</td>
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<tr>
<td>2009</td>
<td>74.6</td>
<td>57.29</td>
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From 2008 to 2010, fully implementing schools had significantly lower percentages of students in Below Basic + Basic on the PSSA Math compared to partially implementing schools.

Comparison of the Percentage of Students Scoring "Below Basic or Basic" on PSSA Math Between Partially Implementing Schools and Fully Implementing Schools

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Comparison of the Percentage of Students Scoring "Proficient or Advanced" on PSSA Math Between Partially Implementing Schools and Fully Implementing Schools

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<td>69.55</td>
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<tr>
<td>2008</td>
<td>75.37</td>
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<td>2009</td>
<td>79.73</td>
<td>57.4</td>
</tr>
<tr>
<td>2010</td>
<td>84.23</td>
<td>72.55</td>
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</tbody>
</table>
Full v. Partial Implementation

- Schools that fully implement SWPBIS demonstrate significantly stronger outcomes on PSSA Reading and Math compared to schools that partially implement.

In Conclusion

- Continue the great work you are doing
- Become active in the PAPBS Network
- Collect data for internal and external purposes
- Be proud of what you are doing
Objectives

- Why collect data?
- What can data do for you?
- What data should you collect?
- What do your data do for everyone else?

Contact

Timothy J. Runge, Ph.D., NCSP
Assistant Professor
Indiana University of Pennsylvania
Department of Educational and School Psychology
Co-PI: PA SWPBIS Initiative

Phone: (724) 357-3788
E-mail: trunge@iup.edu

Thank you for your time!