DRIVING UNDER THE INFLUENCE OF POSITIVE BEHAVIOR SUPPORT:

A BEHAVIOR MANAGEMENT PROGRAM FOR STUDENTS

WHO RIDE THE SCHOOL BUS

by

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THE SCHOOL BUS

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Student safety on school property continues to be a priority for educators.
Pediatric research reveals that student injuries sustained while riding the school bus may
be more than three times the number actually reported by transportation departments.
These studies further indicate that a major factor contributing to injuries is inappropriate
student behavior while riding a school bus. This dissertation involved the creation of a
behavior management program for students who ride the school bus. The behavior

management program (Bus PBS) was derived from the established and well researched school-based universal prevention, Positive Behavior Support (PBS). The core features of the Bus PBS program included, (1) active support and involvement by the School Administrator and the Transportation Director, (2) school-wide expectations reworded for use on the school bus, (3) students received direct instruction regarding behavioral expectations on the school bus, (4) drivers received a 1.5 hour training in the classroom and 3 days of on-board coaching during the intervention phase, and (5) drivers were encouraged to greet students by name as they entered the bus, provide formal rewards to recognize correct student behavior, and deliver a continuum of clear consequences for student problem behavior.

The study was conducted with three typical school buses in a moderate-sized West Coast city. The research question under consideration asked if the presence of Bus PBS was functionally related to student behavior on the school bus. Using a single subject multiple baseline design across three buses, direct observation data were collected on (a) fidelity of bus driver implementation of the program and (b) student problem behavior. Results indicated that bus drivers were able to implement the intervention with moderate to high fidelity, and implementation of Bus PBS was functionally related to improved student behavior. Student problem behavior on the school bus during the Bus PBS program was 37% lower than baseline levels. Discussion is provided about the clinical and research implications of the results.

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CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

Statement of the Problem

In recent years much attention has been given to unwanted student problem behaviors on school property. These behaviors can take the forms of bullying, vandalism, fighting, and on rare occasions death, as in the case of a school shooting (Satcher, 2001). Researchers and society are beginning to recognize that viewing the school as an isolated institution that is responsible for not only academic success, but also behavioral success, is not a realistic model. Schools must reflect and promote the needs of the family, community, school, and peers. These four areas in which a student interacts are intertwined and cannot be separated. Risks experienced in one of these contexts can influence outcome in another of the contexts. A more thorough understanding of these contributing variables has led to the development of prevention and intervention initiatives which are designed to decrease the incidence and prevalence of antisocial behavior in school-aged populations (Biglan, 1995). School-wide behavior support programs such as School-wide Positive Behavior Support (SWPBS), are emerging as some of the most effective and efficient approaches to managing or eliminating the majority of these unwanted student behaviors (Luiselli et al., 2005). A school-wide approach targets all students,

emphasizes measurable outcomes, incorporates research-validated procedures, uses data to guide decision making, is dominated by positive reinforcement and skill-building approaches, and stresses prevention using a proactive model (Sugai & Horner, 2002). Areas that benefit the most from SWPBS tend to be the ones with low levels of structure, limited adult supervision, and fairly large numbers of children (Sugai, & Horner, 2002; Colvin, Sugai, Good, & Lee, 1997). One area of school property that has all of these characteristics, but is often forgotten is the school bus.

This dissertation involves the creation of a new behavior program for students who ride the school bus; Bus PBS (bPBS). This dissertation also evaluates the effectiveness of bPBS on reducing problem behavior on the school bus. Also of interest was whether or not implementing bPBS reduced the number of office discipline referrals a student received in the first two hours of their school day.

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Consequences of Problem Behavior &

Ineffective Behavior Management on the School Bus

</div>

Each year in the United States, 23.5 million children travel 4.3 billion miles on 450,000 school buses (National Highway Traffic Safety Administration, 2002). The current safety standard as defined in 2002 by the National Highway Traffic Safety Administration (NHTSA) requires school buses in the 10,000 lb gross vehicle weight category to provide passive protection to passengers in the form of compartmentalization. Most school busses do not have seat belts, so this compartmentalization requirement is the only true protection that riders have. Compartmentalization requires that school

buses have closely spaced seats and high, padded seat backs. The NHTSA research confirmed that "compartmentalization is an effective restraint strategy for a frontal crash in a school bus", (National Association of State Directors of Pupil Transportation, 2002). Compartmentalization was not found to be effective in lateral crashes nor if a student was out of their seat, because students would be thrown clear of the compartment and therefore not protected by the high padded seat that was in front of them.

In a recent study, McGeehan, Annest, Vajani, Bull, Agran, and Smith (2006) found that from 2001-2003 there were 51,100 non-fatal school bus-related injuries treated in US emergency departments, for a national estimate of 17,000 injuries per year. Theirs was the first study to provide national estimates of children and teenagers with nonfatal school bus-related injuries who were treated in US hospital emergency departments. Using this method they found approximately three times more than the 5,500 school bus-related injuries per year reported in Special Report 269 of the Transportation Research Board (2002). They also found that head injuries accounted for more than half of all injuries (52.1%) to riders less than ten years of age. The researchers noted that a possible reason for this may be that young children tend to topple head first during a fall, because of their relatively high center of gravity.

Another area of concern on the school bus involves the social behavior between riders. Students who ride a bus to and from school find themselves in relatively unstructured environments with limited adult supervision. A full bus may be carrying 60-90 students depending in part upon student size (younger, smaller students will often sit three to a seat) with only one adult on board whose primary job is to drive a bus on public

roads in a safe and law abiding fashion. This relatively low level of supervision provides opportunities for bullying and physical aggression which often go undetected by a driver who is unable to hear what is happening over and above the noise of the students (Putnam, Handler, Ramirez-Platt, & Luiselli, J.K., 2003). Poor or minimal driver training in behavior management contributes to increasingly louder environments, making managing student behavior even more difficult (Trotter, 1987). This can lead to other consequences beyond unwanted student behavior such as raising the stress level and distractibility of the driver. Bus drivers reported an interior noise level of (61%), students being out of seat (48%), and rough- housing (31%) to be among the student behaviors most likely to distract them from their driving tasks (Greene, Bailey, & Barber, 1981).

Behavior Management of Students on the School Bus

School bus drivers have very few 'tools in their tool box' when it comes to managing unwanted student behavior on the school bus. Typically, drivers really only have two 'tools' –punishment and exclusion (Putnam, et al., 2003). Bus office referrals are punishment (similar to building-level office discipline referrals) and bus suspensions are exclusions. Both punishment and exclusion have been found to be ineffective at producing long-term reductions in problem behavior of the target child, and neither do they act as deterrents to other students who are engaging in similar behaviors (Costenbader & Markson, 1998; Skiba, Peterson, & Williams, 1997; Sprick, Borgmeier, Nolet, 2002). Suspensions have also been shown to exacerbate risk factors such as, feeling disconnected from school, and being stigmatized by peers (Costenbader & Markson, 1998). If there is poor coordination between the bus drivers and building

administrators, the bus office referrals can get lost between bus and school, and even when the referrals reach the principal, drivers complain that the consequences imposed by building administrators are often minimal or ineffective.

Bus drivers may be hesitant to give out bus suspensions because they can be punishing for the driver and parents, as well as the students, which may result in unwanted scrutiny of their behavior management skills from the principal or transportation director. For example, the transportation office may receive calls from parents who are upset about their child being excluded from riding the bus. Parents may want to know what the driver has done to correct the student's behavior prior to the suspension. These calls from upset parents may result in the transportation director interviewing the driver regarding his or her behavior management skills and judgment.

Another reason that drivers may be hesitant to impose consequences for unwanted behavior is fear of reprisals against them. Teachers have reported that they were hesitant to implement consequences with students who engaged in severe problem behavior because they feared violent or abusive reprisals against them (Biglan, 1995). Given that teachers are typically in a building with other adults one door down, it may be that bus drivers, who have no other adults to call upon during the ride, also feel this way.

The cumulative effect of these circumstances makes taking action, in the form of punishing and excluding unruly and disruptive students, aversive for drivers. This can lead to an interaction between the riders and the driver which is similar to that of families engaging in a coercive cycle with their children. A coercive cycle is one where the parents increase their demands, and similarly the child increases his or her objection to

those demands. If the parents back down, the child has learned that being objectionable 'works'. Overtime, this will lead to a child who is very unlikely to comply with the rules across multiple settings (Patterson, 2002). So, on the bus, it is not uncommon for drivers to tell students to 'sit down' and then when the student doesn't comply the driver is likely to ask more forcefully. The student has inadvertently 'upped the ante' and now the driver is in the position of having to take action (give a bus referral) or back down. Backing down from the student's challenge to the driver's authority will almost certainly lead to more frequent and intense rule infractions because lack of rule clarity and absent or sporadic enforcement of the rules and policies can contribute to the development and exacerbation of unwanted student behavior (Biglan, 1995).

The consequences of student non-compliance on the school bus are not only social, but also of physical well being. If the driver is too distracted to drive safely, then this becomes an obvious safety issue. If students are up and out of their seats, or leaning into the aisle to interact with other riders, then they are no longer being protected by the only effective and legislated safety measure that the bus has; compartmentalization. Therefore, it is imperative that drivers be given the tools they need to manage student behavior on the school bus.

<div style="text-align:center">School-Wide Positive Behavior Support</div>

School-Wide Positive Behavior Support is an evidence based systems approach to establishing the social culture and behavioral supports needed for students to be successful in both social and academic skills (OSEP Center on Positive Behavioral Interventions and Supports, 2007). The roots of school-wide PBS took hold in 1968

when Baer, Wolf, and Risley published their seminal article entitled *Some Current Dimensions of Applied Behavior Analysis*. In this article the authors broke applied behavior analysis (ABA) into its parts and proceeded to define and describe each of them. *Applied*, they said, must be effective in changing the behavior that is being studied, in a way that is valued by society as defined by the needs of the day. *Behavior* referred to observable and measureable physical events that must be documented with precision. *Analysis* was considered to have occurred when the experimenter had shown the ability to exercise some mechanism of control which was deemed responsible for the occurrence or non-occurrence of the behavior. They concluded their argument for the value of ABA by emphasizing the importance of "generality". By this they meant that we must shape our applied behavior analyses to result in socially valued behavior change that will generalize across multiple settings.

In the forty years that have passed since the publication of that article, many applied behavior analysts have been working to achieve the spirit of the recommendations laid down by Baer, Wolf, and Risley (1968). One extremely promising result of that work has been school-wide positive behavior support (SW-PBS). A basic tenet of SW-PBS is the reduction and elimination of ineffective, reactive, punitive, and exclusionary strategies in favor of more proactive, preventative, and skill-building approaches (Horner & Sugai, 2000; Nelson, 1996; Taylor-Greene, et al., 1997; Walker, et al., 1996). There is general agreement that the following critical components must be present in a PBS system; (1) set consensus-driven behavior expectations; (2) teach critical interpersonal skills; (3) provide systematic positive reinforcement for meeting and exceeding

performance criteria; (4) monitor intervention efficacy continuously through data collection and analysis; (5) involve all stakeholders in the formulation of discipline practices (students, teachers, administrators, and parents); and (6) reduce and eliminate reactive, punitive, and exclusionary strategies in favor of a proactive, preventive, and skill-building orientation (Horner & Sugai, 2000; Nelson, 1996; Taylor-Greene, et al., 1997; Walker, et al., 1996; Luiselli, et al., 2005). One can see the overlap between PBS and ABA; consensus-driven behavior expectations and involving all stakeholders would be the 'Applied' in ABA. Monitoring efficacy continuously through data collection and analysis would be the 'Behavior' in ABA.

Defining, posting, and explicitly teaching school-wide behavioral expectations with a continuum of consequences for both appropriate and problem behavior, are key components of SWPBS (Sugai, et al., 2002; Taylor-Greene et al., 1997), and continuous active supervision of all classroom and non-classroom areas (such as the cafeteria, hallways, and playground) are an integral part of SWPBS (Colvin, Sugai, Good, and Lee 1997). It is also important to include on-going collection and use of data for decision making regarding the effectiveness of SWPBS in different areas across school property (OSEP Center on Positive Behavioral Interventions and Supports, 2007). All of these features comprise the components which define 'Analysis' in ABA.

SWPBS is often referred to as a three-tiered model which is one way of saying that the levels of intensity of the intervention will increase as the behaviors and needs of the students intensify (Walker et al., 1996; Lewis & Sugai, 1999). PBS provides an instructional approach to discipline, giving staff the tools to clearly define and teach

expectations to students, demonstrate the expectations, and provide opportunities for feedback and practice. Teachers are taught to encourage prosocial behavior by recognizing it publicly and they are also given clear procedures for correcting misbehavior. The idea is to engineer the environment to optimize student success, not engineer the student (Horner & Sugai, 2002). Recent studies have found that when SWPBS is implemented with fidelity as a Universal, Tier 1 intervention, approximately 80% of all students will need no other behavioral interventions (Horner & Sugai, 2002; Sprague, Sugai, Horner, & Walker, 1999; Sugai & Horner, 1999). The SWPBS Universal tier 1 typically includes defining, posting, and explicitly teaching school expectations to all staff and students (Sugai et al., 2002), and active supervision of non-classroom areas, such as hallways, cafeterias, and recess areas (Colvin, Sugai, Good, & Lee, 1997). Students are taught how to behavior and they are rewarded for doing so.

Approximately 20% of all the students who are in a Universal Tier 1 SWPBS system will need more help with an additional level of intervention. This group is often referred to as the "Targeted Group, Tier 2" and the types of additional interventions that they will receive are social skills training (Gresham, 2002), daily report card behavior programs, peer tutoring, and check-in/ check-out (Hawken & Horner, 2003; March & Horner, 2002).

Approximately 5% of all students will require the Universal Tier 1, Targeted Tier 2, *and* Intensive Tier 3 intervention. The intensive interventions are individualized for each student based on information collected in the process of a Functional Behavioral Assessment (FBA). An FBA is a way of analyzing and defining a student behavior and

recognizing what precedes and maintains it (O'Neill et al., 1997; Sugai, Lewis-Palmer, & Hagen-Burke, 1999-2000).

Walker (2004) referred to PBS as possibly being the most exciting, recent development within school disciplinary practices and behavioral interventions. The PBS approach to discipline and behavior management creates a positive school climate; a culture of student competence; and an open, responsive management system with multiple stakeholders such as school leaders, staff, students, and parents (Horner, Sugai, Todd, & Lewis-Palmer, 2005; Sugai & Horner, 2002).

Many studies have documented the effectiveness of SWPBS in reducing challenging student behaviors (Metzler, Biglan, Rusby, & Sprague, 2001; J. Ron Nelson, Martella, & Marchand-Martella, 2002; Luiselli et al., 2005). There is also clear evidence that increased academic achievement and prosocial behaviors are associated (Hinshaw, 1992; Kellam, Mayer, Rebok, & Hawkins, 1998; Maguin & Loeber, 1995; McIntosh, Chard, Boland, & Horner, 2006; Morrison, Anthony, Storino, & Dillon, 2001; Nelson, Benner, Lane, & Smith, 2004). Luiselli et al. (2005) found that academic performance, measured using standardized tests of reading and math, improved after a SWPBS system was established.

<div align="center">Bus PBS</div>

To date only a small handful of intervention studies have addressed student behavior on the school bus. Brandon, Bailey, and Barber (1981) installed a sound recording device and recorded both the duration and frequency of noise outbursts which occurred

above a clearly defined, tolerable threshold. This noise meter was toggled to a panel of lights which were visible to the student riders. When the noise level reached a certain point, red lights came on to let the students know that they were now being too loud. If students reduced their noise level within the specified amount of time (5 seconds), then they would keep their privileges for the following day. Privileges included having music played during the bus ride and a raffle for Burger King coupons (4 per ride). They found a dramatic reduction in overall noise level for 70 bus rides. Specifically while in baseline they recorded an average of 624 noise outbursts per ride and during the intervention phase that number dropped to an average of 28 per ride.

The authors also measured out-of-seat and roughhousing behavior and found that although they recorded an initial drop in the targeted behaviors, overtime the levels increased to just below baseline levels. There were no direct consequences for either of these target behaviors. A limitation with this study was practicality of implementation. Any transportation department attempting to implement this intervention will need to equip each bus with a noise guard meter and a panel of lights which is toggled to the meter. Both pieces of equipment will require a substantial financial investment for each bus. Also, this system of noise measurement doesn't address out-of-seat and other unsafe behaviors that are not necessarily directly linked to an increase in noise.

Another study of student behavior on the bus was conducted by Putnam, Handler, Ramierez-Platt, and Luiselli (2003). The study involved first creating a list of safe bus-riding behaviors which students were expected to adhere to. Drivers were then trained as a large group in 60 minutes on how to give out positive reinforcement (Caught Being

Good Cards) which tied directly into the established positive behavior support program that was already being used at the building level. Weekly rewards were given for the bus with the fewest office referrals and suspensions. The researchers found that referrals and suspensions decreased in the intervention phase. The authors also noted that this general drop was sustained over two years. The authors listed several limitations of the study for which they recommended further investigation; (1) they did not conduct direct observations and therefore could not specify the consistency and accuracy with which bus drivers documented student behavior and (2) their driver training documented that the drivers had understood the intervention plan, but they acknowledged that driver verbal report may not correspond with actual implementation.

The research by Putnam et al. (2003) and Greene et al. (1981) provides strong support for a bus behavior program which incorporates the defining and teaching of rules, training drivers to monitor student activity during transport, establish incentive contingencies to motivate performance, and coordinate with school and transportation personnel to ensure administrative support. All of these features are present in School-Wide Positive Behavior Support programs. Given the success of previous studies, the behavior problems on the school bus, and the established efficacy of school-wide positive behavior support, it was the goal of this study to create, and demonstrate the effectiveness of a PBS curriculum for students riding on the school bus. It was also the goal of this study to collect data on the bus so that actual change in both driver and student behavior could be observed and measured. This is an important component of any single subject research design (Horner, et al. 2005) and allowed us to eliminate the reliance on self-

report data that Putnam et al. (2003) found to be a limitation of their study. The current study also documented the number of positives that were given out on each bus ride during the intervention phase.

Primary Research Question

Is there a functional relationship between implementation of the 5 critical elements of the "Positive Behavior Support Bus Riding Program" (PBS Bus Riding Program) and the frequency of student problem behavior during bus rides for elementary age students? The researcher hypothesizes that the teaching and implementation of this PBS Bus Riding Program will significantly reduce the percent of intervals in which problem behaviors are observed.

Secondary Research Question

Is there a functional relationship between use of the "PBS Bus Riding" procedures and student problem behavior during the first half of the school day? The researcher hypothesizes that the teaching and implementation of this PBS Bus Riding program will reduce the number of morning office discipline referrals for those students who ride the bus.

CHAPTER II

METHODS

Participants

Characteristics of Participants

The primary research question focused on problem behavior, participants of the study included the drivers and all elementary school students from the same district on four different school bus routes during the academic year 2006-2007. The composition of the study sample reflected the composition of the student body in regards to gender, ethnicity, and other variables with one notable exception; disability. The school was served by both a special education bus and general education busses. This study was conducted on four bus routes that served the general education population only. Consequently special needs students, non-elementary-aged students, and any students who did not ride a school bus were excluded. There were approximately 25 student riders per bus (n=25), resulting in approximately 100 subjects (N=100). However, for the purposes of this single-subject, multiple baseline design, the group of students on each bus will be considered to represent one "subject" (Tawney & Gast, 1984; Horner, Carr, Halle, McGee, Odom, & Wolery, 2005). More detail related to this decision is provided in the procedures section.

Drivers of the busses were considered participants to the extent that they were trained on, and asked to implement with fidelity, the PBS Bus Riding Program. The elementary school had 4 different general education bus routes and all 4 participated in this study. As part of their job, the drivers were required to implement the bPBS program by the head of transportation for the school district. Drivers were given information about the study and were assured by the researcher that no identifying information would be coupled with the data (see Appendix G). It was made clear that this study would not provide evaluatory information to their supervisors.

The secondary research question addressed a subset of participants from those students participating in question 1. Using the school eSIS (Enhanced Student Information System, AAL Inc., Ontario, Canada) data base, students on each of the 4 busses were rank-ordered according to their previous 4 months of office discipline referral (ODR) history originating on the morning bus ride and during classes that they attended before 11:00AM each day. The 3 riders with the most ODRs per bus route were selected as the participants for this phase.

<center>Recruitment of Participants</center>

This study was part of a district effort to implement the PBS Bus Riding Program. The researcher was invited by the building principal to help with implementation and data collection of the intervention. Cooperation from staff including bus drivers and teachers was mandated by transportation and the school administrator respectively, therefore forms for individual consent to participate were not applicable. Drivers were given a letter from the researcher explaining the study and what participation would

entail (see Appendix G). The building principal did send a letter of introduction to all parents of children who attended the elementary school and any family who did not want their child to participate in the study had the option to so indicate. No families chose not to participate.

Setting

Both research questions utilized the same setting, one elementary school in a small but fast growing school district located within a city of 175,000 people in the Pacific Northwest. The district's ethnic composition was 88% Euro American, 8% Native American, 2% African American, 2% Hispanic, and 1% Asian. The selected elementary school qualified for Title I services, with 33% of the students receiving free or reduced lunch. The elementary school associated with this study was already implementing school wide PBS (Lewis & Sugai, 1999) to criterion (80 % and 80 %) as documented by a School Wide Evaluation Tool (SET) score (Sugai, Lewis-Palmer, Todd, & Horner, 2001, see Appendix A).

Measurement

Dependent Variables

Data were collected on two primary dependent variables: (a) problem behavior and (b) office discipline referrals.

Problem Behavior

Problem behavior on the bus was operationalized using the following 5 indices; (a) noise level, (b) unsafe body position, (c) student using disrespectful language, (d) aggression, and (e) non-compliance with the bus driver.

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The operational definitions of the five indices of problem behavior were as follows:

- *Noise level* was recorded in decibels (dBs) by the data collector using a Quest NoisePro sound level meter. The data collector wore the meter attached to their belt or pants pocket, and the microphone was clipped on to the shoulder of their shirt or jacket. To minimize variability in dB level not directly related to change in ambient noise, the data collector sat in the same location for every ride. A continuous decibel level reading was measured for the full 20 minute data collection period or when the last student exited the bus, whichever came first. The sound level meter recorded all dB levels within the range of 70-140 dBs. The sound level meter automatically calculated mean sound level per second, and then automatically calculated the mean of the means over time. It was this final number, (mean of the means) that was recorded by the data collector at the end of the ride.

- *Unsafe body position* included a student having 50% or more of their bottom off the bus seat. Examples of this were standing up, kneeling on the seat, or being turned around in the seat from more than the neck down. It was also recorded as

unsafe if a minimum of one arm (from shoulder to fingertips) or one leg (mid thigh to shoe) was in the aisle of the bus. The aisle was defined as any space that was beyond the outer edge of the bus seat in which the child was sitting. Waving with one hand or putting a single foot into the aisle was not considered to be an unsafe body position. If a single student had either both hands (from elbows down to fingers), or both shoes in the aisle, it was marked as an unsafe body position.

- *Student using disrespectful language* included a student who used words or physical motions that were inappropriate due to sexual content, or phrases which contained (but were not limited to) the words damn and hell. Phrases containing any words generally considered more offensive then damn and hell were also counted as obscene. Usage of the words darn or heck was not recorded as obscene. Obscene gestures included any physical movements (such as holding up a middle finger) which conveyed to another person one or more of the words or phrases previously defined as obscene. Shaking of a fist was not considered to be a target behavior in this category.

- *Aggression* was defined as any physical contact with another student that was hostile. Examples of this behavior included; pushing and shoving, kicking, biting, poking, bumping, or scratching another rider, and hitting with an open hand, fist, or blunt object such as a backpack or book. Non examples included shaking hands, patting on the back, slipping and falling into another student, or getting pushed into another student.

- *Student non-compliance with the bus driver.* This was recorded when a student defied the bus driver's direct request by failing to initiate compliance with the adult request within 5 seconds. Examples included a student staying seated for 5 or more seconds after the driver asked him or her to move closer to the front of the bus. A non-example would be if the driver asked the student to return to their seat and sit down, and the student began to walk in the direction of his or her seat within 4 seconds of being told to.

Problem behavior was measured using a paper and pencil 10 second partial interval recording system with 20 minute sessions to record observable behavior and decibel level (see Data Collection form in Appendix B). Decibel level was recorded using the Quest NoisePro DLX-1. A sound wave progressing through air causes the instantaneous air pressure at any given point to vary above and below the barometric pressure in accordance with the waveform of the sound. This variation in pressure is used as a quantitative measure of the strength of the sound, and is called sound pressure. This is the quantity which a pressure microphone measures, and is often expressed on a Decibel scale. The unit of pressure of 0 dB on this logarithmic scale corresponds to the lowest threshold of hearing at 1,000 HERTZ for a normal human ear. Specifications of the NoisePro DLX-1 meter include; a measurement range of 40dB to 110 dB, and 70-140 dB, each of which covers a 70 dB dynamic range. Criterion level, 40-140 dB in 1 dB increments. Threshold: Either off or set in the range, 40-140 dB (1 dB increments).

Upper Limit: 40-140 dB, Frequency weighting: RMS: A-weighting or C-weighting., Peak: A-weighting, C-weighting or Z-weighting.

Meters had to be recalibrated every two weeks. They came with a calibration instrument which when attached to the end of the meter, would emit a specific, factory-set dB level. If the meter registered anything other than the preset level, it was adjusted manually to achieve an exact match with the preset level.

Inter-observer Agreement

A second observer rode the bus and scored student behavior alongside the primary observer in approximately 20% of the observation sessions to document inter-observer agreement. Percentage of agreement for the occurrence of a problem behavior was measured using the following formula: agreements/agreements + disagreements x 100% (Watkins & Pacheco, 2001). An average inter-observer agreement of 95% was the goal. If agreement fell below 95%, an additional training for the data collectors was conducted. This training consisted of having the researcher review the definitions of problem behavior with the data collector and then score alongside the data collector on a bus in order to compare responses. Inter-observer agreement for problem behavior for each of the four bus routes met or exceeded 96% for total agreement. To account for chance variability, Cohen's Kappa was used (Watkins & Pacheco, 2000). Cohen's Kappa equaled .74.

Office Discipline Referrals (ODRS) for Research Question #2

Office discipline referrals (ODRs) were issued by the school staff to students for behavior violations such as fighting, noncompliance with rules or teacher requests, vandalism, harassment, or bullying. Typically, an ODR is the result of a series of staff actions including: (a) observing a behavioral violation, (b) documenting the incident, (c) sending the student to the office, and (d) a corrective action is taken. The origin, severity, and recipient of the ODRs are tracked by the school administrator using the eSIS data system (Enhanced Student Information System, AAL Inc., Ontario, Canada). For example, if a student was fighting in the classroom, the teacher would write up the behavioral violation on an office discipline referral form and send the ODR slip and the student to the office. The ODR would go into the administrator's mailbox (if he was not available) and later he would decide how to handle it. Any ODR slips that were written by staff in the building were entered into the eSIS data base by either the principal or his administrative assistant.

Any adult in the school was allowed to give out 'red slips' or an ODR. The procedure at the elementary school used for this study mandated that a student who committed a minor offense was given a 'red slip' and not an ODR. Examples of minor offenses were failure to initiate compliance with teacher request within 5 seconds, and using disrespectful language. Consequences included losing free choice time in class or losing recess. For more major offenses such as fighting, bullying, or theft, the student may have received an ODR. The ODR went directly into the principal's mailbox at

which point he determined the appropriate punishment. Punishment options ranged from a minimum of parent contact to a maximum of expulsion. ODRs were recorded in the eSIS data base but 'red slips' were not.

- Office discipline referrals were recorded by the school secretary in an electronic database (eSIS). This database was used by the school and district personnel as an official record of problem behavior patterns. The counts of problem behaviors occurring before 11:00 am, and recorded in eSIS, were used as a dependent variable. No index of inter-observer agreement was obtained for these data, but the system employed by the school met the criteria required by Irvin et al., (2005) for generating office discipline referral data with validity.

<div align="center">Independent Variables</div>

The independent variable was the presence or absence of the features of the PBS Bus Riding Program (the full program curriculum can be found in Appendix C).

The features of the program included:

- The teaching of the PBS Bus Riding Program to the drivers. For the purpose of this study the researcher conducted this 1.5 hour training.

- Specific PBS bus riding rules were determined during the driver training, and they were then mapped onto the school-wide PBS rules that were already in effect in the school building (Be Safe, Be Respectful, and Be Responsible).

- The teaching of the PBS Bus Riding Program to the student riders. For the purpose of this study, the researcher conducted this 10 minute training on the bus with both the driver and principal present (see curriculum in Appendix D).

- On-the-bus coaching for the driver was provided by the researcher during the first 3 days of implementation in the intervention phase.

- Drivers and students received a 5 minute refresher training on the PBS bus riding program the first Monday of every month and the first day back after a holiday of 5 or more days (see curriculum in Appendix E). During the refresher training there was time for the driver to provide feedback about the PBS Bus Riding Program.

- Clearly defined consequences for breaking the rules. The teaching of consequences was bundled into the PBS bus riding program and taught concurrently. Drivers presented the consequences typically referred to as Bus Incident Reports, as students exited the bus (never when the bus was in motion) with one exception: If the noise level within the bus became either 1) louder than was comfortable for the driver or 2) reached a level that was inconsistent with a safe driving environment; for example if it was so loud that the driver was prevented from hearing other traffic and/or emergency vehicle sirens, then the

driver flipped on the over-head interior dome lights. The children were taught that the illumination of the dome lights was a signal to them that they were 1) too loud, and 2) needing to get quiet within 1 minute. If the dome lights stayed on for more than 1 minute, the driver pulled the bus over to the road side and waited until the noise level dropped to a safe and acceptable level (as determined by the driver). If the driver was stopped for more than 3 minutes, then all the children on that bus got a warning (a bus warning) which resulted in assigned seating on the morning and afternoon bus ride the following day.

- Driver presented rewards in the form of a ticket the children knew as an 'All Star' (For sample, See Appendix F). Because the school already had school-wide PBS in place at the building level, these 'All Stars' were the same ones used within the building. Students could turn the 'All Stars' in to be counted towards earning a class party, or be included in a weekly drawing to win a book or other equally valued prize. Driver presented the ticket as students exited the bus (never when the bus was in motion). All drivers were asked to present 3-5 'All Stars' per ride.

The researcher designed a paper and pencil data collection instrument in which the data collector was able to record problem behaviors observed, consequences, and rewards (See Appendix B). Fidelity of implementation was also built into the data collection instrument which was filled out by the data collector during each ride. This procedure provided the researcher with information such as; is the driver rewarding desired

behavior appropriately? Is the driver consistent in the presentation of consequences for undesired behavior? Does the driver have access to all the necessary parts of the system; rewards and corrective consequences?

Procedures

Recruitment of Subjects

The principal investigator was contacted by the district behavior specialist, the director of transportation and the building principal to request help in implementing and documenting the efficacy of school-wide PBS on the Bus program. The elementary school principal was asked to provide access to 4 general education bus routes for the purposes of this study. In this phase, no individual students were identified during the collection and reporting of data. Also, because the school had decided to implement this program independent of the research component, the principal did not seek parental consent. He did, however send a letter to the parents informing them about the bus behavior program, and the research component.

The district transportation department worked with the researcher to schedule the driver trainings. The researcher provided the drivers with a letter of information about the study (See Appendix G). Drivers were then provided with information regarding the start of the data collection and an approximate date for the 1.5 hour intervention training.

Recruitment and Training of Data Collectors

Eight data collectors were recruited from the University of Oregon. All applicants were either pursuing a Bachelors or Masters degree in Education, or a PhD in

School Psychology. An information session was provided to all of the applicants and applicants were then screened by the researcher. Applicants who were chosen to collect data for the study were then required to attend a two-hour training in the classroom and 3 hours of training on a school bus which was actively transporting children. The researcher provided all of the trainings. Topics covered in the trainings included behavioral observation using the paper data collection instrument (See Appendix B) and how to take a noise level reading using a decibel meter (Appendix H). Data collectors were trained to .95 inter-observer agreement criterion with each other and an expert observer. Inter-observer agreement did not drop below .95, so maintenance trainings were not needed during this study.

<div align="center">Baseline Phase</div>

For the primary question, all data collection occurred on a moving school bus during the afternoon when students were being transported from school to home. Busses B1, B2, and B3 all departed from school property at 2:40PM. Bus B4 served on the 'late route' which transported students from after school activities to home. Bus B4 left the school property at 5PM. Data were collected using the data collection sheets and sound level meters. Each data collector had a clip board with the data collection sheet attached, a laminated card depicting the zones of the bus, a sound level meter attached to their belt, a tape recorder with an ear bud, and a roll of bright green masking tape to mark the ½ way point of the bus interior (the aisle served as a natural divider) effectively completing the division of the bus into 4 visual zones. The tape recorder, with a prerecorded tape

and an ear bud for discrete listening, cued the data collector when to begin a new interval. There were 6 consecutive, 10 second intervals which prompted the data collector to observe and record rider behavior in one visual zone. Then, the next 6 consecutive 10 second intervals would apply to a different zone and so on until all 4 zones had been observed, after which the data collector would begin again in zone 1. There was no break in the data collection and the tape ran continuously for a full 20 minutes.

The first 5 days of collected data were not used in this study. This controlled for the riders' reactions to the introduction of a data collector into their bus environment. It was hypothesized that after 5 days of riding the bus, students would no longer be reacting to the new stimulus of a data collector on the bus. Data collected on the sixth day and beyond were included in the results. Bus B1 was in baseline for 24 days, B2 for 31 days, B3 for 38 days, and B4 for 55 days.

The principal investigator oversaw data collection on the 4 selected school busses during their afternoon runs. These data included two variables: percent of intervals in which an observed student exhibits a behavior from a list of previously defined target behaviors, and also a noise level reading taken on the bus with a hand-held decibel meter. Data collectors used an interval recording system (See Appendix B) to record target behaviors during 10 second intervals during the afternoon bus ride. Data were collected by focusing on a different zone of the bus every 60 seconds.

Data collectors recorded observed behavior in a particular zone for 6, 10 second intervals per zone in the repeating order of zone 1, 2, 3, and 4. This method was chosen to minimize the chance that results would be skewed due to measurement sensitivity to

the behavior of one or two extreme individuals which may have occurred if all children were being observed during each interval. This pattern of data collection was also designed to spend equal amounts of time observing the front passengers and the rear passengers within a 2 minute time interval.

During baseline the principal investigator also worked with building officials to use the existing school database to identify 3 students from each bus in phase 1 who received the highest number of office discipline referrals between the time they boarded the bus until 10:30AM on each school day. Data for this analysis were taken from the previous three months. All data were collected using the eSIS system by building officials. The researcher was given data only after it had been de-identified (students were identified by ID numbers, not by name). Therefore, parental and student consent was not required or sought.

Intervention Phase

The baseline data were graphed daily for all 4 bus routes. The first driver to receive the intervention was selected based upon the slope and trend of their baseline data. We were looking for an upward trend and the steepest slope (Richards, Taylor, Ramasamy, & Richards, 1999). Once the driver had been selected, the transportation director set up a time and classroom location for the researcher to deliver the 1.5 hour training to the driver. The researcher then provided the 10 minute PBS Bus Program training to the students who rode that driver's route the following week after students had

boarded the bus in the afternoon to return home from school. The researcher conducted the training of the students on the bus with the driver and building principal present. The transportation dispatcher called parents to let them know that their children were going to be arriving 10 minutes late that day due to safety training on the bus. The intervention was implemented on that day immediately following the student training. The intervention then stayed in place for the duration of the study.

During the first 3 days of intervention implementation on the bus, the researcher sat directly behind the driver and provided coaching. This coaching consisted of directing the driver's attention to problem behaviors and making suggestions about how to handle them using the PBS Bus Riding program. For example if a student was standing up (an action that was clearly visible to the driver) the researcher might have reminded the driver to give the child a command such as 'Samantha, please be seated'. If the child required a second warning, then the driver was reminded by the researcher to say, 'Samantha, please be seated, this is your second warning, the next time you will be given a bus incident report.' If it happened a third time the driver was reminded to let the child know that they would be receiving a bus incident report for not doing what they had been asked to do.

The coach also spent equal amounts of time helping the driver identify children who were 'doing the right thing' and wording the announcement of giving a positive ticket. An effort was made to reward children who had a history of problem behavior on the bus. For example if there was a student whom the driver could identify to the researcher as typically exhibiting challenging behavior, then the researcher would attempt

to catch that child doing the right thing and coach the driver to reward that behavior with a positive ticket. The researcher often supplied the language to the driver just before the student exited the bus. An example of this was, 'Lyle, you did a very good job of staying safely in your seat today. Here's an All Star for you. Have a great day, and I'll see you tomorrow.' The driver was also encouraged to announce positives out loud over the microphone during the ride as often as possible while remaining within the safety constraints of driving a school bus.

Data collection continued during this phase. Data collectors began recording the number of positive tickets and bus incident reports the students were given during a ride. The driver was expected to give out approximately 3-5 positive slips per ride.

The same intervention training was then provided systematically to the other drivers in accordance with a multiple baseline design where each bus route serves as a subject. Buses were chosen to receive the intervention based upon the slope and trend of their baseline data in the same way that the first bus had been selected.

Secondary Research Question

After the intervention phase was implemented on all 4 routes, the researcher asked the principal for the most complete ODR data on the previously identified 12 students. ODR data after the intervention implementation was then compared to ODR data prior to the implementation.

Design

A concurrent multiple baseline across participants (in this case a bus route serves as a participant) design was used to assess the effects of the driver training intervention

(Richards, Taylor, Ramasamy, & Richards, 1999). A multiple baseline across

participants design involves continually collecting data over many days and staggering

the implementation of the intervention across several participants (e.g. baselines). The

effects of the intervention are determined by examining if there is a significant change in

the collective student behavior on the bus at the point of, and only at the point of,

implementing the intervention. When staggering the implementation across four

baselines, the researcher is able to establish confidence that threats to internal validity are

controlled.

A multiple baseline design across subjects is most appropriate for this research

project due to the following:

- The design controls for many alternative explanations to intervention effects

  such as "would the behavior have gotten better without treatment" or "perhaps

  there is another variable related to the intervention effects" (Cook &

  Campbell, 1979).

- Using a multiple baseline is necessary due to the ethical issues with

  withdrawing or reversing intervention conditions (Richards, Taylor,

  Romasamy, Richards, 1999).

- A multiple baseline design allows for closer approximation to natural conditions

  of the bus activities.

Using a multiple baseline design across subjects allows experimental control addressing the functional relationship between the PBS driver intervention and reduction in problem behaviors of riders.

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

<div align="center">*Visual Analysis of the Data*</div>

Behavioral data were analyzed using visual analysis. Visual analysis of data is a commonly used method for interpreting results in single-subject designs. Two overall aspects of the data will be analyzed; these are level and trend where level relates to performance on the dependent variable and trend refers to changes or consistent patterns in the data path (Tawney & Gast, 1984). Also of interest will be the variability of performance, the level of performance, and the direction and degree of trends that occur (Cooper, Heron, & Heward, 1987). The following five factors will be analyzed: level, trend, variability, overlap, and immediacy of effect. Changes in level indicate a change in the average occurrences of problem behavior across intervention phases. Change in trend is marked by a change in the slope of the line which has been created by plotting over time, intervals in which target behaviors were observed. A positive slope would be associated with an increase in observed target behavior, whereas a negative slope would be associated with a decrease in observed target behavior. Change in trend across intervention phases may indicate an effect of the intervention. Variability refers to the degree to which data points do not conform to a visually identifiable trend. In the event of excessive variability the researcher will need to use professional judgment and continue collecting additional data points until such time as a clear trend can be

identified. Only then is it appropriate to introduce or change the intervention. Overlap refers to the extent to which data across intervention phases looks similar in terms of level. Overlap makes it more difficult to interpret the data. Immediacy of effect is a reference to how immediate an effect is realized after an intervention is implemented (Richards, et al., 1999).

CHAPTER III

RESULTS

This single subject study assessed the effects of bPBS implemented on four elementary school bus routes. Results examined (a) the extent to which bPBS was implemented with fidelity, (b) the extent to which bPBS implementation was associated with change in student problem behavior on the bus and the noise level within the bus, and (c) the acceptability of bPBS as rated by the bus drivers who participated in this study.

Fidelity of Implementation

The fidelity of the bPBS intervention was assessed continually throughout the study. Data collectors kept track of number of Bus Incident Reports (BIRs) and All Stars for each ride in the intervention phase (see Table 1 & Figure 1). Data collectors also tracked the number of positive and corrective statements made by each driver in both baseline and intervention phases (see Table 1 & Figure 2).

The results indicate that in the intervention phase the number of All Stars given out per ride on average were 4.03 on Bus B1, 2.23 on Bus B2, 2.91 on Bus B3, and 2.10 on Bus D4. Drivers averaged .26 positive statements per ride in baseline, and .52 in the

intervention phase. Driver corrections also increased from an average of 1.65 in baseline, to 2.15 in the intervention phase. We were unable to hear the driver greeting students as they entered the bus, so these data were is not reported.

Taken together, the data indicate that the bus drivers were reviewing expectations, praising students when they did the right thing, and providing an average of 2.82 All Stars per ride in the intervention phase (stated goal was 3.0 -5.0) presented in Figure 1.

TABLE 1. Fidelity of Implementation of the Bus Positive Behavior Support Program Across Four Bus Routes Expressed as an Average Per Ride

Subject	Baseline	Bus PBS
Bus B1		
Positives	.23	1.05
Corrections	1.23	2.29
All Stars	Φ	4.03
Bus Incident Reports	Φ	.33
Bus B2		
Positives	.33	.15
Corrections	.72	.88
All Stars	Φ	2.23
Bus Incident Reports	Φ	.04
Bus B3		
Positives	.44	.87
Corrections	2.44	3.13
All Stars	Φ	2.91
Bus Incident Reports	Φ	.26
Bus B4		
Positives	.04	0.0
Corrections	2.19	2.30
All Stars	Φ	2.10
Bus Incident Reports	Φ	0.0

Impact of Bus Positive Behavior Support on Problem Behavior

The percentage of intervals in which problem behavior was observed across

phases is presented in Figure 3. The 4 subjects (4 bus routes) averaged 60.27% of

observation intervals with problem behaviors during baseline: 64.43% for Bus B1, 55.88% for Bus B2, 58.14% for Bus B3, and 62.61% for Bus B4.

Bus B1's baseline levels of problem behavior varied between 52 % and 84 % over 23 days, with a slightly increasing trend before the first phase change. Bus B2's baseline levels of problem behavior varied between 8% and 100% over 30 days with a steep increasing trend before the first phase change. Bus B3's baseline levels of problem behavior varied between 33% and 82% over 37 days with an increasing trend before the first phase change. Bus B4's baseline levels of problem behavior varied between 21% and 87% over 53 days with a decreasing trend after day 37.

The bPBS intervention was associated with reductions in the mean level of problem behavior for all four bus routes presented in Table 2. Bus B1's bPBS phase documents an average of 45.37% intervals with problem behavior (a 19.06 % reduction) with a gradual decreasing trend across the intervention phase. Bus B2's bPBS phase documents an average of 13.62% intervals with problem behavior (a 42.26% reduction) with a flat trend line. Busses B3 and B4 averaged 33.78% and 18.6% intervals with problem behavior respectively across the bPBS phase. The trend for Bus B3 was stable, and B4 showed a slight increase over the last 5 days of the phase.

With the marked exception of Bus B1, all other subjects; Busses B2, B3, and B4 experienced reductions in variability during the bPBS phase.

TABLE 2. Mean Percent of Intervals with Problem Behavior Across Four Buses

	Baseline/ # Days	Intervention / # Days	Change
BUS B1	64.43/ 23	45.37 / 45	-19.06
BUS B2	55.88/ 30	13.62 /38	-42.26
BUS B3	58.14/37	33.78 /31	-24.36
BUS B4	62.61/54	18.6/14	-44.01

Impact of Bus Positive Behavior Support on Bus Interior Noise Level

The decibel level recorded across phases is presented in Figure 4. The decibel level during the baseline phase averaged 71.4 on bus B1, 62.0 on bus B2, 72.0 on bus B3, and 73.7 on Bus B4. In the intervention phase the decibel level averaged 60.1 on bus B1, 68.4 on bus B2, 67.0 on bus B3, and 66.0 on Bus B4. This resulted in the following mean differences from baseline to intervention: B1, -11.33; B2, + 6.4; B3, -5.0; B4, -7.7. Figure 4 presents the decibel level plotted in baseline and intervention phases.

Impact of Bus Positive Behavior Support on Number of

Morning Office Discipline Referrals

Office discipline referrals (ODRs) were tracked by the principal and recorded by building staff. Only ODRs given out during the first 2.5 hours of the morning were counted for this study. There was one recorded building ODR for a student who rode bus B2 in baseline, and one ODR for a student who rode bus B1 in the intervention phase.

Social Validity

Using a 6 point scale, the bus drivers gave an average score of 3.7 to indicate ease

of implementation and use with the bPBS program (a score of 6 would have indicated

maximum ease of use). They indicated, with an average score of 4.33 that problem

behaviors had decreased on their buses with the implementation of bPBS. On average

they indicated that they would recommend the program to other Elementary School bus

drivers (3.7), and that overall, using the bPBS program has increased good behavior on

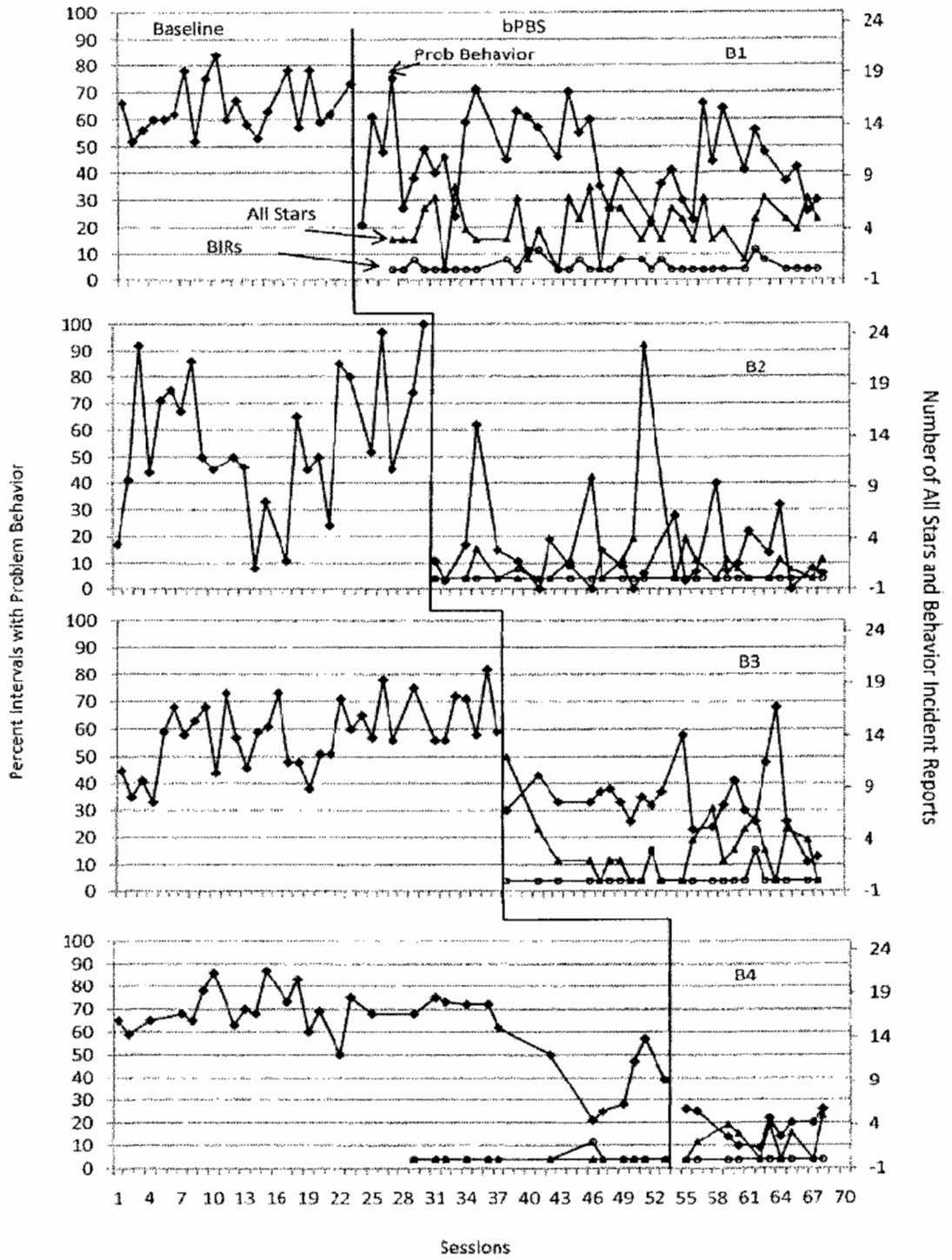their busses (4.0) see Appendix I.

FIGURE 1. All Stars and BIRS
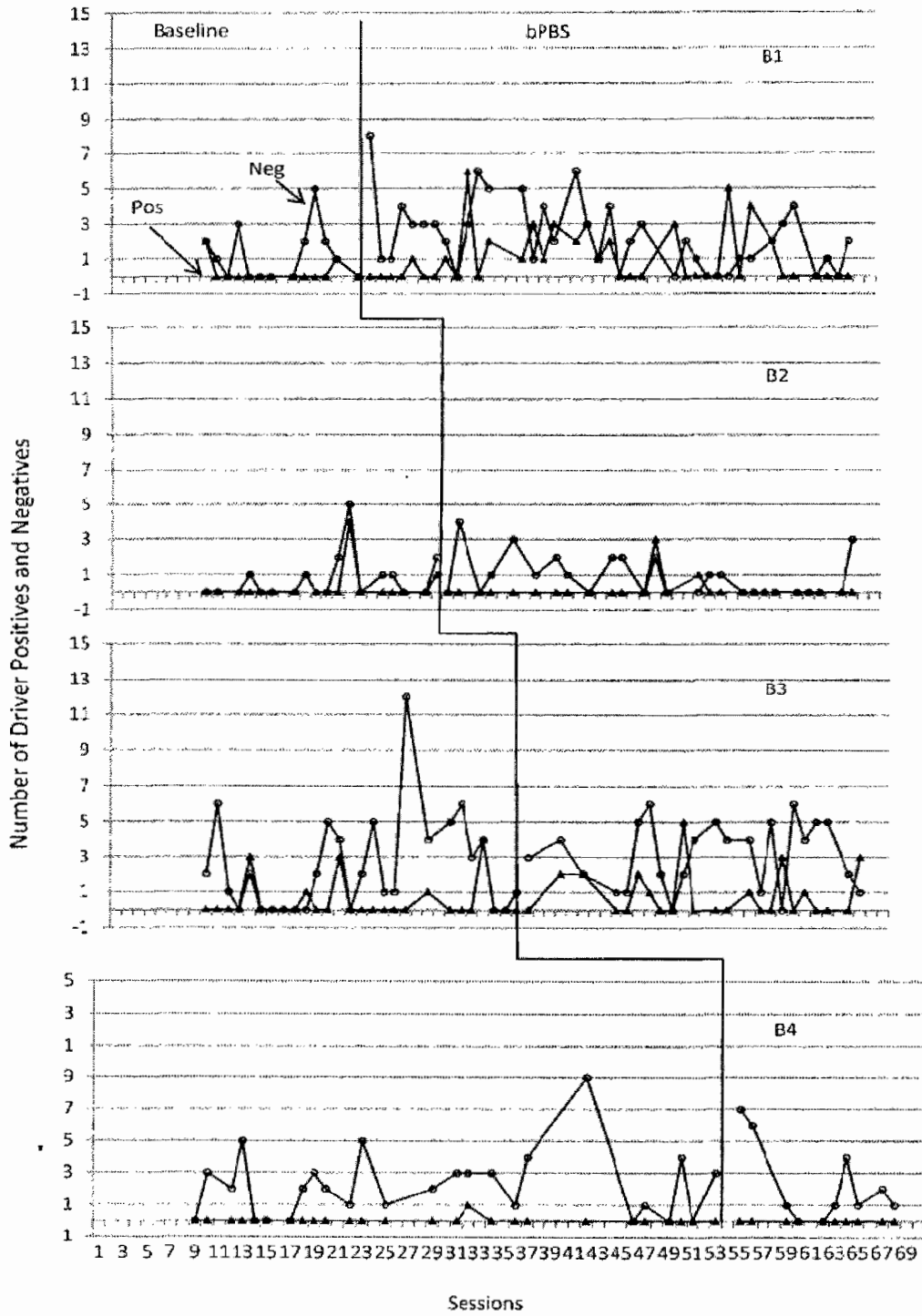
FIGURE 2. Number of Driver Positives and Negatives
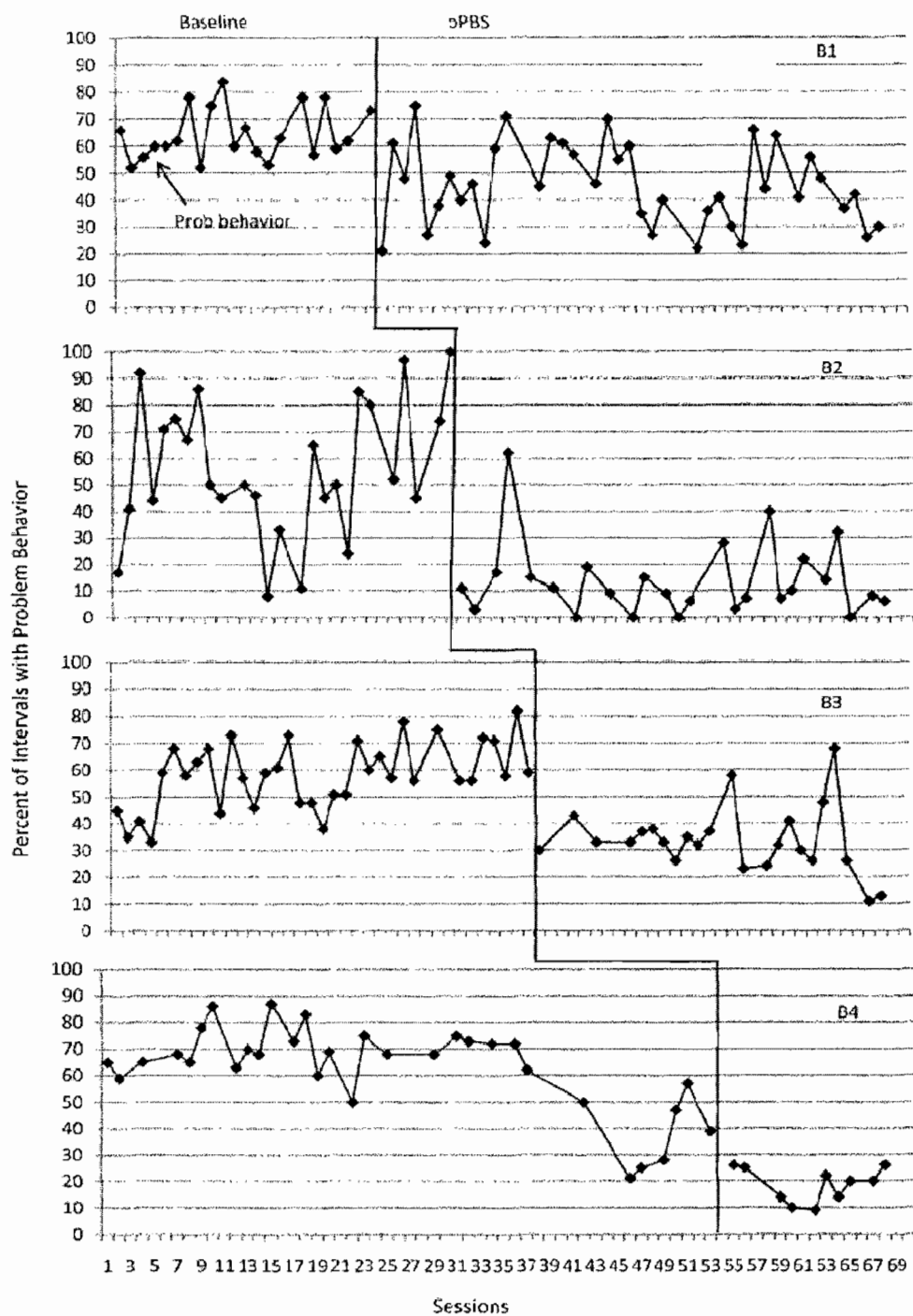
FIGURE 3. Effects of bPBS on Problem Behavior
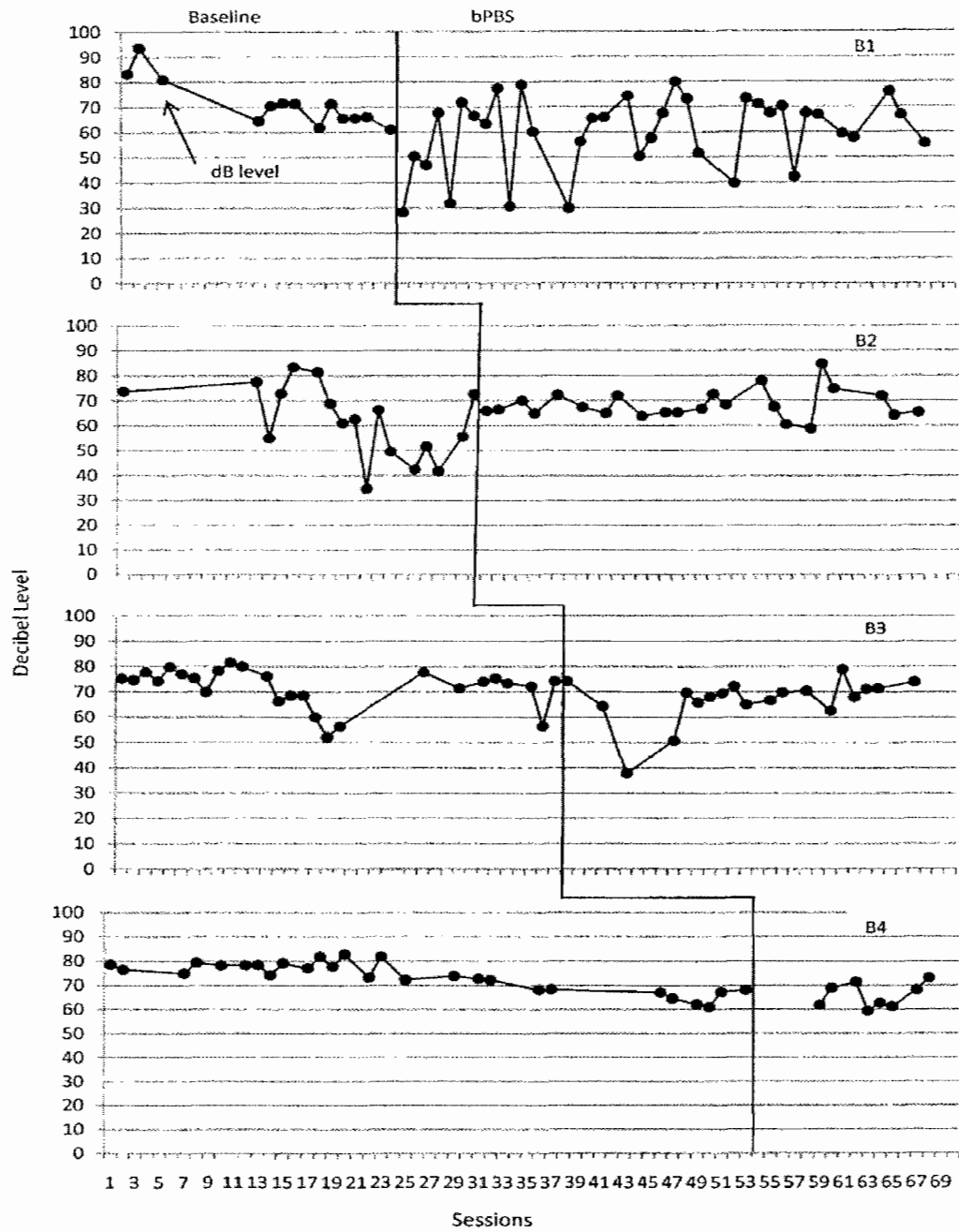
FIGURE 4. Decibel Level in Baseline and Intervention Phases

CHAPTER IV

DISCUSSION

The purpose of the current research project was to determine whether a universal

intervention, Bus Positive Behavior Support (bPBS) could be effective in reducing

the frequency of student problem behavior with elementary age students while riding

the school bus. The effect which implementation of bPBS had on office discipline

referrals for the first 2 ½ hours of the school day was also examined. The single-

subject study examined the extent to which the bPBS intervention resulted in changes

in problem behavior on the school bus and reduction in noise level. This chapter

provides conclusions and limitations for the study, as well as directions for future

research.

Effect of bPBS on Office Discipline Referrals

The school principal recorded a total of one classroom ODR and zero red slips

(minor ODRs) before the implementation of bPBS and one classroom ODR and zero

red slips after the implementation. These numbers are clearly too few to draw any

conclusions. It was hypothesized by the driver and the principal that student behavior

on the morning ride is less problematic and therefore less likely to lead to ODRs and

red slips coming from the classroom. It is also possible that such low numbers reveal more about a building level system in which teachers take care of student problem behavior in their classrooms and write few if any, ODRs or red slips.

Fidelity of Implementation

Implementation was measured by tracking the number of 'All Stars' that the driver gave out per ride (the goal was three to five per ride), and number of bus referrals relative to percent of intervals with problem behaviors. Also considered was the number of positive driver statements and negative driver corrections.

On bus B1, the driver struggled to implement the bPBS program with fidelity. Three days of coaching on the bus right after the intervention was introduced did help the driver learn to use specific praise statements with student riders. The coach also emphasized rewarding desired behavior from students who had a history of being verbally reprimanded by the driver for undesired behavior. Over time data collectors reported that the driver was inconsistent with her corrections and some students ignored the bPBS rules and did not receive a consequence. The driver gave out an average of 4.03 'All Stars' per ride, but she struggled to use specific praise statements when giving them out. This sometimes led to students not really knowing what they had done to receive the 'All Star'. During the intervention phase the driver gave out 13 bus incident reports which was more than double what the other three bus drivers gave out all together. Bus B1 had the smallest drop in percent of intervals with problem behavior; a mean of 19 percent.

On busses B2, B3, and B4, the bPBS program was implemented with fidelity. Coaching occurred on all three of these bus routes for three days immediately after the intervention was introduced. Right after the implementation of the intervention, the driver of bus B2 was not comfortable with the on-board coach and expressed her frustration at having suggestions made to her about correcting students who were not following the rules such as standing up in the aisles. In Figure 3 the fourth data point in the intervention phase shows a sharp increase in percent of intervals of problem behavior on bus B2 (approximately 12% increasing to 60% one day later). The reason for this increase was that the driver was refusing to follow the coach's suggestions to give verbal warnings to some students who were not following the bPBS rules. This led to an important event for this study. The driver of bus B2 complained to her supervisor about the program and the on-board coaching and had the supervisor watch the tape which she had recorded during the on-board coaching session (the coach was not aware at the time that the session was being recorded). The transportation supervisor later reported to the coach that the driver had been advised that complying with the coach's suggestions and the bPBS program in general was an important part of her job and she was expected to implement it to the best of her ability.

This event illustrates that support from the transportation supervisors is critical to the successful implementation of bPBS. After this event, the driver of bus B2 was consistent with her corrections and rarely tolerated students ignoring requests. This was true for the driver of Bus B3 and B4. On these three bus routes praise statements

were specific and very few bus incident reports were made. The mean percent decreases in problem behavior were 42%, 24%, and 44% respectively.

Single Subject Analysis

The single subject multiple baseline study was conducted to answer the research question: Is there a functional relationship between implementation of the five critical elements of the Bus Positive Behavior Support Program (bPBS) and the frequency of student problem behavior during bus rides for elementary age students? A secondary variable of interest was the effect of bPBS on student generated noise level during the school bus ride. The single subject multiple baseline study documented a strong functional relationship between the implementation of bPBS and reductions in problem behavior on the school bus. This was achieved by demonstrating three effects at three different points in time on busses B1, B2, and B3 which also allowed us to document experimental control (Horner, et al. 2005). Bus B4 did experience a mean decrease in problem behavior between baseline and intervention, however the trend was already decreasing in baseline so a clear change in behavior between baseline and intervention was not possible to document. It was hypothesized that the reason for the seemingly premature drop in problem behavior had to do with the fact that bus B4 was a late (after 5PM) bus which transported children who rode bus B3 during the morning route and occasionally on the afternoon routes if they were not staying late that day. Noteworthy is the fact that bus B4

experienced a drop in problem behavior immediately after the intervention was implemented on bus B3. Buses B3 and B4 had the same driver.

All four bus routes experienced significant reductions in mean levels of problem behavior following implementation of bPBS. Busses B1, B2, and B3 experienced a mean decrease in percent of intervals with problem behavior of 37 percent. With the fourth bus added, the mean decrease in intervals with problem behavior was 32 percent.

The study failed to document a functional relationship between the presence or absence of bPBS and interior noise level. It was hypothesized that the movement and gathering of students around the data collector may have contributed to situation specific variability in the noise level. It was quite common on busses B2, B3, and B4 to be half empty at the start of the ride. This resulted in students choosing to sit in the back seats of the bus on some days, and on other days, there were no students in the back half of the bus. Since the data collector was sitting in the back at all times, this created a highly volatile and variable situation relative to noise level. It may be worth noting that Bus A3 began almost always full, and that bus did show an average drop in noise level of 11.33 dBs.

Social Validity

Two out of the three bus drivers (one driver drove two routes) reported that bPBS was worth their time and effort to implement and that the improvements in student behavior were noticeable. They indicated that they would plan to continue using it

and would recommend bPBS to other drivers. After showing the graphed decreases in intervals of problem behavior to the director of transportation, she stated that the program clearly 'worked' and she then mandated the program for all drivers under her employ. Of particular note was her reaction to the on-board coaching component. One of her managers stated that on-board coaching would be prohibitively expensive. The transportation director referred to the graphs from this study and said that they would find a way to make it part of the training.

The elementary school principal also reported that he found bPBS to be easy to implement. He noted that other than a slight increase in number of phone calls to parents, he was very pleased with the over-all decrease in unsafe rider behavior on the school bus.

Limitations

The current study was limited to one elementary school in a medium sized suburban district. This school provided a separate bus for students in Special Education, and that bus was not included in this study. The use of one setting and a selected student group (Students in General Education) limits the generalization of effects to other settings and other populations. An additional consideration is that the study school had been implementing School-wide Positive Behavior Support (SW-PBS) for approximately 3 years prior to the start of the bPBS intervention. Therefore we are not able to conclude generalizability to an elementary school that does not have an established SW-PBS system in place.

Conclusions

Results from this study would indicate that for elementary schools already using a

SW-PBS system, adding bPBS may serve to reduce unsafe and antisocial student

behaviors on the school bus. Some considerations for successful implementation include

not only driver training in the classroom, but also a coaching component that takes place

on the bus with the driver when he or she is taking students home from school. This

could be a considerable obstacle to district-wide implementation. Teaching adults to

exhibit new behaviors is not automatic (Davidson & Redner, 1988) and requires training

that models the new adult behavior (Shernoff & Kratochwill, 2007). Shernoff and

Kratochwill (2007) found that using videotaped examples of classroom teachers using the

Incredible Years Classroom Management Program increased the likelihood that teachers

would use the program with efficacy. The addition of weekly consultation calls added to

the teachers' sense of competency and comfort with the program, but showed no

significant change in behavior for the students between groups (one receiving video only,

the other getting video plus consulting). Extrapolating from their findings, it may be

possible to train drivers who are new to the bPBS program with a training video which

features real bus drivers using the bPBS program with fidelity. This may be sufficient for

training and offers the possibility of eliminating the need for an on-board coach.

Given that a requirement for being safe on the school bus is to stay firmly seated

behind the protective barrier of the seat back in front of the student, it was noted by the

researcher that having three students in a seat made this almost physically impossible for

all but the smallest of riders. The National Highway Safety Administration (2002) has

determined the number of students permitted in a seat based upon hip width. Using their parameters, it is legal to have 3 to a seat in elementary school. However, it seems that these numbers have been mandated without consideration for items which the student brings with them such as backpacks. It was common for students to place their backpacks on the seat next to them, resulting in far less seat space then would normally be available. This resulted in the child closest to the aisle being pushed out to the point of having a significant portion of his or her body in the aisle. Another consequence of the backpacks on the seat was that some students would stand up in order to make room for the backpack. For safety reasons, backpacks should be placed on the lap. Very few students were observed sitting with their backpacks on their laps. This may be due to the packs being heavy and cumbersome, and a ride of any duration with these on the lap would be uncomfortable.

Another observation made relative to safety concerned the students who stood up and spoke to friends. This behavior seemed to be exacerbated when a student was sitting alone in a seat. Some students who were alone would begin to look around for a friend to talk to. The barrier prevents them from seeing over the top unless they stand up or put their head and shoulders into the aisle. Therefore, seeking a friend after the ride began necessitated standing up or leaning into the aisle.

Implications for Practitioners

The primary implication for practitioners was the documented finding that implementation of bPBS can significantly reduce the amount of time that problem

behaviors occur on the school bus. When implemented in a system that already has SW-PBS in place, very little training is required for students (approximately 15 minutes for the initial training and 5-10 minute refreshers after holidays and long breaks). However, the bus drivers who participated in this study did receive 1.5 hours of training in the classroom, and three days of on-board coaching. The coaching seemed to be a crucial component of the program as these were new behaviors and a new program that the drivers were being asked to implement.

Future Research

Future research should examine the efficacy of bPBS on the school bus across different school demographics (e.g., urban vs. rural schools, large vs. small schools, high schools vs. middle schools, general education vs. special education). It will also be important to examine bPBS efficacy relative to the presence or absence of SW-PBS at the building which the bus serves.

Knowing that prevention of problem behavior is more effective than remediation (Metzler, Taylor, Gunn, Fowler, Biglan, & Ary, 1998; Sprague, Sugai, Walker, 1998; Walker, Irvin, & Sprague, 1997; Walker, Stieber, Ramsey, O'Neill, 1991), documenting effectiveness of bPBS over time is of interest. Will behavior on the bus be better overtime as more and more students come up from the lower grades having been exposed to this program?

Future research should examine driver motivation and commitment to the bPBS program. Putnam et al. (2003) used office discipline referrals (ODRs) to not only

document behavior change on the bus, but also to award 'bus of the week' status to the driver who gave out the fewest number of ODRs. It is possible that having a 'bus of the week' sign on the exterior of the bus was socially rewarding for the driver as well as the students, and may have influenced the number of ODRs that the driver gave out as much or more than the student behavior on the bus. By employing more direct measures of problem behaviors on the bus, such as the ones used for this study, transportation directors would be able to post the graphs of problem behavior in the staff lounge. Driver recognition and bus rewards could be based upon the graph of the week or month instead of the number of ODRs given in a week.

Future research should look at fidelity of implementation more closely. Having a tape recorder near the driver to record comments, corrections, and greeting students by name would provide more information then could be gathered by having a data collector positioned in the back seat of the bus. Also, it may be of interest to mount the dB meter in the ceiling at the center of the bus in order to reduce situation specific noise variability.

The secondary research question, 'Is there a functional relationship between use of the bPBS program and number of student office discipline referrals given out between 8:30 AM and 11:00 AM of the school day as measured by office discipline referrals?' was not answered. There was only 1 ODR recorded in baseline and 1 ODR recorded in the intervention phase across all 4 bus routes. This provided too little information from which to draw any relevant conclusions. Future research should target schools that experience high numbers of ODRs in the morning. Being able to show that a more calm

and predictable environment on the bus ride to school will lead to better outcomes for

students as they begin their school day, may increase administrative interest in bPBS.

APPENDIX A

A SCHOOL-WIDE EVALUATION TOOL

School-wide Evaluation Tool
(SET)

Overview

Purpose of the SET

The School-wide Evaluation Tool (SET) is designed to assess and evaluate the critical features of school-wide effective behavior support across each academic school year. The SET results are used to:

1. assess features that are in place,
2. determine annual goals for school-wide effective behavior support,
3. evaluate on-going efforts toward school-wide behavior support,
4. design and revise procedures as needed, and
5. compare efforts toward school-wide effective behavior support from year to year.

Information necessary for this assessment tool is gathered through multiple sources including review of permanent products, observations, and staff (minimum of 10) and student (minimum of 15) interviews or surveys. There are multiple steps for gathering all of the necessary information. The first step is to identify someone at the school as the contact person. This person will be asked to collect each of the available products listed below and to identify a time for the SET data collector to preview the products and set up observations and interview/survey opportunities. Once the process for collecting the necessary data is established, reviewing the data and scoring the SET averages takes two to three hours.

Products to Collect

1. _____ Discipline handbook
2. _____ School improvement plan goals
3. _____   Annual Action Plan for meeting school-wide behavior support

         goals

4. _____ Social skills instructional materials/ implementation time line
5. _____ Behavioral incident summaries or reports (e.g., office referrals, suspensions, expulsions)
6. _____ Office discipline referral form(s)
7. _____ Other related information

Using SET Results

The results of the SET will provide schools with a measure of the proportion of features that are 1) not targeted or started, 2) in the planning phase, and 3) in the implementation/ maintenance phases of development toward a systems approach to school-wide effective behavior support. The SET is designed to provide trend lines of improvement and sustainability over time.

School-wide Evaluation Tool
(SET)

Implementation Guide

School _____   **Date** _____

District _____   **State** _____ _____

Step 1: Make Initial Contact

A. Identify school contact person & give overview of SET page with the list of products needed.
B. Ask when they may be able to have the products gathered. Approximate date: _____.
C. Get names, phone #'s, email address & record below.

Name_____ Phone_____

Email _____

Products to Collect

1. _____   Discipline handbook
2. _____   School improvement plan goals
3. _____   Annual Action Plan for meeting school-wide behavior support goals

4. _____   Social skills instructional materials/ implementation time line
5. _____   Behavioral incident summaries or reports (e.g., office referrals, suspensions, expulsions)
6. _____   Office discipline referral form(s)
7. _____   Other related information

Step 2: Confirm the Date to Conduct the SET

A. Confirm meeting date with the contact person for conducting an administrator interview, taking a tour of the school while conducting student & staff interviews, & for reviewing the products. Meeting date & time: _____

Step 3: Conduct the SET

A. Conduct administrator interview.
B. Tour school to conduct observations of posted school rules & randomly selected staff (minimum of 10) and student (minimum of 15) interviews.
C. Review products & score SET.

Step 4: Summarize and Report the Results

School-wide Evaluation Tool
(SET)
Scoring Guide

School _____   Date _____

District _____   State _____

Pre _____   Post _____   SET data collector _____

Feature	*Evaluation Question*	Data Source (circle sources used) P= product; I= interview; O= observation	Score: 0-2
A. Expectations Defined	1. Is there documentation that staff has agreed to 5 or fewer positively stated school rules/ behavioral expectations? (0=no; 1= too many/negatively focused; 2 = yes)	Discipline handbook, Instructional materials P Other _____	
	2. Are the agreed upon rules & expectations publicly posted in 8 of 10 locations? (See interview & observation form for selection of locations). (0= 0-4; 1= 5-7; 2= 8-10)	Wall posters O Other _____	
B. Behavioral Expectations Taught	1. Is there a documented system for teaching behavioral expectations to students on an annual basis? (0= no; 1 = states that teaching will occur; 2= yes)	Lesson plan books, Instructional materials P Other _____	
	2. Do 90% of the staff asked state that teaching of behavioral expectations to students has occurred this year? (0= 0-50%; 1= 51-89%; 2=90%-100%)	Interviews I Other _____	
	3. Do 90% of team members asked state that the school-wide program has been taught/reviewed with staff on an annual basis? (0= 0-50%; 1= 51-89%; 2=90%-100%)	Interviews I Other _____	
	4. Can at least 70% of 15 or more students state 67% of the school rules? (0= 0-50%; 1= 51-69%; 2= 70-100%)	Interviews I Other _____	
	5. Can 90% or more of the staff asked list 67% of the school rules? (0= 0-50%; 1= 51-89%; 2=90%-100%)	Interviews I Other _____	
C. On-going System for Rewarding Behavioral Expectations	1. Is there a documented system for rewarding student behavior? (0= no; 1= states to acknowledge, but not how; 2= yes)	Instructional materials, Lesson Plans, Interviews P Other _____	
	2. Do 50% or more students asked indicate they have received a reward (other than verbal praise) for expected behaviors over the past two months? (0= 0-25%; 1= 26-49%; 2= 50-100%)	Interviews I Other _____	
	3. Do 90% of staff asked indicate they have delivered a reward (other than verbal praise) to students for expected behavior over the past two months? (0= 0-50%; 1= 51-89%; 2= 90-100%)	Interviews I Other _____	
D. System for Responding to Behavioral Violations	1. Is there a documented system for dealing with and reporting specific behavioral violations? (0= no; 1= states to document; but not how; 2 = yes)	Discipline handbook, Instructional materials P Other _____	
	2. Do 90% of staff asked agree with administration on what problems are office-managed and what problems are classroom–managed? (0= 0-50%; 1= 51-89%; 2= 90-100%)	Interviews I Other _____	
	3. Is the documented crisis plan for responding to extreme dangerous situations readily available in 6 of 7 locations? (0= 0-3; 1= 4-5; 2= 6-7)	Walls O Other _____	
	4. Do 90% of staff asked agree with administration on the procedure for handling extreme emergencies (stranger in building with a weapon)? (0= 0-50%; 1= 51-89%; 2= 90-100%)	Interviews I Other _____	

Feature	*Evaluation Question*	Data Source (circle sources used) P= product; I= interview; O= observation		Score: 0-2
E. **Monitoring &** **Decision-Making**	1. Does the discipline referral form list (a) student/grade, (b) date, (c) time, (d) referring staff, (e) problem behavior, (f) location, (g) persons involved, (h) probable motivation, & (i) administrative decision? (0=0-3 items; 1= 4-6 items; 2= 7-9 items)	Referral form (circle items present on the referral form)	P	
	2. Can the administrator clearly define a system for collecting & summarizing discipline referrals (computer software, data entry time)? (0=no; 1= referrals are collected; 2= yes)	Interview Other _____	I	
	3. Does the administrator report that the team provides discipline data summary reports to the staff at least three times/year? (0= no; 1= 1-2 times/yr.; 2= 3 or more times/yr)	Interview Other _____	I	
	4. Do 90% of team members asked report that discipline data is used for making decisions in designing, implementing, and revising school-wide effective behavior support efforts? (0= 0-50%; 1= 51-89%; 2= 90-100%)	Interviews Other _____	I	
F. **Management**	1. Does the school improvement plan list improving behavior support systems as one of the top 3 school improvement plan goals? (0= no; 1= 4th or lower priority; 2 = 1st- 3rd priority)	School Improvement Plan, Interview Other _____	P I	
	2. Can 90% of staff asked report that there is a school-wide team established to address behavior support systems in the school? (0= 0-50%; 1= 51-89%; 2= 90-100%)	Interviews Other _____	I	
	3. Does the administrator report that team membership includes representation of all staff? (0= no; 2= yes)	Interview Other _____	I	
	4. Can 90% of team members asked identify the team leader? (0= 0-50%; 1= 51-89%; 2= 90-100%)	Interviews Other _____	I	
	5. Is the administrator an active member of the school-wide behavior support team? (0= no; 1= yes, but not consistently; 2 = yes)	Interview Other _____	I	
	6. Does the administrator report that team meetings occur at least monthly? (0=no team meeting; 1=less often than monthly; 2= at least monthly)	Interview Other _____	I	
	7. Does the administrator report that the team reports progress to the staff at least four times per year? (0=no; 1= less than 4 times per year; 2= yes)	Interview Other _____	I	
	8. Does the team have an action plan with specific goals that is less than one year old? (0=no; 2=yes)	Annual Plan, calendar Other _____	p	
G. **District-Level** **Support**	1. Does the school budget contain an allocated amount of money for building and maintaining school-wide behavioral support? (0= no; 2= yes)	Interview Other _____	I	
	2. Can the administrator identify an out-of-school liaison in the district or state? (0= no; 2=yes)	Interview Other _____	I	
Summary **Scores:**	A = /4	B = /10	C = /6	D = /8	E = /8
	F =	G = /4	Mean = /7		

Administrator Interview Guide

Let's talk about your discipline system
1) Do you collect and summarize office discipline referral information? Yes   No   If no, skip to #4.
2) What system do you use for collecting and summarizing office discipline referrals? (E2)
   a) What data do you collect? _____
   b) Who collects and enters the data? _____
3) What do you do with the office discipline referral information? (E3)
   a) Who looks at the data? _____
   b) How often do you share it with other staff? _____
4) What type of problems do you expect teachers to refer to the office rather than handling in the classroom/ specific setting? (D2)

5) What is the procedure for handling extreme emergencies in the building (i.e. stranger with a gun)? (D4)

Let's talk about your school rules or motto
6) Do you have school rules or a motto? Yes   No   If no, skip to # 10.
7) How many are there? _____
8) What are the rules/motto? (B4, B5)

9) What are they called? (B4, B5)

10) Do you acknowledge students for doing well socially? Yes   No   If no, skip to # 12.

11) What are the social acknowledgements/ activities/ routines called (student of month, positive referral, letter home, stickers, high 5's)? (C2, C3)

Do you have a team that addresses school-wide discipline? If no, skip to # 19
12) Has the team taught/reviewed the school-wide program with staff this year? (B3)   Yes   No
13) Is your school-wide team representative of your school staff? (F3) Yes   No
14) Are you on the team? (F5) Yes   No
15) How often does the team meet? (F6) _____
16) Do you attend team meetings consistently? (F5) Yes   No
17) Who is your team leader/facilitator? (F4) _____
18) Does the team provide updates to faculty on activities & data summaries? (E3, F7) Yes   No
    If yes, how often? _____
19) Do you have an out-of-school liaison in the state or district to support you on positive behavior support systems development? (G2) Yes   No
    If yes, who? _____
20) What are your top 3 school improvement goals? (F1)

21) Does the school budget contain an allocated amount of money for building and maintaining school-wide behavioral support? (G1) Yes   No

Additional Interviews

In addition to the administrator interview questions there are questions for Behavior Support Team members, staff and students. ***Interviews can be completed during the school tour.*** Randomly select students and staff as you walk through the school. Use this page as a reference for all other interview questions. Use the interview and observation form to record student, staff, and team member responses.

Staff Interview Questions
Interview a minimum of 10 staff

1) What are the _____ (school rules, high 5's, 3 bee's)? (B5)
   (Define what the acronym means)

2) Have you taught the school rules/behavioral expectations this year? (B2)

3) Have you given out any _____ since _____? (C3)
   (rewards for appropriate behavior)   (2 months ago)

4) What types of student problems do you or would you refer to the office? (D2)

5) What is the procedure for dealing with a stranger with a gun? (D4)

6) Is there a school-wide team that addresses behavioral support in your building?

7) Are you on the team?

Team Member Interview Questions

1) Does your team use discipline data to make decisions? (E4)

2) Has your team taught/reviewed the school-wide program with staff this year? (B3)

3) Who is the team leader/facilitator? (F4)

Student interview Questions
Interview a minimum of 15 students

1) What are the _____ (school rules, high 5's, 3 bee's)? (B4)
   (Define what the acronym means.)

2) Have you received a _____ since _____? (C2)
   (reward for appropriate behavior)   (2 months ago)

APPENDIX B

DATA COLLECTION TOOLS

Driver   Door

Zone 3   Zone 4

Zone 1   Zone 2

DC sits here
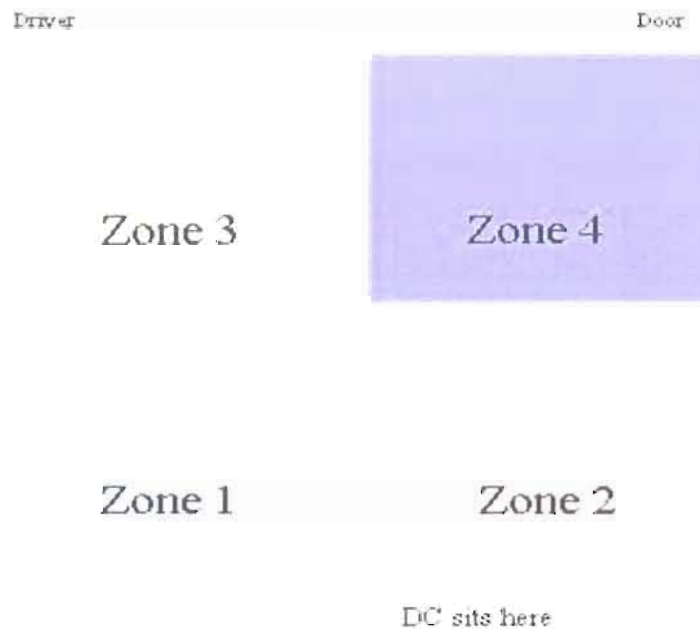
Directions for using decibel meter

At start of ride

1   Attach microphone to shoulder closest to aisle
2   Use penny to remove backing
3.   Press on/off button firmly—look for scrolling message
4   Just before you start your intervals, press the run/pause
        button on bottom left of meter
5   Replace cover using penny
6.   Begin tape recorder and interval recording

At end of ride

Immediately after interval recording has ended:

1   Open case with penny
2   Push run/pause button on bottom left
3.   Push large center button (looks like an arrow pointing left)
4.   Record dBA LAVG on your data sheet
5.   Push Esc button on bottom right
6.   Hold down reset button—upper far left solid black button—for
        5 seconds (make sure you see it count down to zero)
7.   Turn meter off by pushing the on/off button on bottom right
        and hold as it counts down from five to zero.
8.   Replace cover using penny
9   Return meter to inner zipped pocket of 'bus bag'

Definitions for Data Collectors:

- *Unsafe body position* will include a student having 50% or more of their bottom off the bus seat. Examples of this include standing up, kneeling on the seat, or being turned around in seat from more than the neck down. It will also be recorded as unsafe if a minimum of one arm (from shoulder to fingertips) or one leg (mid thigh to shoe) is in the aisle of the bus. The aisle will be defined as any space that is beyond the outer edge of the bus seat which the child is sitting. Waving with one hand or putting a single foot into the aisle will not be considered to be an unsafe body position. If a single student has either both hands (from elbows down to fingers), or both shoes in the aisle it will be marked as unsafe body position behavior.

- *Student non-compliance with the bus driver* will be recorded when a student defies the bus driver's direct request by failing to initiate compliance with the adult request within 5 seconds. Examples include a student staying seated for 5 or more seconds after the driver has asked him or her to move closer to the front of the bus. A non-example would be if an adult asked the student to return to their seat and sit down, and the student began to walk in the direction of his or her seat within 4 seconds of being told to.

- *Student using disrespectful language* will include a student who uses words or physical motions that are inappropriate due to sexual content, or phrases which contain (but are not limited to) the words damn and hell. Phrases containing any words generally considered more offensive then damn and hell are also counted as obscene. Usage of the words darn or heck will not be recorded as obscene. Obscene gestures will include any physical movements (such as holding up a middle finger) which convey to another person one or more of the words or phrases previously defined as obscene. Shaking of a fist will not be considered to be a target behavior in this category.

- *Aggression* will be defined as any physical contact with another student that is hostile. Examples of this behavior include; pushing and shoving, kicking, biting, poking, bumping, or scratching another rider, and hitting with an open hand, fist, or blunt object such as a backpack or book. Non examples would include shaking hands, patting on the back, slipping and falling into another student, or getting pushed into another student.

PBS on the Bus Observation Form

Bus #: _____   Data collector: _____   Reliability: _____ % N/A   Driver Sub: Yes   No

Date: _____   Start Time: _____ End Time: _____ Other (holiday etc.) _____   LAVG (dB₃): _____

Interval	A Problem Behavior was Observed	Unsafe body position	Non compliance with driver	Student used disrespectful language	Aggression	Interval	A Problem Behavior was observed	Unsafe body position	Non compliance with driver	Student used disrespectful language	Aggression
1						31					
2						32					
3 Zone 1						33 Zone 2					
4						34					
5						35					
6						36					
7						37					
8						38					
9 Zone 2						39 Zone 3					
10						40					
11						41					
12						42					
13						43					
14						44					
15						45 Zone 4					
16 Zone 3						46					
17						47					
18						48					
19						49					
20						50					
21						51 Zone 1					
22 Zone 4						52					
23						53					
24						54					
25						55					
26						56					
27 Zone 1						57 Zone 2					
28						58					
29						59					
30						60					
Total	30					Total	30				

Interval	A Problem Behavior was Observed	Unsafe body position	Non compliance with driver	Student used disrespectful language	Aggression	Interval	A Problem Behavior was observed	Unsafe body position	Non compliance with driver	Student used disrespectful language	Aggression
61						91					
62						92					
63 Zone 3						93 Zone 4					
64						94					
65						95					
66						96					
67						97					
68						98					
69 Zone 4						99 Zone 1					
70						100					
71						101					
72						102					
73						103					
74						104					
75 Zone 1						105 Zone 2					
76						106					
77						107					
78						108					
79						109					
80						110					
81						111 Zone 3					
82 Zone 2						112					
83						113					
84						114					
85						115					
86						116					
87						117					
88 Zone 3						118 Zone 4					
89						119					
90						120					
Total	30					Total	30				

% of intervals in which problem behavior was observed = # of intervals observed 120 x 100

_____ / 120 x 100 = _____ %

APPENDIX C

PBS BUS RIDING PROGRAM FOR DRIVERS

PBS Bus Riding Program

A Training Outline for a 1.5 Hour Bus Driver Workshop

Introductions...

1. Let's go around the group and introduce ourselves

2. I have a short activity that is designed to get us all thinking about the topic of this training; student behavior on the school bus (hand out the one-sheet entitled: Here's Where I Get to Share...).

3. Now that you've thought about and responded to those questions, let's discuss some of the things that you wrote. *The trainer will use this time to identify common themes, concerns, frustrations, and rules which will be addressed later on in the training.

The purpose of this training is....

o To teach you how to use a specific, research based behavior program to help manage rider behavior on the school bus that you drive. It is the intent of this training to help you make your ride not only as safe as it can be but also more pleasant for you and the children who ride your bus.

During this in-classroom training you will...

o Learn about a behavior program called Positive Behavior Support which was developed a few years ago to help control student behavior on school grounds. It is currently being used in all classrooms, the lunch room, and the playgrounds at the elementary schools where you pick up students. Expanding it to include the school bus is a logical 'next step'.

o Be given explicit instruction in how to implement this PBS bus program on *your* school bus.

o Be given all of the materials that you will need to get the program not only up and running, but also sustained across the school year.

Later there will be a second training which will occur mostly on the school bus...

- o The trainer will teach bPBS to the students who ride your bus. The trainer will also ride with you several times, providing encouragement and feedback until you feel comfortable running the program on your own.

- o Initially the trainer will also act as a liaison between you and the school, making sure that the bPBS rewards and consequences you give to the students are honored and addressed appropriately within the school building.

Here's Where I Get to Share My Experiences, Frustrations,
and Successes With the Group…

The most frustrating behavior that I have to deal with on the bus is…

These are some things I do to keep problem behavior from happening…

Things that work for me when I have to deal with problem behavior on the bus are…

Things that don't work for me when dealing with problem behavior on the bus are…

If I could have four rules for students who ride the bus they would be…

1.

2.

3.

4.

If I had a magic wand I would…

_____

_____

_____

_____

_____

Let's Get Started

What is Positive Behavior Support?

Positive Behavior Support (PBS) is a behavior program that strives to create a predictable environment across school settings for all students. By predictable, we mean that the rules and expectations are essentially the same across all settings and students are explicitly taught what these rules are. Student in a PBS system should be able to clearly state the rules when asked, and also be able to describe what they would look like in a particular setting. An important part of any PBS system involves recognizing the student when they are doing the right thing. This often requires practice on the part of the teacher, educational assistant, or bus driver. We want to practice giving students feedback for making some good choices as opposed to what many of us do, and that is to only give recognition to a child when they do the wrong thing (it's easier, takes less time in the short run, and sometimes reflects the way we were raised).

Just as important as recognizing students when they do the right thing, is making sure that you have a plan for when they do the wrong thing. This program will provide you with a continuum of punishments that start out being very mild. In order for the program to work, you will need to give out the mild punishments when you see a child doing the wrong thing. This might seem a little uncomfortable to you at first, but if you do it from the start and with consistency, then the number of students' punishable behaviors will drop as soon as you teach them that 'you mean business!'

Now that you have an understanding of the basic PBS system, we will move to a more direct focus on where you work; the school bus. The schools that you serve all have PBS in place within their buildings. This will make it much easier for you to implement PBS on your bus because you will find that your student riders already speak the PBS language – essentially you will be the one who is learning something new, not the students. Also, because the schools are using PBS, they have an established system of rewarding appropriate behavior and punishing inappropriate behavior. We will be using their system on the bus.

Outline for training

1. Define terms:

   a. Be safe
   b. Be respectful
   c. Be responsible

2. Describe the bPBS program in detail:

   a. Greet student by name
   b. Give out 3-5 positive slips per ride
   c. Use the interior lights to control noise level
   d. Know the consequences and their appropriate use in order of least severe to most severe

First...

Why don't we begin by defining and agreeing upon the most important bus expectations?

For most of you these expectations have already been well established by the

transportation department and what we are really about to do is reword them to fit within the bPBS program.

Positive Behavior Support typical uses the following three positively stated expectations:

1. Be Safe
2. Be Respectful
3. Be Responsible

Under these three headings, the building staff is able to place some specifics about what these will look like in say the cafeteria or on the playground. For example on the playground, 'be safe' might include staying within the boundary of the play area but in the cafeteria 'be safe' might include walking at all times. It is important that these expectations are clearly stated, explained, and understood by the students. It is equally important that students are not overwhelmed with an extensive list of expectations. It is best to create a few important ones that they can be successful with, rather than offer a long list that will be difficult even for the most willing and compliant child to manage.

Safe Behavior:

What does 'Be Safe' on the school bus look like? Many of you have said that it should include the following:

1. Follow driver directions
2. Remain seated while the bus is moving keeping body parts and objects (such as backpacks) inside the seat area at all times.
3. Keep noise level down

Here we will spend some time on what specifically is expected of the riders under 'Be Safe'.

1. __Follow driver directions__: the student will begin to comply with the adult request within 5 seconds. Examples include a student who begins to move from a chosen seat to an assigned seat within 5 seconds of being told to by the driver. A non-example would include a student who crosses the street behind the bus rather than in front of the bus as the driver had directed.

2. __Remain seated while the bus is moving keeping body parts and objects inside the seat area at all times__: The student will keep 50% or more of their bottom on the seat at all times. Hands, feet, and objects must remain in the seating area. An example of this would include a student who sits near an open window but does not put his hands or objects out of the window. A non-example would include a student who has her feet in the aisle.

3. __Noise Level__: Noise level must be kept low enough for the driver to hear emergency sirens, horns honking, or train whistles outside the bus. The driver also needs to be able to hear a rider who is calling out for help. Examples of an acceptable noise level include a level where the driver can hear a student who calls out from the last seat of the bus. A non-example is having the bus interior so loud that the driver doesn't hear an ambulance that is trying to pass around from behind the bus.

Respectful Behavior is behavior that contributes to a positive social and emotional environment during the bus ride. What does it mean to ask the student to 'Be Respectful' on the bus?

1. Use appropriate language with driver and peers
2. Comply with driver request in a timely fashion

Specifically:

1. Appropriate Language: Rider will use only language and gestures that are not obscene. An example of appropriate language is 'what the heck are you doing? An example of inappropriate language (also known as a non-example) would be 'oh yeah, well you're full of s_ _t'. A second example of inappropriate language would be 'well that's a damn lie'.

2. Comply with Driver Requests: The rider will begin to comply with driver requests within 5 seconds. Examples include a student who begins to move from a chosen seat to an assigned seat within 5 seconds of being told to by the driver. A non-example would include a student who crosses the street behind the bus rather than in front of the bus as the driver had directed.

Responsible Behavior: The rider will take care of their seating area and the bus in general while keeping in mind the needs of other riders. What does it mean to ask the student to 'Be Responsible' on the bus?

1. Be on Time
2. Keep the Bus Clean
3. Open and Close Windows with Driver Permission

Specifically:

4. Be on time: The rider will board the bus in a timely fashion in order to help everyone be on time. An example is that the student will be waiting at the bus stop and ready to board when the bus pulls up. A non-example would include a student running to catch the bus after it has already pulled away from the stop.

5. Keep the Bus Clean: The student will keep their bus area clean of all paper, wrappers, or trash. The student will also be careful with things like windows and seatbacks so as to keep them undamaged. An example of this would be a student who stops to pick up a piece of crumpled note-book paper as they are exiting the bus. A non –example would be a student who uses a pen to write on the back of the seat in front of them.

6. Open and Close Windows with Driver Permission: Students will request permission from the driver before opening OR closing the windows. An example would be on a

moving bus with the window open a student asks the driver if he has permission to reach up and close the window. A non-example would be on a stopped bus the student reaches up and opens the window without saying anything to the driver.

Now that we are clear and in agreement on what the bus rules are under Be Safe, Be Respectful, and Be Responsible we will move on to the specifics of the bPBS strategies.

bPBS Strategies:

1. Social: greet student by name
2. Positive Recognition: give out 3-5 positive slips per ride
3. Consequences: know the consequences and their appropriate use in order of least severe to most severe

Specifically:

1. Social: Greet student by name as they board or exit the bus. Example student boards the bus and the driver looks up and says 'hey Jeff, how's it going?' or 'good morning Jeff'. A non-example would be driver looking at the student and saying, 'hey there' or 'good morning'.

2. Positive Recognition: Driver is asked to give out 3-5 positive slips on every ride. These slips are provided by the school and can be used inside the school building.

This will be coordinated by the researcher. An example of positive recognition is as the selected student exits the bus on the afternoon route, the driver stops the child, tells them they did a good job staying seated today and hands them a positive slip. Or the driver says, 'I really appreciate how you kept your hands and your feet to yourself today, Jeff and hands him a positive slip. A non-example would be the driver handing a slip to Jeff as he exits the bus and saying, 'thanks Jeff'.

3. Consequences:

a. A Bus Incident Report will go to the principal and the punishment will be a phone call home from the principal plus the student will be called to the principal's office.

> When to use a bus incident report: When a child does not follow one or more rules under - be safe, be respectful, and be responsible. For example if the child does not begin to comply with the driver's request in 5 seconds or less, the driver can hand that child a bus incident report (BIR) on their way off the bus and explain it is because they did not begin to follow their directions within 5 seconds. Some districts find this easier to implement if

you allow the student one or two warnings first and then on the third (three

strikes you're out) the student automatically receives a BIR.

b. <u>A Bus Warning</u> will result in all riders on that particular route getting assigned

seats during the next ride home. Only one slip needs to be written to cover the

whole bus. The driver keeps the slip because he/she will be the one assigning

seats the next afternoon.

<u>When to use a Bus Warning:</u> when you feel that the students as a group

were completely uncontrollable, loud, and not respectful of your requests.

For example if you needed to turn on the interior lights to signal that they

were too loud and they did not get quiet within 10 seconds, that would

warrant a bus warning.

c. <u>A Conduct Report:</u> A conduct report is issued by the driver for major infractions

such as fighting or threat of bodily harm to self or others, possession of weapons,

possession of alcohol or other illegal drugs. A conduct report should also be issued to a

child who has received more than 3 Bus Incident Reports.

a. The first conduct report results in a written warning that goes to the principal and
   parents. The child will be kept off the bus for 1 day.

b. The second conduct report results in a 5 school day suspension from the bus.

c. The third conduct report results in a 10 school day suspension from the bus.

d. The fourth conduct report results in removal from the bus for the remainder of the school year.

Here are Examples of the Materials You Will be Using

1. Show driver an All Star, or whatever the tangible reward is that the school and transportation have decided upon. Ask driver to give examples of when it would be appropriate to give this out.

2. Show driver the Bus Incident Report and go over in detail when and how to use it. Ask driver to provide some examples of when he/she would use it.

3. Here are some things that surprised us, but seemed to make a difference to rider behavior…

   a. After all students have boarded, the driver walks down the aisle to the back of the bus. During this walk he or she is generally pleasant and welcoming to the students and shows concern by making suggestions for safe riding. For

example, telling students to scoot in or move their backpacks to their laps rather than having them on the seat next to them or on the floor.

b. On a bus that is not full, having all students move to the front half of the bus. This gives the driver a much better chance of managing behaviors when students are closer in.

c. Encouraging students to sit two to a seat. Three to a seat (plus backpacks) was almost impossible, even for the Kinders, to keep their arms, feet, and torsos out of the aisle. So reducing it to two students made it much more likely that they would all be able to stay in a safe position behind the barrier.

d. Another benefit of two to a seat (instead of one) was that it gave the students someone to talk to. A student who began the ride as one in a seat, very often started looking around for a friend 10 minutes into the ride. This caused a problem because they could not see over the back of the seat either in front of them or behind them. This meant that in order to speak with a friend that student would have to either stand up to see over the barrier, or lean into the aisle to see and hear other students. Either of these body positions was considered unsafe rider behavior.

Allow time (approximately 10 minutes) for questions, answers, and discussion.

APPENDIX D

PBS BUS RIDING PROGRAM FOR STUDENTS

Training the Students on the Bus

This should be a ten minute training with principal, driver, and trainer present.

1. Make sure that someone (maybe the dispatcher in transportation or a person from the school office) has called parents to let them know that their children will be arriving at their stops approximately ten minutes later than usual due to this important safety training on the school bus.

2. Allow all students to board before beginning the training.

3. The principal greets the students first and then introduces the trainer and provides a brief statement about a new bus riding program that the school is going to start. He takes a moment to reassure the students that their parents or guardians have been notified that the bus will be late today.

4. The trainer greets the students and then explains that today we will be learning about being safe on the bus.

Here is what the trainer tells the students: It is important that students stay safely seated because we all care about you and don't want anyone to get hurt while riding the school bus. At this point the trainer asks students if they know what the school rules are. Many children will be able to say; be safe, be respectful, and be responsible. The trainer will

praise them for knowing these and will then explain how those school rules will now also be in effect on the school bus. The trainer will first cover the definitions of the 3 B's on the bus (these can be found in the driver training curriculum). Then the trainer will describe what those look like on the bus. The trainer will ask for volunteers to demonstrate what safe behavior looks like when in your seat (it can be advantageous to direct this request to an older student who seems particularly bored with the whole training and ask him/her to demonstrate this 'for the younger students'). The trainer will also ask for volunteers to demonstrate unsafe rider behavior. Students usually enjoy this part and it can be a fun activity. It is usually best to ask a younger student to do this demonstration. Continue with this activity until you have provided at least one example and one non-example of each of the bus rider expectations. You will have to move quickly through these because it is difficult to hold their attention at the end of the day when they are anxious to go home.

After you have covered the three Bus B's, you will move on to describe the rewards and consequences. The rewards will be fairly straight forward because students will be pretty familiar with them from the building. The consequences on the bus are different from what's in the building, so these will take a bit more time. You will need to be clear about compliance within 5 seconds of a driver request, and how 3 driver requests will earn the rider a Bus Incident Report (BIR). Give other examples of when a BIR will be earned. Explain what will happen with a Bus Incident Report – that the principal will be notified,

the student will be called to the office, and the principal will place a call home to let them know what happened. Briefly explain the conduct report and when that is activated and what will happen if it is. It is best not to dwell on this or threaten them with it; your goal is to simply let students know about the full continuum of consequences.

At the end of the training you may want to reward several students with All Stars for 'paying attention', 'helping us with an excellent demonstration', or other relevant and specifically stated reason. If a student says, "what about me?" this is an excellent time to model for the driver how to deal with that. You say, "I didn't see you today, but keep up the good work because you never know when it may be your turn."

At the end of the training, the principal will exit the bus, the driver will start the engine, and the trainer will slide into the seat directly behind the driver. At this point the trainer becomes an on-board coach for the driver. You will help the driver by scanning across the students using the driver's mirror. If you notice a student being unsafe and the driver doesn't, you should quietly mention to the driver that you see one student standing, or in the aisle etc. Give them time to look – it might take several minutes depending upon driving conditions. Once the driver looks and tells the student to sit down, you should continue to watch to see if the student complies within 5 seconds. If they do not, gently prompt the driver again by saying that the student is still standing after the 5 second rule. What you will find in the coaching piece is that you will spend much of your time

training the driver to pay attention to all of the rule infractions. This can be a challenge especially if the driver has become comfortable with unsafe behavior that is not necessarily disruptive to their driving. The drivers will need to be reminded about the behavior and prompted to provide an immediate consequence to the student.

Recognizing and praising desired behavior is often a new skill for drivers. Drivers are busy keeping the bus on the road, so as a general rule they are not accustomed to praising students for doing the right thing. It is important that they learn this skill from the coach if they are having a difficult time doing it on their own. It is also very important that they learn the correct wording for giving out the All Star or other positive. You may need to suggest that they reward a student who is typically a challenge for them. As that student gets up to exit the bus you can suggest to the driver that they say, "Jimmy, you did a very good job of keeping your backpack out of the aisle today. Here's an All Star for you to use at school". What you are trying to discourage drivers from doing are saying things like 'good job' or 'thanks' when giving out an All Star. These comments are not specific enough and the student doesn't know what they got it for. Drivers report that this coaching is helpful for them. On-board coaching should continue for a minimum of 3 rides, or until you feel that the driver is using bPBS with fluency.

APPENDIX E

DRIVER AND STUDENT REFRESHER TRAINING

Refresher Training for Students on the Bus

This should be a five minute training with the driver, and trainer present.

1. Make sure that someone (maybe the dispatcher in transportation or a person from the school office) has called parents to let them know that their children will be arriving at their stops approximately five minutes later than usual due to this important safety training on the school bus.

2. Allow all students to board before beginning the training.

3. The driver greets the students and reminds them that they are doing refresher training for safe bus riding.

4. The trainer lets the driver conduct the training and helps out as needed.

Here is what the driver tells the students: It is important that you stay safely seated because I care about you and I don't want anyone to get hurt while riding my school bus. The driver will quickly cover the 3 Bus B's to remind the students what he/she is expecting in their behavior. If one area has been a particular problem, the driver may use their discretion and cover that expectation a little more detail.

Tell them that you are looking for 5 riders per day to earn the rewards. Also remind them of the continuum of consequences.
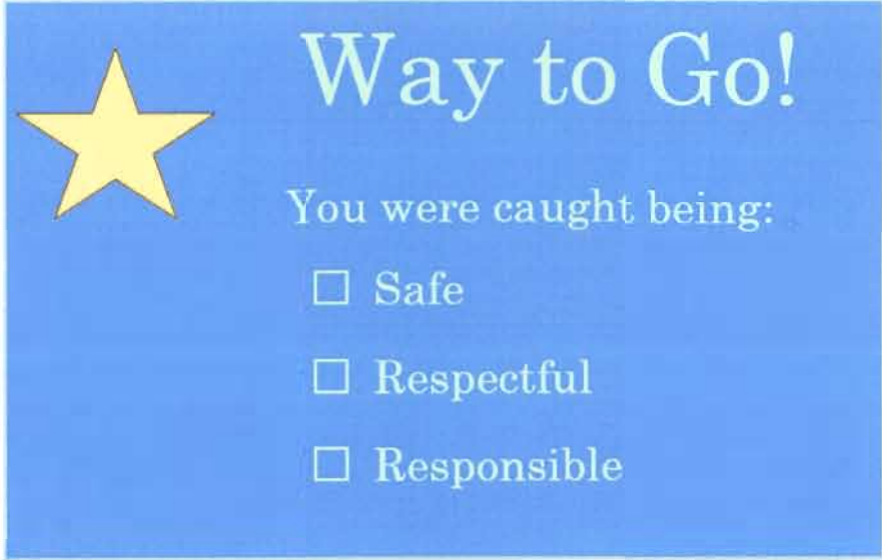
At the end of the training you may want to reward several students with All Stars for 'paying attention', 'helping us with an excellent demonstration', or other relevant and specifically stated reason.

On this day the trainer can stay behind the driver and act as a coach for this ride. Be sure to praise the driver for using the program effectively and making suggestions in areas that are weak. One coaching session should be sufficient for the refresher. However if you feel that another coaching session would be helpful, feel free to continue the following day.

APPENDIX F

'ALL STAR' & BUS INCIDENT REPORT

All Star

Bus Incident Report

Name of Student: _____

Name of Driver:
Sub? Y/N: _____

Date/ Time: _____

Bus Number: _____

Student was not:

□ Safe
□ Respectful
□ Responsible

Because the student:

□ did not follow driver directions
□ did not remain seated while bus was moving
□ did not keep noise level down

□ did not use appropriate language with driver or peers
□ did not comply with driver request within 10 seconds

□ was not on time for the bus
□ did not keep the bus clean
□ opened or closed bus window without driver permission

Signed: _____ Date: _____

APPENDIX G

LETTER OF INFORMATION FOR DRIVERS

Letter of Information for Drivers

You are invited to participate in a research study conducted by Louise Bronaugh, a doctoral student in school psychology at the University of Oregon. Through this study, we will learn more about how to predict, manage, and prevent unwanted student bus rider behaviors on the school bus. The purpose of this study is to implement a behavior program for students who ride the school bus and figure out how well it works. The results may help the 4J transportation department and many others across the US, to manage student bus rider behavior while traveling between home and school each day.

The research will directly contribute to my doctoral dissertation, which I am completing under the supervision of Dr. Rob Horner, a well-regarded expert in positive behavior support in schools.

If you decide to participate, we will provide you with a 1.5 hour training on how to use the Positive Behavior Support Bus Riding Program.

Data collectors will ride your bus every day for approximately 12-16 weeks. They will be sitting in the back in order to have the best view of all children. They will be recording certain target behaviors that they see the riders do (for example, is rider out of seat while the bus is moving?). They will not be recording any identifying information about the riders. They will also be measuring decibel level in the bus. This only tells us how loud it is, not what words were actually said. They will also be monitoring how easily and effectively you are able to use the PBS Bus Riding Program.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law.

If you have any questions, please feel free to contact me at (541) 513-XXXX or Rob Horner, at (541) 346-XXXX. Your calls and their content will be kept strictly confidential. Dr. Horner has an office at Educational and Community Supports, 1761 Alder, Eugene, OR 97403-5208. If you have questions regarding your rights as a research participant, contact the Office of Human Subjects Compliance, University of Oregon, Eugene, OR 97403, (541) 346-2510. You will be given a copy of this form to keep.

Your signature indicates that you (a) have read and understand the information provided above, (b) are willingly agreeing to participate, (c) may withdraw your consent at any time and discontinue participation without penalty, (d) will receive a copy of this form, and (e) are not waiving any legal claims, rights or remedies.

Signature _____ _____ Date _____

Print Name _____

APPENDIX H

INSTRUCTIONS FOR USING THE NOISE LEVEL METER

Instructions for operating the noise level meter…

At beginning of ride:

1. Attach microphone to shoulder closest to the aisle
2. Use penny to remove backing from red sound level meter
3. Press on/off button firmly – display should come to life and scroll a message
4. Immediately before you begin your tape recorder for intervals, press the run/pause button on bottom left of meter.
5. Replace cover using penny
6. Begin tape recorder and interval recording

Immediately after interval recording has ended:

1. Open case using penny
2. Push the run/pause button on bottom left
3. Push large center button (looks like an arrow pointing to left)
4. Record dBA LAVG on your data sheet
5. Push Esc button on bottom right
6. Hold down reset button – upper far left solid black button – for 5 seconds
7. After session has reset to zero, turn meter off by pushing the on/off button on bottom right **and hold** as it counts down from five to zero
8. Replace cover using penny
9. Return meter to inner zipped pocket of 'bus bag'

APPENDIX I

SOCIAL VALIDITY MEASURE

What did you think of the PBS on the Bus Behavior Program?

Please circle the one number that best describes how you feel about the statement:

1) I found it to be pretty easy (not too much time or effort required) to use the PBS program on my bus.

Strongly disagree   Strongly agree

   1   2   3   4   5   6

2) I feel that in general the problem behaviors on my bus decreased since I started using the PBS program on my bus.

Strongly disagree   Strongly agree

   1   2   3   4   5   6

3) I think that my students are now sitting correctly and safely in their seats more now than before I was using the PBS program.

Strongly disagree   Strongly agree

   1   2   3   4   5   6

4) I would recommend that other bus drivers use the PBS Bus program with their Elementary School routes.

Strongly disagree   Strongly agree

   1   2   3   4   5   6

5) I think that overall, using this PBS program has increased good behavior on my bus.

Strongly disagree   Strongly agree

   1   2   3   4   5   6

6) Please list any specific concerns or comments you would like to make:

_____

_____

_____

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