

A Model for Statewide Evaluation of a Universal Positive Behavior Support Initiative

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Running head: MODEL STATEWIDE EVALUATION

Citation:

Childs, K.E., Kincaid, D.K., & George, H.P. (in press). *Journal of Positive Behavior Interventions*.

**Abstract**

Several statewide evaluations of Tier 1/Universal PBS implementation efforts have been conducted, adhering to the evaluation template developed by Horner, Sugai, and Lewis-Palmer (2005). Building on these examples, Florida's Positive Behavior Support Project developed a comprehensive evaluation system that sought to answer critical questions about building a scalable and sustainable PBS system at the state level that also provides data for decision-making at the school and district levels. This article describes Florida's evaluation system as a model driven by 12 questions including topics of implementation fidelity as both a dependent and independent variable and expanding traditional questions of statewide evaluations to include consumer satisfaction, team processes, barriers and facilitators to implementation, and attrition. The data indicated that implementing Tier 1/Universal PBS with fidelity was associated with improved student outcomes. Additional findings are described as well as considerations for future directions.

**Key-word descriptors:** Positive Behavior Support, Program Evaluation, Implementation, Scale Up, Systems Change

## A Model for Statewide Evaluation of a Universal Positive Behavior Support Initiative

Program evaluation is defined as “applied research” that systematically examines human service programs for pragmatic reasons (Royse, Thyer, Padgett, & Logan, 2001). These reasons include determining whether the program is accomplishing its goals, should be funded in the future, is meeting the needs of its consumers, or is experiencing barriers to implementation. Early in the maturity of Tier 1/Universal Level of School-wide Positive Behavior Supports, several researchers and education agency personnel began to identify a need for evaluation of implementation and outcomes of Tier 1/Universal Level PBS (Chapman & Hofweber, 2000; Lohrmann-O’Rourke, Knoster, Sabatine, Smith, Horvath, & Llewellyn, 2000; Sadler, 2000; Nersesian, Todd, Lehmann, & Watson, 2000; Nakusato, 2000). However, most of these implementation efforts were in their infancy, so evaluation efforts did not include data from large numbers of schools or for multiple years.

Over the past decade, a consensus about the core features of Tier 1/Universal Level PBS has solidified and includes the following: (a) a committed team leading all PBS efforts; (b) positively stated school-wide behavior expectations and rules; (c) a method for identifying current problems through on-going self assessment; (d) lesson plans to teach the expectations and rules; (e) procedures for encouraging expected behaviors; (f) procedures for discouraging violations of school-wide expectations and rules; and, (g) a plan for monitoring implementation and effectiveness (George, Kincaid, & Pollard-Sage, in press). Though a plan for monitoring implementation and effectiveness at a school-level is evident in most, if not all, PBS efforts, district and state-level evaluation efforts have not grown to a level to address the over 8000 schools that are implementing Tier 1/Universal Level PBS across the country (OSEP TA Center, 2008).

Following initial efforts at district and statewide evaluation, Horner, Sugai, and Lewis-Palmer (2005) provided an evaluation template and formal structure to evaluate the degree to which Tier 1/Universal Level of School-wide PBS are occurring as planned, resulting in change in schools, and producing improvement in student outcomes. The authors identified the critical questions and some useful instruments and assessments to assist in answering those questions. These instruments and assessments include the Team Implementation Checklist (TIC), the Effective Behavior Support (EBS) Self-Assessment Survey, Systems-wide Evaluation Tool (SET), School-wide Benchmarks of Quality (BoQ), School Safety Survey, (SSS) and the School-wide Information System (SWIS™) as well as other tools that are being developed to assist schools, districts and states with evaluation processes. By adhering to that template and using these tools, several statewide evaluations of implementation efforts have addressed the critical areas of consumer outcomes (students, teachers, schools, etc.) and implementation fidelity.

Galloway, Panyan, Smith, and Wessendorf (2007) conducted a statewide evaluation of universal SWPBS utilizing the SET, TIC, and ODR data to assess fidelity of implementation and student outcomes. The authors found that most schools in Iowa were implementing universal SWPBS with fidelity (score over 80% on the SET and TIC). Furthermore, seventy-five percent of schools in three cohorts also showed a 42% decrease in ODRs over a two-year period.

Irwin and Algozzine (2007) conducted an extensive evaluation of the statewide PBS system in North Carolina. In addition to measuring the spread of the PBS efforts across the state (53% of LEAs), they also assessed the impact of PBS efforts on student outcomes and implementation fidelity of the PBS activities. However, further analysis was only available for a dozen schools with multiple years of data and the implementation results for those schools showed mixed results. During 2004-2005, it was reported that 46 schools began baseline

measures of implementation. Sixteen of those schools utilized the SET to evaluate implementation fidelity, with nine of the schools scoring at least 80% on total implementation and 80% on Behavioral Expectations Taught. It is anticipated that North Carolina's evaluation system has likely grown since their published statewide evaluation as the number of schools implementing Tier 1/Universal Level PBS has increased to several hundred schools across the state.

Muscott, Mann & LeBrun (2007) evaluated the effect of large-scale Tier 1/Universal Level PBS implementation on school discipline and academic outcomes. Twenty-eight schools were evaluated for implementation using the Universal Team Checklist (UTC), Effective Behavior Support Survey (EBS) and the School-wide Evaluation Tool (SET). After one year, 21 of 24 teams (88%) were scoring at or above the 80/80 criteria on the SET. Schools averaged a 28% reduction in ODRs, a 31% reduction in ISS and a 19% reduction in OSS. Decreases in ISS and ODRs accounted for significant time savings for instruction while implementation was also associated with math gains for the majority of schools.

Perhaps no state has a documented evaluation process as extensive as Maryland (Barrett, Bradshaw & Lewis-Palmer, 2007). Over 400 schools have been trained on Tier 1/Universal Level PBS and a corresponding multiple-tiered evaluation plan has been applied to all of the schools. Fidelity of implementation was assessed with the Team Implementation Checklist (TIC), the Coaches Checklist, the School-wide Evaluation Tool (SET) and the Implementation Phases Inventory (IPI). In the past two years, Maryland's PBIS Project has also started to utilize the Benchmarks of Quality (BoQ) to measure team implementation of Tier 1/Universal Level PBS (Barrett, Personal Correspondence, 2007). Outcome measures gathered in Maryland include office discipline referrals, suspension rates, and a staff survey (Lewis-Palmer & Barrett,

2007). Training and support needs were assessed with periodic needs assessments. Preliminary results from 467 schools trained in Tier 1/Universal Level PBS suggest that Maryland has developed an effective and efficient structure to measure and promote state-wide implementation.

These early evaluation efforts reflect the first attempts of states to develop comprehensive protocols and processes for evaluation of their Tier 1/Universal Level PBS efforts. These evaluation efforts allow states and funded initiatives to answer critical questions about whether the allocation of funds is sufficient to produce and sustain large-scale systems change, and whether and where to target programmatic changes (e.g. training, technical assistance, products, etc.) to produce better outcomes for schools. Building on these examples, Florida's Positive Behavior Support Project has developed a comprehensive evaluation system that seeks to answer critical questions about building a scalable and sustainable PBS system at the state level that simultaneously provides data for decision-making at the school and district levels.

This paper presents a model for conducting a comprehensive state-wide evaluation of PBS training and technical assistance efforts at the Tier 1/Universal Level of PBS. Figure 1 provides an illustration of the service delivery and evaluation model utilized by Florida's PBS Project. The described evaluation process is ongoing and some of the critical questions will not be answered with sufficient data for several more years. We encourage the reader to critically examine the model and process for evaluation and consider the types of evaluation questions that are asked, the data required to answer those questions, and the process for gathering those data. We describe here where sufficient data may exist in the current evaluation process to derive conclusions about the effectiveness of Tier 1/Universal Level PBS. We also alert the reader to additional data necessary to warrant further conclusions.

This article addresses the state-wide evaluation of the PBS process in over 300 schools. Many of the data sources utilized to answer program evaluation questions at a state level are also critical for evaluation and data-based decision making at the district and school levels. The Florida PBS evaluation process follows many of the inquiries in the Horner, Sugai, and Lewis-Palmer (2005) template and expands its state-wide evaluations by addressing additional questions about consumer satisfaction, team processes, barriers and facilitators to implementation, and attrition. Furthermore, the Florida evaluation process examines the critical issue of implementation fidelity as both a dependent variable (e.g., How well are trained schools implementing the Tier 1/Universal Level PBS process?) and as an independent variable (e.g., Is the level of implementation at a school related to differences in the outcomes achieved for the school?). Table 1 contains a list of the evaluation questions asked along with the measures used to answer the questions.

#### *Participants and Settings*

Florida's Positive Behavior Support Project is funded by the State Department of Education to increase the capacity of Florida's school districts to provide positive behavior support at the universal, classroom, targeted group, and individual student levels. Project staff initially train school and district teams at Tier 1/Universal Level PBS throughout the school year at varying times dependent upon the district schedules.

Florida public schools are eligible for voluntary participation in training at the Tier1/Universal Level PBS as guided by a required District Action Plan developed by their local District Leadership Team. Florida's PBS Project facilitates this action planning meeting (see George & Kincaid, 2008) prior to any school participating in training in order to secure district commitment in supporting the schools interested in Tier 1/Universal Level PBS. Once

commitment is secured, local schools complete an Individual School Readiness Checklist (see <http://flpbs.fmhi.usf.edu>) within a specified timeframe that assesses the school's commitment to training and implementation and determines eligibility for training participation in their district. From school year 2002-2003 to school year 2003-2004 only 25% of schools continued implementation (George & Kincaid, 2008). As a result of these enhanced readiness requirements of schools, at the end of the 2006-2007 school year more than 85% of trained schools remained active.

A critical prerequisite to attendance in Tier 1/Universal Level PBS Training is active participation from the school's administration (e.g., principal, assistant principal or dean who is responsible for discipline on campus) throughout the entire training. The Tier 1/Universal Level PBS training typically occurs for three consecutive days and may occur at any time during the calendar year as determined by the district. Since participating schools receive training after district and school readiness items have been completed, yearly cohorts are not created within the State (i.e., schools/districts enter training at different times). For example, although schools may be considered in Year 1 implementation, their onset of implementation varies depending upon when they received the training (e.g., spring, summer, winter, etc.). School teams participate in lecture, team activities, and view videotapes of actual schools to assist in visualizing implementation on their campus, and complete a comprehensive action plan to guide implementation activities throughout the school year. Tier 1/Universal Level PBS training components include: establishing a team, understanding basic behavioral principles, building faculty buy-in, establishing a data-based decision-making system (e.g., including behavioral definitions, behavior tracking forms, coherent discipline referral process, and effective consequences), identifying expectations, establishing rules for specific settings, developing

reward systems, and implementing and evaluating the Tier 1/Universal Level PBS system. As of August 2008, over 500 Florida schools in 42 districts have been trained in Tier 1/Universal Level PBS. This represents approximately 20% of the public schools in Florida. It is important to note that the number of schools completing the assorted mid-year and end-year evaluation measures varies by year and by measure.

*Process and Outcome Measures*

Evaluation instruments measure all intervention efforts including training impact and satisfaction, technical assistance efforts, team processes, implementation activities, and student outcomes. Reports generated from these evaluation measures are used by Florida's PBS Project and the State funding source to assess the effectiveness of Florida's PBS Project activities. All data are entered online two times annually (mid-year in December and end-year in June) and evaluation summaries are automatically generated and immediately available for viewing and downloading by school and district. All instruments and protocols for use are available at the Florida PBS Project's website (<http://flpbs.fmhi.usf.edu>).

*New School Profile.* The New School Profile is a two-page form designed to collect basic demographic information about the school prior to receiving initial training. These data assist Florida's PBS Project staff in providing support and demonstrating effectiveness across the State. Basic contact information, demographics (e.g., ethnicity, attendance, percentage of students on IEP, staff stability, etc.), baseline behavior, and academic data are requested and self-reported on the form by participating schools. These baseline data are used to investigate how implementation may differ across participating schools with various characteristics.

*School Profile.* After a school received Tier 1/Universal Level PBS training, the PBS Project asks them to provide demographic data on an annual basis using the School Profile. This

profile is identical to the New School Profile except that it does not include behavior or academic data. For existing schools, these data are automatically collected at the end of the year through the Outcome Data Summary. The PBS Coach (i.e. team facilitator with additional training in positive behavior supports) completes this form mid-year with assistance from school personnel (i.e., school administrator and/or data clerk).

*Team Process Evaluation.* This 20 item survey evaluates the PBS team's functioning and effectiveness. Items are divided into the following 4 domains that correspond with best practice in team building and functioning: a) trust building, b) communication/distributive leadership, c) problem solving, and d) conflict management. Participants score each item on a Likert scale from 1= we never do, 3= we sometimes do, to 5= we always do. A sample item is "We arrive at meetings on time and stay for the duration of the meeting." Each member of the PBS Team (including the Coach) completes a Team Process Evaluation. The Coach then calculates the average response for each item (to the nearest 10<sup>th</sup>; i.e., 4.2) and records this as the final score for each item which is then entered on-line. Data are collected mid-year and results are used to identify areas of needed support for teams and to assist coaches in effective PBS implementation.

*Benchmarks of Quality (BoQ).* This evaluation instrument assesses the fidelity of Tier 1/Universal Level PBS implementation by listing 53 benchmarks of quality that address 10 critical elements (Kincaid, Childs, & George, 2005). Validation study results indicate that the Benchmarks of Quality is a reliable, valid, efficient, and useful instrument for measuring the fidelity of implementation of the primary or universal level of PBS application in individual schools (Cohen, Kincaid & Childs, 2007). The BoQ is completed annually each spring and requires the coach to complete the Benchmarks Scoring Form (100 point scale) after the PBS Team members have completed and returned the Team Member Rating. The Benchmarks

Scoring Guide describes the administration process of the instrument and provides a rubric for scoring each item. The results are used to evaluate the extent to which teams are implementing Tier 1/Universal Level PBS, to identify potential Model Schools (i.e., demonstrations or exemplars), and to provide a mechanism for school teams to identify areas of strength and weakness for establishing future action plans. The Project considers high implementers (those with strong fidelity) to be schools scoring a 70 or higher on the BoQ, while schools scoring below 70 are considered low implementers. This distinction is based on an average score of 69 for the instrument during validation (Cohen, Kincaid & Childs, 2007), however for clarity, a cut off of 70 is used by the Project. It is important to note that a BoQ score may not be reflective of a full year of implementation. For example, a school initially trained in January and another trained the same year in September will each complete the BoQ for year one implementation when evaluated the following spring. Therefore, first year implementation scores could be indicative of 16 months or 8 months of implementation respectively. All information derived from the BoQ is summarized and reported back to the school-based PBS Team. A comparison of Benchmarks of Quality scores for all of Florida's reporting schools since 2004 is reported to Florida's Department of Education each year (Kincaid, George, & Childs, 2007).

*Outcome Data Summary.* The Outcome Data Summary provides basic outcome data related to attendance, behavior referrals, and academic achievement. More specifically, teams complete these end-year data on office discipline referrals, in-school suspensions, out-of-school suspensions, and certain academic data (e.g., Florida Comprehensive Assessment Test (FCAT), the state-wide assessment test). The FCAT is part of Florida's overall plan to increase student achievement by implementing higher standards and is administered to students in Grades 3-11. It contains two basic components: criterion-referenced tests (CRT), which measures selected

benchmarks in Mathematics, Reading, Science, and Writing and norm-referenced tests (NRT) in Reading and Mathematics, measuring individual student performance against national norms. Yearly improvements on the FCAT are critical variables in determining whether the state judges a school to have made AYP and therefore is of particular importance to Florida schools. FCAT student results are reported by achievement levels from the lowest level (Level 1) to the highest level (Level 5). Level 3 indicates that a student's performance is on grade level. Furthermore, student progress can be tracked over time and across grade levels indicated as student "learning gains."

The coach completes this self-report form with assistance and input from the school-based PBS Team and data entry personnel. The combined results are used to identify whether the implementation of Tier 1/Universal Level PBS has had an impact on the outcome data variables such as academics. Completion of this form for ongoing data analysis is essential since only 25% of Tier 1/Universal Level PBS trained schools utilize SWIS™ (the web-based gold standard data system for Tiers 1 and 2) and the Project has no other way to access this data.

SWIF. The School-Wide Implementation Factors (SWIF) survey is a web-based survey that gathers information from PBS team members, coaches, and district coordinators on the facilitators and barriers to Tier 1/Universal Level PBS implementation. The items on the SWIF survey were derived from the nominal group process technique conducted with implementers from Florida's PBS schools as described by Kincaid et al. (2007). The SWIF also assesses consumer satisfaction with training, technical assistance or product development activities provided by Florida's PBS Project. Data are entered end-year and results are used to direct future training and technical assistance activities of Florida's PBS Project. To date, 211

individuals representing 91 schools in their first, second, and third year of implementation have completed the SWIF survey.

*Attrition Survey.* This is a web-based “exit” survey that gathers information from participants from school PBS teams to identify factors contributing to the discontinuation of participation in PBS. Respondents to the attrition survey rated items on a 4-point Likert scale from “contributed significantly” to “did not contribute at all.” Domains examined include knowledge, motivation, support, and the participant selection processes. The Attrition Survey is completed by team members’ whose schools are no longer implementing Tier 1 PBS. Data will be utilized to assist in preventing future discontinuation of participants. To date, 32 individuals representing 18 schools have responded to the attrition survey.

#### *Procedures*

Baseline data were collected with the New School Profile at least two weeks prior to the onset of the initial Tier 1/Universal Level PBS training. Mid-year data were requested in the Fall and collected by mid December each year. These data included the School Profile, School Team Update and the Team Process Evaluation. Results were provided in early January, which assisted in mid-year action planning, the delivery of appropriate technical assistance, and training for ongoing skill building. End-year data were requested in late Spring and collected by mid June each year. These data included the Benchmarks of Quality and the Outcome Data Summary that assist in determining model school status (i.e., exemplar schools), overall outcomes, and future action planning. Full evaluation summaries were provided directly to district coordinators for dissemination across district coaches. The SWIF survey was collected at the end of the year and the Attrition Survey was collected throughout the calendar year as participants from exiting schools were identified.

Florida's PBS Project has provided external funds to school districts to help support the completion of evaluation activities. Funding was distributed directly to the district. When reports were successfully completed within the specified timeframe, grant funding historically allowed for \$200 per school for mid-year and \$600 per school for end-year reports. Schools that did not complete mid-year reports could complete end-year reports, but were not eligible for funding. Schools that moved to inactive status (defined as not actively implementing Tier 1/Universal Level PBS, with confirmation by their PBS District Coordinator) were ineligible for funding. The final dollar amount varied from year to year based upon the availability of grant funding.

Data on the SWIF and attrition factors were collected outside of the mid-year and end-year evaluation process. At the end of the school year, all PBS team members were asked to complete the SWIF survey. As an incentive to participate, team members completing the survey were entered into a drawing to receive one of three \$100 awards. Team members from schools that discontinue formal participation in PBS with Florida's PBS Project were solicited by email to complete the web-based attrition study. Team members completing the attrition survey were eligible to receive a \$25 stipend.

### *Descriptive Results*

Table 1 provides a summary of each evaluation question and the data sources used to address the question. The analyses described in this section include data from pre-K, elementary, middle, high, alternative/center, and other (i.e., K-8) or a subset of those school types. In some analyses, data from particular school types were not available or applicable. For each question that follows, the schools included in the analysis will be identified.

*Implementation Fidelity.* “*Are Florida schools trained in Tier 1/Universal Level PBS implementing with fidelity?*” In each school year between 2004 and 2007, over 50% of all active PBS schools in Florida implemented Tier 1/Universal PBS practices with a satisfactory level of fidelity as demonstrated by scoring at least a 70 on the Benchmarks of Quality. The implementation level of schools increased each year with 54% scoring 70 or above in 2004-2005, 63% scoring 70 or above in 2005-2006, and 65% scoring 70 or above in 2006-2007.

“*Is there a difference in implementation fidelity across years?*” Since the 2004-2005 school year, the average level of implementation by Florida’s schools improved as demonstrated by incremental increases in average BoQ scores across years. In 2004-2005, the average BoQ score for all of Florida’s schools was 66. The average score in both 2005-2006 and 2006-2007 was 75, which falls within the cutoff for “high implementing” schools which requires a BoQ score of 70 or higher.

“*Is there a difference in implementation fidelity across school types?*” Between the 2004-2005 and 2006-2007 school years, alternative/center schools in Florida reported a higher level of implementation than other school types. The BoQ score averages for alternative/center schools were 69, 76, and 78 in the three consecutive school years starting in 2004-2005. The standard deviation in those years ranged from 18.0 to 19.8. Elementary schools in Florida were the school type implementing with the next highest level of fidelity averaging 71.3 on the BoQ across three consecutive school years. The standard deviation for those school years was from 18.1 to 19.7. Middle schools averaged 67.3 on the BoQ across the same three year span with standard deviations for each year ranging from 17.8 to 19.1. High schools scored the lowest level with an average of 66 on the BoQ across the three years. They also had the greatest range of standard deviations; from 5.7 to 19.7.

*“What issues are related to implementing with fidelity?”* The School-Wide Implementation Factors (SWIF) survey revealed differences in issues identified as helpful or problematic for higher and lower implementing teams (see Table 2). The results of the SWIF survey indicated that overall, respondents from higher implementing schools identified a greater number of issues as helpful than did respondents from lower implementing schools. Respondents from lower implementing schools identified a greater number of issues as problematic than did respondents from higher implementing schools. Common issues both high and low implementing schools identified as being helpful included “expectations and rules clearly defined” and “administrator commitment.” However, factors identified as problematic by high implementing schools (i.e. adequate funding, staff stability) differed from those identified by respondents from lower implementing schools (i.e. staff time for PBS, staff belief about the effectiveness of PBS).

*“Do teams that work well together implement with greater fidelity?”* Florida’s PBS Project measures the degree to which teams work well together using the Team Process Evaluation. The state average on all process domains was above 4 on a scale of 1-5 with 1=strongly disagree and 5=strongly agree. The domains with the highest average scores were “no put downs” and “friendly.” The domains with the lowest average scores were “time limits,” “summary of outcomes,” and “checks for understanding of concepts.” Both higher and lower implementing schools scored relatively high on team functioning. The 134 higher implementing teams scored an average of 5 points higher on the Team Process Evaluation (mean=89; SD=13.2) than did the 94 lower implementing teams (mean=84; SD=12.6).

*Impact on Student Behavior. “Do schools implementing Tier 1/Universal Level PBS realize a decrease in ODRs (office discipline referrals), days of ISS, and days of OSS?”* After

the initial year of implementation, Florida elementary, middle and high schools implementing Tier 1/Universal Level PBS realized an overall percentage change in office discipline referrals, days of out-of-school suspension, and days of in-school suspensions. Overall, the average number of ODRs per 100 students after one year of implementation was approximately 33% lower than the number of ODRs per 100 students during the average baseline year (see Figure 2). The range of change in ODRs per 100 students across schools was -491.81 referrals to +103.13 referrals with a median of -22.76. A paired t-test was used to ascertain whether the change in number of ODRs, in-school-suspensions, and out-of-school suspensions between baseline and Year 1 of implementation is statistically significant. For ODRs per 100 students, statistically significant differences were found between baseline and year 1. The mean difference between ODRs in baseline and Year 1 was 45.01 (SD=101.3)  $p=.001$ .

The average reduction in days of ISS per 100 students after one year of implementation was 16% (see Figure 2). The range of change in the number of days of ISS per 100 students across schools was -205.28 days per 100 to +72.88 days per 100 with a median of +.30 days per 100. The average change in days of OSS per 100 students after one year of implementation reflected an increase of 2%. The range of change in number of days of OSS per 100 students across schools was -86.53 days per 100 to +164.06 days per 100 with a median of -1.79 days per 100. This analysis does not account for fidelity of implementation and instead reflect the average change across elementary, middle and high schools for which Florida's PBS Project had both baseline and year 1 data regardless of implementation level. A t-test with days of ISS and days of OSS did not reveal a statistically significant difference between baseline and year 1.

Pre-K, alternative/center, and "other (i.e., K-8)" schools could not be included in the descriptive analysis of these outcome measures due to factors that lead to extraordinary

variability of the data. Alternative/center schools have atypically small populations with high rates of turnover which are often a result of “limited stay” times. Due to the age and developmental stage of students, pre-K programs frequently use alternatives to discipline procedures such as office referrals and suspensions. The school type categorized as “other” for Florida schools captures populations across the standard grade levels which confounds the descriptive data analysis.

*“Do schools implementing Tier 1/Universal Level PBS realize an increase in academic achievement?”* From 2004-2007, Florida schools trained in the Tier 1/Universal Level of PBS had a higher percentage of students reaching level 3 (performance on grade level) on the Florida Comprehensive Achievement Test’s reading segment (62.67%) when compared to the statewide average (55.67%).

*“Is there a difference in outcomes across school types?”* Florida’s elementary, middle and high schools implementing Tier 1/Universal Level PBS reported fewer office discipline referrals after their initial year of implementation (see Figure 3). Alternative/center, PreK and “other” school types were not included in this comparison for the reasons described previously. Both middle and high schools showed similar decreases in ODRs from baseline to Year 1 with middle schools reporting an average of 34% fewer referrals per 100 students and high schools reporting 33% fewer. Elementary schools realized the smallest decrease in referrals after one year of implementation (30%) when compared to the decrease for middle and high schools. Although not represented in Figure 3, middle schools reported the highest average number of referrals overall (285 per 100 students before implementation and 188 per 100 students after implementation; SD=186.8 and 132.5 respectively). High schools reported an average of 179 referrals per 100 students before implementation and 121 referrals after implementation

(SD=149.18 and 106.0 respectively). Elementary schools reported the lowest average number referrals overall (68 per 100 students before implementation and 47 after implementation; SD=50.6 and 32.5 respectively).

Florida's elementary, middle and high schools implementing Tier 1/Universal Level PBS reported fewer days of in-school suspension during their first year of implementation. Elementary schools reported an average 58% decrease in days of ISS per 100 students (SD=40.83). The range of change in days of ISS per 100 students for elementary schools was -205.28 to +13.72. Middle schools reported an average 8% decrease in days of ISS per 100 students (SD=44.51). The range of change in days of ISS per 100 students for middle schools was =96.26 to +72.88. High schools reported an average decrease of 4% (SD=40.85). There were only 3 high schools represented in the analysis of change in days of ISS per 100 students. The percentage change for the three high schools was -27.9, -23.5, and +44.9.

Although not depicted in Figure 3, middle schools reported the highest average number of days of in-school suspension with 98 days per 100 (SD=77.3) before implementation and 90.7 days per 100 (SD=73.7) after implementation. Elementary schools reported the lowest average number of days with 16.5 days per 100 (SD=44.5) before implementation and 6.9 days per 100 (SD=8.7) after implementation. High schools reported an average of 54 days per 100 (SD=41.2) before implementation and 52.6 days per 100 (SD=23.1) after implementation. The results for high schools should be viewed with caution as the dataset contained only 3 schools.

Florida's elementary schools implementing Tier 1/Universal Level PBS reported fewer days of out-of-school suspension during their first year of implementation. Elementary schools reported a decrease in days of in-school suspensions with 24% fewer after one year of implementation (SD=17.37). The range of change in days of OSS per 100 students for

elementary schools was -246.4 to +77.4 days per 100 students. Middle and high schools reported an increase in the average number of days of OSS per 100 students (see Figure 3). Middle schools reported an average increase of 8% in days of OSS per 100 students (SD=59.55). The range of change in days of OSS per 100 for middle schools was -491.8 to +103.1. High schools reported an average increase of 28% in days of OSS per 100 students (SD=53.18) ranging from -223.6 to 88.4. It is important to note that the data for high school represent only 5 schools. Furthermore, a school level analysis revealed that 3 of the 5 high schools realized a decrease in days of OSS after implementing Tier 1/Universal Level PBS.

Although not depicted in Figure 3, middle schools reported the highest average number of days of out-of-school suspension with 89.4 days per 100 (SD=65.0) before implementation and 96.6 days per 100 (SD=71.7) after implementation. Elementary schools reported the lowest average number of days with 20.2 days per 100 (SD=20.4) before implementation and 15.2 days per 100 (SD=14.7) after implementation. High schools reported an average of 56.6 days per 100 (SD=30.6) before implementation and 72.4 days per 100 (SD=42.0) after implementation.

All levels of Florida's schools implementing Tier 1/Universal Level PBS realized an increase in the average percentage of students scoring level 3 or above on the reading section of Florida's Comprehensive Achievement Test after their first year of implementation. Middle schools realized the greatest increase with 3% more students achieving level 3 or above after year 1 of implementation (SD=13.1% in baseline and 13.1% in year 1). Elementary and high schools averaged 1% more students scoring level 3 or greater (high schools SD=13.9 in baseline and 15.1 in year 1; elementary schools SD=12.9 in baseline and 13.4 in year 1).

*“Are schools implementing with high fidelity realizing better outcomes than those implementing with low fidelity?”* The data indicated that this is true for office discipline referral

rates, in school suspension rates, out of school suspension rates and reading performance.

Overall, higher implementing schools averaged a lower rate of ODRs than lower implementing schools (see Figure 4). Of the 34 schools for which we have both BoQ and ODR data for 3 consecutive years, in each of the 3 years high implementing schools reported fewer average number of referrals per 100 students when compared to low implementing schools. In year 1, high implementers reported 54.2% fewer ODRs per 100 students, in year 2 they reported 11.1% fewer ODRs per 100 students, and in year 3 they reported 38.3% fewer ODRs per 100 students.

Another outcome measure examined in relation to implementation level was the use of suspensions. For the 3 year period 2004-2007, high implementing elementary, middle and high schools realized fewer days of ISS per 100 students than did lower implementing schools. In the 2004-2005 school year, the 37 high implementing schools had 31.6% fewer days of ISS when compared to the 30 lower implementing schools. For 2005-2006 the 73 high implementing schools reported 41.6% fewer days of ISS per 100 students than the 71 low implementing schools. In 2006-2007, the 106 high implementing schools reported 26.0% fewer days of ISS per 100 students when compared to the 72 low implementing schools. For the same sets of schools over the 3 year period from 2004-2007, high implementing schools reported fewer days of OSS per 100 students than did lower implementing schools. In the 2004-2005 school year, high implementing schools reported 33.8% fewer days of OSS per 100 students when compared to lower implementing schools. For 2005-2006 they reported a 21.1% fewer days of OSS per 100 students, and in 2006-2007, they reported 34.3% fewer days of OSS per 100 students.

Schools implementing with higher fidelity had a greater average percentage of students achieving level 3 or above on the reading segment of Florida's Comprehensive Achievement

Test (FCAT). For schools scoring 70 or above on the BoQ, 67.3% of students achieved level 3 compared to 59% of students in schools with BoQ scores below 70.

*“Do schools with teams that work well together realize better outcomes than those that don’t work as well together?”* Team functioning across all PBS schools was relatively high (average 87%). Teams functioning above the state average (e.g. 88% or higher) realized 6% fewer office discipline referrals per 100 students than did schools with teams functioning below the state average. Schools scoring below the state average on team functioning averaged 195 referrals per 100 students (SD=438.4), while teams scoring above the state average on team functioning averaged 183 referrals per 100 students (SD=528.5).

*“Why do schools discontinue implementation of Tier 1/Universal Level PBS?”* Items on the Attrition Survey with the highest number of responses revealed three major issues contributing to the schools’ decision to discontinue participation: 1) high rates of turnover in schools, 2) lack of time (administrator, team, staff), and 3) lack of commitment (administrator, team, staff). These data are preliminary while data collection continues as schools “drop-out” of participation in Florida’s PBS Project. A summary of a comprehensive dataset for the attrition evaluation is forthcoming.

*“Are our consumers satisfied with the training, technical assistance, products and support received?”* Respondents to the SWIF survey responded favorably to the quality of services provided by Florida’s PBS Project. Over 82% rated the support from or collaboration with Florida’s PBS Project as helpful or somewhat helpful, that staff were professional and respectful, and that materials and resources provided were valuable. Over 70% responded that Florida’s PBS Project staff provided good recommendations and technical assistance to help

them address district and/or school issues and that staff were effective and efficient in responding to requests for support.

*Discussion*

This paper presents a model for conducting a comprehensive state-wide evaluation of training and technical assistance efforts at the Tier 1/Universal Level of PBS. This program evaluation was driven by twelve questions that draw on four types of data (implementation, impact, attrition, and satisfaction) that shaped the evaluation process of Florida's Positive Behavior Support Project. The Project assessed the student outcomes of ODRs per 100 students, days of ISS per 100 students, days of OSS per 100 students and reading achievement to determine the overall impact of the Tier 1/Universal PBS process across hundreds of schools. The evaluation also compared overall student outcomes with the level of fidelity of implementation. The descriptive data indicate the following:

1. The percentage of Florida schools implementing Tier 1 with fidelity level has increased in each of three years to 65% in 2006-2007.
2. Benchmarks of Quality (fidelity of implementation) scores have increased from the first year of use indicating overall improvement in fidelity across schools.
3. Measures of team functioning did not effectively differentiate school teams implementing with high or low fidelity or with better or worse outcomes.
4. Teams implementing Tier 1/Universal PBS with fidelity saw substantially different effects on all four outcome measures.
5. ODR, ISS and OSS outcome measures differed considerably depending on the level of school (e.g., elementary, middle, high, etc.).

While our descriptive results are encouraging, the nature of the sample had some limitations. As the number of schools represented in Florida's PBS database continues to expand, the descriptive differences in the data across hundreds of schools and multiple years will be reported with increasing confidence. And while it is also possible to conduct statistical analyses of the data, the nature of several of the data sets presented some significant challenges. For instance, though fidelity (BoQ) and academic (FCAT) data sets fluctuate within narrow parameters (scores range from 0-100%), other data sets (ISS, OSS, ODR) have a tremendously large set of parameters which can fluctuate from less than 100 per year per school to well over 10,000 per year per school based on circumstances such as the size of the school or the building's discipline policies. The variability within these data sets prohibited the assumptions necessary for the use of parametric statistical analyses (i.e., normal distribution). Given the nature of the sample, the analyses and descriptive data presented in this article are effectual in communicating the results of our study of the relationships between the degree of implementation, implementation factors, outcomes, and team processes at the state, district and school levels. Although one cannot use these evaluation data to conclude that Tier 1/Universal PBS "produced" a difference in outcomes, the data indicate a clear a relationship between implementation fidelity and ODRs per 100 students.

*Using Evaluation Data to Impact PBS Practice.* This comprehensive evaluation process has resulted in numerous improvements to the training and technical assistance provided by the Florida's PBS Project, including:

1. The Florida's PBS Project provided increased emphasis on the use of the BoQ results for school level and district level action planning, recognition of model schools, and improvements in preparation for training activities that resulted in improved implementation

fidelity as illustrated by the increase in the average BoQ score each of the past three years while at the same time more than doubling the number of participating schools.

2. District coordinators received both individual school data and district average response data from the Team Process Evaluation. If schools across the district were low in any particular area, the district coordinator was encouraged to address that issue during monthly coaches' meetings. PBS Project staff numbers were also available to provide support to districts with school teams struggling with particular components.
3. Since the average scores for the Team Process Evaluation were over 87% for both low and high implementers, Florida's PBS Project reviewed the measure to determine whether it is sensitive enough to identify actual differences in high and low implementing schools, whether differences actually exist, or whether the items adequately reflect the team variables critical to the Tier 1/Universal Level PBS implementation process. As a result of that review, we no longer require the Team Process Evaluation to be used by schools.
4. The data suggested that Tier 1/Universal Level PBS may have had greater impact on the use of ISS versus the use of OSS at participating schools. Perhaps less severe problem behaviors are dealt with more effectively through Tier 1/Universal Level PBS strategies, thus reducing ISS, while more severe behavior problems are still occurring at the same rate and are being consequted with the use of OSS. A further analysis of Project data may be able to identify the factors related to this difference in ISS and OSS rates.
5. Although the data did not indicate a significant and immediate effect of Tier 1/Universal Level PBS on academic performance, the small increase supports the Florida PBS Project's assertion that Tier 1/Universal Level PBS will not negatively impact a school's academic performance, and may in fact produce more significant academic impacts after several years

of implementation. These data are used to get buy-in at the district and school level from schools that are reluctant to devote time and energy to activities that they perceive to “interfere” with academic efforts.

6. The data (implementation fidelity, behavioral outcomes, and academic achievement) were not as consistent or significant across the high schools when compared to other school levels. It should be noted that the Project has a limited number of high schools and that individual high schools have demonstrated fidelity of implementation and positive student outcomes. In response to the relatively inadequate effectiveness of implementation and outcomes with high schools, Florida’s PBS Project began to implement the following strategies: (a) PBS Plus – a one-year intensive planning process to build administrator and faculty buy-in prior to initiating the Tier 1/Universal Level PBS training, (b) training one grade level at a time [e.g., an initial effort at grade level implementation produced a 93% reduction in office discipline referrals per 100 students after the first year of implementation (English and George, 2008)], (c) implementing continued and frequent social skills groups across all students, faculty and staff, (d) utilizing both internal and external PBS coaches per site, (e) extended training to accommodate larger school-based teams, (f) encouraging earlier student participation on the school-based team, and (g) continuous advocating at the district-level for administrator stability. As high schools continue to increase in participation and the Project continues to expand the data collected, further analyses will be conducted to determine if any of the above strategies may have had an impact on the outcomes.
7. In light of the general acceptance that implementation fidelity was related to student outcomes, we are continuing to explore the specific factors that contribute to successful implementation of Tier 1/Universal PBS. Previous research by Cohen (2006) indicated that

the most important factor in successful PBS implementation is the functioning of the team. As a result, Florida's PBS Project continues to relate team functioning/process variables to implementation fidelity and student outcomes. As a result of this analysis, the Project can begin to identify critical team variables that may be impacted via statewide training and technical assistance activities.

8. Finally, the Florida's PBS Project's measurement of helpful and problematic factors to implementation (current and attrition teams) began to identify common variables that facilitate or impede Tier 1/Universal PBS implementation. The identification of systems, training, materials, etc. that facilitate or impede implementation can provide Florida's PBS Project with action plan steps (policy changes, updated training materials, reallocation of resources, etc.) to improve targeted areas each year. Yearly analysis of this survey data should provide data on the success of action plan activities.

#### *State Evaluation Models*

While published evaluation reports of states implementing Tier 1/Universal Level PBS with several hundred schools (Illinois, Maryland, North Carolina, Florida, etc.) are limited, an examination of annual reports from selected state projects responsible for PBS implementation presents a consistent picture of evaluation processes. Each the above mentioned states, by and large, follows the template developed by Horner, Sugai, and Lewis-Palmer (2005), and evaluates at a minimum: a) who is receiving training, b) whether schools are implementing with fidelity, c) the impact of PBS on student behavior (e.g., ODR, OSS, ISS, school safety, academics, etc.), and d) the level of implementation (e.g., sustained, phase of implementation, number of schools implementing, etc.).

However, additional evaluation questions reflect the unique needs of states. Illinois (Eber, Lewandowski, Hyde & Bohanon, 2008) provides an extensive evaluation of the benefits of PBS for students with complex needs. Maryland (S. Barrett, personal communication, February 21, 2008) identifies the specifics of ODR data across all schools (what, when, where, gender, ethnicity, etc.). And Florida's evaluation includes an analysis of factors related to implementation fidelity and discontinuation of PBS, changes in implementation over time, and the impact of team work on fidelity of implementation and outcomes. Thus, it does appear that states that scale-up intervention begin to identify some very similar evaluation questions that are consistent from state to state, but also develop evaluation questions that reflect the unique characteristics of their state (e.g., funding source, mission, etc.).

Florida's evaluation efforts have also taught us some important lessons that may inform evaluation efforts of other states. First, it is important to "know what you want to know" before collecting data so that you can capture multiple types of student and school outcome measures but not be seduced by the desire to collect more data than are necessary. Second, it is important to compare fidelity of implementation with outcomes to present a strong case for implementing Tier 1 Universal PBS with fidelity. Third, additional sources of data can assist the state in determining not just if the Tier 1 Universal PBS process is working, but why it is or is not working. This qualitative data is necessary for redesigning and adapting the training and technical assistance support provided to schools and districts. Finally, it is essential to address state, district and school systems issues that might impact implementation success. The development of an effective and efficient data collection and analysis system is one such critical issue that can promote initial success and future expansion.

### Future Directions

The questions, data, and processes in this article describe one approach to evaluating Tier 1/Universal PBS. As the application of PBS continues to expand through all three Tiers of PBS (i.e., Universal, Supplemental/secondary, Intensive/tertiary), additional questions (e.g., How many students are receiving Tier 2 and 3 interventions?, Are the interventions implemented with fidelity?), data (e.g., How are groups and individuals progress monitored at the school, district and state levels?), and processes (e.g., How will such data be gathered in an effective and efficient manner and provided back at each level for data-based decision-making?) must continue to expand to allow schools, districts and state education agencies to answer critical evaluation questions. These evaluation efforts will likely produce an array of new tools and measures. As the field of PBS grows, the need to develop tools and assessments that are both reliable and valid is paramount. Future researchers and evaluation efforts should pay particular attention to procedures that might improve those evaluation tools and assessments (e.g., instrument validation, standardized data collection/summarization procedures and interpretation guidelines).

Florida's model for evaluation of state, district and school Tier 1/Universal Level PBS efforts has been presented as one template for evaluation activities that assess multiple variables in various formats. As Tier 1/Universal Level PBS efforts continue to expand across the country at the universal, secondary, and individual levels, the evaluation questions and data sources will continue to grow in number and complexity. We encourage all states and districts to begin framing their critical evaluation questions early in the process and designing data collection and analysis processes to answer those questions in the most effective and efficient manner.

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Figure 1. Florida's PBS Project's service delivery and evaluation model.

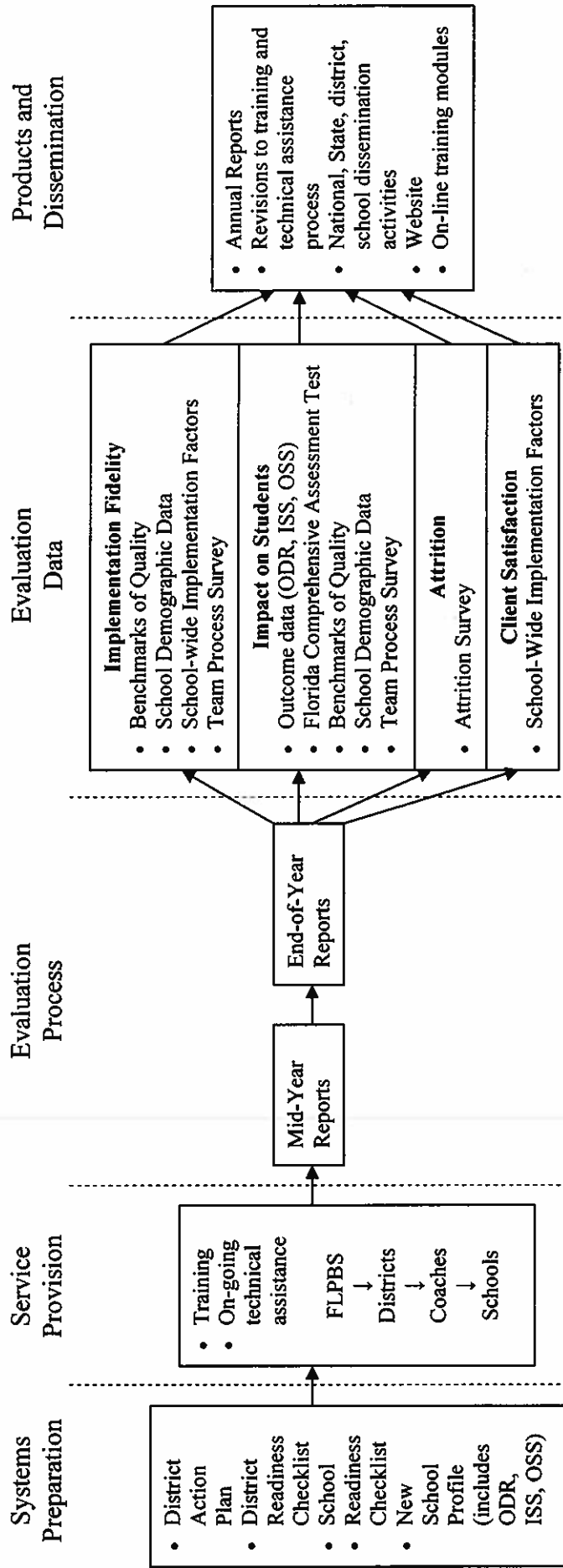


Figure 2. Percentage change in ODR, ISS and OSS rates per 100 students before and after PBS implementation.

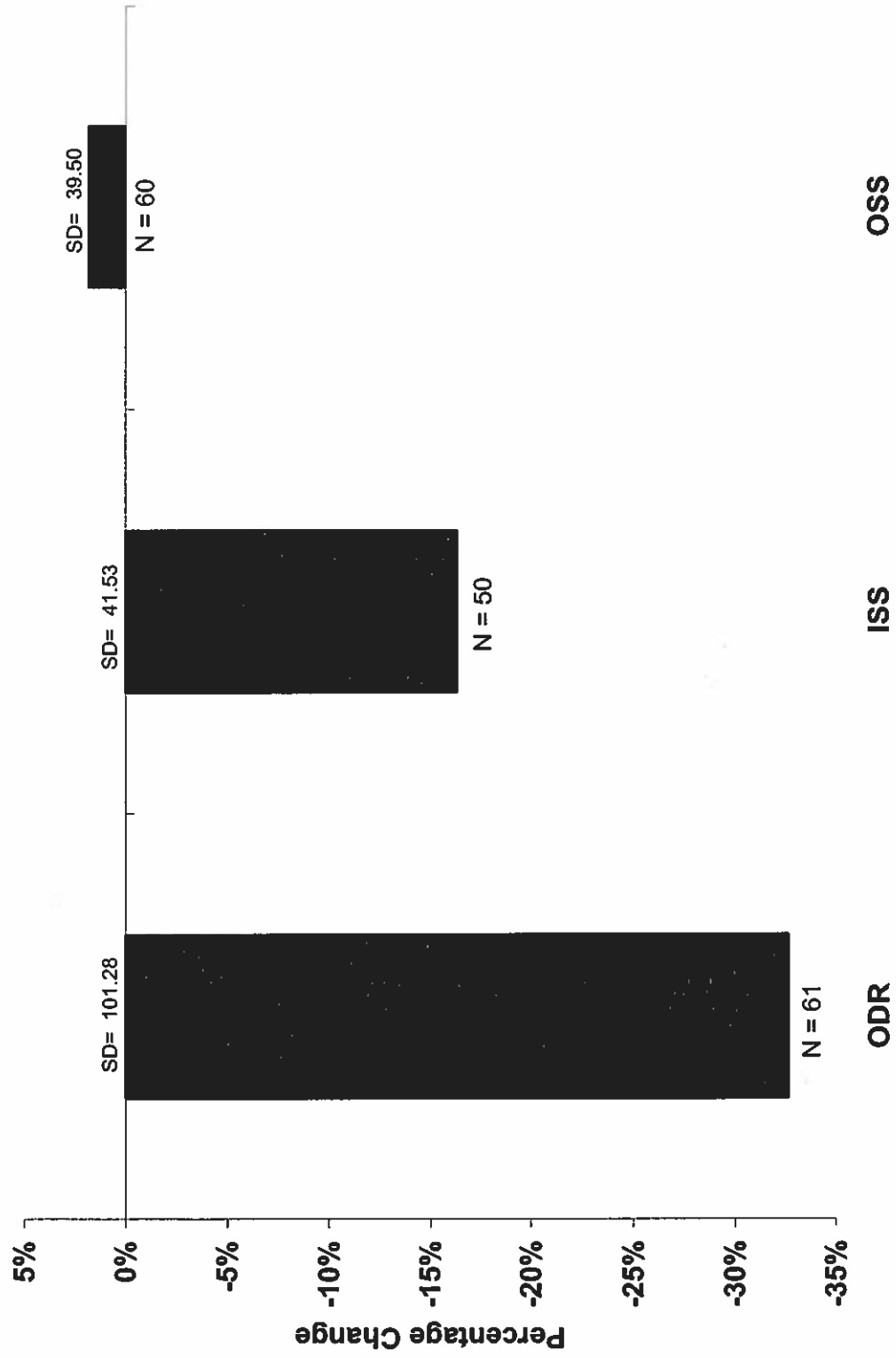


Figure 3. Percentage decrease in ODR, ISS, OSS rates per 100 students after 1 year of implementation (by school type).

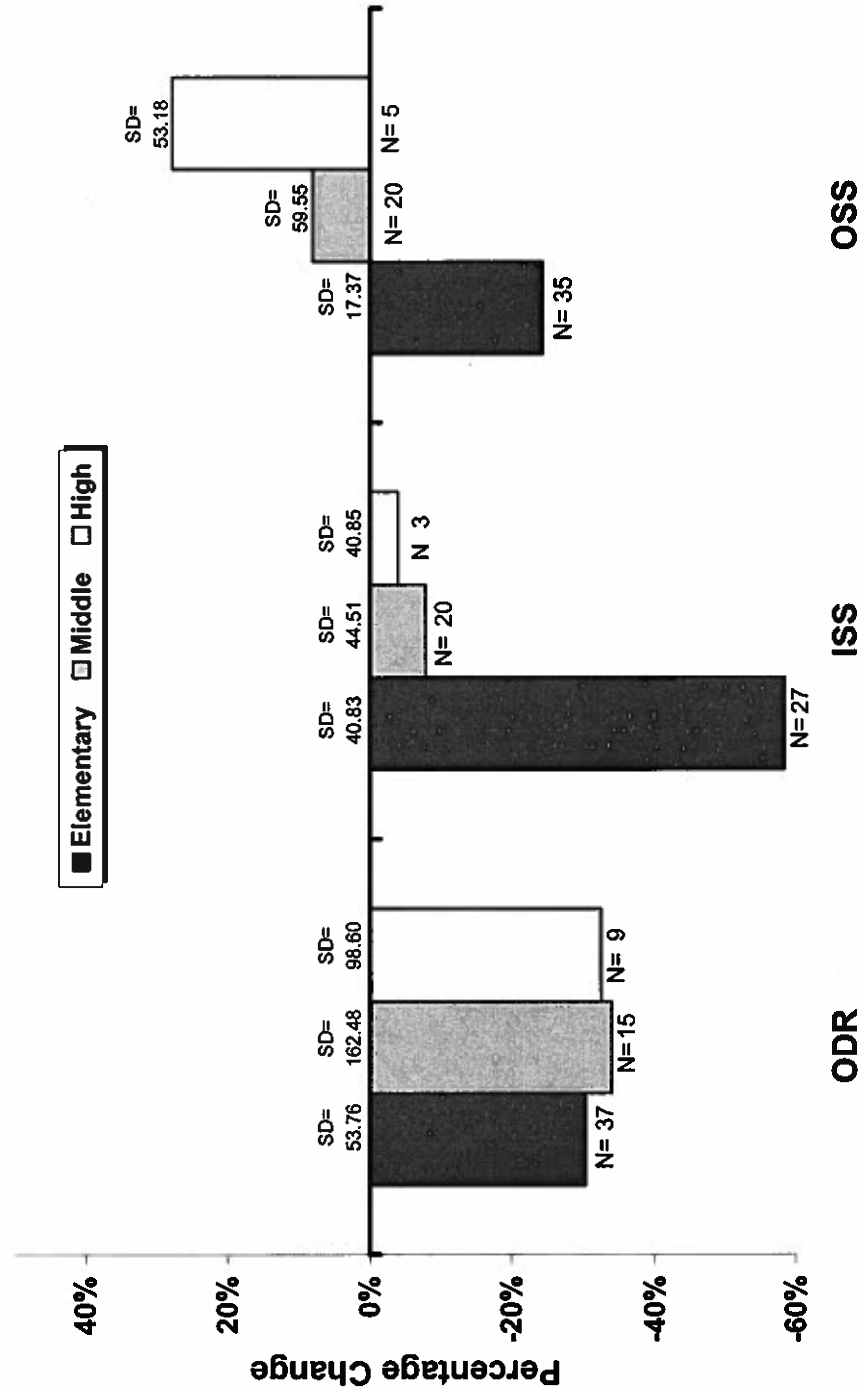


Figure 4. Office discipline referrals by implementation level across three years of implementation.

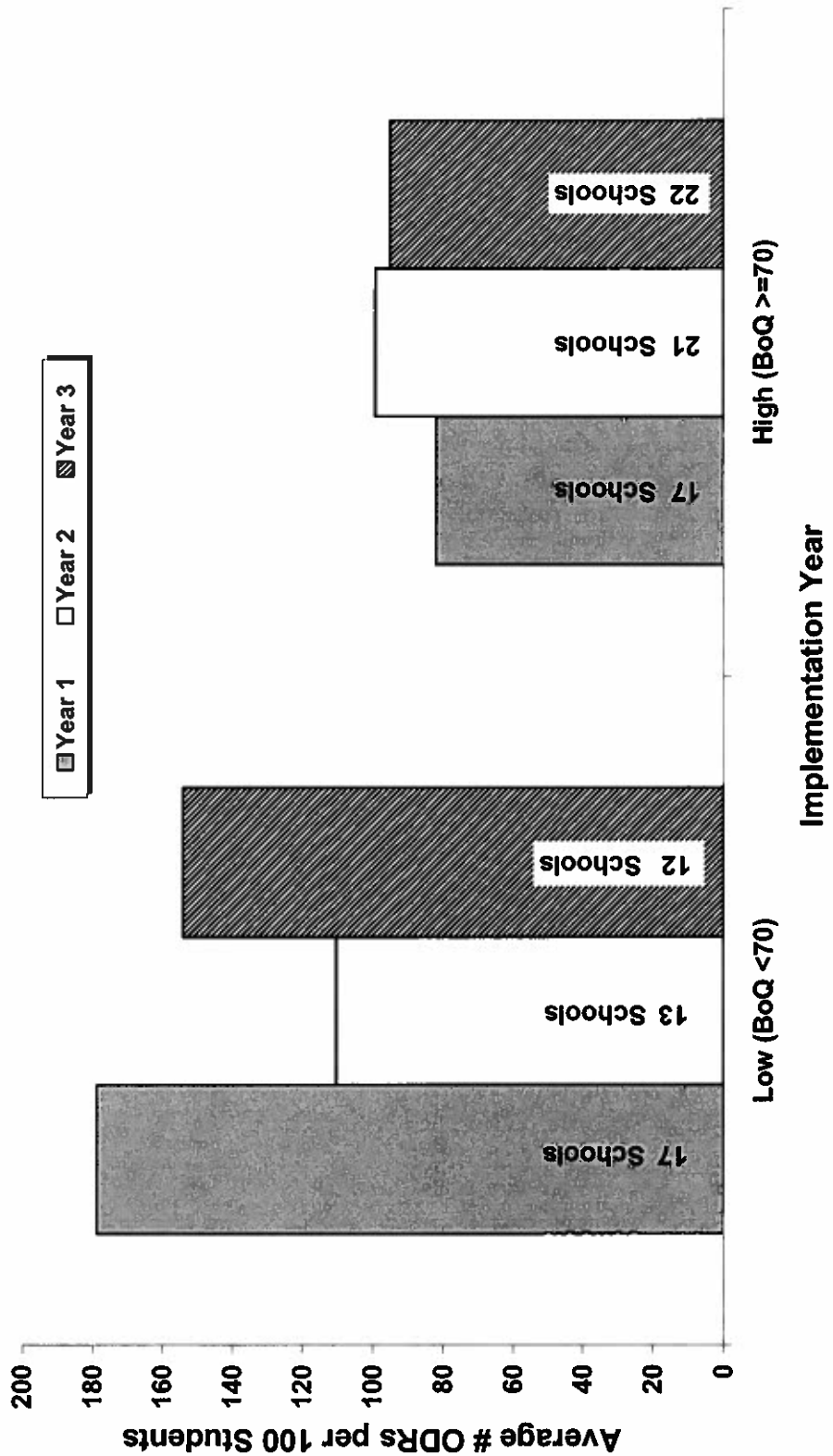


Table 1

Summary of evaluation questions, sources of data, and article references.

Question	Data source
<b>Implementation fidelity</b>	
Are schools trained in Universal SWPBS implementing with fidelity? <sup>a</sup> Across years? Across school types?	<ul style="list-style-type: none"> <li>▪ Benchmarks of Quality (BoQ)</li> <li>▪ School Demographic Data</li> </ul>
What factors are related to implementing with fidelity?	<ul style="list-style-type: none"> <li>▪ School-Wide Implementation Factors (SWIF) survey, BoQ</li> </ul>
Do teams that work well together implement with greater fidelity?	<ul style="list-style-type: none"> <li>▪ Team Process Evaluation, BoQ</li> </ul>
<b>Impact on student behavior</b>	
Do schools implementing SWPBS decrease ODRs, days of ISS, and days of OSS? <sup>a</sup>	<ul style="list-style-type: none"> <li>▪ ODRs, ISS, OSS</li> </ul>
Do schools implementing SWPBS realize an increase in academic achievement? <sup>a</sup>	<ul style="list-style-type: none"> <li>▪ Florida Comprehensive Assessment Tool (FCAT) scores</li> </ul>
Is there a difference in outcomes across school types?	<ul style="list-style-type: none"> <li>▪ ODRs, ISS, OSS, FCAT scores, School Demographic Data</li> </ul>
Do schools implementing with high fidelity have greater outcomes implementers with low fidelity?	<ul style="list-style-type: none"> <li>▪ BoQ, ODRs, ISS, OSS</li> </ul>
Do teams that work well together have greater outcomes than those that don't work as well together?	<ul style="list-style-type: none"> <li>▪ Team Process Evaluation, ODRs, ISS, OSS</li> </ul>

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**Attrition**

Why do schools discontinue implementation of  
SWPBS?

▪ Attrition Survey

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**Consumer satisfaction**

Are our consumers satisfied with the training, technical  
assistance, products and support received?

▪ SWIF (School-Wide  
Implementation Factors) survey

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<sup>a</sup>Questions also found in PBIS Template

Table 2

School-Wide implementation factors by implementation level.

Type of Factor	Higher Implementing (70+ on BoQ)	Lower Implementing (<70 on BoQ)
	<i>At least 90% of respondents of high implementing schools identified the following factors as Helpful:</i>	<i>At least 80% of the respondents of low implementing schools identified the following factors as Helpful:</i>
Factors most helpful to implementation of SWPBS	<ul style="list-style-type: none"> <li>• <b>Expectations and rules defined</b></li> <li>• <b>Administrator committed to PBS, willing to teach, model, and reward</b></li> <li>• <b>Representative, committed Team</b></li> <li>• Reward system works</li> <li>• PBS Coach’s guidance with process</li> <li>• Students’ responses to rewards and activities</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Expectations and rules defined</b></li> <li>• <b>Administrator willing to reward students</b></li> <li>• <b>Representative PBS Team</b></li> </ul>
	<i>At least 25% of respondents of high implementing schools identified the following factors as Problematic:</i>	<i>At least 50% of the respondents of low implementing schools identified the following factors as Problematic:</i>
Factors most problematic to implementation of SWPBS	<ul style="list-style-type: none"> <li>• Adequate funding</li> <li>• Team recognizes faculty participation</li> <li>• Staff stability from year to year</li> <li>• Student stability from year to year</li> </ul>	<ul style="list-style-type: none"> <li>• Staff time for PBS</li> <li>• Staff belief about effectiveness of PBS</li> <li>• Staff philosophy</li> <li>• Staff consistency in teaching</li> <li>• Staff consistency in discipline procedures</li> </ul>