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LOYOLA UNIVERSITY CHICAGO

HIGH SCHOOL TEACHER ATTITUDES TOWARD IMPLEMENTING

POSITIVE BEHAVIOR SUPPORT SYSTEMS

A DISSERTATION SUBMITTED TO

THE FACULTY OF THE GRADUATE SCHOOL

IN CANDIDACY FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

PROGRAM IN SCHOOL PSYCHOLOGY

BY

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CHICAGO, ILLINOIS

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I would like to thank all my family and friends who supported me throughout this project – for I would not be where I am today without them. I would also like to thank my many mentors throughout the years, who have guided me both in my career and in my research.

TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

Positive behavior support (PBS) is a systems change effort that entails explicitly teaching expected social behaviors and rewarding students for behaving appropriately. Additionally, PBS systems involve developing a hierarchy of consequences that are matched to the severity of behavioral infractions. While there is growing research support for the effectiveness of PBS systems in elementary and middle school settings, there is very limited research about positive behavior support implementation at the high school level. Preliminary studies suggest that teacher and staff buy-in and attitudes toward implementation practices are critical to implementation success at the high school level. Additionally, the some theoretical models imply that attitudes toward performing a behavior, social perceptions about a behavior, and perceived behavioral control in executing a given behavior impact intent to perform the behavior. The present study discusses survey results of teaching staff in eight high schools implementing positive behavior support systems. Teacher attitudes toward various PBS practices, social perceptions about practices, and control over implementing practices are examined, as well as environmental factors inhibiting PBS implementation.

CHAPTER I

INTRODUCTION

Systems change can be defined as an intentional process designed to alter the

status quo by revamping the form and function of current system structures. The aim of

systems change efforts is generally to improve the situation for key stakeholders

involved, and to make the system at hand function more effectively (Foster-Fishman,

Nowell, & Yang, 2007). Many theorists have outlined the steps necessary to attain

systems change, and several of them mention how human behavior can impact the level

of success within systems change efforts.

In his seminal article, Kotter (1995) noted eight "must-haves" for successful

systemic change efforts. Among these "must-haves," Kotter discussed how change

leaders must convince stakeholders that there is a need for change. He also mentioned

how stakeholders need to be informed of how this change will affect them positively.

Initiative activities should be communicated to stakeholders along the way, so that those

involved in the current system are aware of the changes to come. Without this constant

communication with members of the existing system, Kotter predicts that change efforts

will likely be less successful than intended or anticipated.

Adelman and Taylor (2007) similarly discuss components necessary for systems

change in schools, and again mention "people factors" that may impede systems change

efforts. Authors noted that true systems change takes place over the course of several

years, and that initial phases of change should focus solely on creating readiness within the school. Creating readiness may be likened to achieving buy-in with key stakeholders – which might include teachers, administrators, students, and parents in a school. Until key players are in agreement with the proposed change, school leaders should not move into implementation – as system change efforts will be thwarted by a lack of support from stakeholders. There are several authors within the systems change literature that detail the importance of human behavior and attitudes in affecting successful change initiatives.

The use of positive behavior support (PBS) systems is an example of a relatively recently popular systems change effort in schools. Positive behavior support systems entail teachers explicitly teaching expected social behaviors, as well as acknowledging students for exhibiting desired behaviors. This is in contrast to the historically punitive disciplinary measures used with students with severe disabilities in order to decrease problem behaviors. However, a philosophical shift led many educators to embrace more positive disciplinary practices that focused on teaching appropriate replacement behaviors, rather than punishing problem behaviors (Carr, Dunlap, Horner, Koegel, Turnbull, Sailor et al., 2002). This shift away from punitive practices toward more positive practices was a first step in systems change regarding discipline practices in school settings.

Positive behavior supports have since infiltrated the general education sphere as a prevention-oriented approach that fosters appropriate behaviors for all students (not only for students receiving special education services). Horner and Sugai (2002) described

four key components in positive behavior support systems: outcomes; systems change; data-based decision making; and effective practices. Concerning systems change, PBS focuses on building systems that allow adults to better support students. Examples of such systems include a system for operationally defining and teaching behavioral expectations, as well as for acknowledging students when they exhibit appropriate behavior. Paramount to implementing successful positive behavior supports in schools are building effective systems to support adults in implementing practices and systems to shape student behaviors. In establishing systems to support student behavior, systems change literature highlights ensuring adult buy-in prior to initiating any major changes.

The implementation of systems to support student behavior has been empirically validated in a number of elementary and middle school settings. Clearly outlining expectations, explicitly teaching expected social behaviors, and acknowledging students for behaving appropriately has resulted in fewer office discipline referrals and fewer incidents of suspension and expulsion, for example. Researchers have illustrated the effectiveness of these practices in both building-wide implementations of PBS (McCurdy, Mannella, & Eldridge, 2003; Warren, Edmonson, Griggs, Lassen, McCart, Turnbull et al., 2003) and setting-specific use of PBS practices (Franzen & Kamps, 2008; Kartub, Taylor-Greene, March, & Horner, 2000) – making these behavior support systems viable change options for schools. As the body of literature validating the use of positive behavior supports in elementary and middle school settings continues to grow, so does the knowledge base for practitioners implementing these practices.

While there has been a fair amount of research on the effectiveness of PBS systems at elementary levels, far less research has been conducted in secondary settings. Thus, far less is known about the systems change processes that must occur in secondary settings when implementing modified behavior systems. Recently, research funded by the U.S. Department of Education helped to identify some facilitators and barriers to implementation at the high school level. This preliminary research found that teacher buy-in and attitudes toward PBS practices were both critical components in successful implementation in secondary settings. Teacher attitudes around these change efforts were sometimes so influential that buildings experienced difficulty in getting PBS systems off the ground when attitudes were negative. These findings jived with the theoretical literature concerning successful systems change – in that without the support of key stakeholders, leaders of systems change efforts met many challenges.

Given that systems change authors frequently cite stakeholder beliefs as impacting change success, it is interesting to note that there is limited research regarding how teacher attitudes and beliefs affect change efforts. In a study around factors impacting implementation of new initiatives, researchers identified four key factors linked to successful initiative implementation: enthusiasm for the program; self-identifying with program goals; viewing the program as compatible with their beliefs; and holding favorable attitudes toward the program (Beets, Flay, Vuchinion, Acock, Li & Allred, 2008). Researchers noted that teachers essentially choose whether or not to implement a new initiative and that attitudes toward new programs may play a critical role in implementation success. Therefore, teacher attitudes toward the program as well

as being able to identify how a new program aligns with their personal beliefs appear to strongly impact whether teachers participate in implementation. And, as authors noted, creating an environment that embraces change efforts and involving teachers in said efforts is critical to implementation success (Beets et al., 2008).

While there is some research around how teacher beliefs impact change efforts, the paucity of research regarding teacher attitudes specific to PBS implementation is evident to anyone conducting a review of the literature on this topic. To date, there are no validated measures that assess teacher attitudes or other belief factors that might influence successful implementation. Considering how stakeholder attitudes impact systems change efforts in general, and how teacher attitudes influence initiative implementation specifically, it is important that some measure of attitudes be established for teachers in buildings implementing PBS.

Taken from behavior change literature, the Reasoned Action approach demonstrates how attitudes toward performing a behavior, perceived social norms about a behavior, and perceived behavioral control over executing a behavior all predict an individual's intent to perform the behavior. Intentions, in turn, are strong predictors of actually performing the behavior (Fishbein & Azjen, 2010). Several studies have validated how these three factors taken together (attitudes, perceived social norms, and perceived behavioral control) explain a significant amount of variance in individual intentions. This model has important implications for educators investigating attitudes around a given topic, in that these attitudes (among other factors) likely play a huge role in whether or not individuals follow through with performing a behavior.

The goal of this research project is to determine whether the Reasoned Action model can be used to predict teachers' intentions to engage in positive behavior support practices. Considering the lack of research in this area, this project will contribute to the field significantly. This project also seeks to determine which factors (e.g., attitudes, perceived norms, perceived behavioral control) are *most* influential in predicting teachers' intent to engage in PBS-related behaviors. The information gained from this research will allow schools to more successfully design professional development and supports for teachers in the throes of implementing positive behavior support systems at the high school level.

CHAPTER II

LITERATURE REVIEW

Within the context of examining systems change, considering adult behavior is critical to understanding how change occurs. This literature will examine attitude theory – specifically, the Reasoned Action approach – and how it relates to large-scale system change. Systems change literature highlights the importance of human behavior in successful change efforts, with human characteristics also critical to implementing positive behavior support (PBS) systems. Studies emphasizing the effectiveness of PBS systems at the elementary and middle school level, as well as a review of the PBS literature at the high school level will be examined – and gaps in the literature base will be noted.

Attitude Theory

Martin Fishbein and Icek Ajzen have long been leaders in studying social behaviors and behavioral change. The Reasoned Action (RA) approach to predicting behavior is well-accepted in the literature, and has been supported by numerous empirical examinations of its components. Fishbein and Ajzen (2010) define three different types of beliefs within the Reasoned Action model: behavioral beliefs; perceived norms; and perceived control over performing a behavior. Behavioral beliefs are comprised of evaluations of consequences that might result from performing a given behavior (instrumental attitudes), and are influenced by perceptions of how positive or negative

engaging in the behavior might be (experiential attitudes). It is behavioral beliefs that determine people's attitudes toward performing said behaviors. People also make judgments about perceived norms within this model – both injunctive (what others think I should do) and descriptive (what others are actually doing) norms. For example, if a person thinks more important others (termed referents) approve of performing a given behavior than those who disapprove, then that person would be more likely to think performing the behavior was important. Perceived level of difficulty associated with performing a behavior (capacity), as well as the belief that a person can carry out a behavior (autonomy) comprises a person's perceived level of behavioral control (Fishbein & Ajzen, 2010).

Within the Reasoned Action model, behavioral (attitude), normative, and control beliefs together act as determinants of an individual's intention to perform a behavior. And, the stronger the intention to perform a behavior, the more likely a person is to carry out a given action. The Reasoned Action model also considers environmental variables and levels of skills/knowledge that would affect a person's *actual control* over performing a behavior. For example, regardless of a person's attitudes toward performing a self-breast exam, if they don't know how to recognize abnormalities in breast tissue, their lack of knowledge would influence their ability to perform the behavior (would have a moderating affect on intentions, and thus, execution of a behavior) (Fishbein & Ajzen, 2010).

A significant number of studies in wide-ranging disciplines have found that attitudes, perceived norms, and perceived control all account for a high level of variance

in behavioral intentions. For example, these effects have been demonstrated in studies of health-related behaviors (Drossaert, Boer, & Seydel, 2003; Godin, Valois, Lepage, & Desharnais, 1992; Hagger, Chatzisarantis, & Harris, 2006; Villaruel, Jemmott, Jemmott, & Ronis, 2004), drug use (Orbell, Blair, Sherlock, & Conner, 2001), helping behaviors (Cheung, Chan, & Wong, 1999; Giles & Cairns, 1995), and self-promoting activities (Davis, Ajzen, Saunders, & Williams, 2002; Giles & Laramour, 2000). These studies also found varying regression weights for each of the three determinants, supporting Fishbein and Ajzen's (2010) proposition that different determinants have different effects on intentions.

Regarding regression weights, determinants can have different effects on intention depending on the population or behavior in question. For some individuals or groups, one of the determinants (behavioral, normative, control) may not be significantly related to intention. However, Fishbein and Ajzen (2010) purport that this should *not* be taken as evidence against the model. Rather, it is a demonstration of how a given determinant(s) may be more influential for certain populations. For example, literature suggests that engaging in physical activity is more strongly influenced by a person's attitude toward the behavior as compared to perceived norms or perceived control. However, in a study of individuals with spinal cord injuries, perceived control had a stronger effect on individual intentions to engage in physical activity (Latimer & Martin-Ginnis, 2005). In a similar vein, certain determinants may carry more weight at different times, in different behavioral contexts, and with different behavioral targets. Fishbein and Ajzen (2010) present the example of measuring intention to use public transportation to demonstrate

this concept. An individual's intention to use public transportation may vary if the target behavior (taking the bus compared to taking the train) or the context (taking the train to work compared to taking the train to a sporting event) are varied.

Fishbein and Ajzen (2010) do not attempt to explain patterns of determinant coefficients within their model. They propose that researchers must form hypotheses about relationships between determinants (attitudes, norms, control) and intentions based on relevant information. Some researchers have used correlational evidence to predict relationships between determinants and intentions. Trafimow and Finlay (1996) estimated that a high score on a measure of collective self would correlate with stronger perceived norm weights. The theory being that a person belonging to a collectivist culture might value perceived norms more highly than someone from an individualist culture – making the regression weight for norms higher than behavior attitudes or perceived control. And in a study on condom use, researchers found that perceived control carried a higher regression weight in predicting intentions to use condoms in female respondents than in males, demonstrating a difference in populations that may have been predicted using background behavior about respondents and the behavior in question (using condoms) (von Haeften & Kenski, 2001). Fishbein and Ajzen (2010) also note that some studies have manipulated features of experiment situations, resulting in different ratings for each of the three determinants. The authors warn against using individual differences as moderating factors for intentions, as the research has yielded only mixed results.

Also within this model, attitudes toward a behavior and perceived norms about the behavior are said to indirectly affect one's intentions to perform the behavior.

However, perceived control over performing the behavior can either have an indirect (mediating) effect on behavior by affecting intentions, or have a direct effect on predicting behavior. In a study examining perceived control over staying within the speed limit, researchers found that when controlling for intentions to stay within the speed limit, perceived behavioral control had a direct effect on performing the behavior (or not) (Elliot, Armitage, & Baughan, 2003). So, within the Reasoned Action model, behavioral attitudes and perceived norms about behaviors are said to indirectly influence behaviors, whereas perceived control can either have a mediating effect on intentions, or a direct effect on behavior prediction (Fishbein & Ajzen, 2010).

Fishbein and Ajzen (2010) reviewed studies that specifically assessed all three components of the Reasoned Action model (behavior, norms, control) in relation to intentions. Studies that were reviewed had to meet several criteria. First, investigators had to consider behavioral (attitude), perceived norms, and perceived behavioral control as unitary constructs in statistical analyses. Studies that analyzed injunctive and descriptive norms in relation to intentions separately were not reviewed. Second, studies had to use the standard valid measures of attitudes, perceived norms, and perceived control. According to authors, standard valid measures of attitudes are those measures that asked individuals to rate items along a continuum (e.g., Likert scale, semantic differential scale). Standard valid measures of perceived norms included items about what others think they should do (injunctive norms), or what others are actually doing (descriptive norms). Standard valid measures of perceived behavioral control included questions regarding the extent to which a given behavior is under individual's control (capacity), or

whether they feel they are able to perform a behavior (power). Third, studies included in their review used multiple linear regression analyses to determine the amount of variance each of the three determinants had on intentions (Fishbein & Ajzen, 2010). The results from their review are presented below.

Latimer and Martin Ginis (2005) investigated levels of physical leisure activity among a sample of spinal cord injury patients. They assessed intention to perform leisure activities using three items ("I will try to do at least 30 minutes of leisure time physical activity…") that were rated along 7-point Likert scales. Researchers assessed attitudes using semantic differential pairs for instrumental as well as experiential attitudes. For example, individuals were asked to rate whether leisure time physical activity was relaxing-stressful (experiential) or valuable-worthless (instrumental) along a 7-point scale Researchers also measured perceived norms and perceived control over engaging in leisure activities using similar methods.

Researchers found a multiple correlation of .78, with attitudes, injunctive norms, and perceived control accounting for 61% of the variance with regard to intention to engage in leisurely physical activity. All three determinants were statistically significant in their overall contribution to reported intentions, with perceived control having the highest regression weight (.66), following by attitudes toward physical activity (.55) and perceived norms (.48) (Latimer & Martin Ginis, 2005).

In a study involving an entirely different behavior, Armitage, Norman, and Conner (2002) examined determinants of college students' intentions to drink after consuming alcohol. Researchers measured intent to drive after drinking by asking

students to rate three items ("I intend to…I expect to…I want to drive after drinking

alcohol") on a 7-point scale (definitely do not-definitely do). Researchers measured

attitudes by taking the means of four semantic differential pairs that asked students to rate

whether drinking was: foolish-wise; harmful-beneficial; bad-good; undesirable-desirable.

Each pair (e.g., foolish-wise) was rated on 7-point scale. In this particular investigation

researchers chose to use only instrumental attitude items. Students were also asked to

evaluate two injunctive norm items, as well as three capacity items for perceived

behavioral control (Armitage, Norman, & Conner, 2002).

Researchers found a multiple correlation of .82, with attitudes, injunctive norms,

and perceived control accounting for 67% of the variance with regard to intent to drive

after consuming alcohol. All three determinants were statistically significant in their

overall contribution to reported intentions, with perceived norms having the highest

regression weight (.71), following by attitudes toward drinking and driving (.71), and

perceived control (.64) (Armitage et al., 2002).

Other Models of Behavior Prediction

Up to this point, only the Reasoned Action approach has been presented as a

model for behavioral prediction. There are several other models of behavior, with many

similar components as the Reasoned Action model proposed by Fishbein and Azjen

(2010). Authors recognize that using beliefs about a behavior or information about a

behavior to predict intentions or behavior is not unique to their model. Bandura's (1972;

1997) well-known social cognitive theory includes components of behavioral beliefs,

outcome expectancies, and self-efficacy (analogous to perceived behavioral control) to

explain behavior. In the health belief model, perceived risk of contracting an illness, perceived severity of the illness, beliefs about costs versus benefits (behavioral beliefs) all interact to predict performing health-related behaviors (Rosenstock, Strecher, & Becker, 1994; Strecher, Champion, & Rosenstock, 1997).

Fishbein and Azjen (2010) have fine-tuned their model by integrating more recent research on behavioral beliefs and perceived norms. Authors of the Reasoned Action approach incorporate concepts such as implicit versus explicit attitudes and injunctive versus descriptive norms when attempting to explain behavior. Some researchers, as outlined in Fishbein and Azjen have suggested the inclusion of even more predictors to the Reasoned Action approach (e.g., partner norms, moral norms). However, a review of current behavior prediction literature indicates that additional predictors tend to overlap with core predictors (e.g., attitudes, perceived social norms, perceived behavioral control), and do not add any significant predictive validity to the model. Fishbein and Azjen also account for background factors as mediating variables in predicting behaviors, making their model perhaps more complete and more useful for the purposes of this project.

Beliefs as Predictors of Behavior

Within the Reasoned Action model, Fishbein and Ajzen (2010) also purport that in order to truly understand why some individuals actually complete an intended behavior while others do not, one has to examine underlying behavior beliefs, norm beliefs, and control beliefs. According to this model, a person's behavioral beliefs multiplied by their outcome evaluations – evaluations of the consequences of performing a behavior – is

correlated with intentions to perform the behavior, but is mediated by their overall attitude toward the behavior. By the same token, the strength one's normative beliefs multiplied by their level of motivation to complete a behavior is correlated with intentions, but is mediated by the individual's overall perceived norms about the behavior. Further, an individual's index of control beliefs multiplied by their perceived power over control factors indirectly affects intentions via their perceived behavioral control (Fishbein & Ajzen, 2010).

According to Fishbein and Ajzen (2010), in order to fully understand behavioral patterns, researchers should examine attitude beliefs, social norm beliefs, and perceived control beliefs in addition to individuals' overall attitudes toward the behavior, as well as their perceived social norms, and behavioral control. For example, Azjen and Diver (1991) conducted a study that surveyed a sample of college students regarding mountain climbing. Students completed a questionnaire about mountain climbing, and then reported a year later how frequently they had been mountain climbing in the past twelve months. Several control factors were identified: good weather; appropriate equipment; living near mountains; and level of skills/knowledge about mountain climbing. Students were asked to rate whether the factors were true for them (e.g., if they thought having appropriate equipment was necessary for mountain climbing) on a 7-point scale, which assessed the strength of the control belief. They were also asked whether the factor would make mountain climbing easier or more difficult along a 7-point scale, which assessed the perceived power or behavioral control of respondents.

The sample was analyzed by climbers and non-climbers, based on students'

responses at the 12 month follow-up. Most students reported that they believed they

lacked the proper equipment to go mountain climbing (belief strength), but the mountain

climbers were significantly less likely to believe this was the case (perceived control).

While both climbers and non-climbers felt they were lacking in skills (perceived control),

the non-climbers believed much more strongly that this was the case (belief strength).

Similar findings were reported for perceived norms about mountain climbing and

attitudes toward the behavior. This study illustrates how examining underlying beliefs

can help explain why some individuals complete a behavior (in this case, mountain

climbing), while others do not (Ajzen & Diver, 1991).

Fishbein and associates (in preparation) surveyed a sample of high school

students between the ages of 14 and 16 regarding sexual intercourse. Again, researchers

examined overall attitudes, perceived norms, and perceived control over performing the

behavior as well as the underlying beliefs associated with all three determinants. To

measure attitudes toward having sex, researchers asked students to rate 13 outcomes

(assigned as positive or negative by researchers) using the following stem: "If I have sex

in the next twelve months, it would…" Stems included "give me pleasure (+)," "give me

an STD (-)," "gain the respect of my friends (+)," and "make my parents mad (-)."

Students also rated their intention to have sex within the next twelve months along a 7-

point scale, and the sample was analyzed by intenders and non-intenders.

Researchers found that responses differed between intenders and non-intenders in

degree rather than in type for most attitude items. For example, most people agreed that

having sex would "give pleasure to a partner," but intenders held this belief more strongly than non-intenders. Similar relationships were demonstrated for norm items and control items, again demonstrating that underlying beliefs can, in fact, help explain why some individuals perform a given behavior while others do not (Fishbein et al., in preparation).

In sum, the Reasoned Action approach provides a framework for examining behavioral attitudes, perceived norms about behaviors, and perceived control over performing the behavior, as well as the beliefs associated with these three determinants of intentions. A number of researchers examining a wide range of behaviors have incorporated this model into their work – and the empirical support for the model is robust (see Fishbein & Azjen, 2010 for a review of said studies). In examining these determinants and beliefs, one can gain a better understanding of motivations associated with performing an identified behavior. In understanding behavioral beliefs, researchers can then design interventions that increase the likelihood that an individual might perform a behavior, based on information gleaned about their attitudes, perceived norms, and perceived level of control (Fishbein & Ajzen, 2010).

Systems Change

Fishbein and Azjen's (2010) model of behavior prediction has implications for systems-level change in schools. As public schools increasingly engage in more reform efforts, it becomes important to examine adult views about proposed change – namely their attitudes and beliefs about the change. As discussed previously, attitudes about a behavior, perceived social norms about a behavior (whether others are performing a

behavior), and perceived behavioral control (whether an individual can actually perform a behavior) taken together act as strong predictors of intent to perform a behavior. Thus, underlying attitudes and perceptions might act as predictors of adult participation in a proposed change effort.

In their discussion of systemic change, Noelle and Gansle (2009) highlight the importance of considering adult behavior within the context of change efforts. Authors note that in order for systems change to occur, adult behavior must change as well to some degree. Within a school setting, adults are part of student environments – and in order to change student behavior, many adults recognize that environmental changes must occur (including themselves). And while proponents of systemic change may develop a sound plan for change in theory, they often forget the complexities of human behavior that need to be addressed prior to the implementation of a new initiative; particularly the behavior of adults that are impacted by the change and have a heavy hand in implementation of any school reform movement.

In schools, failure to adopt systemic change is often labeled as "resistance" or "reluctance" to change. Noelle and Gansle (2009) frame the problem within a different context: rather than thinking about adults as being "resistant" to adopting change efforts, they might be thought of people that need additional support in order to be successful in adopting change efforts. The authors point out that the more effortful the proposed change (e.g., new behaviors or practices have to be learned) and the more time-consuming new practices are perceived to be increases the implementation "cost" in the minds of teachers. In order for successful systemic change, Noelle and Gansle propose

reducing real (or perceived) barriers to engaging in change efforts, as well as providing environmental support for teachers.

Adelman and Taylor (2006) also discuss successful systemic change in their work – highlighting the paucity of research examining the process of large-scale change in school systems. In their discussion of systems change, they outline the phases of the change process – creating readiness, initial implementation, institutionalization, and ongoing evaluation. Creating readiness entails building consensus around the proposed change, building infrastructure, designating leadership to lead change efforts, and preparing the climate of the building for a new initiative. Until these steps have been taken to create readiness within a school system, change efforts will not be successful.

Building consensus involves getting a critical mass of staff in agreement with implementing the proposed change. Important infrastructure pieces include building leadership, a sense of ownership over change efforts, administrative support, and established problem solving strategies to overcome barriers in the change process. Additionally, schools need to establish teams to spearhead change efforts, and teams need to prepare the larger staff for the new initiative. According to Adelman and Taylor (2006), unless the readiness step is accomplished, systems change will likely be unsuccessful. Both Noelle and Gansle (2009) and Adelman and Taylor (2006) note that it is imperative to get building staff involved in the change process and that people are ready to embrace new initiatives.

Positive Behavior Supports

One example of a system change effort in schools that has received significant attention and focus is Positive Behavior Support (PBS). PBS has been mentioned in recent legislature as an acceptable evidence-based program (IDEA, 2004). George Sugai and Rob Horner (2002) – both highly involved in school-wide positive behavior support development and research – described four key components in positive behavior support systems: outcomes; systems change; data-based decision making; and effective practices. PBS focuses on building systems (i.e., systems to teach students appropriate behavior, systems for delivering consequences) that support adult behavior in school settings. The systems that support adult behavior, in turn, allow school staff to better support student behavior. One of the first steps in establishing PBS within a school is to establish the necessary building-wide systems (Sugai & Horner, 2002). Regarding data, one of the key features of PBS is using data to make decisions around adult and student behavior. School staff collect data to determine whether their PBS systems have been implemented with fidelity (adult behavior), as well as to determine whether PBS practices are improving student behavior as desired. In terms of practices, positive behavior support systems encourage staff to employ a set of practices that facilitate appropriate student behavior. For example, in buildings that implement positive behavior supports, staff develop systems for explicitly defining and teaching expected behaviors (practices) to students. They also build a system for acknowledging students (practice) when they display appropriate behaviors. Additionally, analyzing and reviewing data and administering a continuum of consequences (that match the severity of student behavior

infractions) are other practices associated with positive behavior support systems. Lastly, systems, data, and practices all interact to achieve desired student and building outcomes (Sugai & Horner, 2002; 2006).

In addition these key elements (systems, data, practices), Sugai and Horner (2002, 2006) discussed school-wide positive behavior supports being delivered along a continuum – in that *all* students are exposed to basic teaching and acknowledgement practices, and receive systematic consequences. Students who continue to struggle with behavior following the application of a universal behavior curriculum receive *additional* small group, targeted supports to address their specific behavioral needs. Sugai and Horner recognize that some students will need even more individualized, team-based supports (or intensive supports), than can be delivered through small group targeted interventions. Universal support systems allow schools to devote more resources to behavior problems at the targeted and intensive levels of support if strong school-wide systems are put in place.

Universal positive behavior supports are also marketed as comprehensive models of behavior intervention and support, in that they are implemented across multiple systems. At the universal or school-wide level, buildings identify a positive purpose, clearly define expectations and positive behavior examples, and develop procedures for teaching and acknowledging expected behaviors (in addition to a range of preventative and disciplinary procedures for behavioral infractions). At the classroom level, teachers institute routines and use good classroom management strategies in order to support desired student behavior. School staff employ active supervision practices, pre-correct for

problem behaviors, explicitly teach expected behaviors, and reinforce good behavior in non-classroom settings. Lastly, for students in need of intensive supports (along the support continuum), school-based teams use functional behavior analysis procedures and person-centered interventions in order to augment individual skill sets (Sugai & Horner, 2002; 2006).

Positive Behavior Supports in Elementary Settings

Proponents of positive behavior support systems tout practices associated with the systems as being rooted in research and empirically based. Indeed, there is a growing body of literature that investigates the effectiveness of utilizing PBS systems as a means of increasing appropriate behaviors in students. McCurdy, Mannella, and Eldridge (2003) studied the effects of implementing a positive behavior support system in an urban elementary school serving grades K through 5. In terms of student demographics, 44% of all students were Asian American, 33% were African American, 18% were white, and 5% were Hispanic.

The building principal approached an outside agency asking for support in managing student behavior problems. After learning more about the school, the agency suggested implementing a universal (or school-wide) positive behavior support system. The agency helped the school develop a PBS team that developed and defined three general expectations, rules for specific locations, and routines for common areas. The team also developed a motivation system (acknowledgement system), and restructured their current consequence system.

Researchers utilized the *School-wide Evaluation Tool* (SET; Sugai, Lewis-Palmer, Horner, & Todd, 2001) to measure PBS implementation fidelity in the building. The SET is a direct observation tool that measures the degree to which a building is implementing the universal PBS practices (e.g., defining behavior expectations, teaching expectations, acknowledging student behavior, data systems used). Results from the SET indicated that the school had been implementing PBS practices with a high level of fidelity in all but two areas measured – district level support (33% capacity) and expectations defined (75% capacity). However, researchers determined that the staff had achieved an acceptable level of fidelity (82% on the entire measure), and that analyses could continue. After two years of implementation, the school experienced a statistically significant 46% decrease in office discipline referrals as compared to the year prior to year one of implementation. Researchers also conducted analyses of two specific behaviors – student disruption and student fighting (identified by staff as two major problem areas). As compared to the year preceding PBS implementation, a steady decrease in student disruption was observed by the end of year two, as was a statistically significant decrease in student fighting (McCurdy et al., 2003).

In another study conducted in an urban school, researchers again found a decrease in inappropriate behaviors following the implementation of school-wide positive behavior supports. Warren, Edmonson, Griggs, Lassen, McCart, Turnbull et al. (2003) worked with an inner city middle school in Wyandotte County, Kansas. Approximately 90% of students were eligible for free or reduced lunch rates, with 40% of the population being African American, 32% Hispanic, 20% white, and 8% Asian American. As

compared to the rest of the state, this particular school was extremely diverse in terms of both minority status (81% of students state-wide were white at the time of the study) and socioeconomic status (31% of students state-wide were eligible for free or reduced lunches).

Researchers spent the first years of the project establishing rapport with teachers by demonstrating how positive behavior supports could work with individual cases. After achieving teacher buy-in, researchers worked with school staff to build school-wide PBS systems (i.e., teaching, acknowledgement, data, consequences). Researchers also took steps to ensure sustainability following the termination of the project (established PBS funding sources, revised the school improvement plan to include PBS, etc.).

After one year of full school-wide implementation, researchers observed a 20% decrease in total office discipline referrals. Additionally, there was a 23% decrease in "time-outs," another discipline procedure utilized in the building. While building staff and students experienced successes with the support of university researchers, they struggled to maintain those gains once researchers assumed a more consultative role. Warren et al. (2003) (like McCurdy et al., 2003) demonstrated that positive behavior support systems can be successful in challenging environments (inner city schools with limited resources and diverse populations). However, Warren also illustrates the need for planned supports following a research project for successes experienced to be maintained.

In addition to research outlining implementation of universal positive behavior supports, other studies highlight how PBS principles can be applied to specific settings with similar success. In Kartub, Taylor-Greene, March, and Horner (2000), researchers

supported a middle school where lunch transitioning was a problem area. The rural

middle school in Oregon had 525 students in grades six through eight (90% white) being

housed in a building too small for the student population. As a result of space constraints

(and large groups of students attending lunch periods), noise generated by students

transitioning from lunch became an area of concern for school staff.

Researchers suggested applying a positive behavior support system for the

hallway problem. Students attended training in which they identified acceptable levels of

hallway noise. They also watched demonstrations of inappropriate levels of hallway noise

modeled by other students. School staff took a baseline measure of noise using the *Sound*

Level Meter, and defined the "appropriate" noise level as below 70 decibels for the

purposes of this intervention. In addition to the student training, school staff made

lighting adjustments in the hall to differentiate between quiet passing periods (after

lunch), and periods when students could make more noise (after school). Following three

days of quiet transitions (as defined by the staff), students were rewarded with five extra

minutes of lunch time as acknowledgement for their appropriate behavior. As compared

to baseline measures, researchers found by applying positive behavior supports to a

hallway setting, overall noise levels following lunch decreased across all three grade

levels. Additionally, at a follow-up measurement point, similar decreases in noise levels

for all three grade levels were observed. This study demonstrates how the application of

PBS practices can result in an increase in appropriate student behavior – in this case,

decreased noise levels in the halls (Kartub, Greene-Taylor, March, & Horner, 2000).

In another setting-specific study, an urban elementary charter school implementing school-wide positive behavior supports revised its playground policies to increase appropriate student behavior. Franzen and Kamps (2008) conducted research in an urban setting with approximately 180 students in grades 1 through 3 (at the onset of the study). School-wide, 95% of students were from minority backgrounds, and 96% qualified for free or reduced lunch rates.

While the school had already experienced a significant decrease in office discipline referrals following its first year of PBS implementation, staff continued to express concerns about student behaviors on the playground. Researchers found that staff did not acknowledge student behavior on the playground, and generally did not deliver consequences for inappropriate behavior. In order to bolster PBS on the playground, staff re-taught students how to behave appropriately when outdoors. Additionally, staff were instructed to acknowledge students for displaying good behavior during recess, and were also instructed to increase interactions with students while serving supervision duties.

Researchers observed supervisory interactions (defined as actual interchanges with students), staff reprimands, and counts of inappropriate student behaviors (five selected behaviors that had been previously defined by staff). In this multiple baseline study, Franzen and Kamps (2008) found a consistent increase in teacher supervision on the playground, as well as a decrease in problem behavior counts. Again, this study demonstrates how PBS principles can be applied in order to increase appropriate behaviors in students.

Horner, Sugai, Smolkowski, Eber, Nakasato, Todd et al. (2009) conducted a controlled study that compared schools that received formal training in establishing positive behavior support systems to those that had no formal training. Researchers selected 30 schools in Illinois and 30 schools in Hawaii serving students in grades K through 5 for the purposes of this study (conducted between 2002 and 2006). Criteria for selection included (a) state capacity to provide training and technical assistance, (b) self-recommendation by building administration, and (c) no prior training in PBS implementation. Following the adjustment of the sample due to attrition and other factors, the final sample for the study included 30 treatment schools and 23 control schools.

Schools were randomly assigned to either a treatment condition or a control condition. In the treatment condition, schools received formal training from state-level professionals involved in networks that worked with schools that were establishing PBS systems. The control schools eventually received training, but at a later time (year two). Researchers used several measures to assess the effectiveness of training supports, including a review of school-wide office discipline referrals and ratings on a perceived school safety measure (a measure of climate). While no baseline data were available for office referrals (due to incomplete data systems for many schools), at the end of the project schools had low rates of discipline referrals as compared to a national database with referral information. Additionally, schools involved in the training and establishment of PBS systems experienced an increase in school safety overall. While some methodological flaws exist, most significantly no pre-test measure of office

referrals, this preliminary study provides some additional evidence that implementation of PBS systems yields multiple positive results (Horner et al., 2009).

Implementation Process in Elementary Settings

As the body of literature validating the use of PBS in elementary and middle school settings continues to grow, researchers have developed a fairly good understanding of how implementation should take place. Sugai and Horner (2007) outlined several steps related to school-wide positive behavior support implementation. First, buildings need to establish representative leadership teams that spearhead the development and implementation of PBS activities. Teams need to secure a long-term commitment (or buy-in) to the SWPBS effort, and ensure that staff are willing to shift to a more preventative approach in addressing student behaviors.

Once schools establish leadership teams and secure staff buy-in, leadership teams develop data-based action plans around PBS implementation activities. Teams collect data to determine which discipline practices need to be improved or eliminated from the school. They develop expectations, teaching plans, and acknowledgement systems. Teams use data to develop measurable outcomes, and have a means of achieving PBS activities (e.g., teaching expectations, financing acknowledgement systems). Leadership teams are then responsible for training building staff on how to implement PBS, to the extent that 80% are ready to use behavior support systems and can use practices with students. Following the initial implementation phase, teams engage in regular data collection and review to determine whether systems are in place and whether practices are working (Sugai & Horner, 2002).

In a study evaluating facilitators and barriers to PBS implementation, Kincaid and colleagues surveyed schools in the early stages of implementation. Schools that received training from Florida PBS network (FLPBS) were invited to a trainer's forum in Florida. Invitations were extended only to schools that had been implementing SWPBS for at least one year. Researchers classified schools as either high implementing schools or low implementing schools based on staff members' ratings on the *Benchmarks of Quality* (BoQ; Cohen, Kincaid, & Childs, 2007). The BoQ is a self-rating evaluation tool that measures the level of implementation fidelity across a number of areas related to positive behavior supports (e.g., teaching systems, using acknowledgments, data). Researchers considered a score of 70% or higher on the BoQ to be a "high" implementing (HI) school, with schools scoring below that cut point being classified as a "low" implementing (LI) school. A total of 70 participants were involved in the study, with 29 individuals being assigned to the HI group and 41 individuals being assigned to the LI group. A total of 26 schools across 18 districts in Florida were represented in the total sample – with eight schools in six districts represented in the HI group and 18 schools across 12 districts in the LI group.

Participants in the HI and LI groups were randomly assigned to smaller groups of seven to nine participants, with four HI groups and five LI groups. Researchers then employed the nominal group process to answer two main research questions: (a) what have been the barriers to implementing school-wide positive behavior support in your district, and (b) what have been the facilitators to implementing PBS in your district? Prior to beginning data analysis, researchers grouped statements made by participants

into themes. Two researchers looked at the raw statements generated by group members and grouped them into initial themes and named said groups. A third member of the research team then reviewed statements and made minor changes regarding statement placement and thematic group names.

Following theme development, researchers' primary data analysis was averaging the most highly ranked themes for barriers and facilitators. Researchers analyzed themes overall, as well as looked for differences in responses among the HI groups and the LI groups. For the 21 barrier themes generated across both groups, both the HI and LI groups rated staff buy-in as a highly important barrier. Both groups also rated implementation issues (e.g., inconsistent implementation, use of data, reward system issues) as important. In terms of differences for barrier ratings, the HI groups were more likely to rank data and team training issues as key barriers, whereas LI groups were more likely to rank general team functioning and communication as key barriers. This study highlighted the critical importance of staff buy-in to successful PBS implementation in schools (Kincaid, Childs, Blasé, & Wallace, 2007).

Positive Behavior Supports in High Schools

While the body of research outlining the positive effects of universal PBS systems is growing, most of the research to date with outcome data has been conducted in elementary and middle schools. More limited research with outcome data is available for high school populations. In one study conducted by Bohanon, Fenning, Carney, Minnis-Kim, Anderson-Harris, Moroz et al. (2006), researchers gathered data across three phases of implementation in an urban high school setting. The school had approximately 1,800

students representing 75 different countries. In terms of student demographics, 36% of students were African American, 36% were Hispanic, 16% were Asian American, 8% were white, 2% were Native American, and 2% were classified as other. The school had an average attendance rate of 86%, a 19% drop-out rate, and a significant proportion of students receiving free and reduced lunch (87%) and English language supports (21%).

During Phase I of the study (termed "initial inquiry"), researchers gathered information about school climate, data systems, and communication practices through an informal needs assessment. Following their preliminary data collection, researchers presented impressions of building needs to administrators, and got approval to establish a formal discipline (leadership) team. During Phase II, researchers identified and prioritized building outcomes in terms of student behavior. They also reviewed office discipline referral data and completed a team integrity checklist to measure team development status and functioning. During Phase III of the project, the leadership team developed PBS practices (e.g., refined discipline policies, defined behaviors and expectations, built an acknowledgement system) across two days of professional development provided by researchers. The leadership team then trained staff on systems and practices, and the school piloted PBS during summer school of that year (Summer 2004). Following the pilot, staff introduced PBS to the entire school in the fall with a "kick-off" followed by two large all-school celebrations. The leadership team had continued professional development with researchers throughout this process (Bohanon et al., 2006).

Implementation data suggested a fairly high level implementation fidelity, with the school receiving over 80% in all areas of the *School-wide Evaluation Tool* (Horner, Todd, Lewis-Palmer, Irvin, Sugai, & Boland, 2004) except for "expectations taught" and "district-level support." Schools implementing with fidelity have an average score of 80% across all SET subscales, as well as an 80% on the expectations taught subscale. Concerning office discipline referral data, the school experienced a 20% decrease in average referrals per day/per month/per 100 students between Years 2 and 3. More specifically, the school saw a decrease in dress code violations, and a decrease in referrals for severe incidents of disobedience. Additionally, the school had a statistically significant shift between the percentage of students with 0-1 office referrals in Year 2 (46%) as compared to Year 3 (59%) of the study (Bohanon et al., 2006).

The limited body of research in secondary settings raises questions regarding whether the accepted practices for elementary/middle school PBS implementation are as effective in high school implementation. For example, Bohanon et al. (2006) illustrates that successful implementation of SWPBS at the high school level is possible, albeit potentially more challenging. Authors noted several factors related to secondary settings that impacted the implementation process. Bohanon et al. noted that getting teachers to teach behaviors and to implement discipline policies correctly were both challenges. They also discussed the importance of developing age-appropriate acknowledgements for high school students. Additionally, the large setting (in terms of physical size and in terms of personnel) presented logistical challenges for some PBS practices, including communication and distribution of acknowledgements.

In a survey of PBS leadership teams across two states, Flannery, Sugai, and Anderson (2009) learned more about high school implementation challenges. Researchers surveyed leadership team members in schools that had been implementing PBS. Implementation was loosely defined as (a) having met once in the past month, and (b) having PBS practices in place for at least one year. Researchers asked questions regarding school demographics, staff participation in/support of PBS, building expectations and types of acknowledgements used, leadership team composition, and priorities for implementation.

In this small, preliminary study ($n = 43$), a large proportion of respondents (41%) indicated that working on school-wide discipline policies was a top priority. Gaining support from the larger staff was identified as the second-most reported priority. In terms of support, most respondents (70%) indicated that less than 80% of staff supported PBS efforts (80% being the standard for implementation support). Respondents noted that administrative support, training opportunities, and expert input might facilitate gaining PBS support in their buildings. In terms of teaming, survey respondents noted that student and parent representation was limited, and that representation from additional groups (students, parents, security) may be helpful in supporting implementation (Flannery, Sugai, & Anderson, 2009).

Researchers concluded that leadership teams at the high school level may need to be larger in order to get adequate representation of all groups (including students, staff, security personnel, department representation). Additionally, active participation on behalf of the larger staff was identified as a factor aiding PBS implementation at the high

school level. In terms of acknowledgement systems, it appears that these systems (of all PBS practices mentioned) are those being implemented with the lowest level of fidelity (Flannery, Sugai, & Anderson, 2009).

More recently, in an effort to gain a better understanding of how positive behavior supports are implemented at the high school level, researchers from the University of Oregon partnered with researchers from Loyola University Chicago to conduct focus groups with those involved with universal high school PBS implementation (Fenning et al., in preparation). The sample in this qualitative study included two high schools from each state – one school experiencing relative success implementing PBS, and one school experiencing more difficulty implementing positive behavior support systems.

For the purposes of this project, "relative success" was ultimately defined as schools who achieved scores of 60% on the *Expectations Taught* subscale of the School-wide Evaluation Tool (SET; Horner, Todd, Lewis-Palmer, Irvin, Sugai, & Boland, 2004), and an overall score of 60%. This operational definition of success was utilized due to the limited number of high schools across both states that met the full implementation status of 80% in both areas (Expectations Taught and Overall Mean). Thus, "less successful" was defined as schools that were below the 60/60 cutoff for "successful" schools. Once schools meeting success criterion were identified, researchers matched potential sites based on demographics (e.g., location, size, minority status, percentage of population eligible for free and reduced lunch) (Fenning et al., in preparation).

Within each school site, researchers conducted focus groups with PBS leadership team members and with students, in addition to an administrator interview. Focus group

questions for school teams and interview questions for administrators asked about the process of PBS implementation in the high school setting, challenges faced by the building during implementation, and factors that affected staff/student buy-in to the process. Student focus group questions asked about personal experiences with PBS from a student perspective. In addition to focus groups and interviews conducted at each of the four high schools, the researchers conducted an additional focus group with a panel of experts in PBS implementation (the Design Team). These experts were asked more detailed questions related to PBS implementation at the high school level, and how that process looks different than other levels (Fenning et al., in preparation).

Researchers found several key themes related to high school positive behavior support system implementation. Attaining staff buy-in prior to introducing practices appeared to be one critical element that distinguished high school implementation processes from those at more elementary settings. It seemed that a critical mass of staff willing to support the PBS process was essential to successful implementation at the high school level – and this sentiment was echoed across multiple contexts within the research project (within the Design Team group, in leadership team focus groups) (Fenning et al, in preparation).

Related to buy-in, teachers' attitudes toward teaching behavior at the high school level appeared to influence whether or not they supported PBS implementation (with team members in less successful schools reporting negative teacher attitudes as a challenge to implementation). For example, one focus group participant noted that, "a good number of [teachers] … feel like their time in this building is to teach their subject

and not have to necessarily parent these kids" (p. 80). Teachers in more successfully-implementing schools reported staff members having a philosophical orientation toward explicitly teaching social behaviors. Conversely, in less successful schools, focus group participants indicated that some teachers felt that teaching behaviors was not part of their job description. Philosophical orientation toward teaching social behaviors appeared to have an effect on the level of PBS implementation within buildings. From this preliminary research with PBS team members, several key elements emerged as critical to implementing PBS in secondary settings – among these being teacher buy-in to the process, and more positive attitudes toward teaching behaviors at the high school level.

Teacher Attitudes Toward Teaching Behaviors at the High School Level

In an attempt to develop a measure that captured teacher attitudes as related to PBS-related behaviors, researchers at Loyola University piloted the *High School Teaching Approach Rating Scale (TARS)*. The initial version of the TARS included three constructs derived from the preliminary focus group research – attitudes toward teaching behavior, attitudes toward investigating the function of student behavior, and attitudes toward using acknowledgement.

The original version of the TARS consisted of 16 items, with a fairly even number of items dedicated to measuring each of the three constructs (teaching behavior, understanding function, using acknowledgements). Items were rated on a 4-point Likert scale, with response options ranging from "strongly disagree" (1) to "strongly agree" (4). The TARS was piloted in the fall of 2009 as part of the same research grant that designed and conducted focus groups with high schools implementing SWPBS. (In addition to

conducting focus groups, researchers involved on the grant provided technical

assistance to buildings that were implementing SWPBS systems, or that were refining

existing positive behavior support practices.) The TARS was administered through an

online survey link to all teaching staff across eight high schools (four in Illinois and four

in Oregon). Survey protocol called for a PBS team member from each school to send the

survey link to all classroom teachers and paraprofessionals (teacher aides) who worked in

classroom settings. Response rates for the pilot administration ranged from 47% to 84%

across the eight schools – making responses fairly representative (approximately half of

teaching staff) to representative (over three-quarters of teaching staff) of general staff

opinion. Data analyses indicated that responses across all three constructs were

overwhelmingly positive. On items that measured attitudes toward teaching behaviors,

over 80% of participants indicated that they either agreed/strongly agreed with statements

that endorsed teaching social behaviors at the high school level. Additionally, on two

items that were reverse-scored, teachers generally disagreed with statements that said

students "should know" how to behave appropriately at the high school level. On items

that measured attitudes toward understanding the function of behavior, over 85% of

participants indicated that they either agreed/strongly agreed with statements endorsing

investigating the function of student behavior as a means of selecting/implementing more

effective interventions. Lastly, on items that measured using acknowledgements, over

85% of participants indicated that they either agreed/strongly agreed with statements

endorsing using acknowledgements (both tangible and intangible) as a means of

improving student behavior.

Researchers felt that the positive response patterns across all eight school sites may not have accurately reflected what was actually happening in the building. Anecdotal reports from PBS team members indicated that while staff may agree with the principles associated with positive behavior supports, there may be other factors that hinder implementation. Other reports suggested that the most "negative" staff members may not have even responded to the survey. In an effort to have a usable instrument by the termination of the grant (Summer 2011), researchers opted to investigate attitude theory – in hopes that they might revise the TARS so that items more adequately addressed each construct (teaching, function, acknowledgement).

Summary of Major Findings

The Reasoned Action approach holds that attitudes toward performing a behavior, perceived social norms about a behavior (e.g., whether other people are engaging in a behavior, whether other people think the target individual should be engaging in the behavior), and perceived behavioral control act as strong predictors of an individual's intent to engage in the behavior. Authors purport that this model of behavior prediction is universal, and that the model can be used to predict intent to execute any behavior – including engaging in positive behavior support practices.

Positive behavior support (PBS) is an example of a systems-change effort that is gaining popularity in schools today, and whose literature base is growing. Systems change theory highlights the importance of "human factors" in implementing any successful change initiative. Particularly applicable to implementing PBS systems are staff attitudes toward enacting new practices and staff buy-in to the initiative. Positive

behavior supports entail explicitly teaching expected social behaviors, as well as acknowledging students for engaging in appropriate behaviors. In order for PBS efforts to be successful, teaching staff need to be "on board" with engaging in said teaching and acknowledgement practices.

While there is a strong literature base outlining key components to successful change efforts, as well as a growing literature base of how PBS systems can effect positive change in school systems (e.g., reduced office discipline referrals), there is scant research specifically addressing how teacher attitudes affect PBS implementation efforts. Specifically, there is limited research regarding how teacher attitudes and perceptions influence PBS efforts at the high school level. This gap in the literature highlights the need to study teacher beliefs (e.g., buy-in, acceptance of PBS practices) because they are so critical to positive behavior support implementation efforts.

Research questions for the current study focus on teacher attitudes and perceptions toward engaging in practices associated with positive behavior supports (e.g., teaching behaviors, collecting student functional behavior data, using acknowledgements) at the high school level, in an effort to contribute to the PBS implementation literature specific to secondary settings.

CHAPTER III

METHODOLOGY

Instrumentation

Development of the High School Teaching Approach Rating Scale (TARS)

Following a literature review that yielded no validated instruments that measured teacher attitudes specifically toward PBS implementation, a collaborative cross-state research team (Oregon/Illinois) started developing an original instrument. In an earlier research project, investigators from the same collaborative team conducted focus groups to gain information regarding facilitators and barriers to successful PBS implementation in high schools. From the focus group data, researchers found that negative attitudes toward teaching behaviors and using acknowledgements at the high school level could function as barriers to implementation success.

Using focus group data as a springboard, the collaborative team developed operational definitions for constructs to be measured by the new instrument – named the High School Teacher Approach Rating Scale (TARS). The TARS addressed three constructs: attitudes toward teaching behaviors (versus teaching academic content); attitudes toward understanding the function of student behavior; and attitudes toward using acknowledgement at the high school level. Construct definitions were initially derived from focus group data collected earlier in the research project, and were refined through cross-site collaboration. Oregon and Illinois partners finalized constructs by

cross-checking definitions with statements made by focus group participants and by discussing definitions together. Initial construct definitions are outlined in further detail below.

"Teaching behavior" (versus teaching academic content) refers to the thinking that it is the teacher's responsibility to teach behaviors as well as to teach academics. An attitude change would entail a shift from "it is my sole responsibility to teach academic content," to "it is my job to teach behaviors as well as academic content." "Understanding the function of student behavior" refers to the thinking that understanding the function of behavior will help teachers implement the appropriate interventions to support students. A change in attitude would entail a shift from, "I do not need to understand why students behave the way they do," to "it is important for me to understand why students behave the way they do so that I can best support them." Finally, "using acknowledgements" refers to the thinking that students should be intrinsically motivated to behave appropriately at the high school level. A change in attitude would entail a shift from, "I believe that students should be intrinsically motivated to behave appropriately and that they do not need acknowledgements," to "I think that students are both intrinsically and extrinsically motivated to do well, and that sometimes students need external motivators (including specific praise) in order to be successful in school."

TARS Pilot Results

The pilot version of the survey (16 items, not including demographic information, with a 4-point Likert scale) was administered during the fall of 2009 to teaching staff in

eight high schools across Illinois and Oregon involved in the research grant. Responses

to survey items across all three constructs were *overwhelmingly* positive (over 80% of all

respondents across all sites rated items positively), indicating that the instrument was not

very sensitive to variable response patterns. Social desirability was an initial concern of

researchers, and it appeared as if items on this survey were worded in ways that

encouraged positive responding. Additionally, qualitative data from schools indicated

that while teachers may have agreed with statements associated with teaching, function of

behavior, and acknowledgement, other variables prevented them from successfully

implementing these components of PBS. Thus, it appeared as if the survey required

modification prior to its second administration (Fall 2010). The purpose of this project

was to develop an instrument that more accurately assessed factors that might facilitate or

hinder successful positive behavior support implementation.

TARS Revisions

In an effort to expand what the scale measured, the first author investigated

theoretical frameworks used in studying individual attitudes. Using the Reasoned Action

model (Fishbein & Ajzen, 2010) as a guide, the primary author revised items that

measured teachers' attitudes toward the different constructs (teaching behavior,

understanding function, using acknowledgement). Items were also added to measure

teachers' perceptions of social norms around PBS practices (e.g., what other staff in the

building thought about PBS practices, whether other staff engaged in PBS practices) and

teachers' perceived level of control over implementing positive behavior support

practices. Additionally, the primary author inserted items related to environmental

variables that might impede teachers' actual control over implementing PBS practices (a concern also noted by technical assistance providers working on the grant).

Authors of the Reasoned Action approach recognize that while attitudes, perceived norms, and perceived behavioral control may influence a person's intentions to perform a behavior (thus impacting whether they actually complete the behavior), they also recognize that there are environmental variables that have an impact on an individual's ability to perform an intended behavior (Fishbein & Ajzen, 2010). This would be applicable for teaching staff that have limited training or materials, thus affecting their ability to participate in behavior support systems. Lastly, items that measured whether teaching staff intended to perform PBS-related behaviors were added to the revised TARS. With the revision of attitude items and addition of social norm, perceived control, environmental variable, and participant intent items, the TARS became aligned with the Reasoned Action model – and had an even stronger theoretical base.

The version of the TARS administered in the fall of 2010 had 11 items related to teaching behaviors at the high school level – with three items directly measuring attitudes, two items measuring perceived norms around teaching behaviors, two items measuring perceived behavioral control over teaching, two items addressing whether teachers intended to engage in teaching practices, and two items around environmental barriers to teaching. Similarly, the revised TARS had 10 items related to understanding the function of behavior – with two items measuring attitudes toward investigating the function of behavior, two items measuring perceived norms around investigating the function of student behavior, two items measuring perceived behavioral control over

investigating function, two items addressing whether teachers intended to investigate the function of student behavior, and two items addressing environmental barriers to investigating the function of student behavior. Lastly, the TARS had 11 items related to using acknowledgements to reinforce appropriate student behavior – with three items directly measuring attitudes toward using acknowledgements, two items measuring perceived social norms toward using acknowledgements at the high school level, two items measuring perceived control over using acknowledgements, two items asking whether teachers intent to use acknowledgements to reinforce student behavior, and two items asking about environmental barriers to using acknowledgements. All items are available in Appendix A, and item numbers are provided in table 1.

Table 1. TARS Item Numbers with Construct Assignments

| | Item Numbers | | | | |
Construct	Attitudes	Norms	Control	Intent	Barriers
Teaching	1, 2, 3	4, 5	6, 7	8, 9	10, 11
Function	12, 13	14, 15	16, 17	18, 19	20, 21
Acknowledgement	22, 23, 24	25, 26	27, 28	29, 30	31, 32

All TARS items measuring attitudes, norms, perceived behavioral control, and intentions are rated along a 7-point Likert scale, with 1 representing "strongly disagree" and 7 representing "strongly agree." Having respondents rate along a continuum their strength of their attitudes toward teaching, understanding function, and using acknowledgement is a standard and valid measure of assessing attitudes, according to Fishbein and Ajzen (2010). Items measuring the perceived influence of environmental

variables affecting respondents' ability to engage in each practice (teaching, investigation of function, use of acknowledgement) are assessed along a 5-point scale. All items ask teaching staff to "rate the degree to which each of the following [components related to teaching, function, acknowledgement] are available to you," with response options ranging from "never" to "always." All TARS items (including demographic items) are available in Appendix A.

School-wide Evaluation Tool (SET)

The School-wide Evaluation Tool (SET) is a widely-used measure of treatment integrity, or the degree to which the most critical components of SWPBS are being implemented (Horner, Todd, Lewis-Palmer, Irvin, Sugai, & Boland, 2004). The SET is comprised of several interview questions (administrator, staff, and student interviews), building observations, and a review of permanent products (e.g., discipline referral forms, student handbook, school improvement plan). The information gathered in interviews, observations, and product reviews results in scores on seven different subscales related to SWPBS implementation – expectations defined, expectations taught, rewards (use of acknowledgements), response to violations, data management, district involvement – as well as an overall summary (mean) score. Schools receiving an overall summary score of 80% on all SET subscales and a score of 80% on the expectations taught subscale are considered to be fully implementing universal positive behavior support systems (commonly referred to as being an "80/80" school).

Sample/Participants

The High School Teaching Approach Rating Scale (TARS) was administered to a sample of teachers across eight high schools involved in a federally funded collaborative U.S. Department of Education (Institute of Educational Sciences) collaborative research project based at the University of Oregon and Loyola University Chicago. For the purposes of this study, participants considered eligible to take the survey were teachers or classroom-based support professionals (e.g., teacher aides).

Eight high schools total are project partners; four in Oregon, and four in Illinois. During the 2009-2010 academic year, each partner high school participated in structured professional development about universal positive behavior support (PBS) planning and implementation delivered by grant staff. Professional development took place across two days in August 2009 in Oregon through an all-site forum, while the professional development was delivered on-site across several months during the fall and winter in the Illinois high schools.

Following the delivery of the structured professional development modules, grant staff provided technical assistance for a designated PBS leadership team at each site while they either developed behavior support system components (e.g., behavioral definitions, referral processes, behavioral expectations, teaching system, acknowledgement system), or refined existing PBS systems. At each site, the leadership team consisted of key school personnel, inclusive of an administrator, general and special education teachers, and support personnel. The number of members on each team ranged from 10 to almost 20 members. Leadership teams were, in turn, expected to train school

staff in their buildings around the positive behavior support system they developed or refined.

The four high schools in Illinois were termed "zero" schools by grant personnel, which means that they previously had no professional development around PBS, nor had they had any formalized behavior support systems in place (they may have had some of the requisite components, but none that were systematized) or practices related to PBS. The four high schools in Illinois will be referred to as Site 111, Site 112, Site 113, and Site 114 for the remainder of this discussion.

Site 111 is the only high school within the district, and is located directly north of Chicago in what is considered a small city. The school has 2,970 students and 191 teachers, with a teacher to student ratio of 15:5. Approximately 36% of students are eligible for free or reduced lunch. The student body is comprised of 1,395 Caucasian students, 1,077 African American students, 318 Hispanic students, 93 Asian/Pacific Islander students, and 2 American Indian/Alaskan native students (U.S. Department of Education, Institute of Education Statistics, 2010).

Site 112 is located in the largest high school district in the state, and is established in what is considered a small city. The school has 2,550 students and 137 teachers, with a teacher to student ratio of 18:6. Approximately 17% of students are eligible for free or reduced lunch. The student body is comprised of 1,728 Caucasian students, 142 African American students, 305 Hispanic students, 319 Asian/Pacific Islander students, and 9 American Indian/Alaskan native students (U.S. Department of Education, Institute of Education Statistics, 2010).

Site 113 is located in a large near northwest suburb, and is part of a three school district. The school has 1,893 students and 133 teachers, with a teacher to student ratio of 14:2. Free/reduced lunch information is not available for this site. The student body is comprised of 856 Caucasian students, 104 African American students, 291 Hispanic students, 614 Asian/Pacific Islander students, and 7 American Indian/Alaskan native students (U.S. Department of Education, Institute of Education Statistics, 2010).

Site 114 is located in the same district as Site 112. The surrounding city is considered a large suburb, and is located northwest of Chicago. The school has 2,643 students and 143 teachers, with a teacher to student ratio of 18:5. Approximately 28% of students are eligible for free or reduced lunch. The student body is comprised of 1,604 Caucasian students, 133 African American students, 663 Hispanic students, 207 Asian/Pacific Islander students, and 6 American Indian/Alaskan native students (U.S. Department of Education, Institute of Education Statistics, 2010).

The four high schools in Oregon had previously established positive behavior support systems, but were experienced varying levels of success at the outset of the project. The four Oregon high schools will be referred to as Site 101, Site 102, Site 103, and Site 104 for the remainder of this discussion. Site 101 is located in a relatively larger metropolitan area in Oregon, and the surrounding area is considered a mid-size city. The school has 1,073 students and 56 teachers, with a teacher to student ratio of 19:3. Approximately 29% of students are eligible for free or reduced lunch. The student body is comprised of 766 Caucasian students, 18 African American students, 110 Hispanic

students, 37 Asian/Pacific Islander students, and 37 American Indian/Alaskan native students (U.S. Department of Education, Institute of Education Statistics, 2010).

Site 102 is also a small high school located in a town on the fringe of a larger metropolitan area. The school has 1,905 students and 80 teachers, with a teacher to student ratio of 23:7. Approximately 42% of students are eligible for free or reduced lunch. The student body is comprised of 1,609 Caucasian students, 17 African American students, 163 Hispanic students, 39 Asian/Pacific Islander students, and 47 American Indian/Alaskan native students (U.S. Department of Education, Institute of Education Statistics, 2010).

Site 103 is a small high school located in a town on the fringe of a larger metropolitan area. The school has 743 students and 37 teachers, with a teacher to student ratio of 19:4. Approximately 34% of students are eligible for free or reduced lunch. The student body is comprised of 607 Caucasian students, 6 African American students, 54 Hispanic students, 11 Asian/Pacific Islander students, and 11 American Indian/Alaskan native students (U.S. Department of Education, Institute of Education Statistics, 2010).

Site 104 is located in a town that is not considered close to a larger metropolitan area. The school has 1,748 students and 81 teachers, with a teacher to student ratio of 21:6. Approximately 40% of students are eligible for free or reduced lunch. The student body is comprised of 1,215 Caucasian students, 17 African American students, 451 Hispanic students, 32 Asian/Pacific Islander students, and 5 American Indian/Alaskan native students (U.S. Department of Education, Institute of Education Statistics, 2010). Key demographic information is summarized in table 2.

Table 2. Sample Demographic Information

Site (State)	Number of Students	Number of Staff	% Free/Reduced Lunch	% Minority Status
111 (IL*)	2,970	191	36	53.0
112 (IL)	2,550	137	17	32.2
113 (IL)	1,893	133	n/a	54.8
114 (IL)	2,643	143	28	39.3
101 (OR*)	1,073	56	29	28.6
102 (OR)	1,905	80	42	15.5
103 (OR)	743	35	34	18.3
104 (OR)	1,748	81	40	30.5

*IL = Illinois; OR = Oregon

In addition to summarizing existing demographic information for school sites, the researcher asked several additional demographic items for the purposes of this project. At the conclusion of the TARS, participants were asked to indicate the following: their position (teacher/aide); number of years at their current position; and number of years in the field of education. Overall, most survey respondents were classroom teachers, and the sample was relatively young (with respondents indicating between 12 and 18 years in the field of education). Supplementary demographic information is summarized in table 3 below.

Table 3. Supplementary Sample Demographic Information

Site (State)	Teacher Respondents	Teacher Aide Respondents	Average Number of Years (Site)	Average Number of Years (Field)
111 (IL*)	76	5	9.3	15.3
112 (IL)	108	8	12.7	16.2
113 (IL)	95	5	11.2	17.0
114 (IL)	96	13	10.0	13.1
101 (OR*)	28	6	5.6	13.3
102 (OR)	31	0	11.0	17.2
103 (OR)	31	6	8.6	12.5
104 (OR)	42	13	7.2	13.9

*IL = Illinois; OR = Oregon

As part of the research project, each site participates in the SET bi-annually. As previously mentioned, the SET is a measure of fidelity that assesses a school's level of implementation across a number of different areas. A school operating at full fidelity would receive an 80% on the Expectations Taught subscale, as well as an 80% overall. Of particular interest to this project are the Expectations Taught (measuring fidelity of teaching practices) and the Reward Systems (measuring fidelity of using acknowledgement) subscales. The most recent SET scores for each site are listed in table 4.

Table 4. SET Subscale Summary

Site (State)	SET Collection Date	Expectations Taught (%)	Rewards System (%)	Overall (%)
111 (IL)	Spring 2010	10	0	26
112 (IL)	Fall 2010	50	83	67
113 (IL)	Fall 2010	0	0	32
114 (IL)	Fall 2010	60	80	68
101 (OR)	Fall 2010	100	83	88
102 (OR)	Fall 2010	70	83	72
103 (OR)	Fall 2010	90	100	74
104 (OR)	Fall 2010	50	33	79

Procedure

In the fall of 2010, grant-based data management staff sent a scripted e-mail with on-line TARS survey link to the technical assistance provider assigned to each site across the two states. The assigned technical assistance provider, in-turn, forwarded the link to the high school team leader (e.g., internal facilitator) at each of eight Illinois and Oregon project sites. The team leader at each site was instructed to send the link via email to *all teaching staff* within the building. Again, for the purposes of this project, "teaching staff" was defined as both teachers and teacher aides/paraprofessionals. (The survey was intended to be administered to any staff person who spends the majority of their time within an instructional setting, directly teaching students.) Additionally, core PBS team members were asked *not* to complete the survey, as they were heavily involved in

developing and implementing PBS practices, thus positively biasing their potential responses.

After the survey is opened to each site, it was available online for approximately one month. Two weeks after the survey was launched at each site, technical assistance providers prompted designated team members to remind staff who received the survey link that it would close in two weeks. At the end of one month, teaching staff at each of the eight schools were no longer able to take the survey.

Following the closing of each survey, survey responses were exported from the online survey server in an Excel spreadsheet. Each Excel spreadsheet contained individual survey responses per item, but no individually identifying information about respondents. Spreadsheets with response information for each high school were posted to a secure shared drive (shared between Loyola and Oregon grant staff) by an Oregon staff member. Once files were posted to the secure shared drive, they were available for data analysis.

The SET was administered in the Fall of 2010 as a project data collection requirement (in one case, the SET was administered during the preceding summer). Similar to the data sharing process employed for TARS data, an Oregon staff member posted scored and summarized instruments for Oregon schools to a secure shared drive. Illinois SET scores for each site were readily available to the researcher (as well as saved to the secure shared drive).

CHAPTER IV

RESULTS

Data Analysis Procedures

Description of the Statistical Model

The researcher used a hierarchical linear model to examine the differences

between project sites across several variables. Multiple regression models aggregate all

data points into a single regression line, while a hierarchical linear model (HLM) utilizes

a nested structure to analyze differences between individual responses as well as

differences between schools. Thus, this statistical analysis yields multiple regression lines

(one line per school, in this case), and uses factors about different sites to more accurately

predict how individuals in a given building will respond to survey items – or will fall

along the regression line. The basic model for hierarchical linear analyses is presented

below:

$$Y_{ij} = \beta_{oj} + r_{ij}$$

$$\beta_{oj} = \gamma_{oo} + u_{oj}$$

Within this model, the outcome term (Y_{ij}) represents the expressed intent to perform a

given behavior per person (teacher) per group (school). The *r value* represents the error

term for individual responses at level one of this analysis. The intercept, or beta term of

the model ($\beta_{oj} = \gamma_{oo} + u_{oj}$), includes a gamma term. The gamma term represents the grand

mean of all regression line intercepts for each of the eight schools. The *u value* is the

error term at level two of analysis, and represents the distance of the school mean from the grand mean for each school. Individual variables for analyses are represented by the subscripts in the beta term (β_{oj}).

HLM Analysis

The first step in data analysis was to determine the intra-class correlation (ICC) value. This analysis allowed the researcher to determine how much of the variance in responding – or the variance between regression lines – was explained by school factors. That is to say, the researcher wanted to determine how much variance in responding was explained simply by teaching in a given building. The ICC was calculated by dividing the *u value* by the *r + u value* (the total amount of variance in the model), and multiplying that value by 100 to yield a percentage. An ICC of at least 10% is desirable before proceeding with building the HLM for this project. Otherwise, it would be unnecessary to run hierarchical statistics if no variance was found between groups (sites), and the researcher would resort to multiple regression statistics.

The second step in data analysis was to determine level one variance within the nested structure of HLM. For the purposes of analysis, the researcher built three separate models, to represent the three distinct constructs embedded within the data. For the purposes of brevity, three constructs will be abbreviated as follows: teaching (TCH); function (FXN); and acknowledgement (ACK). The level one variance was determined based on individual teacher responses, and the models for this level of analysis are presented below:

Teaching (TCH) Model:

$$Y_{ij} = \beta_{oj} + \beta_{1j}*(\text{TCH Attitude Mean}) + \beta_{2j}*(\text{TCH Social Mean}) + \beta_{3j}*(\text{TCH Control Mean})$$

$$+ r_{ij}$$

$$\beta_{1j} \,(\text{TCH Attitude}) = \gamma_{1o} + u_{1j}$$

$$\beta_{2j} \,(\text{TCH Social}) = \gamma_{2o} + u_{2j}$$

$$\beta_{3j} \,(\text{TCH Control}) = \gamma_{3o} + u_{3j}$$

Function (FXN) Model:

$$Y_{ij} = \beta_{oj} + \beta_{1j}*(\text{FXN Attitude Mean}) + \beta_{2j}*(\text{FXN Social Mean}) + \beta_{3j}*(\text{FXN Control Mean})$$

$$+ r_{ij}$$

$$\beta_{1j} \,(\text{FXN Attitude}) = \gamma_{1o} + u_{1j}$$

$$\beta_{2j} \,(\text{FXN Social}) = \gamma_{2o} + u_{2j}$$

$$\beta_{3j} \,(\text{FXN Control}) = \gamma_{3o} + u_{3j}$$

Acknowledgement (ACK) Model:

$$Y_{ij} = \beta_{oj} + \beta_{1j}*(\text{ACK Attitude Mean}) + \beta_{2j}*(\text{ACK Social Mean}) + \beta_{3j}*(\text{ACK Control}$$

$$\text{Mean}) + r_{ij}$$

$$\beta_{1j} \,(\text{ACK Attitude}) = \gamma_{1o} + u_{1j}$$

$$\beta_{2j} \,(\text{ACK Social}) = \gamma_{2o} + u_{2j}$$

$$\beta_{3j} \,(\text{ACK Control}) = \gamma_{3o} + u_{3j}$$

Within this level one model, the first beta term represents the y-intercept for each school.

The first variable (β_{1j}) represents regression coefficient for attitude items per construct.

The second variable (β_{2j}) represents the regression coefficient for perceived social norms

items per construct. The third variable (β_{3j}) represents the regression coefficient for

perceived behavioral control items per construct. At this level of analysis, the

researcher determined whether slopes per variable (e.g., attitudes, perceived social norms,

perceived behavioral control) differed significantly between schools. *It was the*

hypothesis of the researcher that the regression coefficients per variable per school will

vary. Per the Reasoned Action model, one would expect different predictors to contribute

differently to intent to engage in a behavior, based on site variables influencing response

patterns.

The final step in the HLM analysis was to determine how building factors

influenced teacher responses. The building level factors considered were response

patterns for environmental variables items, of which there were two environmental items

per larger construct (teaching, function, acknowledgement). Again, the researcher built

three separate models, to represent the three distinct constructs embedded within the data.

Variance at this level of analysis was determined based on building level responses to

environmental items, and the models for the second level of analysis are presented below:

Teaching (TCH) Model:

$$Y_{ij} = \beta_{oj} + \beta_{1j}*(\text{TCH Attitude Mean}) + \beta_{2j}*(\text{TCH Social Mean}) + \beta_{3j}*(\text{TCH Control Mean})$$

$$+ r_{ij}$$

$$\beta_{oj} = G_0 + G_{01}*(\text{TCH Environment Mean}) + u_{0j}$$

$$Y_{ij} = \beta_{oj} + \beta_{1j} + \beta_{2j} + \beta_{3j} + r_{ij}$$

$$\beta_{1j} = \gamma_{1o} + w_{1o} + u_{1j}$$

$$\beta_{2j} = \gamma_{2o} + w_{2o} + u_{2j}$$

$$\beta_{3j} = \gamma_{3o} + w_{3o} + u_{3j}$$

Function (FXN) Model:

$$Y_{ij} = \beta_{oj} + \beta_{1j}*(\text{FXN Attitude Mean}) + \beta_{2j}*(\text{FXN Social Mean}) + \beta_{3j}*(\text{FXN Control Mean})$$

$$+ r_{ij}$$

$$\beta_{oj} = G_0 + G_{01}*(\text{FXN Environment Mean}) + u_{0j}$$

$$\beta_{1j} = \gamma_{1o} + w_{1o} + u_{1j}$$

$$\beta_{2j} = \gamma_{2o} + w_{2o} + u_{2j}$$

$$\beta_{3j} = \gamma_{3o} + w_{3o} + u_{3j}$$

Acknowledgement (ACK) Model:

$$Y_{ij} = \beta_{oj} + \beta_{1j}*(\text{ACK Attitude Mean}) + \beta_{2j}*(\text{ACK Social Mean}) + \beta_{3j}*(\text{ACK Control}$$

$$\text{Mean}) + r_{ij}$$

$$\beta_{oj} = G_0 + G_{01}*(\text{ACK Environment Mean}) + u_{0j}$$

$$\beta_{1j} = \gamma_{1o} + w_{1o} + u_{1j}$$

$$\beta_{2j} = \gamma_{2o} + w_{2o} + u_{2j}$$

$$\beta_{3j} = \gamma_{3o} + w_{3o} + u_{3j}$$

It was the hypothesis of the researcher that, with level two analysis, there would be building-level variance related to how participants within a particular school responded to the environmental variable items per construct.

Additional Analyses

Regression Weights

The researcher was also interested in determining how attitudes, social perceptions, and perceived behavioral control individually contributed to participants' intent to perform each of the three behaviors (e.g., teaching, collecting functional data,

using acknowledgement). Thus, the researcher used simple regression models to determine coefficients for attitudes, social perceptions, and perceived behavioral control for each of the three major behaviors. *It was the hypothesis of the researcher that regression coefficients would vary across major behaviors.*

SET Correlations

The researcher was additionally interested in determining how SET subscale scores per site might be related to intent to perform specific behaviors. The researcher used a basic correlation model to determine how SET subscale scores (e.g., Expectations Taught, Rewards System) per site correlated with the average site intent to engage in teaching behaviors and intent to use acknowledgments. *It was the hypothesis of the researcher that SET scores would be positively correlated with building-level intent to engage in PBS-related practices.*

<div align="center">

Data Cleaning Procedures

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Once survey data were collected, some cases needed to be eliminated from analysis. The researcher used two criteria for inclusion in data analysis: at least 75% of all survey items completed (no more than eight items skipped) and the respondent must report being a teacher or a member of the teaching staff. For example, respondents that reported being a counselor or a school psychologist on demographic items were excluded from the overall sample – as teachers and teaching assistants were the target population for the survey. The numbers of original respondents per site and final cases per site are available in table 5.

Table 5. Deleted Case Summary

Site	Original Number of Respondents	Deleted Cases	Final Number of Cases
101	38	3	35
102	32	0	32
103	39	2	37
104	62	2	60
111	86	1	85
112	133	11	122
113	116	6	110
114	119	7	112

After eliminating appropriate cases from the overall sample, the researcher used mean substitution for any items skipped by participants (for remaining cases). Mean substitution was used in order to have the maximum number of cases for each part of the data analysis phase (for a more detailed discussion of data analysis procedures, see below). Numbers of items requiring mean substitution ranged from 1 to 7.

Sample Characteristics

The number of survey respondents ranged across sites from 32 respondents to 133 respondents (before eliminating cases, as outlined above). The average years at the site, years in the field of education, reported knowledge and familiarity with implementing PBS procedures also varied across sites. For knowledge respondents, participants rated their level of knowledge about various PBS practices along a 5-point continuum, ranging

from "not at all knowledgeable" to "extremely knowledgeable." Similarly, on familiarity items, respondents rated their level of familiarity with implementing PBS practices along a 5-point continuum, ranging from "not at all familiar" to "extremely familiar." Demographic data for survey participants is available in table 6.

Table 6. Final Sample Demographic Information

Site	Number of Cases	Average Years at Site	Average Years in Field	Average Reported Knowledge	Average Reported Familiarity
101	35	5.6	13.3	2.01	2.03
102	32	11.0	17.2	2.68	2.77
103	38	8.6	12.5	2.32	2.38
104	60	7.2	13.9	2.67	2.70
111	85	9.3	15.3	3.11	3.31
112	122	12.7	16.2	2.80	2.83
113	110	11.2	17.0	2.93	3.07
114	112	10.0	13.1	2.78	2.77

Data Analysis Results

Research Question #1 – Is there variance between sites regarding intent to engage in different PBS practices?

      Hierarchical Linear Modeling (HLM) – Step 1. The first step in building the model for analysis entailed aggregating all responses for the designated outcome variables. For the purposes of this project, items that addressed participants' intent to

explicitly teach behaviors, intent to collect data around the function of student

behavior, and intent to acknowledge students for behaving appropriately served as the

dependent variables (dependent upon their responding on items from other constructs).

The researcher constructed three distinct models for analysis, as participants' intent to

teach behaviors, collect data, and to acknowledge behaviors are understood as three

separate constructs.

After aggregating outcome variable responses, the researcher ran the

unconditional ANOVA model to determine whether there was variance between sites

(level 1 of the hierarchical linear model). The results for each analysis are listed in table 7

below.

Table 7. Unconditional ANOVA Results

Outcome Variable	Standard Deviation	Variance Component	Degrees of Freedom (df)	Chi-square	P-value
Intent to teach behaviors	0.094	0.0088	7	11.33	0.124
Intent to collect function data	0.082	0.0067	7	11.02	0.137
Intent to use acknowledgements	0.155	0.0239	7	18.44	0.010

As outlined in table 7, intent to explicitly teach behaviors or to collect functional

behavior data did not vary significantly between sites. However, this initial level of

analysis indicated that there was some level of variance between sites regarding intent to

acknowledge students – meaning that the variance component for this particular

outcome variable was significant (0.0239).

Hierarchical Linear Modeling (HLM) – Step 2. The first step indicated that

multilevel model building was appropriate for the outcome intent to use

acknowledgements. As such, a random coefficients (RC) analysis was utilized to

determine the difference in slopes between sites for intent to use acknowledgements.

Specifically, the researcher wanted to estimate whether there was variance regarding

weights for attitudinal, perceptions of social norms, and perceived behavioral control

items across sites. The results from this level of analysis are outlined in table 8.

Table 8. Final Estimation of Fixed Effects

Fixed Effect	Coefficient	Standard Error	T-ratio	Degrees of Freedom (df)	*P-Value*
Intercept Term	5.326	0.078	68.414	7	0.000
Attitudes toward using ACK*	0.332	0.036	9.177	7	0.000
Social perceptions around ACK	0.084	0.039	2.179	7	0.065
Perceived control in using ACK	0.609	0.035	17.271	7	0.000

*ACK = acknowledgement

As outlined in table 8, the results indicated that the relationship between the three

independent variables and the intent to acknowledge students did not vary between sites.

Each school has the same relationship between the predictors (attitudes, social

perceptions, perceived control) and the outcome (intent to use acknowledgements with

students). The final estimation of variance components is included in table 9.

Table 9. Final Estimation of Variance Components for Acknowledgement

Random Effect	Standard Deviation	Variance Component	Degrees of Freedom (df)	Chi-square	*P*-value
Attitude	0.079	0.0062	7	6.20	0.500
Social perceptions	0.069	0.0047	7	8.91	0.258
Perceived control	0.057	0.0032	7	7.64	0.366

The table above represents the "level-1" relationship between the independent

variables (e.g., attitudes toward using acknowledgements, social perceptions around

whether other staff members are using acknowledgements, perceived behavioral control

over implementing this practice) and the dependent variable (intent to actually use

acknowledgements with students). From this level of analysis, it can be determined that

there is no variation between sites in terms of intent to use acknowledgements (the

dependent variable). There is, however, some variance in intercept terms across sites.

Hierarchical Linear Modeling (HLM) – Step 3. For the third level of HLM

analysis, slopes as outcomes (SAO), the researcher wanted to determine how

environmental barriers to using acknowledgements affected schools' intent to utilize

rewards with students. To accomplish this task, the researcher utilized school-level

variables to estimate the intercept's variance. School level variables used at this level

of analysis included environmental items – whether teachers felt they had adequate

materials and/or time to implement PBS practices (using acknowledgements with

students, in this case). As indicated earlier, the researcher averaged responses for both

environment items related to acknowledgment for analysis. Additionally, level-1

variables were fixed to non-random, and all school-level variables were grand-mean

centered. The results from this level of analysis are outlined in table 10.

Table 10. Final Estimation of Fixed Effects for Acknowledgement

Fixed Effect	Coefficient	Standard Error	T-ratio	Degrees of Freedom (df)	*P*-value
Intercept Term	5.325	0.056	95.848	6	0.000
Environment	0.381	0.148	2.573	6	0.042
Attitudes	0.342	0.035	9.867	588	0.000
Social perceptions	0.083	0.034	2.449	588	0.015
Perceived control	0.604	0.033	18.478	588	0.000

From this level of analysis, it appears as if the site mean response values have a

significant relationship with the site intercept ($p = 0.042$). Meaning, the higher a given

site (school) rates environmental variable items related to acknowledgements (e.g., time

in the day to acknowledge students, acknowledgements available to use), the higher the

mean intent to use acknowledgements values. The final estimation of variance is

provided in table 11 below.

Table 11. Final Estimation of Variance for Acknowledgement

Random Effect	Standard Deviation	Variance Component	Degrees of Freedom (df)	Chi-square	P-value
Level-1 intercept	0.132	0.0173	6	20.476	0.003

When examining random effects, the *p*-value (0.003) indicates that there is variation between site intercepts at this level of analysis even after controlling for environment. In order to determine the amount of variance explained by response patterns for environmental items (in relationship to using acknowledgements with students), the researcher used the variance value from the first step in the modeling procedure (0.0239) as compared to the variance component from the final step in the modeling procedure (0.0173) in the following equation:

% of variance explained = (0.0239) – (0.0173) / (0.0239) = 27.6%

According to this calculation, 27% of the variance in the intercept across schools can be explained by environmental variables. While there is some level of variance between site intercepts, this calculation indicates that a very small percentage can be explained by the above modeling procedure (27.6% of 0.0239).

Research Question #1 Summary

The researcher found no variance between sites in responding for teaching and function construct variables. However, some level of variance between site intercepts was found for the use of acknowledgements with students – meaning that there was variation between schools in average expressed intent to use acknowledgement. A similar

relationship between attitudes, perceived norms, and perceived control as related to intent was found across all sites. But some differences were noted in environmental item responses for intent to use acknowledgments across sites once attitudes, perceptions of social norms, and perceived behavioral control were controlled for in the within school model. While some level of variance was established, site-specific variables (e.g., responses on environmental variable items) explained a minimal level of variance between sites.

Research Question #2 – Are attitudes, social perceptions, and perceived behavioral control weighted differently in terms of predicting intent to engage in PBS practices?

  Teaching Regression Analysis. Using the entire sample, the researcher averaged responses for all items addressing attitudes toward teaching (3), perceptions of what other staff members think/do regarding teaching behavior (2), and perceived behavioral control items around teaching behavior (2). After averaging all participant responses across all sites, the researcher utilized a linear regression model to determine how well each of the three variables predicted participants' intent to teach behavior, as well as regression coefficients for each construct (attitudes, social perceptions, perceived variable control). Regression results for teaching are listed in table 12.

Table 12. Teaching Regression Results

Model Variable	Unstandardized Beta Coefficient	Standard Error	t-value	*P*-value
Attitudes	0.324	0.041	7.807	0.000
Social perception	0.140	0.035	4.048	0.000
Perceived control	0.453	0.030	14.991	0.000

The R square variable for this regression was 0.465 – meaning that attitudes, social perceptions, and perceived behavioral control taken together predicted approximately 47% of the variance in expressed intent to engage in teaching behaviors related to positive behavior support systems. Additionally, significant *p*-values for each of the model variables indicate that each variable significantly contributes to expressed intent to perform teaching behaviors. Of the three constructs, perceived ability to teach social behaviors had the greatest weight (B = 0.453).

Function Regression Analysis. The researcher averaged responses for all items addressing attitudes toward understanding function (2), perceptions of what other staff members think/do regarding analyzing the function of student behavior (2), and perceived behavioral control items around understanding the function of student behavior (2). After averaging all participant responses across all sites, the researcher utilized a linear regression model to determine how well each of the three variables predicted participants' intent to collect and examine behavior, as well as regression coefficients for

each construct (attitudes, social perceptions, perceived variable control). Regression

results for function are listed in table 13 below.

Table 13. Function Regression Results

Model Variable	Unstandardized Beta Coefficient	Standard Error	t-value	P-value
Attitudes	0.269	0.056	4.838	0.000
Social perception	0.338	0.053	6.382	0.000
Perceived control	0.452	0.047	9.590	0.000

The R square variable for this regression was 0.283 – meaning that attitudes,

social perceptions, and perceived behavioral control taken together predicted

approximately 28% of the variance in expressed intent to engage in functional behavior

analysis behaviors. Additionally, significant *p*-values for each of the model variables

indicate that each variable significantly contributes to expressed intent to perform

function-related behaviors. Of the three constructs, perceived ability collect and analyze

behavior data had the greatest weight (B = 0.452).

Acknowledgement Regression Analysis. The researcher averaged responses for all

items addressing attitudes toward using acknowledgements (3), perceptions of what other

staff members think/do regarding using acknowledgements (2), and perceived behavioral

control items around acknowledging students (2). After averaging all participant

responses across all sites, the researcher utilized a linear regression model to determine

the amount of variance the three variables predicted related to intent to use

acknowledgements, as well as regression coefficients for each construct (attitudes, social perceptions, perceived variable control). Regression results for acknowledgement are listed in table 14.

Table 14. Acknowledgement Regression Results

Model Variable	Unstandardized Beta Coefficient	Standard Error	t-value	*P*-value
Attitudes	0.335	0.034	9.817	0.000
Social perception	0.110	0.034	3.295	0.001
Perceived control	0.599	0.033	18.311	0.000

The R square variable for this regression was 0.542 – meaning that attitudes, social perceptions, and perceived behavioral control taken together predicted approximately 54% of the variance in expressed intent to engage in acknowledging behaviors related to positive behavior support systems. Additionally, significant *p*-values for each of the model variables indicate that each variable significantly contributes to expressed intent to perform acknowledgement behaviors. Of the three constructs, perceived ability to teach social behaviors had the greatest weight (B = 0.599).

Research Question #3 – Does expressed intent to teach behaviors or to use acknowledgements correlate with SET subscale scores?

The researcher wanted to determine whether site intention to teach behavior or to use acknowledgements was correlated with SET subscale scores for Expectations Taught and Reward System (teaching and acknowledgement, respectively). The researcher

aggregated intent to teach and intent to use acknowledgement per site, and estimated the Pearson product-moment correlation between all variables. The results from this analysis are presented in table 15.

Table 15. Correlation Between TARS Intent Ratings and SET Scores

	TSET	ASET	TTARS	ATARS
Expectations Taught SET Subscale (TSET)	-	0.894	0.059	0.681
Rewards Systems SET Subscale (ASET)	0.894	-	-0.038	0.614
TARS Teaching Intent Mean (TTARS)	0.059*	-0.038	-	0.518
TARS Acknowledgement Intent Mean (ATARS)	0.681	0.614**	0.518	-

$*p < 0.05$
$**p < 0.1$

As indicated in table 15, TARS intent to teach behavior ratings were correlated with site Expectations Taught subscale scores at the .05 level (0.059). Additionally, TARS intent to use acknowledgements was fairly correlated with Rewards Systems subscale scores at the 0.1 level (0.614).

CHAPTER V

DISCUSSION

Research Questions

Research Question #1 – Is there variance between sites regarding intent to engage in different PBS practices?

The first research question was partially supported. It was initially hypothesized that there would be variance in expressed intent to engage in all three PBS practices addressed through the TARS – teaching behaviors, understanding the function of student behavior, and using acknowledgments with students when they exhibit desired behaviors. However, between-site variance was only found for intent to use acknowledgements (or rewards) with students.

There was no variance between sites in terms of expressed intent to perform teaching-related behaviors (e.g., explicitly teach expected behaviors in the classroom; explicitly teach expected behaviors in non-classroom settings). Similarly, there was no variance between sites in terms of expressed intent to perform function-related behaviors (e.g., collect behavior data related to student motivation). Some level of variance between site intercepts was found for the use of acknowledgements with students (but not for intent to use acknowledgement, the dependent variable). While some level of variance was established, site-specific variables (e.g., responses on environmental variable items)

72

explained a minimal level of variance between sites for use of acknowledgement. Ultimately, only 26.7% of 0.0239 was explained by the model.

Despite the minimal level of variance explained, environmental variables as they relate to the intent to implement acknowledgement practices should be considered. The researcher found that the more positive the average school ratings for environmental items (e.g., do participants have access to acknowledgements, do participants have time during the school day to administer acknowledgements), the higher the expressed intent to use acknowledgements with students per building. This relationship demonstrates that environmental barriers can have a significant impact on teachers' intent to engage in PBS practices, despite positive attitudes toward (or ratings of social norms, or perceived behavioral control) engaging in these practices. Even well-intentioned teachers with positive attitudes toward PBS programs and high self confidence (perceived behavioral control), for example, might encounter environmental variables (e.g., time, lack of materials) that could prevent them from participating in the implementation process. That is to say, even if teachers have the core philosophy in place (they agree that students need to be taught behaviors, that they should be rewarded for behaving appropriately), if there are systems-level barriers in place, then teachers may be less likely to engage in these practices. For schools implementing PBS, this means that due consideration needs to be given to any school-level variables that might prevent teachers from enacting core practices – such as explicitly teaching social behaviors, or providing rewards when students behave appropriately.

There are several possible explanations for why there was minimal (if any) variance between sites in expressed intent to perform PBS-related practices. First, all participants were staff members within schools belonging to the same overarching research project. Core PBS teams at all sites received a similar amount and caliber training around implementing positive behavior support systems, as well as around the importance of fostering buy-in to the initiative with their larger staff. In fact, each site was actively encouraged by researchers to discuss the benefits of positive behavior support practices within their buildings, as well as to facilitate the implementation of said systems. With all sites having these common denominators, it is not surprising that there was minimal variation between school buildings.

Additionally, all sites were willing participants in the overarching research project. Administrators at the district level, as well as principals and a core group of teachers at the building level, agreed to receive training and to begin (or continue) implementing school-wide positive behavior support systems within their buildings. All sites may have had a common predisposition toward favoring the implementation of PBS and its related practices – further dampening possible variance between buildings. Considering Illinois-Oregon site differences may provide further insight as to the limited variability in the sample. Oregon sites were considered further along in implementation (they had been implementing PBS or PBS-like practices for at least one year) as compared to Illinois sites. Thus, they may have already spent time gaining buy-in for building positive behavior supports, and staff may have already had favorable attitudes toward the initiative.

In relation to the Reasoned Action model, studies reviewed that used this framework had much larger samples than the present study. All studies used individual people as units of analysis – not entire schools. Thus, it would have been much easier to find variability between individual respondents in a study that had many more units of analysis. According to the Reasoned Action model, the lack of variability between schools for two of the three constructs (teaching, understanding function) would not necessarily be a reflection of the inapplicability of the model to these behaviors (e.g., PBS practices). Rather, it was a function of the limited number of units of analysis, affecting the statistical power during data analysis.

Research Question #2 – Are attitudes, social perceptions, and perceived behavioral control weighted differently in terms of predicting intent to engage in PBS practices?

The second research question was supported by the results found in this study. It was hypothesized that for different constructs (e.g., teaching, function, acknowledgement), attitudes, perceived social norms, and perceived behavioral control would have different regression coefficients. That is, it was predicted that attitudes, perceived norms, and perceived behavioral control would predict participants' intent to engage in PBS-related behaviors differently. Explanation of regression weights will be followed by a brief discussion of the amount of overall variance explained using the Reasoned Action model in this study.

In general, the amount of variance explained by attitude, social perception, and perceived behavioral control variables as related to each construct (teaching, understanding function, using acknowledgements) was fairly substantial. This was

particularly the case for the teaching (46.5% of variance explained) and the acknowledgement (54.2% of variance explained) constructs of the scale. Less variance was explained for the function construct (28.3%), for reasons discussed in more detail below.

According to the Reasoned Action model, it would be expected that a high amount of variance could be explained considering average responses on items related to attitudes, social perceptions, and perceived behavioral control. Studies reviewed in Fishbein and Azjen (2010) indicated that between 62% and 90% of the variance in expressed intent to perform a given behavior could be explained considering these three factors. In comparing the level of variance from these studies to the levels of variance explained in the present study, attitudes, perceived norms, and perceived behavior control seemingly explain slightly less than archetypal studies provided in the review – particularly for intent to teach social behaviors (54% explained) and intent to use acknowledgements at the high school level (47% explained). However, approximately 50% for both of these constructs might be considered a valid achievement in a pilot study with a significantly restricted range of potential respondents.

In considering the construct of intention to engage in function-related behaviors (e.g., determining student motivation for behaviors, gathering function-based data), there is not strong support for the Reasoned Action framework (only 28% of variance in expressed intent was explained when considering attitudes, perceived norms, and perceived control). While determining the function of student behavior is an important part of intervening effectively, it is not necessarily a core practice in buildings attempting

to implement school-wide positive behavior support systems (e.g., systems for explicitly teaching behavior, rewarding students for engaging in appropriate behaviors). Teachers are encouraged to hypothesize behavioral motivation when students fail to demonstrate expected behaviors, but in-depth analysis of motivation and function typically does not happen until the secondary and tertiary levels of support within a PBS framework. Thus, if teachers were not accustomed to gathering behavioral data, they may not have realized the importance of said data in intervention planning (a notion addressed in TARS items). Also important to consider, items on the TARS assumed a basic understanding of behavioral principles – of the connection between student motivation and outward behaviors. However, if teachers did not fully understand this connection (or did not agree that all student behaviors serve a purpose), then they would not necessarily endorse function-related items positively.

All three variables (attitudes, perceived norms, perceived behavioral control) contributed significantly to the overall variance in responding. However, across all three constructs, ratings on items related to perceived behavioral control had the greatest coefficient weight – meaning that they contributed most to the overall variance explained for the construct. In several other studies that employed the Reasoned Action Model, perceived behavioral control also had the greatest regression weight as compared to other constructs (perceived norms, attitudes). Latimer and Martin-Ginis (2005) investigated levels of physical leisure activity among a sample of spinal cord injury patients. In this study, researchers found that attitudes, injunctive norms, and perceived control accounted for 61% of the variance with regard to intention to engage in leisurely physical activity.

All three determinants were statistically significant in their overall contribution to reported intentions, with perceived control having the highest regression weight (.66), following by attitudes toward physical activity (.55) and perceived norms (.48) (Latimer & Martin-Ginis, 2005).

In Davis, Azjen, Saunders, and Williams (2002), researchers investigated intent to complete the current school year in a sample of inner-city students, with perceived behavioral control having the greatest regression weight (0.44) as compared to attitudes toward completing school (0.22) and perceived norms about completing school (0.28). Researchers found the same pattern in a study examining intent to apply for a promotion in a sample of employees, with perceived behavioral control having a regression weight of 0.70 (Giles & Laramour, 2000). And again, in a study examining intent to donate blood (Giles & Cairnes, 1995) and a study examining smoking cessation (Godin, Valois, Lepage, & Desharnais, 1992) researchers found that perceived behavioral control over performing a given behavior (e.g., giving blood, quitting smoking) explained the most variance in participants' expressed intent to engage in the behavior.

While perceived behavioral control as the strongest predictor of intent to engage in a behavior has been found in several studies, most of the studies mentioned above concern behaviors that are innately personal. Deciding to give one's blood, quitting smoking, and applying for a promotion (for example) are all personal choices, and behaviors that one might expect perceived behavioral control (or self-efficacy) to carry the greatest weight in predicting intention to engage in the behavior. There aren't many

"systems-level" variables that might inhibit one's perceived control over filling out the paperwork for a promotion application, for example.

Conversely, the study regarding completing the current school year within an inner-city neighborhood (Davis, Azjen, Saunders, & Williams, 2002) has more systems-level implications than the other aforementioned behaviors. Environmental variables (e.g., neighborhood violence, lack of resources at home, lack of parental supervision at home) might diminish students' level of perceived self-efficacy in going to school every day or completing homework outside of school – yet perceived behavioral control still had the greatest predictive weight for students' intent to complete school. The present study examined teachers within school systems, who are influenced by factors outside of their personal choices. The present study adds to the scant literature employing the Reasoned Action model as applied to practices or behaviors (e.g., completing school) influenced by systems-level variables, and acts as the first study of its kind to directly apply the Reasoned Action framework to positive behavior support implementation – a systems-level initiative.

Outside of the Reasoned Action literature base, perceived behavioral control predicting teacher intent to engage in practices is an interesting finding when considering the systems change literature to date – particularly studies examining PBS implementation. Recent studies conducted focused mainly on staff attitudes toward a new initiative (e.g., Beets et al., 2008) or level of staff buy-in to positive behavior support programs (e.g., Fenning et al., 2010; Kincaid et al., 2007). These studies did not consider staff feelings of perceived behavioral control (self-efficacy) directly and perhaps missed a

key factor in implementation success. For this particular sample, it appears as if perceived behavioral control was more instrumental in predicting intentions to engage in PBS-related behaviors – even more so than attitudes toward different practices, such as teaching behavioral expectations or acknowledging students.

Research Question #3 – Does expressed intent to teach behaviors or to use acknowledgements correlate with SET subscale scores?

The third research question was supported by the findings of this study. It was hypothesized that schools with higher average intent to engage in teaching behaviors would have higher scores on the Expectations Taught subscale of the *School-wide Evaluation Tool* (SET*;* Horner, Todd, Lewis-Palmer, Irvin, Sugai, & Boland, 2004). Additionally, it was hypothesized that schools with higher average intent to use acknowledgements with high school students would have higher scores on the Reward System subscale of the SET. Both hypotheses were supported, as discussed in more detail below.

The researcher wanted to determine how the *Teacher Approach Rating Scale* (TARS) correlated with the already validated *School-wide Evaluation Tool*. The researcher calculated the mean intent to engage in teaching-related behaviors, as well as to engage in acknowledgement-related behaviors for each of the eight sites, and then determined the correlation between TARS subscales with relevant SET subscales. TARS intent to teach behavior ratings were positively correlated with site Expectations Taught subscale scores at the .05 level (0.059). Additionally, TARS intent to use

acknowledgements was positively correlated with Rewards Systems subscale scores at the 0.1 level (0.614).

There is a positive correlation between how participants respond on the TARS and how well schools are implementing certain positive behavior support practices – namely teaching and acknowledgement systems – within a PBS program. The higher the average intent to engage in teaching practices on the TARS, the higher the Expectations Taught subscale on the SET. The same relationship was true for intent to engage in acknowledgement behaviors on the TARS and the Reward System subscale on the SET. Further, it might be hypothesized that if perceived behavioral control contributes the most to explaining variance in intention to engage in PBS practices, then teachers with the most confidence in their abilities might be more willing to attempt implementation practices. Buildings with confident teachers may have higher SET scores in the areas of teaching (Expectations Taught) and acknowledgement (Reward System) by this logic.

Limitations

The most critical limitation of the study was the number of units involved in analysis – which adversely impacted the power. There were only eight buildings involved in the study, a very low number considering the type of data analysis attempted (hierarchical linear modeling). That said, given that there were some significant findings from the study, a greater number of buildings may have increased the researcher's ability to establish trends across the data sample.

As previously mentioned all schools surveyed in the study received similar training and were all voluntary participants in a larger research project. Survey

respondents had some commonalities that could not have been addressed by the researcher. Common training and a vested interest in establishing positive behavior support systems in their schools likely limited the amount of variance that could have been established between buildings.

In terms of function-related items – attitudes, social perceptions, and perceived behavioral control taken together explained the least amount of variance in responses as related to intent to collect functional behavioral data. However, participants never received explicit training through the larger research project on behavior data collection tools or functional behavior analysis processes. Participants received a brief overview of behavioral principles and of possible motivations of student behavior (e.g., to escape a task, to obtain attention), but that was the extent of the training. Thus, should not have been assumed that all participants would have the skills or the knowledge base to answer function-related questions adequately.

Directions for Future Research

Regarding instrumentation, items referring to understanding the function of student behavior will likely need to be removed (or drastically modified). As functional behavior analysis typically is *not* included in basic positive behavior support training, these items may not be appropriate for inclusion on an instrument specifically targeting PBS-related practices (as previously discussed).

There are several variables that might be considered when modifying the instrument for subsequent administrations. In their study on perceived barriers to successful implementation, Kincaid et al. (2007) noted several that were not included in

the TARS. Researchers found that participants perceived a lack of building-level administrative support as well as a lack of district support as barriers to successful implementation. In terms of environmental variables addressed on the TARS, variables were limited to tangible resources (e.g., lesson plans for teaching, acknowledgement materials) and time set aside to engage in practices. Given this finding, it might be worth incorporating items regarding perceptions of administrative support or how administrative support affects environmental variables (for example) in future administrations (Kincaid et al., 2007).

In terms of replication, the survey will need to be administered several more times, to more variable samples in order to get a true picture of how the tool works. Specifically, the TARS should be administered within buildings that have not had formalized PBS training (but that are looking to start implementing PBS), or in buildings where there is a greater resistance among staff toward implementing positive behavior support practices. If the TARS is administered to buildings with a wider range of attitudes and/or levels of training, then greater variability between sites might be observed. Additionally, to explore the relationship between the TARS and the SET more carefully, replication should occur in buildings where the SET is being administered naturally (or in buildings where administration is receptive to allowing SET data collection).

<div align="center">*Implications for Future Practice in PBS Implementation Efforts*</div>

The present study provides several implications for practitioners in the field attempting to support PBS implementation. In terms of training building-level teams to

implement PBS practices, providing opportunities to practice new concepts and to receive corrective feedback may be critical to successful implementation. Increasing teachers' feelings of self-efficacy in enacting PBS-related practices might increase the likelihood that they will actually engage in desired adult behaviors (e.g., teaching expected behaviors to students, reward students for behaving appropriately). Related to professional development, staff members may need more opportunities to bolster confidence in implementing PBS-practices, as compared to a base explanation of what the practices are (for example). Providing opportunities to rehearse lessons or to administer acknowledgements appropriately, providing corrective feedback to staff as they attempt to implement practices, and other similar supports may increase teachers' perceived ability to engage in PBS practices. Increasing staff confidence in their ability to engage in teaching or acknowledgement practices might ensure more successful implementation of positive behavior support systems.

At the building-level, core implementation teams – in concert with administrative personnel – will want to consider minimizing environmental variables that could impede successful implementation prior to introducing the initiative. Buildings might consider building time into the yearly calendar for initial teaching sessions, booster teaching sessions, and any necessary staff training. They may also want to embed time during the day/week for acknowledgment practices (e.g., homeroom, daily announcements, designated weekly raffles). Minimizing potential building-level barriers to successful implementation might allow teams to focus on other factors (e.g., staff attitudes, feelings

of self-efficacy, perception that everyone is "on board" with the initiative) that hinder PBS success.

If implementation teams feel it is important for teachers to understand the connection between student motivation and student behavior, then teachers will need more direct training in this area. Teams cannot assume that teachers understand that all student behaviors are purposeful, and that there is oftentimes a direct link between a student's motivation and his/her inappropriate behavior. In order to encourage teachers to consider student motivation, teachers (like students) need to be explicitly taught these behavioral principles.

Overall, teachers who rate intentions to engage in teaching and acknowledgement (rewarding) behaviors, appear to be in schools with higher levels of implementation fidelity – as measured by the *School-wide Evaluation Tool*. However, schools must also consider environmental variables that might impede teachers' ability to engage in practices. The present study found that schools whose average ratings for environmental items related to acknowledgement behaviors were more positive had more positive ratings for intent to engage in acknowledgement behaviors. Thus, despite expressed intent and favorable attitudes toward implementing PBS practices, schools need to consider more practical implementation factors – such as securing materials for engaging in practices and establishing protected time for PBS-related practices – in order for successful implementation to occur.

APPENDIX A

TARS SURVEY ITEMS

Construct	Sub-Construct	Question
Teaching	Attitude	Teaching expected social behaviors is as important to me as teaching academic subjects
	Attitude	Teaching students appropriate social behaviors will prevent problem behaviors
	Attitude	Students should know how to behave appropriately when they enter high school
	Social	Other staff members in my building think I should be teaching social behaviors
	Social	Other staff members in my building explicitly teach expected social behaviors
	Control	Delivering lesson plans around social behaviors is easy for me
	Control	I have the skills to teach expected social behaviors
	Intent	I plan to teach expected social behaviors within my classroom
	Intent	I plan to teach expected social behaviors in non-classroom settings (e.g., hallways, cafeteria)
	Environment	[I have] Copies of lesson plans (or other materials) needed to teach social behaviors
	Environment	[I have] Time in my day to teach expected social behaviors
Function	Attitude	When we know why students behave the way they do, we can be more effective in selecting interventions
	Attitude	Students who behave inappropriately are simply "bad" kids
	Social	Other staff in my building think I should be able to determine the function of student behavior (e.g., attention-seeking, escape/avoidance)
	Social	Other staff in my building collect data to determine the function of student behavior
	Control	Analyzing behavior data is difficult for me
	Control	I am capable of determining the function of student behavior
	Intent	I plan to collect data around the function of student behavior
	Intent	I plan to use functional behavior data to select appropriate interventions
	Environment	[I have] The tools I need to collect student behavior data

	Environment	[I have] Time to collect student behavior data
Acknowledge	Attitude	Acknowledging students with verbal praise when they behave appropriately can result in continued appropriate behavior
	Attitude	Acknowledging students by giving tangible rewards when they behave appropriately can result in continued appropriate behavior
	Attitude	Students should exhibit appropriate behavior without having to be acknowledged
	Social	Other staff in my building think I should use acknowledgments with my students
	Social	Other staff in my building use acknowledgments or rewards as a way of recognizing appropriate behavior
	Control	It is easy for me to administer acknowledgments in the classroom
	Control	I am able to determine when students should be acknowledged for appropriate behavior
	Intent	I plan to use acknowledgments in my classroom
	Intent	I plan to use acknowledgments in non-classroom settings (e.g., hallways, cafeteria)
	Environment	Acknowledgements/tokens/tickets to distribute
	Environment	Time to distribute acknowledgements

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