2-2012

Case example of the implementation of schoolwide positive behavior support in a high school setting

Hank Bohanon
Loyola University Chicago, hbohano@luc.edu

Pamela Fenning
Loyola University Chicago, pfennin@luc.edu

Kimberly Thier
Loyola University Chicago, kthier@luc.edu

Author Manuscript
This is a pre-publication author manuscript of the final, published article.

Recommended Citation

Bohanon, H., Fenning, P., Hicks, K., Weber, S., Their, K., Akins. B., Morrissey, K., Briggs, A., Bartucci, G., Hoeper, L., Irvin, L., & McArdle, L. (2012). Case example of the implementation of schoolwide positive behavior support in a high school setting. Preventing School Failure, 56 (2), 92-103.

Running head: A CASE EXAMPLE OF THE IMPLEMENTATION OF POSITIVE
BEHAVIOR SUPPORT

A Case Example of the Implementation of Schoolwide Positive Behavior Support in a High

School Setting Using Change Point Test Analysis

Hank Bohanon

Address correspondence to Hank Bohanon, 820 N. Michigan Ave., Chicago, IL 60640, USA;

hbohano@luc.edu (e-mail)

Pamela Fenning

Address correspondence to Pamela Fenning, 820 N. Michigan Ave., Chicago, IL 60640, USA;

pfennin@luc.edu (e-mail)

Loyola University of Chicago

Kira Hicks

Address correspondence to Kira Hicks, 759 W. Melrose Street, Chicago, IL 60657, USA;

khicks@maine207.org (e-mail)

Illinois School District 207

Stacey Weber

Address correspondence to Stacey Weber, 6 S 331 Cornwall Road, Naperville, Illinois 60540,

USA; sweber@sased.org

(e-mail)

Kimberly Their

Address correspondence Kimberly Their

820 N. Michigan Ave., Chicago, IL 60640, USA; kthier@luc.edu (e-mail)

Loyola University of Chicago

Brigit Akins

Address correspondence to Brigit Akins,

21 W. Goethe Street, Unite 5A, Chicago, IL 60610, USA; Brigit Aikins brigit.aikins@gmail.com

(e-mail)

Township High School District 211

Kelly Morrissey

Address correspondence to Kelly Morrissey, 4836 N. Oakley Avenue. # 2, Chicago,

60625, USA; kcarne1@luc.edu (e-mail)

Chicago Public Schools

Alissa Briggs

Address correspondence to Alissa Briggs,

811 Scott Place, Libertyville, IL 60048, USA; abriggs@luc.edu (e-mail)

Gina Bartucci

Address correspondence to Gina Bartucci,

820 N. Michigan Ave., Chicago, IL 60640, USA; gbartucci@luc.edu (e-mail)

Lauren McCardle

Address correspondence to Lauren McCardle,

3625 S. Lowe Avenue, Chicago IL 60609, USA; laurenmariemcardle@gmail.com (e-mail)

Loyola University of Chicago

Lisa Hoeper

Address correspondence to Lisa Hoeper,

3235 N Leclaire Ave, Chicago, IL 60641-4289, USA; lmhoeper@cps.k12.il.us (e-mail)

and Larry Irvin

Address correspondence to Larry Irvin,

3235 N Leclaire Ave, Chicago, IL 60641-4289, USA; lmirvin@cps.k12.il.us (e-mail)

Chicago Public Schools

Preventing School Failure

Abstract

The purpose of this case study was to expand the literature base regarding the application of high school schoolwide positive behavior support (PBS) in an urban setting for practitioners and policymakers to address behavior issues. In addition, the study describes the use of the Change Point Test as a method for analyzing time series data that are dependent in nature. The researchers used an existing case study example to guide the implementation of the intervention. The overall implementation of PBS reached full fidelity during the final year. Focused professional development may have been related to changes in statistically significant office discipline referral trends. Implications for practice, future research, and policies are addressed.

Keywords: policy, positive behavior support, high schools, data analysis, professional development

Generally speaking, major areas of focus for K−12 practitioners (Horner, Sugai, Todd, & Lewis-Palmer, 2005) and policymakers include (a) improving academic performance, (b) increasing social competence, and (c) providing a safe instructional environment. Positive behavior support (PBS) is one approach to address these needs. A body of research is emerging that may lend support to the concept that PBS is an evidence-based practice (Horner et al., 2009; Bradshaw, Mitchell, & Leaf, 2010) for addressing the needs of students. According to Horner, Sugai, Todd, and Lewis-Palmer (2005), PBS provides a school-based framework that "emphasizes prevention of problem behavior, active instruction of adaptive skills, a continuum of consequences for problem behavior, assessment-based interventions for children with the most intractable problem behaviors, the implementation of organizational systems to support effective behavioral practices, and the use of information to guide decision-making" (p. 360). While PBS has a established record of practice (Carr et al., 2002), there is limited information regarding the evidence for applied use of PBS at the high school level (Bohanon-Edmonson, Flannery, Eber, & Sugai, 2005; Bohanon, Eber, Flannery, & Fenning, B., 2007; Bohanon et al., 2006; Bohanon, Flannery, Malloy, & Fenning, 2009), or in urban settings (Lassen, Steele, & Sailor, 2006; Turnbull et al., 2002; Warren et al., 2006).

The purpose of this paper is to provide a case study example of the use of PBS in one urban high school to address discipline and behavioral concerns. Further, this paper will discuss the use of the Change Point Test to determine if trends in office discipline referrals (ODRs) were improved in connection with the provision PBS. The following provides a brief overview of schoolwide high school climate efforts, PBS in high school settings, current policy examples related to implementation of PBS, and a brief overview of the Change Point Test.

Schoolwide Change and High Schools

Potential challenges exist when implementing PBS, or any other climate change related initiative, in high school settings. First, problematic behaviors displayed by high school students may be more severe and intense. For example, high school students in 2007 were more likely to report gang-related activity in their schools than students in middle grades (National Center of Educational Statistics, 2009; NCES). Second, structural barriers exist at the secondary level. The large size of many high schools makes it difficult to facilitate communication between staff members, organize meeting times, develop routines, and create consistent discipline policies. The departmentalized emphasis on content and pedagogy also make it difficult to convince teachers that they should address student behaviors (e.g., teach expected behaviors), a key component of PBS described below (Bohanon, Borgmeier, Fenning, Flannery, & Malloy, 2008; Bohanon-Edmonson, Flannery, Eber, & Sugai, 2005).

Schoolwide strategies may involve restructuring critical components and practices in the management of the school (Walberg, H. J., & Niemiec, 1993). For example, Koberg (1986) studied change in elementary, middle, and high schools. According to this author, typical alterations in organizational structures from most to least common included changes to (1) procedures (e.g., changes in rules and work procedures), (2) personnel (e.g., hiring consultants) and process (e.g., budget), (3) structure (e.g., creation or elimination of departments), and (4) strategic activities (e.g., changes in instruction, adoption or abandonment of classes). Significant differences in organizational change based on grade level were not identified in their work. Except for procedural adjustments, organizational adjustments were related to school size. Except for strategic adjustments, level of uncertainly also was related to organizational change. Issues of change in high school may have to do more with the size of the school and uncertainly of the future, and less with development levels of students. A moderate level of uncertainty (or

urgency), according to Koberg (1986), was required in order for change to occur in larger school settings.

As stated above, schools will not take action on an issue until a certain level of uncertainty or urgency (e.g., perceived need) is identified (Kotter, 1995). This urgency is typically generated through sharing priorities (e.g., data) between staff and district personnel, as well as with other critical groups (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). Fixsen and Blase (2009) refer to this early stage of implementation as exploration, the first of six stages of scaling up an initiative.

Before exploration, decision makers (e.g., state personnel, district and building level leadership) require information involving the resources, policies, organizational structures, and processes to achieve change. These alterable variables (e.g., access to knowledge, professional teaching conditions; Oakes, 1989) must be accounted for when implementing change in high schools, including programs related to school climate. These variables include the, "basic beliefs, values, expectations, and relationships that make up the school culture" (Oakes, p. 190). As is discussed below, expectations of behavior are critical components of PBS, including PBS as it occurs in high school settings (Muscott, Mann, and LeBrun, 2008; Bohanon, Borgmeier, Fenning, Flannery, & Malloy, 2008).

Kahne, Sporte, de la Torre, and Easton (2008) described the evaluation of a small high school initiative in Chicago Public Schools. In their model, the context for reforming outcomes for students included addressing student-level expectations (e.g., schoolwide future orientation), expectations for post-secondary education for students on behalf of the teacher, and academic and personal support (e.g., respectful classrooms, peer support for academic achievement, sense of belonging, classroom personalization, student-teacher trust, teacher support). These factors

may create environments that support the success of all students in the general education context. Small school initiatives were somewhat connected to improved outcomes for teachers (i.e., commitment to professional learning on the part of teachers). Treatment schools demonstrated slight changes regarding academic press, and some improved outcomes in terms of drop-out prevention. No major differences were identified between comparison schools and small school initiative sites in terms of the evidence of the implementation of practices that improved instruction. The authors stated that while goal setting for change was important, improving high schools required addressing the systems (e.g., coaching support) and processes (e.g., curriculum) that are needed to reach set goals. Treatments must be explicitly designed to address an identified need.

For example, de Baca, Rinaldi, Billig, and Kinnison (1991) provided a case example from a rural high school that addressed issues of absenteeism, lack of academic progress, problems with staff development, and connection with community and staff. The treatment components included the use of schoolwide acknowledgement systems that focused on academic outcomes (e.g., high grade point averages), and attendance. Teachers in the study reported problems implementing assertive discipline strategies associated with the program. However, they did report improvements in the overall discipline climate of the building. Further, students reported a 30% increase in self-esteem based on a local climate tool. Explicitly addressing school climate may be related to preventing the abuse of drugs, exhibiting violent behavior, and engaging in sexual activity at an early age as a result of school connectedness (McNeely, Nonnemaker, & Blum, 2002).

In a study of 80 schools, McNeely, Nonnemaker, and Blum (2002) evaluated the relationship between student connectedness and school-related variables. School connectedness

was found to be lower in schools that (a) expelled students for infractions of greater magnitude than smoking or cheating, (b) had poor classroom management, and (c) temporarily expelled students for minor infractions (especially on the first occurrence). Students in schools with harsh discipline policies reported feeling less safe than students in schools with less harsh policies. In contrast to the report mentioned above, school size had a weak negative relationship regarding school connectedness. Conversely, students who engaged in more extracurricular activities, had higher grades, and did not skip school had elevated school connection scores. These authors stated that a challenge for policymakers was to, "identify and promote school attributes and policies that correspond to adolescents' developmental needs…[and]…promote school connectedness" (McNeely, Nonnemaker, & Blum, 2002, p. 138). Positive behavior support may provide a framework that could address environmental components that support school connectedness.

<div align="center">Three-tier Structure of PBS</div>

Implementation of PBS is structured through three tiers of support—universal behavioral supports, secondary behavioral supports, and tertiary behavioral supports (Horner, Sugai, Todd, & Lewis-Palmer, 2005; Turnbull et al., 2002; Walker et al., 1996). Universal behavioral supports, intended to address the needs of approximately 80% of the student body, include defining and teaching expected behaviors, acknowledging appropriate behaviors, communicating a continuum of consequences for problem behavior(s), and continuous use and collection of data for decision-making and universal screening (Sugai & Horner, 2007). Secondary supports focus on 15% of the student body. These supports encompass utilizing data for decision-making and planning, as well as the use of progress-monitoring data to make decisions as to whether students are responding to their current program of support. Tertiary behavioral supports, which are more

individualized interventions that are generally intended for 5% of the student population, focus on functional behavioral assessment and more frequent progress monitoring of data beyond that employed when using universal and secondary supports.

The framework for schoolwide PBS implementation includes the establishment of systems, use of practices, collection of data, and measurement of outcomes (Sugai et al., 2010). Systems are defined as the essential elements required to support and maintain changes in adult behavior. These elements are critical structures that may need to be in place before implementing interventions and practices. Practices are the specific interventions that are implemented by the staff (e.g., teaching expectations) (Horner, Sugai, Todd, & Lewis-Palmer, 2005). Both process measures and disciplinary outcomes, such as ODRs, are often used to determine whether an intervention is having an impact on a school setting (Horner, Sugai, Todd, & Lewis-Palmer, 2005; Irvin et al., 2006), including gaining instructional time as a result of improved behavior (Scott & Barrett, 2004). There is an evidentiary body of research that supports PBS as an effective process for improving behavioral (Bradshaw, Mitchell, & Leaf, 2010; Horner et al., 2009) and academic (Lassen, Steele, and Sailor, 2006; Horner et al., 2009) outcomes for students in elementary and middle schools.

McIntosh, Campbell, Carter, and Dickey (2008) found that students who struggled with academic skills early in their educational career may have been more likely to demonstrate problematic behavior in the future. McIntosh, Flannery, Sugai, Braun, and Cochrane (2008) also found a statistically significant relationship between the number of ODRs a student had in the 8th grade and their performance on 9th grade academic scores. Supports such as PBS, along with academic intervention, may reduce the need for students to escape or avoid academic settings

that pose a higher level of threat due to an instructional mismatch. However, there is limited evidence supporting PBS implementation at the high school level.

Challenges of Implementing PBS in High Schools

Flannery, Sugai, and Anderson (2009) conducted research on high schools that were in the process of implementing PBS at some level. In their student, schools implementing PBS in high school settings first focused on addressing discipline and establishing commitment from staff before implementation. Few schools began their process by first addressing implementation of the direct intervention components of schoolwide PBS (e.g., teaching expectations, acknowledging behaviors). In addition, few schools reported more than 76% of the staff supported the initiative.

Bohanon et al. (2006) conducted an evaluation of the effects of PBS on ODRs of students in a large urban high school. This study used a three-phase process for introducing and implementing PBS, including initial inquiry (phase I), formalized planning (phase II), and implementation (phase III). After three years of implementing PBS at the high school, there was a 20% reduction in ODRs. Based on results from a measure of fidelity (i.e., School-wide Evaluation Tool; SET) (Horner et al., 2004), full implementation was not reached by the school in the area of teaching expectations; however, the overall implementation average reached 80%. Further, there is some concern regarding the use of the Chi Square Test in that study. Specifically, it may not have been the most useful statistic in that it could not be assumed that there was independence between the data sets used to determine change in ODRs over time. Many of the same students were in data set every year of the study, a violation of independence. Another statistical approach may be needed to determine change in patterns of ODRs without violating the assumption of independent sampling. One question for policymakers,

administrators, and other practitioners is to determine if the aforementioned strategies would lead to decreases in ODR patterns for students, and hence lead to increased instructional time. A possible method for determining change in the pattern of linear data, although not widely used in education, is the Change Point Test.

Change Point

The Change Point Test was selected for this study for its ability to determine if significant changes in the trends of ODR data had occurred, and its ability to analyze data that are dependent (e.g., the same group of students over time). This test is a non-parametric version of regression analysis which can be used to identify localized changes in the smoothness of a curve. This statistic is more commonly used in medical, physical (Muller, 1992), and economic research (Hsu, 2003) to determine abrupt changes in the slope of data. The Change Point Test has been used to locate the most likely point at which a significant decrease in average monthly deaths from automobile accidents occurred (Tay, 2001). This study reviewed data before program development and implementation. The results of the analysis indicated that the significant change in the average monthly deaths occurred during the point when safe driving polices were being publicly debated in Parliament. Tay (2001) suggested that the reason other studies had not determined if significant changes had occurred was because they did not include data before development of the intervention.

Similar to the policies in Tay (2001), PBS policies support (a) a multi-component approach, (b) interventions put in place over time, and (c) the reliance upon longitudinal information to determine impact of implementation on outcomes. One of the first steps for implementing PBS is assessing the current state of behavior support before intervention. It would appear that an evaluation statistic should be employed that does not assume when a change in the

direction of the data (i.e., ODRs) should occur beforehand. Rather, a statistic is needed that could allow the data to identify if and when the change occurred. This need may be even more important for reform models that include public discussion of current state of affairs regarding student performance as a part of its development.

This is the first study that we are aware of that uses the Change Point Test to analyze ODRs. This test is appropriate because the school reported a series of ODRs overtime and those ODRs from the same schools are dependent to each other. Therefore, the more commonly used analytical methods, such as Chi-square, that assumed independence of the data are improper for these ODR data.

<div align="center">Research Design</div>

Sample

The participants in this study were the staff and students in a large urban high school. This school was located in a large Midwest urban metropolitan area in a district with more than 613 schools and 426,812 students. This school was selected due to its similarity in size and structure (i.e., purposive sampling) to prior research (Bohanon et al., 2006) and the willingness of the administrations to participate in the project (i.e., convenience sampling). Table 1 provides a demographic comparison between this study and Bohanon et al., (2006).

<Insert Table 1 here>

Measures

Process measures (research question one).

The Effective Behavior Support Self Assessment Survey (SAS) survey was used by the school team (described below) as a measure of staff perception of PBS. The SAS (Lewis & Sugai, 1999; Safran, 2006) can be used to determine the level of implementation and priority for

change in four settings for PBS: (a) schoolwide, (b) classroom, (c) nonclassroom (e.g., hallways), and (d) individual supports. These data were collected in the late spring of each year of the study.

During the 2005−2006 and 2006−2007 school years, staff members completed the SAS in a paper and pencil format. During the 2007−2008 school year, staff completed an online version of the survey (http://www.pbssurveys.org). There were 34 completed surveys for the 2005−2006 school year.

There were 30 completed surveys for the 2006−2007 school year. For the final year of the study, 2007−2008, the participants entered data directly into an online database (http://www.pbssurveys.org) which did not allow for a non response option to any item. There were 57 completed surveys for this school year.

Outcome data (research question two).

Office discipline referrals were the primary outcome measure for the study. Irvin, Tobin, Sprague, Sugai, and Vincent (2004) identified at least three purposes for the use of ODRs. These purposes included (a) serving as an indicator for school climate, (b) serving as a measure of effectiveness of schoolwide behavior interventions, and (c) determining the behavior support needs for a school. The researchers in this study used the School-Wide Information System (http://www.swis.org; SWIS) readiness tool to prepare the discipline referral collection form.

The data were adjusted for per day, per month, per 100 students, per average daily enrollment to ensure that comparisons could be made over time. According to West and Ogden (1997), monthly aggregate data may be as reliable as using daily rates. The average daily enrollments (from publicly available electronic school report cards) for school years 2005−2006, 2006−2007, and 2007−2008, were 1,351, 1,486, and 1,490 students, respectively.

While ODR data were collected throughout the study in different online systems, an office-managed behavior versus classroom-managed behavior policy was used consistently throughout. The district used a district code of conduct to determine the behavioral definitions for data entry into all electronic systems. During the 2005−2006 school year, the administration adopted a SWIS referral format. While three systems were ultimately used, the data fidelity components of SWIS (e.g., definitions for ODR) were used as much as possible.

Fidelity measures (research question three).

According to Horner, Todd, Lewis-Palmer, Sugai, and Boland (2004) the SET is an appropriate tool for, "(a) assessing the need for training, (b) assessing the impact of personnel development efforts in the area of school-wide PBS, (c) assessing the sustained use of school-wide PBS procedures, and (d) developing locally effective strategies for building school-wide PBS outcomes" (p. 10). The SET was used as an instrument to measure treatment integrity for schoolwide PBS implementation within this study. The SET was conducted by a trained technical assistance director (TAD) from the state PBS network. The TAD was accompanied by a university graduate student research team member. Both the TAD and the graduate student reviewed their scores, discussed any discrepancies in scoring, and finalized the score based on the discussion. The SET was conducted during early spring for each year of the study. The protocol used for this study was based directly on the SET manual provided by the Office of Special Education Programs (OSEP) National Technical Assistance Center on PBS (available at http://www.pbis.org/tools).

Procedures

This study was implemented in three phases identified in Bohanon et al. (2006), including 2003−2005 Phase I: initial inquiry, 2005−2006 Phase II: formalized planning,

2006−2008 Phase III: implementation. Table 2 provides information regarding the approximate amount of time for the researchers, internal coaching, and training.

<Insert Table 2 here>

Phase I: Initial inquiry (2003−2004).

Staff members and administrators from the school met with the research team to discuss PBS. Also, members of the school staff attended a meeting with a local high school—the same high school addressed in Bohanon et al. (2006)—where they witnessed planning for the school's fall roll out of PBS. In addition, members of the staff attended a forum on high school PBS.

2004−2005.

During the 2004−2005 school year, some of the researchers (also serving as external coaches and consisting of university personnel—two faculty members and two graduate students) met again with the administration and school psychologist at school staff's request. The administrative team was provided with a brief overview of the principles of support, information regarding three tiers of implementation, and additional data regarding PBS from a local high school. Next, the university staff assisted the school in organizing existing ODR data for planning purposes.

A joint presentation was provided by the researchers and school administration to the entire staff in June 2005. The topics for the presentation included (a) results from the previously mentioned staff survey, (b) connection of the survey themes with the school improvement plan (SIP), (c) sample data from a similar in-district school regarding the implementation of PBS, (d) a bulleted list of possible future steps (e.g., teaching expectations), and (e) a request for volunteers to meet to form a representative team to address issues of school climate.

Phase II: Formalized planning.

Formalized planning began in the summer of 2005 with a representative leadership team. This team included a mix of special education teachers, general education teachers, students, school administration, and the university research team. The team was provided with a more detailed overview of the systems, practices, and data components of schoolwide PBS. The steps for this part of the planning were aligned with steps from the Team Implementation Checklist (http://www.pbis.org/evaluation/evaluation_tools.aspx; TIC), including establishing and maintaining a team, and self assessment.

The team met at least twice during the summer to plan for the following school year. The team addressed (a) finalizing the representative leadership team; (b) identifying internal and external coaches; (c) setting goals for overall reductions in problem classroom behavior and problem hallway behavior, and communication with the staff regarding discipline; (d) defining schoolwide expectations; (e) developing frequent, intermittent, and large-scale celebrations for targeted behaviors; (f) identifying consequences for negative behaviors; (g) ensuring the visibility of the team; (h) ensuring administrative support; and (i) planning for staff and student orientations using a formalized action plan. Office discipline data were available from the school database provided by the district. Upon reviewing the data (ODR, TIC), the team identified three specific issues to address in the following school year, including (a) freshmen students behavior and hallway locations (based on ODR data by reviewed by grade level and location), (b) establishing a schoolwide system for teaching and acknowledging expected behaviors, and (c) identifying a plan for communicating the action steps for PBS implementation and the subsequent results to the entire staff and student body. Phase III began during the fall of 2005.

Phase III: Implementation (2005−2006).

The steps for implementation, identified on the SAS and the TIC, included the major components for establishing schoolwide expectations and preventions systems, classroom behavior support systems, and establishing information systems. During the fall of 2005, all students were provided grade level orientation assemblies. These assemblies included a basic overview of the school's expectations via role playing based on lessons taught by the staff. The focus of the lessons, based on areas of need identified in the ODR data by location, were on hallway- and classroom-related expectations. The school expectations were posted throughout the building. Student acknowledgement tickets (Bee Bucks) were developed and presented to the students by the teachers when they saw a student engage in appropriate behaviors. These tickets could be turned in once per week for snack-related items (e.g., popcorn). At the end of the year, a schoolwide picnic was held in celebration of the school's new expectations.

Based on ongoing meetings with the leadership team and review of the TIC and ODR data, it was decided during the late fall of 2005 that teaching levels for expectations were lacking. The administration requested targeted training for key personnel (particularly for freshmen teachers and special education staff) regarding teaching, acknowledging, and redirecting students. Eight sessions were provided by the research team in small-group, rotational meetings that began in early spring of 2006. The 45-minute training sessions, conducted during teacher preparation hours approximately one week apart, included a breakdown of a PBS-related topic, provided modeling and guided practice, and assigned homework for participants to complete as independent practice (e.g., developing a lesson plan for a specific classroom behavior based on schoolwide expectations). The format for increasing engagement of the staff during professional development was based on the Partnership Learning model (Knight, 2002). In this model, for every content objective, a learning object (e.g., reflective question) was used to

increase the level of active involvement for participants. Previous research indicated that this type of presentation format could increase the active learning behaviors of participants (Knight, 2002).

The SET was completed and the data were presented to the leadership team. In addition, ODR data were collected throughout the year to monitor the impact of implementation PBS. These data indicated that additional changes in team organization needed to be made to increase the level of teaching, acknowledgement of expectations, and implementation of schoolwide policies (e.g., consistent discipline responses).

Due to the high number of students and staff to consider in the implementation, the team was reorganized to create subcommittees to head specific parts of the implementation process, including (a) teaching expectations (e.g., developing lesson plans), (b) acknowledgment (e.g., organizing plans for high frequency acknowledgment), (c) communication (e.g., maintaining and sharing action plans), and (d) data management (e.g., scheduling the review of ODR data).

An internal coordinator position was created in February of 2006 and filled by an individual with 20 years of experience within the district as a discipline dean. The research team members, principal, and the internal coordinator met quarterly to discuss implementation. The schoolwide team met four times during the summer of 2006 to review process (e.g., TIC, SET, SAS) and outcome data (i.e., ODR) from the previous year, and to finalize preparation for the student and staff orientations. An improved teacher handbook was developed to support documentation of the process for the staff.

2006–2007.

During late August of 2006, an overview of the expectations and lesson plan format was provided to the staff in small-group, rotational meetings. Staff were given the more formalized

handbook, which included the basic premises of the PBS approach and policies (e.g., office-versus classroom-managed behaviors), sample lesson plans, and other teaching examples.

The basic expectations were taught to students by grade level in the main auditorium. The lessons were lead by school staff and students and included basic information regarding the meaning of the expectations, examples and non-examples of expected behaviors in the classroom and hallways, and expectations for the school dress code. An initial overview of the schoolwide plan (e.g., expectations, acknowledgement) was provided to the incoming freshmen and their parents at the new student orientation. Also, students were provided with an overview of the Bee Bucks program, and were awarded one Bee Buck upon leaving the assembly. Bee Bucks could be redeemed at a school store. Redeemable items were related to school spirit (e.g., school t-shirts) or academic resources (e.g., school pencils). A schoolwide celebration cookout was held in June.

Concern was raised that newer team members did not have a solid understanding of PBS, and thus would not understand the full scope of the process in which they were partaking. The research team provided the administration, staff, and students on the team with two days of leadership training during the fall of 2006 to encourage PBS implementation. Day one of the offsite training included (a) reviewing PBS principles and systems, practices, and data; (b) data planning (process and outcome); and (c) differentiating between systems and practices. The second day of training (which occurred two weeks later) included (a) a review of the assigned homework, (b) a reflection on the components of an effective leader, (c) the elements of effective delegation, (d) an overview of how to run an effective meeting (e.g., setting agendas and creating action plans), and (e) an overview of specific tasks relevant to required delegation of tasks (e.g.,

developing a teaching curriculum, developing an acknowledgement plan, or developing an on-time-to-class policy).

In late spring 2007, all teachers were provided with specific examples of the classroom expectation lesson plans, information regarding differentiation between office and classroom management behaviors, and a rationale for the importance of posting expectations. This presentation was provided by the researchers and leadership team members who had attended the workshops during the targeted staff training in the spring of 2006 (example lesson plans can be found at http://www.hankbohanon.net). The year ended with a schoolwide cookout for students and staff and a retreat for the leadership team. During the summer of 2007, the team reviewed data (i.e., ODR, SET, TIC, SAS), celebrated goals from the previous year, and identified new goals for the following school year. The team focused on systematizing the events for the year (e.g., kickoff assemblies) and scheduling booster teaching and acknowledgement sessions. Dates were based on ORD patterns for higher levels of problem behavior (i.e., October, November, February, March).

2007−2008.

The basic components of schoolwide PBS (including student and staff orientations) along with continuous review of ODR data continued throughout the 2007−2008. The focus for the teaching expectations included addressing profanity and teaching respect for adults. Skills focused on teaching students to act with respect, even if they felt the teacher did not treat them with respect. In addition, all teaching staff were asked to address these expectations with common lesson plans across three days in their classrooms. Also, a common on-time-to-class definition was shared with the staff.

Additional acknowledgement strategies included monthly interventions for groups of students displaying specific target behaviors (e.g., fewest borrowed school uniforms), a monthly Bee Buck drawing for larger school wide prizes, A and B honor roll IDs, a thank-you dinner for staff and students, and non-contingent pencil and card awards for students on their birthday. The school year ended with another schoolwide picnic and celebration for all students and staff.

Design

As Greene and Caracelli defined (1997), a method involves the procedures used for gathering and analyzing information. The design for this case example was to provide descriptive information regarding preparation, implementation, and outcomes for PBS in this high school setting based on field notes and other outcomes. The processes for specifying target areas for implementation are described in detail (Scott, 2001). Comparisons in process and outcome measures were across years 2005−2008.

Data Analysis

Changes in perception regarding the implementation of PBS process were determined using the SAS. Descriptive analysis was used for these data. Changes in fidelity of implementation were measured by the SET.

The researchers used the Change Point Test for continuous variables (Siegel & Castellan, 1998) in order to determine if ODRs changed significantly during 2005−2008, and at what time point(s) the changes (if any) occurred. This test is a nonparametric approach that is powerful for detecting changes in single case designs. To conduct a Change Point Test, the data first need to be rank-ordered. The median in the series ranked data is used as an index to identify the occurrence of changes. The sum of the ranks for each data point in the sequence is calculated. The differences between observed and expected sum of the ranks for each data point are

calculated. These sum of ranks and the differences between sum of the ranks are used to calculate a *z* value. The critical value can be identified in the normal distribution table and we conclude there was a change in the data sequence if the calculated z value exceeds the critical value in the table (Siegel & Castellan, 1988).

<div align="center">Findings</div>

Process Measures (question one)

The results from the SAS indicated that staff who responded to the survey perceived that the current levels of PBS implementation status for schoolwide, classroom, and non-classroom supports increased over time. The perception of schoolwide components perceived to be in place increased from 26% ($SD = 4.6$) in 2005−2006, to 33% ($SD = 5$) in 2006−2007, and to 58% ($SD = 9.04$) in 2007−2008. The staff perception of the percentage of non-classroom supports in existence changed from 16% ($SD = 2.71$) in 2005−2006, to 17% ($SD = 2.17$) in 2006−2007, and last to 42% ($SD = 7.81$) in 2007−2008. Perception of the percentage of in-place items for classroom systems increased from 23% ($SD =3.58$) in 2005−2006, to 29% ($SD = 4.76$) in 2006−2007, and, ultimately, to 42% ($SD = 9.6$) in 2007−2008. There was minimal change in responses on individual student system items from 19% ($SD = 1.85$) in 2005−2006, 12% ($SD = 2.05$) in 2006−2007, and 24% ($SD = 5.82$) in 2007−2008. As items were rated as more "in place," those items seemed to become less of a priority for change. Response rates for the SAS for staff were 20% (n = 34) for 2005−2006, 19% (n = 30) for 2006−2007, and 37% (n = 57) for 2007−2008.

Office Disciplinary Referrals (question two)

The data representing ODRs across months were visually reviewed, and it was found that there were reductions in ODRs for the majority of months when comparing the 2005−2006 and

2007−2008 school years. In October and November, the number of ODRs increased between the

2005−2006 and 2006−2007 school years. A general decrease in the incidence of problem

behaviors was noted between the 2005−2006 and 2006−2007 school years in all other months

(60% of the total reporting months). Additional decreases between the 2006−2007 and

2007−2008 school years were noted in 70% of the reporting months with the exceptions of

September, March, and April. The incidence of total ODRs per day, per month, per average daily

enrollment, per 100 students for the 2005−2006, 2006−2007, and 2007−2008 school years were

0.69, 0.50, and 0.32, respectively. Overall, these differences represent a 26% decrease from the

2005−2006 to 2006−2007 school years, a 35% reduction between the 2006−2007 and

2007−2008 school years, and a decrease of 53% between the 2005−2006 and 2007−2008 school

years.

In addition, two significant change points were denoted across months (see Figure 1).

These changes occurred following February 2007 ($z = 3.6$, $p < .0001$) and again in March 2008

($z = 2.02$, $p < 0.0214$). Based on field notes, it was determined that a booster session for students

and professional development for staff were scheduled for the entire staff during January and

February of 2007. Specific acknowledgements were targeted for groups of students (clusters of

classrooms) who had the fewest number of loaned school uniforms in March of 2008.

< Insert Figure 1 here>

Fidelity of Implementation (question 3)

According to Horner et al. (2004), full implementation of PBS based on the SET is

indicated by a score of 80% on the teaching subcategory and a score of 80% overall. The

teaching and total scores for this case study were 60% and 66 % (2005−2006), 60 % and 77%

(2006−2007), and 80% and 94% (2007−2008). The school reached full implementation on the

SET during the 2007−2008 school year. All subscales reached at least 80% implementation during this year.

Discussion

There is substantially more research supporting the effectiveness of the applied use of PBS in elementary and middle school than in high school settings (Bohanon et al., 2006; Sugai & Horner, 2007). The purpose of this current study was to provide a case example (Scott, 2001) of the implementation of PBS using a similar approach to Bohanon et al. (2006) (e.g., developing stages of implementation through three phases) and to determine if a subsequent change in ODRs occurred using the Change Point Test.

The current study adds to the literature in several ways. First, it adds to the knowledge base regarding an approach to establishing PBS at the high school level, in that the processes (e.g., phases of approach) of the earlier evaluation study of PBS in high schools completed by Bohanon et al. (2006) were used in a comparable large urban high school. Similar to Bohanon et al. (2006), a three-phase approach, starting with a more qualitative naturalistic strategy, followed by more formal organization of data (e.g. completing the SAS) before any implementation of practices was attempted. This school spent time developing a sense of urgency (Kotter, 1995) by taking time to explore (Fixsen & Blase, 2009) their current state of need and consider how their needs might be addressed through PBS implementation. Also, the fact that a local example was available for the staff may have increased their willingness to attempt the initiative. In the authors' experience, it would appear that high school teams have two general thoughts about examples (1) if the intervention did happen in a high school it is not relevant, (2) if the intervention did not happen in a high school like ours it is not relevant. Policymakers and practitioners may need to consider the use of creating local pilots that allow evidence to be

generated that will encourage other schools of similar demographics to more readily adopt

effective interventions. Practitioners should perhaps carefully consider the types of examples

they present to their fellow staff members. Care should be taken to ensure that, as much as

possible, examples of potential interventions are related to settings that are demographically

similar to their own schools. Staff willingness to consider this type a new approach to behavior

support may increase with the right examples. Further, it would appear that taking the time to

build the case that the school had needs regarding discipline may have been important. The

staffs' willingness to implement PBS in this case may have increased as a result of establishing a

need (i.e., urgency; Kotter, 1995) and taking time to explore their options for responding (Fixsen

and Blasé, 2009). This is a step that practitioners (e.g., coaches of PBS, leadership team

members, administrators) may need to consider before attempting to adopt processes such as

PBS.

　　　The results of the current study showed similar reductions in ODRs but, unlike the prior

Bohanon et al. (2006) research, the school in the current study ultimately implemented PBS at

full capacity as measured by the SET. This is the first descriptive case study of which the authors

are aware of an urban high school reaching full implementation of PBS based on the SET

(Horner, Todd, Lewis-Palmer, Sugai, & Boland, 2004). Practitioners in large urban high school

settings can be encouraged that schoolwide supports can be implemented in diverse settings with

fidelity. This includes the direct teaching of expected behavior, acknowledging those behaviors,

and adopting policies at the building level that increase the success of students (e.g., consistent

tardy policies).

　　　Further discussion of what treatment components would be associated with improved

outcomes is needed. The improvement in process of implementation in this case study (e.g.,

SET) may be due to an increased focus on readiness preparation of the leadership team, an increased focus on distribution of leadership across personnel, and more intensive professional development for all staff regarding the components of schoolwide PBS. Administrators in high school settings should consider these factors before implementing a schoolwide initiative. Along with the costs of the intervention (e.g., time for teams to meet, training materials), staff may need additional preparation to serve in roles (e.g., chairing a teaching committee) for which they are not initially prepared.

High school teachers may need to be equipped through focused professional development to teach skills sets (e.g., teaching expected behaviors) outside of their comfort zones or certification. In addition, by distributing the responsibilities of leadership across groups, the burden of responsibility may have been dispersed to acceptable levels for staff. Administration and coaches of PBS should carefully consider preparing staff for the distribution of roles and responsibilities given the larger sizes of high schools. Our experience suggests that this training should not be conducted in mass. It would appear that training groups of 10−30 might lead to more effective outcomes. Our theory has been that with fewer people, it is easier to address the contagion of antagonistic voices.

There does not appear to be a prior research study that incorporates subcommittees to implement key components of PBS. Also, the improvement in process (e.g., SET) and outcomes (e.g., ODRs) may support the concept that while goal setting is necessary, it may not be sufficient. As recommended by Kahne, Sporte, de la Torre, and Easton (2008), successfully reaching school reform goals "requires an infusion of expertise; leadership that focuses attention on the necessity of instructional reform; and time for teachers to plan, learn, and reflect" (p. 299). This case study included each of these features through (a) the use of external and internal

coaching, (b) the involvement of the principal on the leadership team, and (c) providing

systematic professional development that included time to plan, learn, and reflect. Administrators

and other district personnel in charge of implementing PBS policies (e.g., *IDEA*, 2004, LAUSD,

2007) may benefit from considering the level of support that high school staff may require before

implementing an initiative. While these supports are more time intensive at the onset of an

initiative, they may provide for more efficiency in the future.

In terms of hours of external support, there were differences between this study and

Bohanon et al. (2006). Regarding year one preparation, Bohanon et al. (2006) had an estimated

2,020 hours of external time provided to the school site for initial set up (e.g., external coaching).

For this current study, only 87 hours were provided. This was a decrease in external support by

1,933 hours. In terms of sustainability, it would seem that increasing the level of systems support

(e.g., identifying internal coach, sub-committee development) and training may lead to improved

outcomes and reduced cost for external support.

Practitioners may be less likely to become frustrated with this intuitive if they do not feel

this process is "one more thing" added to their plates (Edmonson, 2000). By clearing time for

key staff members and providing expertise in the form of coaching, practitioners may feel better

equipped to carry out the strategies. Also, the use of the example from Bohanon et al. (2006)

may have decreased the amount of time needed for preparation and developing buy-in. In

addition, a focus of the training included preparing staff to engage in specific components of

schoolwide PBS (e.g., teaching expected behaviors). The increased capacity of the leadership

team may have supported their ability to provide more of their own internal trainings. This, too,

may be a critical feature for improved outcomes for students and staff, in that it may have

decreased the resistance of the team toward implementation (Flannery, Sugai, & Anderson, 2009).

Significant change points in ODRs occurred at the same time as systematic prompting of staff and students to expected behaviors, professional development, and focused acknowledgement. It is possible that these changes in ODR trends were due to these factors alone, or were due to other factors. The former explanation may lend support to the idea that changes in student behavior in high schools may be contingent upon supporting adult behavior through focused professional development. In terms of the latter explanation, these changes may have been related to other factors in the school (e.g., administrative support, changes in leadership team members). To our knowledge, this is the first example of the Change Point Test being used for determining the change in ODR data. We believe this statistic may be a useful when evaluating time-series data that are dependent in nature. While the current case study is promising in that actual reductions in ODRs were evident in the majority of months in which PBS implementation took place, several questions arise for future research.

One such question is whether academic outcomes were improved through the delivery of PBS at the high school level. Reductions in ODRs translate directly to the saving of instructional minutes (Scott & Barret, 2004). Because discipline problems may be related to academic achievement (Lassen, Steele, & Sailor, 2006; McIntosh, Flannery, Sugai, Braun, & Cochrane, 2008), it would stand to reason that implementation of PBS at the high school level will yield positive academic outcomes (Rathvon, 2008). Additional research is needed to consider high school implementation of PBS and the study of its impact on academic outcomes.

Future work should examine outcomes in addition to ODRs, inclusive of academic achievement and academic-related behaviors that are critical in high schools, such as attendance

and tardy behaviors (Spaulding et al., 2010). Also, the school which was the focus of the current study implemented PBS with full fidelity of PBS implementation for only one year (2007−2008). Future studies are required that build on these findings to determine what is required to sustain such efforts over time. High schools are, by their nature and structure, large settings in which multiple initiatives and demands are common practice and students can become lost in the shuffle (Stevens, 2008). Future work should examine the best ways of delivering professional development and ongoing technical assistance to ensure that prevention remains as a top initiative in addressing the behavior of high school students over time.

The current findings seem to indicate that it is possible to implement the universal supports associated with PBS in a large urban setting with fidelity and that such implementation was associated with positive outcomes, particularly reductions in ODRs. Future research should focus on implementation nuances and outcomes aligned with secondary and group level (McIntosh, Campbell, Carter, & Dickey, 2008; Bohanon, Eber, Flannery, & Fenning, B., 2007) and individualized supports for high school populations (Bohanon, Flannery, Malloy, & Fenning, 2009). The use of control schools that did not implement a three-phased approach would be needed to determine a cause and effect relationship.

Limitations of the Study

There are several limitations to be considered in this study. For instance, the response rates for the SAS were lower between the 2005−2006 and 2006−2007 school years. In addition, there were missing data for these years that were not missing from the 2007−2008 school year. The change to the online system for data collections (http://www.pbssurveys.org) may have influenced both of these outcomes. This change was made to ensure that the system for data collection for the school was the same system used by the state PBS network. In order for

potential support from the network for sustainability, it was critical that the school use the same data collection system to ease transition.

In addition, while the Change Point Test and review of formative data (e.g., ODRs) is suggestive of a positive impact of the delivery of PBS, the implementation of PBS was not controlled experimentally in the current study. There are other possible explanations for reductions in the ODR data including (a) changes in the number of discipline deans (from two to three), (b) a change in the administration (principal), (c) the forced decision by the district office that the school adopt a scripted curriculum for core areas, and (d) a change in personnel at the internal coach position. Possible increases in the discipline deans' capacity to address problem behavior could have resulted in lower rates of ODRs.

Future studies in the area are of high school PBS should consider a methodology that addresses these threats to the validity of this study. This case study was conducted in an applied setting that was an authentic and real-world environment. In addition, multiple data collection systems were used to address ODR collection. In our experience, large urban districts may switch between data systems frequently. Training on the use of consistent policies, based on the SWIS system, was used for the entire study, regardless of the database. Future studies should attempt to control for changes in use of data systems.

Conclusion

The intention of this study was to add to the current literature base. In particular, the purpose for this study was to determine the efficacy of proactive approaches (e.g., PBS) that direct students toward a future as productive citizens of society. Also, the use of the Change Point Test may serve as a useful tool for evaluating the impact of intervention processes and policies. In summary, practitioners and others leading the improvements to their environments

may benefit from (a) identifying the concerns of the building staff and community prior

presenting a solution, (b) not training staff on initiatives for which they are not ready to support

with systems, and (c) remembering the humanity of their staff and that other factors (e.g., high

turnover in administration, concerns about contracts, have levels of current responsibilities) in

the setting may influence their willingness to adapt new skill sets. Practitioners, researchers, and

policymakers may want to consider the readiness of staff and the ongoing support required to

ensure the success of PBS in high school settings.

References

Bohanon, H., Borgmeier, C., Fenning, P., Flannery, B., & Malloy, J. (2008). Finding a Direction for High School Positive Behavior Support. In R. Horner, W. Sailor, G. Dunlap, & G. Sugai. (Eds.), *Handbook on Positive Behavior Support* (pp. 581−601). New York, NY: SpringerLink.

Bohanon, H., Eber, L., Flannery, B., & Fenning, P. (2007). Identifying a roadmap of support for secondary students in: School-wide positive behavior support applications, *International Journal of Special Education, 22*(1)*, 39−60.

Bohanon-Edmonson, H., Flannery, K. B., Eber, L., & Sugai, G. (2005). (Eds.) Positive behavior support in high schools: Monograph from the 2004 Illinois high school forum of positive behavior interventions and supports. Retrieved from http://www.pbis.org.

Bohanon, H., Fenning, P., Carney, K., Minnis, M., Anderson-Harris, S., Moroz, K., et al., (2006). School-wide application of urban high school positive behavior support: A case study. *Journal of Positive Behavior Interventions and Supports*, *8*(3)*, 131−145.

Bohanon, H., Flannery, B., Malloy, J., & Fenning, P. (2009). Utilizing positive behavior supports in high school settings to increase school completion rates. *Exceptionality, 17*(1)*, 30−44.

Bradshaw, C. P., Mitchell, M. M., & Leaf, P. J. (2010). Examining the effects of schoolwide positive behavioral interventions and supports on student outcomes results from a randomized controlled effectiveness trial in elementary schools. *Journal of Positive Behavior Interventions, 12*(3)*, 133−148.

Carr, E., Dunlap, G., Horner, R., Koegel, R., Turnbull, A., Sailor, W., & Fox, L. (2002). Positive behavior support*:* Evolution of an applied science. *Journal of Positive Behavior Interventions*, *4*(1)*, 4−16.

de Baca, M. R. C., Rinaldi, C., Billig, S., & Kinnison, B. M. (1991). Santo Domingo School: A

      Rural schoolwide project success. *Educational Evaluation and Policy Analysis, 13*(4)*,*

      363−368.

Edmonson, H. (2000). *A study of the process of the implementation of school reform in an urban*

      middle school using positive behavioral support: "Not one more thing." (Doctoral

      Dissertation). Available from ProQuest Dissertations and Thesis database. (AAT 9998074)

Fixsen, D. L., & Blase, K. A. (2009). Implementation brief (Vol. 1): National Implementation

      Research Network.

Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, E. (2005).

      Implementation research: A synthesis of the literature (FMHI Publication #231). Tampa:

      University of South Florida, Louis de la Parte Florida Metal Health Institute, The

      National Implementation Research Network.

Flannery, K. B., Sugai, G., & Anderson, C. M. (2009). School-wide positive behavior support in

      high school: Early lessons learned. *Journal of Positive Behavior Interventions, 11*(3)*,*

      177−185.

Greene, J. C., & Caracelli, V. J. (Eds.). (1997). *Advances in mixed method evaluation: The*

      Challenges and benefits of integrating diverse paradigms. San Francisco, CA: Jossey-

      Bass Inc.

Horner, R. H., Sugai, G., Smolkowski, K., Eber, L., Nakasato, J., Todd, A. W., et al. (2009). A

      Randomized, wait-list controlled effectiveness trial assessing school-wide positive

      behavior support in elementary schools. *Journal of Positive Behavior Interventions,*

      11(3)*,* 133−144.

Horner, R. H., Sugai, G., Todd, A., Lewis-Palmer, T. (2005). Schoolwide positive

behavior support. In *Individualized Supports for Students with Problem Behaviors: Designing positive behavior plans*, L M. Bambara L. Kern (Eds.), New York, NY: Guilford Press.

Horner, R. H., Todd, A. W., Lewis-Palmer, T., Irvin, L. K., Sugai, G., & Boland, J. B. (2004). The School-wide Evaluation Tool (SET): A research instrument for assessing school-wide positive behavior support. *Journal of Positive Behavior Interventions, 6*(1)*,* 3−12.

Individuals with Disabilities Education Improvement Act of 2004. 20 USC 1400.

Hsu, Y. (2003). *Change point estimations for the stock market prices.* National Cheng Kung University, Taiwan.

Irvin, L. K., Horner, R. H., Ingram, K., Todd, A. T., Sugai, G., Sampson, N. K., & Boland, J. B. (2006). Using office discipline referral data for decision-making about student behavior in elementary and middle schools: An empirical evaluation of validity. *Journal of Positive Behavior Interventions*, *8*(1)*,* 10−23.

Irvin, L. K., Tobin, T. J., Sprague, J. R., Sugai, G., & Vincent, G. C. (2004). Validity of office discipline referral measures as indices of school-wide behavioral status and effects of school-wide behavioral interventions. *Journal of Positive Behavior Interventions, 6*(3)*,* 131−147.

Kahne, J. E., Sporte, S. E., de la Torre, M., & Easton, J. Q. (2008). Small High Schools on a larger scale: The impact of school conversions in Chicago. *Educational Evaluation and Policy Analysis, 30*(3)*,* 281−315.

Knight, J. (2002). The Teacher-Guided Professional Development Series. Retrieved from http://www.kucrl.org/partnership/Documents/PartnershipLearningFieldbook.pdf

Koberg, C. S. (1986). Adaptive organizational behavior of school organizations: An exploratory

study. *Educational Evaluation and Policy Analysis, 8*(2)*,* 139−146.

Kotter, J. (1995). Leading change: Why transformation efforts fail. *Harvard Business Review,*

73(2)*,* 59−67.

Lassen, S. R., Steele, M. M., & Sailor, W. (2006). The relationship of school-wide positive

behavior support to academic achievement in an urban middle school. *Psychology in the*

Schools, 43(6)*,* 701−712.

Lewis, T. & Sugai, G. (1999). Effective behavior supports: A systems approach to proactive

schoolwide management. *Focus on Exceptional Children, 31*(6)*,* 24−37.

Los Angeles Unified School District (2007). *Discipline Foundation Policy: School-Wide*

Positive Behavior Support.

McIntosh, K., Campbell, A. L., Carter, D. R., & Dickey, C. R. (2008). Differential effects of a

tier two behavior intervention based on function of problem behavior. *Journal of Positive*

Behavior Interventions, *10*(4)*,* 82−93.

McIntosh, K., Flannery, K. B., Sugai, G., Braun, D., & Cochrane, K. L. (2008). Relationships

between academics and problem behavior in the transition from middle school to high

school. *Journal of Positive Behavior Interventions, 10*(4)*,* 243−255.

McNeely, C. A., Nonnemaker, J. M., & Blum, R. W. (2002). Promoting school connectedness:

Evidence from the National Longitudinal Study of Adolescent Health. *Journal of School*

Health, 72(4)*,* 138−146.

Muscott, H. S., Mann, E. L, & LeBrun, M. R. (2008). Positive behavioral interventions and

supports in New Hampshire: Effects of large-scale implementation of schoolwide positive

behavior support on student discipline and academic achievement. *Journal of Positive Behavior Interventions, 10*(3)*,* 190−205.

National Center of Educational Statistics (2009). *Indicators of school crime and safety: 2008.* Washington, DC: National Center for Educational Statistics. (NCES 2009-22).

Oakes, J. (1989). What Educational Indicators? The Case for Assessing the School Context. *Educational Evaluation and Policy Analysis, 11*(2)*,* 181−199.

Rathvon, N. (2008). *Effective school interventions: Evidence-based strategies for improving student outcomes* (2nd ed.). New York, NY: Guilford Press.

Safran, S. P. (2006). Using the effective behavior support survey to guide the development of schoolwide positive behavior support. *Journal of Positive Behavior Interventions, 8*(1)*,* 3−9.

Scott, T. M. (2001). A Schoolwide Example of Positive Behavioral Support. *Journal of Positive Behavior Interventions, 3*(2)*,* 88-94.

Scott, T. M. & Barrett, S. (2004). Using staff and student time engaged in disciplinary procedures to evaluate the impact of school-wide PBS. *Journal of Positive Behavior Interventions*, *6*(21)*,* 21−28.

Siegel, S., & Castellan, N. J., Jr. (1998). Nonparametric statistics for the behavioral sciences. New York, NY: McGraw-Hill.

Spaulding, S. A., Irvin, L. K., Horner, R. H., May, S. L., Emeldi, M., Tobin, T. J., et al. (2010). Schoolwide social-behavioral climate, student problem behavior, and related administrative decisions: Empirical patterns from 1,510 schools nationwide. *Journal of Positive Behavior Interventions, 12*(2)*,* 69−85.

Stevens, W. D. (2008). *If small is not enough: The characteristics of successful small high schools in Chicago*. Retrieved May 21, 2009, from the Consortium on Chicago School Research at the University of Chicago. http:/ccsr.uchicago.edu/content/publications.php.

Sugai, G., & Horner, H. (2007). Is school-wide positive behavior support an evidence-based practice? Unpublished paper, Office of Special Education Programs, U.S. Department of Education. Retrieved from http://www.pbis.org/main.htm.

Sugai, G., Horner, R. H., Algozzine, R., Barrett, S., Lewis, T., Anderson, C., et al. (2010). School-wide positive behavior support: Implementers' blueprint and self-assessment. Eugene, OR: University of Oregon.

Tay, R. S. (2001). Fatal Crashes Involving young male drivers: A continuous time poisson change-point analysis. *Australian and New Zealand Journal of Public Health, 25*(1)*, 21−23.

Turnbull, A., Edmonson, H., Griggs, P., Wickham, D., Sailor, W., Beech, S., & Warren, J. (2002). A Blueprint for schoolwide positive behavior support: Full implementation of three components, *Exceptional Children, 68*(3)*, 337−402.

Walberg, H. J., & Niemiec, R. P. (1993). Validating exemplary programs: Methods and criteria. *Educational Evaluation and Policy Analysis, 15*(4)*, 429−436.

Walker, H .M., Horner, R.H., Sugai, G., Bullis, M., Sprague, J.R., Bricker, D., et al. (1996). Integrated approaches to preventing antisocial behavior patterns among school-age children and youth. *Journal of Emotional and Behavioral Disorders, 4*(4)*, 194−209.

Warren, J. S., Edmonson-Bohanon, H., Turnbull, A., Sailor, W., Wickham, D., Griggs, P., & Beech, S. (2006). School-wide positive behavior support: Addressing behavior problems that impede student learning. *Educational Psychology Review, 18*(2)*, 187−198.

West, W. R., & Ogden, T. R. (1997). Continuous-time estimation of a change-point in a poisson

process. *Journal of Statistical Computation and Simulation, 55*(4)*, 293−302.*

Author Notes

Hank Bohanon is an associate professor at Loyola University of Chicago. His current research interests are school reform through positive behavior support, response to intervention, and social emotional learning.

Pamela Fenning is an associate professor at Loyola University of Chicago.

Kira Hicks is the Response to Intervention coordinator for Maine Township High School District 207 in Illinois. Her current research interests include the implementation of three-tiered academic and behavioral models of support in high schools and the prevention of school failure and drop out for students of color.

Stacey Weber is a response to intervention and problem solving coach for the School Association for Special Education in DuPage Count and a technical assistance provider for high school positive behavior support at Loyola University of Chicago.

Kimberly Thier is a clinical assistant professor in special education. Her current research and professional interests include school and classroom-wide positive behavior support, functional behavioral assessment and intervention planning, and behavioral consultation.

Brigit Akins is a school psychologist and Response to Intervention coordinator at Township High School District 211.

Kelly Morrissey is special education teacher in the Chicago Public Schools and Adjunct Faculty at Loyola University of Chicago.

Alissa Briggs is a doctoral candidate in school psychology at Loyola University of Chicago. Her current research interests include the relationship between school-wide positive behavior support implementation and student well-being.

Gina Bartucci served as graduate research assistant at Loyola University of Chicago.

Lauren McCardle completed her doctorate in school psychology at Loyola University of Chicago. Her current professional interests entail working as a school-based psychologist with particular interest in tiered models of prevention and intervention (both academic and behavioral).

Lisa Hoeper is an art teacher in the Chicago Public Schools.

Larry Irvin is a doctoral student at the University of Illinois at Chicago in the Urban Education Leadership program and a principal in the Chicago Public Schools. His leadership and research interests include developing leadership capacity, implementing best practice, and supports for all students.

FIGURE 1
Office Disciplinary Referral Data Presented Over Time with Change Point Analysis
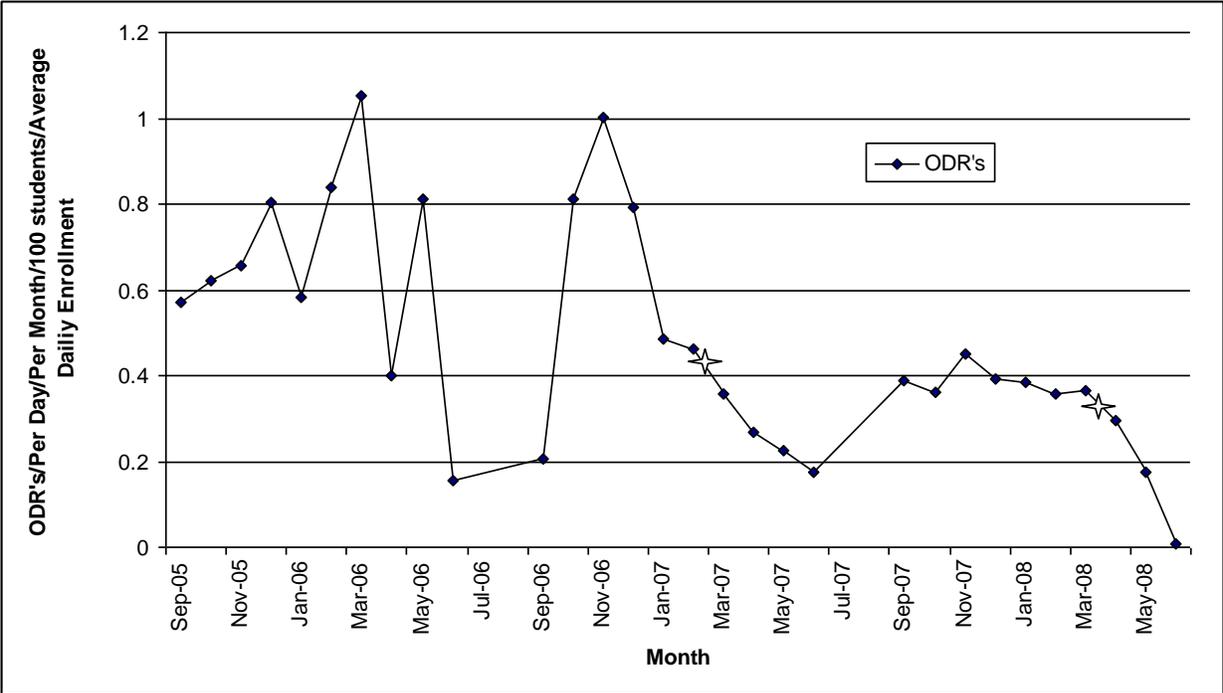
Note. The star symbols identify when a statistically significant change point in the trend of the ODR data occurred.

TABLE 1
Demographic Comparison of Bohanon et al., (2006) and Current Study

Variable	Bohanon et al., (2006)	Current Study
Total Enrollment and racial and ethnic breakdown for the school	1,800 Students 36% African American 36% Hispanic 16% Asian American 8% Caucasian 2% Native American 2% Other	1,738 Students 13 % African American 72% Hispanic 1% Asian American 14% Caucasian 0% Native American 0% Other
Percent of students qualifying for free and reduced lunch	89%	90 %
Percent of students with limited English proficiency	21%	21 %
Average Daily Attendance	86%	78%
Dropout rate	19%	15 %
Mobility rate	30%	30 %
Percent of students with Individual Education Plans	20%	19 %

TABLE 2
Estimates of Number of Hours of Required Training and Coaching for the Implementation of Positive Behavior
Support in One Urban Case Study

	2004-2005	2005-2006	2006-2007	2007-2008
Personnel				
External support time (e.g., external coach)				
Two Research Faculty	40	440	440	440
University Graduate Students	40	220	440	440
State Network Personnel	7	11	11	11
Internal support time (i.e., internal coach)				
Internal Coach	0	176	308	308
Personnel Totals	**87**	**847**	**1199**	**1199**
Time for Training				
Summer Schoolwide Training	0	17	12	14
Fall and Spring Schoolwide Training	12	25	20	0
Hallway Targeted Training			12	
Hours of Training Totals	**12**	**42**	**44**	**14**