

Evaluation of Pennsylvania's SWPBS Initiative



Timothy Runge, Mark Staszkiwicz, Melissa Gilroy
Indiana University of Pennsylvania

James Palmiero, Ronald Sudano, Rick Boyle, Tina Lawson
Pennsylvania Training and Technical Assistance Network

Agenda

1. PA-SWPBS Evaluation Model
2. PA-SWPBS Outcomes

The Early Days....

- Prior to 2007, Pennsylvania did not have a systematic plan for addressing the behavioral, social, and emotional needs of ALL students
- Fragmented approach across the Commonwealth focused primarily on students with special needs, incarcerated youth, APS placements, etc.
- Brief effort in late 1990s to implement SWPBS (known as SWEBS at that time)

Emerging SWPBS....

- Pennsylvania Department of Education (PDE), Bureau of Special Education (BSE), and Pennsylvania Training and Technical Assistance Network (PaTTAN) initiated SWPBS implementation to begin summer 2007
- Informal survey of schools across PA in spring 2007 to find out “what they were doing”

Emerging SWPBS....continued

- 3 PaTTAN offices (Pittsburgh, Harrisburg, King of Prussia), in conjunction with regional educational services agencies (Intermediate Units; IU), identified Cohort 1 schools for training and sustained technical assistance
- Kick-off 3-day training in Summer 2007
- Expansion of initiative since that time

Why Conduct an Evaluation of SWPBS?

Regular evaluation of program / initiative signals:

1. Outcomes are valued
2. Personnel hold themselves accountable for its implementation

Used Algozinne et al. (2010) as framework for program evaluation

Large- or Small-Scale Evaluations

(Algozzine et al., 2010)

Five broad areas of evaluation:

1. **Context** – goals; documentation of training and support
2. **Input** – content of training and support; satisfaction with training and support
3. **Fidelity**- of implementation
4. **Effect on outcomes** – behavioral, social, academic, cultural
5. **SWPBS replication, improvement, and sustainability** – over time

PA-PBS **Context**: Goals

- Implement SWPBS (Walker et al., 1996) in selected schools to serve as model sites for expansion to other schools
- Provide sufficient training and on-going onsite technical assistance to Cohort 1 schools
- Build a network of PA-PBS facilitators for eventual scaling up
- Monitor key outcomes of Cohort 1 schools for evaluative purposes
- Advocate for expansion of SWPBS across Commonwealth as Best Practice

PA-PBS **Context:** Cohort 1 Sites

- 33 schools in initial Cohort 1
 - District commitment
 - Identification of Internal and External Coaches
 - Team representation

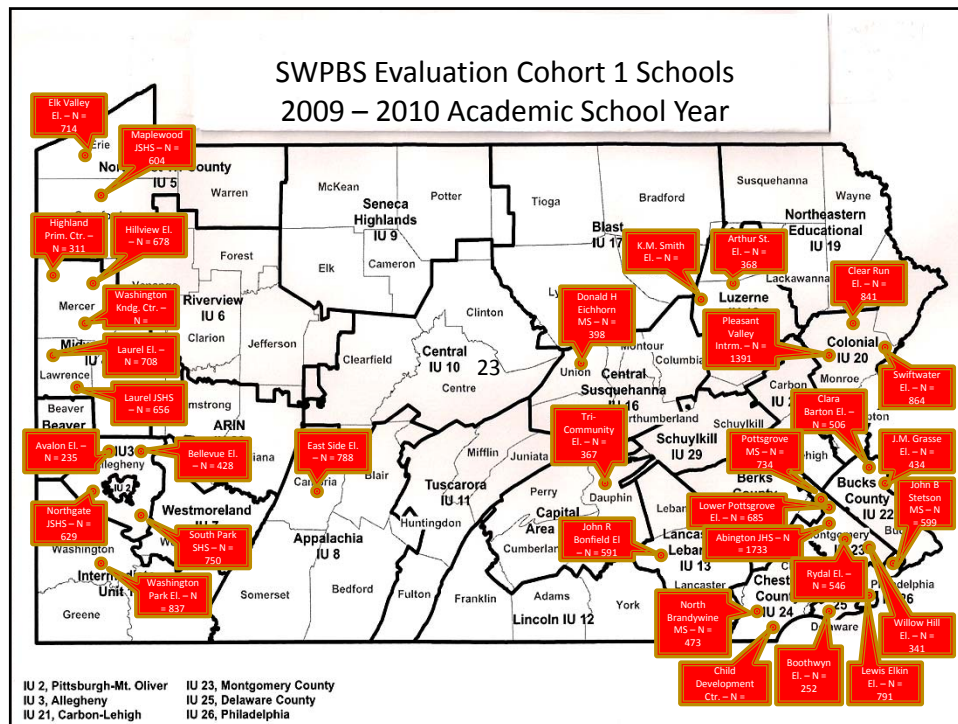
- Approximately 8,000 students in cohort 1 schools of the 1.78 million in PA

Schools Receiving Training and Implementation Support – Cohort 1

Participating Buildings / LEAs / IUs by Region

	West	Central	East	Total
Schools	12	4	17	33
LEAs	7	4	12	23
Collaborating IUs	4	4	7	15

	Elementary (K-5)	Middle (6-8)	High School (9-12)
Number of Schools	23	9	5



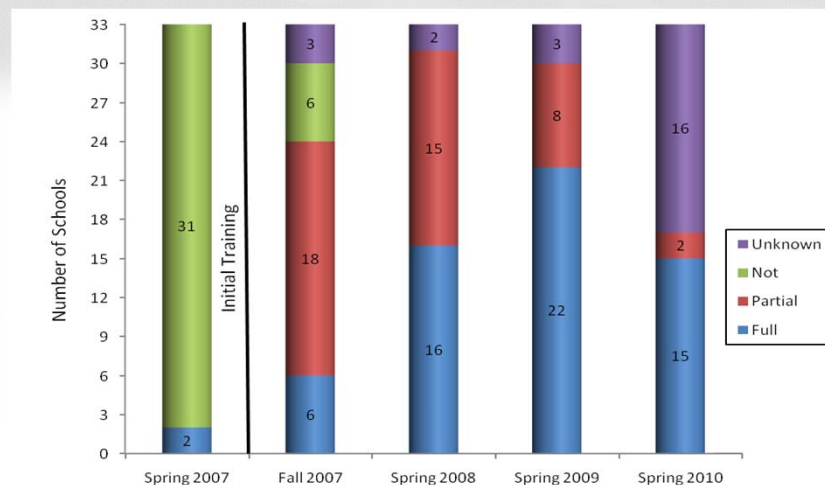
PA-PBS **Input**: Training and Support Year 1

- Illinois PBIS Network, led by Lucille Eber
- PBIS Trainers Marla Dewhirst and Steve Romano
- Followed PBIS Blueprint for training
- Summer 2007 – development of universal, tier 1, SWPBS
- 2007-2008 – technical assistance to implement

PA-PBS **Input**: Training and Support Years 2 and 3

- Year 2 (2008-2009) – Secondary training
- Year 3 (2009-2010) – Tertiary training
- On-site technical assistance as needed by PaTTAN / IU Personnel
- Also, 2009-2010: Universal training for Cohort 2 schools

PA-PBS **Fidelity**



Note. Fidelity assessed via BoQ (Kincaid, Childs, & George, 2005), SET (Sugai, Lewis-Palmer, Todd, & Horner, 2005), and TIC (Sugai, Horner, & Lewis-Palmer, 2002)

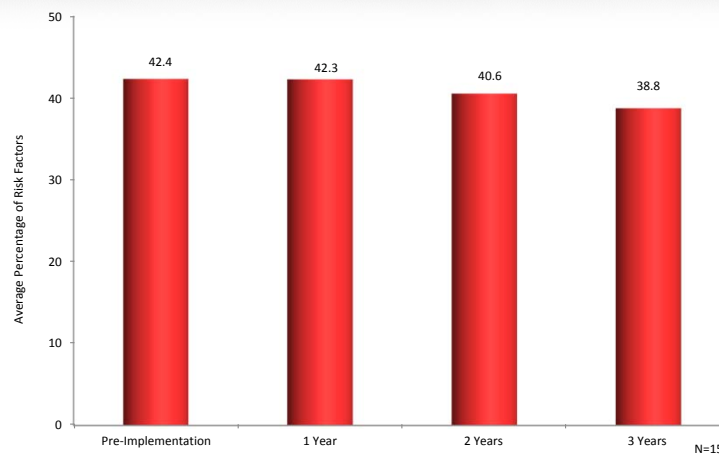
Agenda



PA-SWPBS Evaluation Model

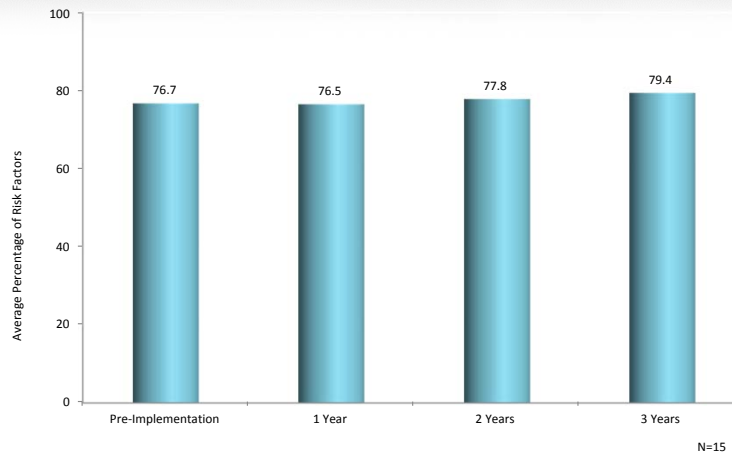
2. PA-SWPBS Outcomes

Longitudinal Comparison of Average Percentage of Risk Factors



Note. Data collected from the *School Safety Survey* (SSS; Sprague, Colvin, & Irvin, 2002); trend is not statistically significant

Longitudinal Comparison of Average Percentage of Protective Factors



Note. Data collected from the *School Safety Survey* (SSS; Sprague, Colvin, & Irvin, 2002); trend is not statistically significant

Risk and Protective Factors as a Function of Fidelity

Longitudinal Comparison Reported Risk and Protective Factors from Partial and Full Implementing Schools at 2 Years

Variable	N	M	SD	SEM	t
Risk Factors					2.83*
Partial	8	50.15%	11.90	4.21	
Full	15	36.65%	10.33	2.67	
Protective Factors					-3.59*
Partial	8	71.04%	5.62	1.99	
Full	15	80.56%	6.26	1.62	

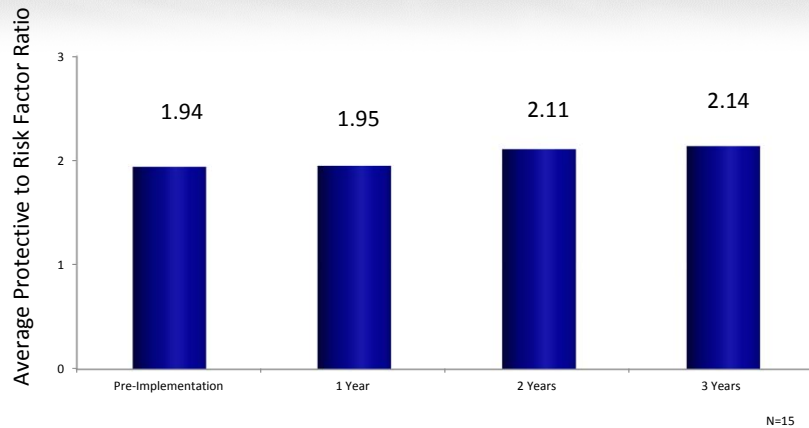
Note. *df* = 22

**p* < .01

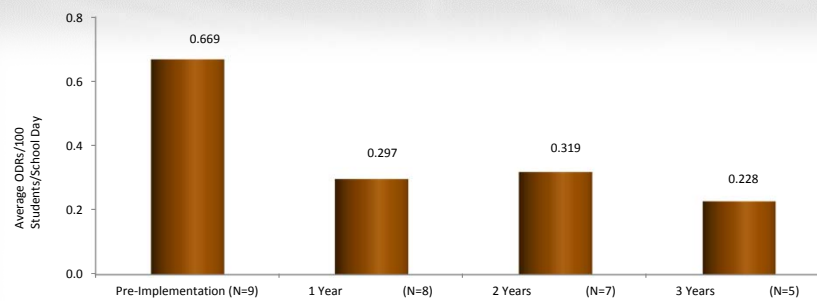
- Fully implementing schools see **MORE** Protective Factors and **FEWER** Risk Factors than partially implementing schools.

- Consistent with other research (e.g., Childs et al., 2010)

Ratio of Protective to Risk Factors



ODRs – Cross Sectional

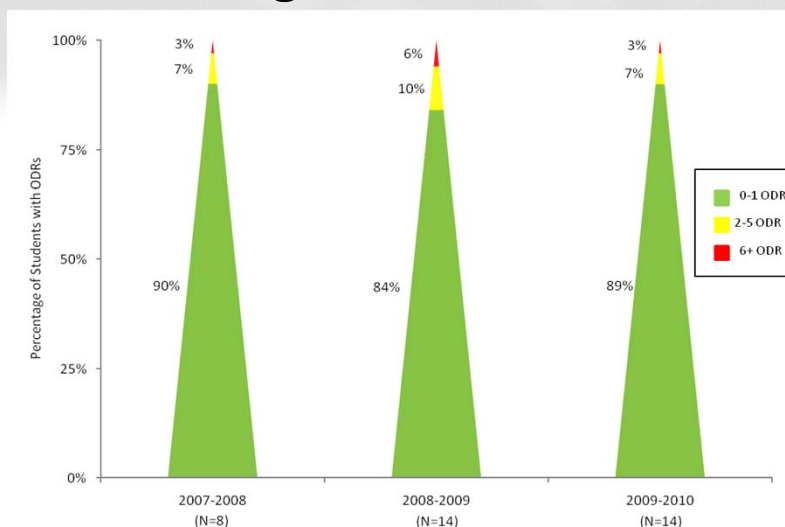


Cross Sectional Descriptive Statistics for ODRs/100 Students/School Day

	<i>M</i>	<i>SD</i>	<i>N</i>
Pre-Implementation	.669	.967	9
1 Year	.297	.369	8
2 Years	.319	.354	7
3 Years	.228	.256	5

Note. Trend was not statistically significant; similar findings from longitudinal analyses with 5 schools

ODRs – Triangle Data

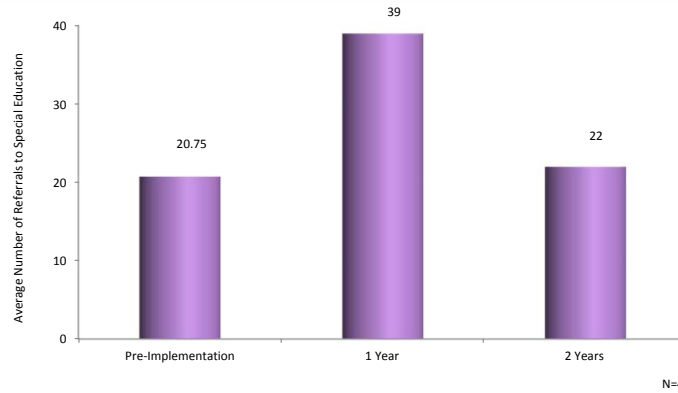


Note. All schools using SWIS were fully implementing beginning 2007-2008; no baseline data available to make pre-post evaluations

Average Number of Referrals to Special Education

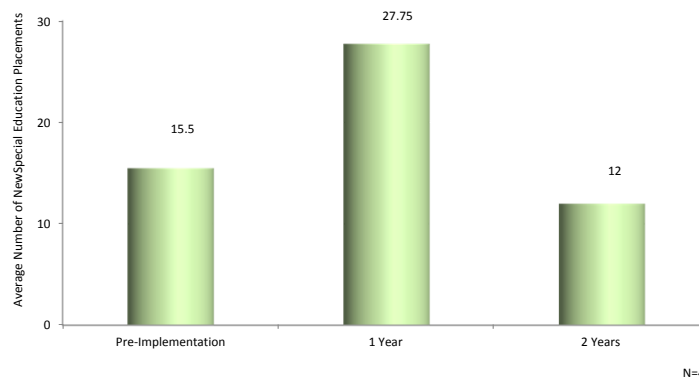
- It is perceived that implementation of a SWPBS framework will affect the number of students referred for an evaluation to determine eligibility for special education as well as those identified as eligible for special education
- Complete longitudinal data for three years were available for three of the fully implementing schools

Longitudinal Comparison of Average Number of Referrals to Special Education



Note. Data include referrals for ALL exceptionalities according to IDEIA.

Longitudinal Comparison of Average Number of New Students Identified for Special Education

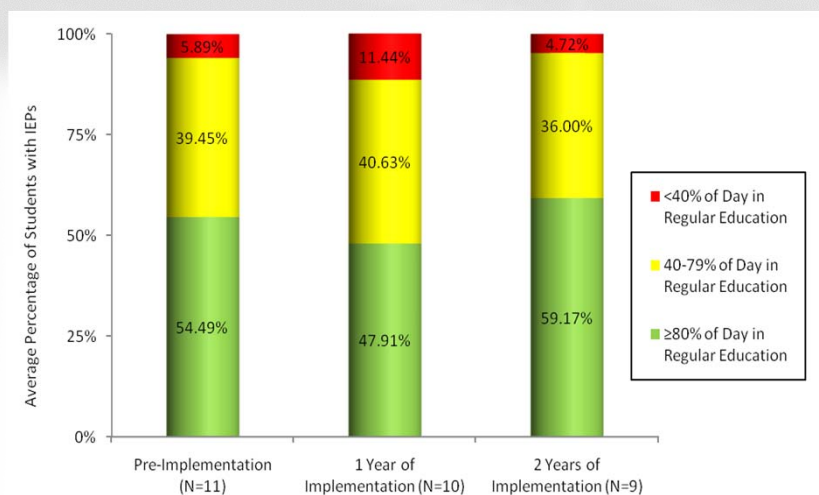


Note. Data include referrals for ALL exceptionalities according to IDEIA.

Least Restrictive Environment

- Of national interest, but particularly relevant to PA given focus for improvement in State Performance Plan submitted to OSEP
- Longitudinal data available for only three schools; cross sectional approaches use to maintain school anonymity
- Data on subsequent slide reflect percentage of time students with IEPs educated in inclusionary settings (i.e., along with their non-disabled peers).

SWPBS and LRE



Note. Changes across time were not statistically significant

Academic Outcomes

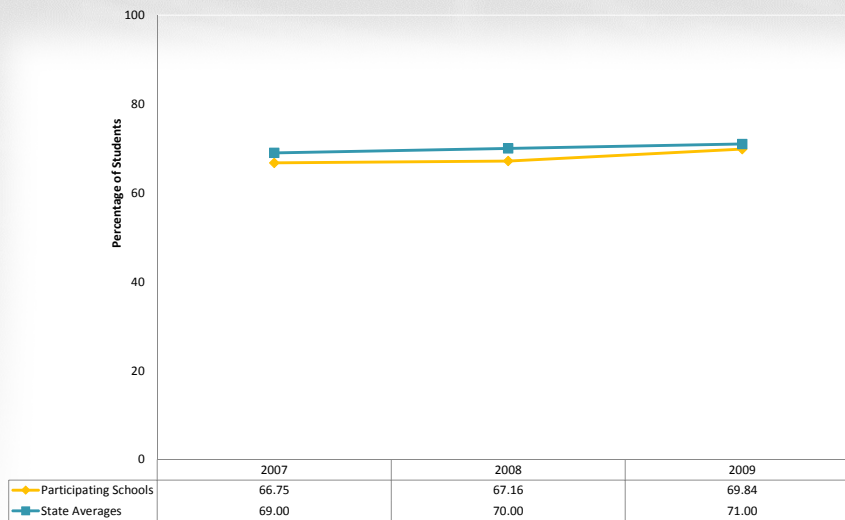
26 of 33 participating schools had PSSA complete longitudinal data available for analysis

- ✓ Four schools for which data was unavailable were schools in which students are not assessed via the PSSA (Kindergarten Only, Grades K-2)
- ✓ One school is an alternative education setting for which its students' PSSA scores are attributed to students' home districts
- ✓ The final two schools were implementing SWPBS for a number of years before the PA SWPBS initiative began

Pre- and Post-Implementation Comparison of SWPBS Schools and State-wide Schools on Percentage of Students Performing "Below Basic and Basic" on PSSA Reading



Pre- and Post-Implementation Comparison of SWPBS Schools and State-wide Schools on Percentage of Students Performing “Proficient and Advanced” on PSSA Reading



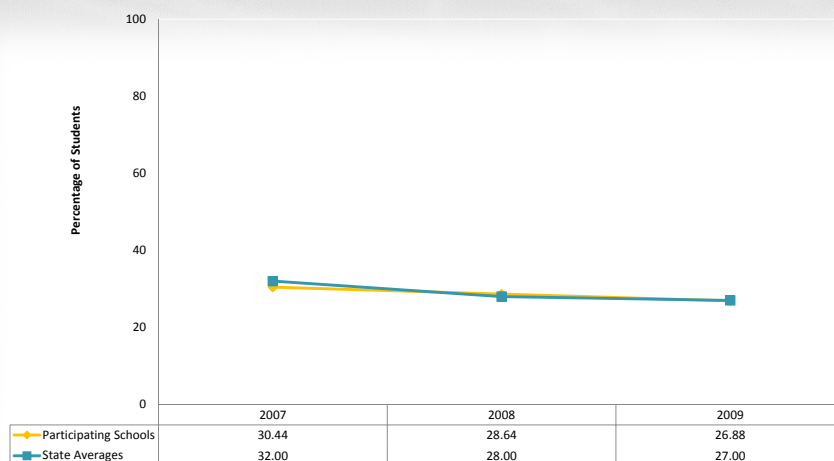
Pre- and Post-Implementation Comparison of SWPBS Schools and State-wide Schools on PSSA Reading

- The data from the participating schools parallel very closely the results of all schools across Pennsylvania
- The gap between the average among participating schools and the State averages for PSSA Reading did move in the desired direction
 - Prior to implementation of SWPBS, 33.27% of the students in SWPBS participating schools performed at the Below Basic or Basic levels compared to 31% of the State-wide data
 - After two years of implementation, the participating schools’ percentage of students performing Below Basic or Basic dropped to 30.12% and the State-level schools’ decreased to 29%
 - Prior to implementation, the percentage of students in SWPBS participating schools who performed at the Proficient or Advanced levels was 66.75% compared to 69% State-wide
 - By year two, that difference between SWPBS participating schools and the State-wide average of 2.25% had decreased to 1.16%

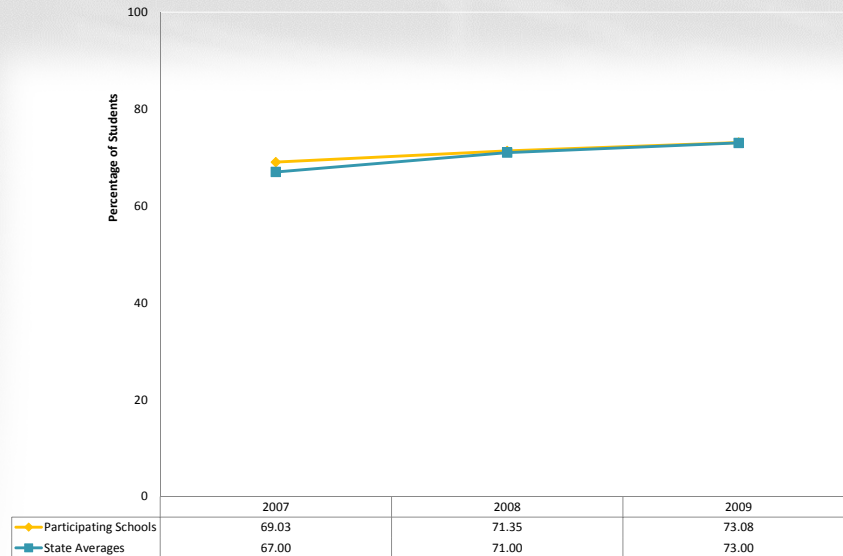
Pre- and Post-Implementation Comparison of SWPBS Schools and State-wide Schools on PSSA Reading

- T-tests were used to compare the SWPBS participating school percentages with the State-wide percentages for each of the three years, which resulted in six comparisons
- In no case was there a statistically significant difference between the percentage of students from the SWPBS schools achieving at Below Basic and Basic compared to the percentage of students at the State-wide performing at the same levels
- While the results of this comparison were in the desired direction, they were not statistically significant

Pre- and Post-Implementation Comparison of SWPBS Schools and State-wide Schools on Percentage of Students Performing “Below Basic and Basic” on PSSA Math



Pre- and Post-Implementation Comparison of SWPBS Schools and State-wide Schools on Percentage of Students Performing "Proficient and Advanced" on PSSA Math



Pre- and Post-Implementation Comparison of SWPBS Schools and State-wide Schools on PSSA Math

- Performance of the SWPBS participating schools very closely parallels the trend of all schools across Pennsylvania
- Schools implementing SWPBS had a lower percentage of students performing at Below Basic and Basic levels and a larger percentage of students performing in Proficient and Advanced levels in each year when compared to the State-wide data
- However, over the course of the three years, the gap between SWPBS schools and all schools across Pennsylvania closed slightly

Pre- and Post-Implementation Comparison of SWPBS Schools and State-wide Schools on PSSA Math

- To test the significance of these comparisons, t-tests were used to compare the SWPBS school percentages with the State-wide percentages for each of the three years, which resulted in six comparisons
- As found in the PSSA Reading analyses, none of the comparisons were statistically significant
- In other words, the overall PSSA Math results from the SWPBS schools mirrored that of all schools across Pennsylvania

Comparison of PSSA Reading and Math in Partial and Full Implementing Schools

- In addition to comparing the differences between SWPBS schools and all Pennsylvania schools on PSSA Reading and Math results, a comparison within the participating schools was also performed for both Reading and Math
- During the first and second year of implementation, participating schools could be categorized as either partially implementing SWPBS or fully implementing SWPBS
- Adjusted means were calculated based upon pre-implementation performance levels, which allowed for direct comparisons between partially and fully implementing schools using the analysis of covariance (ANCOVA) statistical procedure, which statistically equated the schools based upon their PSSA performance in 2007

Analysis of Covariance Between Partial and Full Implementing Schools on Reading at Year Two

2009 Means

Variable	<i>N</i>	2007 Actual Mean	Actual	Adjusted	<i>F</i>	<i>p</i>
Percent Below Basic+Basic Reading					5.29	.031
Partial	9	41.0%	39.1%	32.4%		
Full	17	29.2%	25.4%	28.9%		
Percent Proficient+Advanced Reading					4.02	.057
Partial	9	59.0%	61.0%	67.6%		
Full	17	70.8%	74.5%	71.0%		

Results of the ANCOVA for PSSA Reading

- Results of the ANCOVA for PSSA Reading after one year of implementation indicated no significant differences on adjusted means between partial and full implementing schools
- In year two, however, schools designated as fully implementing SWPBS had significantly fewer students performing in Basic and Below Basic levels
 - This difference between partial and full implementing schools was statistically significant ($p = .031$)
- The differences in adjusted means after two years of implementation on the percentage of students performing in Proficient and Advanced levels between partial and fully implementing schools was approaching statistical significance ($p = .057$)

Analysis of Covariance Between Partial and Full Implementing Schools on Math at Year Two

2009 Means

Variable	N	2007 Actual Mean	Actual	Adjusted	F	p
Percent Below Basic+Basic Math					2.58	0.12
Partial	9	43.2%	40.4%	29.8%		
Full	17	23.7%	19.7%	25.3%		
Percent Proficient+Advanced Math					4.65	0.04
Partial	9	56.8%	59.4%	69.0%		
Full	17	75.5%	80.3%	75.2%		

Results of the ANCOVA for PSSA Math

- As found with the PSSA Reading scores, there were no statistically significant differences on PSSA Math between fully and partially implementing schools after the first year of implementation
- After adjusting for initial pre-implementation differences, however, schools designated as fully implementing SWPBS had a significantly higher percentage of students in the Proficient and Advanced performance levels compared to schools partially implementing SWPBS after two years
- No statistically significant differences were observed after two years of implementation on the percentage of students performing in the Below Basic and Basic level
- These data suggest that, after two years of implementation, fully implementing SWPBS schools produce a higher percentage of students who perform in the Proficient and Advanced levels compared to schools that partially implement SWPBS

Caveat Regarding Comparison of PSSA Performance by Implementation Level

- It is important to note that while the schools are the same across all three years, the students do differ
 - The students tested in the pre-implementation year are not the same as the students tested two years later in spring 2009

- These comparisons were performed on percentage data rather than on the raw frequency data
 - Had the raw data (i.e., number of students in each category) been available, the actual number of students performing at each level for each school and year would have provided a much more stable and accurate picture

Replication, Improvement, Sustainability

	# of Schools with Fidelity Data	# of Schools That Maintained or Improved	% of Schools That Maintained or Improved	# of Schools That Did Not Maintain or Improve	% of Schools That Did Not Maintain or Improve
Across 2 Years	33	30	90.9%	3	9.1%
Across 3 Years	17	17	100%	0	0%

- Cohort 2: Up to 120 more schools trained during 2009-2010 with implementation presently underway.

PA-PBS Evaluation Caveats

- Few schools submitted longitudinal data
 - Effect on inferential statistics
- Limitations of cross sectional approaches
- Missing fidelity data of many schools three years out
- Self-reporting of data may lead to selection bias
- Mitigating these issues moving forward...

PA-PBS Future Directions

- Addition of ~120 cohort 2 schools
- Expansion of data collection to include :
 - PVAAS (PA Value Added Assessment System) – measure of academic growth Safe Schools Data
 - Safe Schools Data
 - Out of School Placements for Students with ED/BD

Agenda



PA-SWPBS Evaluation Model



PA-SWPBS Outcomes

How to Contact Us?

Research Team:

Timothy Runge, Co-PI (trunge@iup.edu)

Mark Staszkiwicz, Co-PI (mjstat@iup.edu)

Implementation Team:

James Palmiero, Director (jpalmiero@pattan.net)

Ronald Sudano (rsudano@pattan.net)

Rick Boyle (rboyle@pattan.net)

Tina Lawson (tlawson@pattan.net)

Teresa Stoudt (tstoudt@pattan.net)

Tracy Ficca (tficca@pattan.net)

Website:

<http://www.papbs.org>

References

- Algozzine, B., Horner, R. H., Sugai, G., Barrett, S., Dickey, S. R., Eber, L.,...Tobin, T. (2010). *Evaluation blueprint for school-wide positive behavior support*. Eugene, OR: National Technical Assistance Center on Positive Behavior Interventions and Support.
- Childs, K. E., Kincaid, D., & George, H. P. (2010). A model for statewide evaluation of a universal positive behavior support initiative. *Journal of Positive Behavior Interventions, 12*, 198-210. doi: 10.1177/1098300709340699
- Kincaid, D., Childs, K., & George, H. (2005). *School-wide benchmarks of quality*. Unpublished instrument, University of South Florida.
- Sprague, J., Colvin, G., & Irvin, L. (2002). *The school safety survey version 2.0*. Eugene, OR: The Institute on Violence and Destructive Behavior.
- Sugai, G., Lewis-Palmer, T., Todd, A. W., & Horner, R. H. (2005). *School-wide evaluation tool version 2.1*. Eugene, OR: Educational and Community Supports.
- Sugai, G., Horner, R. H., & Lewis-Palmer, T. (2002). *Effective behavior support: Team implementation checklist version 2.2*. Eugene, OR: Educational and Community Supports.
- Walker, H. M., Horner, R. H., Sugai, G., Bullis, M., Sprague, J. R., Bricker, D., & Kaufman, M. (1996). Integrated approaches to preventing antisocial behavior patterns among school age children and youth. *Journal of Emotional and Behavioral Disorders, 4*, 193-256. doi: 10.1177/106342669600400401