2009-07-01

The Effects of School-Wide Positive Behavior Support on School Climate: A Middle School Logitudinal Study

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Original Publication Citation
OSEP Conference, Washington, D.C. (July 29)

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Young, K. Richard; Shatzer, Ryan H.; Young, Ellie L.; Caldarella, Paul; and West, Richard E., "The Effects of School-Wide Positive Behavior Support on School Climate: A Middle School Logitudinal Study" (2009). All Faculty Publications. 1252.
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The Effects of School-Wide Positive Behavior Support on School Climate: A Middle School Longitudinal Study

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Funding

U.S. Department of Education
Field Initiated Research Projects

OSEP Grant # H324CO30124B

Written by Brigham Young University in collaboration with participating school district
2003 – 2008
Contents

• Introduction
• Methods
• Results and Discussion
• Questions
Questions

• What strategies and resources are needed to implement a successful SWPBS program in middle schools?

• How can you measure the effects of SWPBS in middle schools?
INTRODUCTION
Positive Behavior Support (PBS)

Tertiary Prevention:
- Students with High-Risk Behavior (~5%)

Secondary Prevention:
- Students with At-Risk Behavior (~15%)

Primary Prevention:
- School-Wide (~80% of Students)

Key Components of PBS:
- Build Positive Relationships
- Establish Clear Expectations
- Teach Appropriate Skills
- Reinforce Appropriate Behavior
- Data-Based Decision Making
School Climate

• “A set of internal characteristics that distinguishes one school from another and influences the behavior of its members”
  
  (Hoy and Hannum, 1997)

• Encompasses the dimensions of
  
  (1) Values
  
  (2) Educational practices
  
  (3) Personal interactions

  (National Research Council, 2004)
School Climate

Our definition includes perceptions of...

- Physical Aspects of the School
- Programs and Resources
- Instructional Management
- Relationships between Staff, Students, and the Community
- Parent and Teacher Support
Outcomes of Healthy School Climate

• Improved Student Achievement
  – Standardized test scores
  – Reading levels
  – GPA
  – Academic and school adjustment
    (Brand et al., 2008; Esposito, 1999; Hoy & Hannum, 1997)

• Decreased Student Misbehavior
  – Student drug use
  – Aggression and school violence
  – Anti-social behavior
  – Absences and suspensions
  – Student delinquency
    (Astor et al., 2002; Aveyard et al., 2004; Gottfredson et al., 2005; Sprott, 2004)
METHODS
POSITIVE BEHAVIOR SUPPORT INITIATIVE

Build Positive Relationships

Data-Based Decision Making

Establish Clear Expectations

PBS

Teach Appropriate Skills

Reinforce Appropriate Behavior
This PBS framework was implemented over 4 years at the treatment middle school (2004-2007)
## Sample

<table>
<thead>
<tr>
<th></th>
<th>Treatment School</th>
<th>Control School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Teachers</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td>1063</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>548</td>
<td>51.6%</td>
</tr>
<tr>
<td>Female</td>
<td>515</td>
<td>48.4%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>934</td>
<td>87.9%</td>
</tr>
<tr>
<td>Other</td>
<td>129</td>
<td>12.1%</td>
</tr>
<tr>
<td>Special Education</td>
<td>141</td>
<td>13.3%</td>
</tr>
<tr>
<td>Reduced Lunch</td>
<td>402</td>
<td>37.8%</td>
</tr>
</tbody>
</table>

* The numbers reported are school averages over the four years of the intervention
Measures

- School Records
  - Grade Point Average (GPA)
  - Absences
  - Office Discipline Referrals (ODRs)

- Indicators of School Quality (ISQ)
  - Teacher ratings of school climate (7 categories)
  - Student ratings of behavior support (5 categories)

- Supplemental Questionnaire
  - Teacher ratings of school climate (3 factors)
Indicators of School Quality (ISQ)

- Conducted over 9 Years
- 1,300 Schools
- 33 Utah School Districts
- 14 States + 2 International
- 70,000 Teachers
- 500,000 Families
- 700,000 Students
Indicators of School Quality (ISQ)

The Surveys …
- are short
- include all parents, students, faculty, and other school staff
- employ age and culturally appropriate language
- evaluates several environment domains

The Reports …
- are easy to read
- provide data to compare each school to a normative group of schools
- provide a progress summary
- summarize the statistical and practical adequacy of the response to the survey
<table>
<thead>
<tr>
<th>Indicators of School Quality</th>
<th>Parent</th>
<th>Teacher</th>
<th>Student</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Status Report</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parent Support</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Parents volunteer often at the school</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Parents know what happens at school</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enough parents participate at parent/teacher conferences</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents support extracurricular activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Teacher Excellence</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers are knowledgeable about the subjects they teach</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers care about students as individuals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers maintain discipline in their classrooms</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Teachers are well organized</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers enjoy teaching</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Student Commitment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students are well behaved</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enough students participate in extracurricular activities</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Students are excited about learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students have pride in their school</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration is accessible to parents, students, and staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration is supportive of teachers</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Administration is well organized</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Administration applies appropriate discipline at the school</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Administration has high expectations for all students</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Instructional Quality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This school prepares students for future employment</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>This school provides a quality education</td>
<td></td>
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<tr>
<td>Instruction at this school is innovative</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Instruction at this school challenges students</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Resource Accessibility</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Staff has access to enough ongoing training</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselors are accessible to students</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Students have adequate computer access</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The school has enough quality textbooks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students have enough extracurricular opportunities</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students and staff feel safe at school</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students feel safe going to and from school</td>
<td></td>
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<td></td>
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<tr>
<td>The school is clean and in good repair</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The school grounds and hallways are well supervised</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ISQ Predicts Academic Achievement

<table>
<thead>
<tr>
<th></th>
<th>3rd Grade</th>
<th>5th Grade</th>
<th>8th Grade</th>
<th>11th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher Excellence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Commitment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Leadership</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructional Quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Safety</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Elements of Behavior Support

<table>
<thead>
<tr>
<th>Elements</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Relationships</td>
<td>Is there an adult at school whom you trust to ask for help?</td>
</tr>
<tr>
<td>Clear Expectations</td>
<td>Are you frequently confused about what is expected of you at school?</td>
</tr>
<tr>
<td>Building Skills</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>Do you make friends easily?</td>
</tr>
<tr>
<td>Academic</td>
<td>Do you do well on tests and assignments?</td>
</tr>
<tr>
<td>Rewards &amp; Recognition</td>
<td>Are you recognized enough for your efforts to succeed?</td>
</tr>
</tbody>
</table>

**PBS**

- Data-Based Decision Making
- Establish Clear Expectations
- Reinforce Appropriate Behavior
- Teach Appropriate Skills
- Build Positive Relationships
RESULTS & DISCUSSION
Data Analysis

• Analysis of Variance (ANOVA)
  – Linear Trend
    • Were there significant improvements over the four years in the treatment middle school?
  – Interaction Effects
    • Were there significant improvements in the treatment school, relative to the control school?
School Record Data

2004-2007
School Records Summary

- Academic Achievement
  - GPA
- Absences
  - Tardies*
  - Unexcused Absences*
- ODRs
  - Disorderly Conduct ODRs*

*Significant interactions
PBS School:
Significant increase in GPA, but no interaction effect
Linear trend: $F (1, 4457) = 11.81, p < .001, d = .14$
PBS School:
Significant interaction: $F (3, 10758) = 77.51, p < .001$
Decrease in tardies: Linear trend: $F (1, 4822) = 70.08, p < .001, d = .32$
Unexcused Absences

PBS School:
Significant interaction: F (3, 10758) = 12.04, p < .001
Decrease in absences: Linear trend: F (1, 4822) = 5.85, p < .05, d = .11

Periods per student per year
Disorderly Conduct ODRs

PBS School:
Significant interaction: $F(3, 10758) = 14.01, p < .001$
Decrease in ODRs: Linear trend: $F(1, 4822) = 11.27, p < .001, d = .14$
Practical Significance

• It was estimated that during the last year of PBS the treatment school saved:
  – 167 student and administrative hours due to the reduced number of ODRs
  – 4,498 days in the classroom due to the reduced number of absences
  – 213 hours of class time due to reduced tardiness

*Based on 15 minutes spent per ODR and 5 minutes late per tardy
Indicators of School Quality (ISQ)

ISQ Results Summary

• Teacher Version
  – Teacher Excellence*
  – Instructional Quality*
  – School Leadership*
  – Student Commitment
  – Parent Support
  – Resource Management *
  – School Safety

*Significant interactions
Teacher Excellence

PBS School:
Significant Interaction: $F(3, 306) = 2.75, p < .05$
Significant Linear Trend: $F(1, 145) = 4.71, p < .05, d = .48$
Instructional Quality

PBS School:
Significant Interaction: F (3, 306) = 3.13, p < .05
Significant Linear Trend: F (1, 145) = 8.81, p < .01, d = .64
PBS School:
Significant Interaction: $F (3, 306) = 6.17, p < .001$
Significant Linear Trend: $F (1, 145) = 19.69, p < .001$, $d = 1.15$
Student Commitment

PBS School:
Non-significant Interaction: $F (3, 307) = 1.29, p = .28$
Significant Linear Trend: $F (1, 145) = 11.56, p < .001, d = .74$
Parent Support

PBS School:
Non-significant Interaction: F (3, 307) = 0.37, p = .77
Significant Linear Trend: F (1, 145) = 4.07, p < .05, d = .50
PBS School:
Significant Interaction: $F(3, 306) = 3.09, p < 0.05$
Significant Linear Trend: $F(1, 144) = 11.67, p < .001, d = .77$
School Safety

PBS School:
Non-significant Interaction: $F(3, 306) = 2.11$, $p = .10$
Non-significant Linear Trend: $F(1, 144) = 0.44$, $p = .51$
Behavior Support Items

Positive Relationships: Is there an adult at school whom you trust to ask for help? Percentages are those students that marked “Yes”
Clear Expectations: Are you frequently confused about what is expected of you at school? Percentages are those students that marked “No”
Building Social Skills: Do you make friends easily?
Percentages are those students that marked “Yes”
Building Academic Skills: Do you do well on tests and assignments?
Percentages are those students that marked “Yes”
Rewards and Recognition: Are you recognized enough for your efforts to succeed? Percentages are those students that marked “Yes”
Supplemental Questionnaire

## Factor Analysis

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students show respect for each other</td>
<td>.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students use appropriate social skills</td>
<td>.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students share responsibility for making school safe</td>
<td>.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students are motivated to use appropriate social skills</td>
<td>.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students learn important social skills</td>
<td>.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Everyone at school treats others with positive regard</td>
<td>.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior problems dealt with appropriately</td>
<td>.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School develops links to community</td>
<td></td>
<td>.83</td>
<td></td>
</tr>
<tr>
<td>School involves families</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students have opportunities to express feelings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adults invite discussions of safety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School uses positive means for student cooperation</td>
<td>.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student with special needs receive special help</td>
<td></td>
<td>.50</td>
<td></td>
</tr>
<tr>
<td>School identifies needs of high-risk students</td>
<td></td>
<td></td>
<td>.65</td>
</tr>
<tr>
<td>School strives for academic success</td>
<td></td>
<td></td>
<td>.76</td>
</tr>
</tbody>
</table>

Only factor loadings over .50 are shown  
All eigenvalues > 1; Explains 59.38% of the variance

\[ \alpha = \begin{array}{cccc} 0.90 & 0.82 & 0.76 \end{array} \]
Supplemental Questionnaire Summary

• Teacher Survey
  – Student Pro-social Behavior*
  – School Communication/Collaboration*
  – Educational Assistance*

*Significant interactions
PBS School:
Significant Interaction: $F(3, 399) = 13.84, p < .001$
Significant Linear Trend: $F(1, 185) = 38.63, p < .001, d = 1.20$
PBS School:
Significant Interaction: $F(3, 400) = 5.55, p < .001$
Significant Linear Trend: $F(1, 185) = 15.14, p < .001, d = .78$
PBS School:
Significant Interaction: F (3, 398) = 5.20, p < .05
Significant Linear Trend: F (1, 184) = 10.64, p < .001, d = .65
Overview

- School-wide PBS showed moderate improvements in school climate
  - School records (GPA, attendance, ODRs)
  - Indicators of School Quality (ISQ)
  - Supplemental questionnaire

- Gradual, continuous improvement

- Limitations
  - Measures of treatment fidelity
QUESTIONS
Questions

• What strategies and resources are needed to implement a successful SWPBS program in middle schools?

• How can you measure the effects of SWPBS in middle schools?
References


http://education.byu.edu/pbsi

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