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Teacher Self-Efficacy Beliefs Related to the Implementation of a School-Wide Positive Behavioral Interventions and Support Program

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This is to certify that the doctoral dissertation by

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Walden University
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Abstract

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by

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MP, Walden University, 2019

MS, California State University, San Bernardino, 2000

BS, University of Southern California, 1998

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Research supports that teacher self-efficacy beliefs influence instructional behaviors and the implementation of educational programs. Bandura, based on his social cognitive theory, described teacher self-efficacy beliefs as strong self-regulating factors that influence individual instructional practices. However, there is a lack of empirical information about the influence of these factors on implementation of school-wide positive behavioral interventions and supports (SWPBIS) programs to address student behaviors. The purpose of this quantitative study was to investigate the relationship between teacher self-efficacy beliefs and perceptions about the implementation of a SWPBIS program, and student outcomes. The research questions concerned whether teacher self-efficacy beliefs were predictive of (a) implementation of SWPBIS and (b) student behavior outcomes. Multiple linear regression analysis was used to analyze survey responses from 54 teachers who worked at three local school districts. The surveys used were the Teachers' Sense of Efficacy Scale and the Effective Behavior Support Self-Assessment Survey. Office discipline referrals (ODRs) were used to measure student behavioral outcomes. The results indicated that teacher self-efficacy beliefs, personal teacher efficacy and general teacher efficacy, did not predict perceptions of SWPBIS implementation with statistical significance. Also, no significant relationship was found between teacher self-efficacy beliefs and ODRs. Despite the non-significant results, teacher self-efficacy beliefs are demonstrated to be important for instructional practices. Further research may promote positive social change for students through the development of effective plans for sustained program implementation in education.

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Dedication

This dissertation is dedicated to my parents. You have always supported me in the pursuit of my goals. I am forever grateful to be your loving daughter.

Acknowledgments

I would like to thank Dr. James Brown, Dr. Marites Pinon, and Mrs. Catherine Heck. This journey has been long and, at times, arduous. Your support and help throughout have been pivotal in my making it to the end.

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Chapter 1: Introduction to the Study

Teachers play an important role in the lives of children. The current state of school reform has modified the role of the teacher to include instruction in social-emotional skills and behavior support with the primary duty of teaching academic subjects (Klassen et al., 2011). Teachers have new instructional responsibilities that may include following nonacademic curricula and integrating new types of practices. However, some teachers may not believe they have the capabilities to successfully implement such practices. This belief, or teacher self-efficacy, involves a judgment about one's ability to positively influence student learning (Tschannen-Moran & Woolfolk Hoy, 2001).

Teacher self-efficacy is thought to have a positive influence on instructional behaviors and student outcomes (Klassen et al., 2011). The more confident teachers are in their abilities, the more successful they are in promoting student learning. Within the classroom environment, teacher self-efficacy influences teacher motivation, tenacity when faced with challenging students and situations, and the ability to cope and self-regulate emotions (Bandura, 2012; Klassen et al., 2011). Student behaviors, such as on-task behaviors and compliance, are influenced by the level of teacher self-efficacy (Rodríguez et al., 2014). Bandura (1993) described teacher self-efficacy as influencing student self-efficacy beliefs.

The leaders of many schools are focused on success for all students. To that end, they have implemented behavior intervention programs (Bradshaw et al., 2010; Franklin et al., 2012; Reinke et al., 2011). However, sustained implementation of school-wide

behavior intervention programs has been inconsistent. Thus, inquiries about the factors that influence implementation are relevant (Feuerborn & Chinn, 2012; Pas et al., 2015). Answers to questions about which factors affect sustained implementation may be found by taking a closer look at what factors influence teachers, specifically self-efficacy, and if there is a statistically significant correlation.

In this study, I explored what role, if any, teacher beliefs play in the implementation of behavioral intervention programs in schools. Specifically, I investigated whether teacher self-efficacy influenced sustained implementation of the school-wide positive behavior interventions and supports (SWPBIS) program designed by Horner et al. (2010) and student behavioral outcomes. This quantitative study was designed to determine whether a statistically significant relationship existed between teachers' perceptions of self-efficacy and their implementation of SWPBIS and how this influenced student outcomes.

The study has social change implications for a variety of stakeholders, especially students, who might benefit academically and socially from application of key recommendations. An effective behavioral intervention program in elementary school has the potential to produce long-range positive outcomes. Student outcomes are positively influenced by the adoption of prosocial behavioral intervention programs in schools (Elbertson et al., 2009). Similarly, this study could result in greater understanding of the role and weight of teachers' efficacy beliefs and how these beliefs may promote the success of students and decrease teacher burnout and turnover (Pas et al., 2015). For communities, this study could yield insight on effective educational intervention

programs that increase the number of students who successfully use prosocial skills and decreasing the prevalence of at-risk behaviors within the community.

In Chapter 1, I introduce the study. This chapter begins with a discussion of the background of the topic and key literature. I then present the study's problem and purpose, research questions (RQs) and hypotheses, theoretical framework, and nature of the study. Definitions of key terms and discussion of the assumptions, scope and delimitations, limitations, and significance of the research are also included. The chapter concludes with a summary of key points and a transition to Chapter 2.

Background

As research show, children who are identified as having academic and behavioral problems in early childhood can experience long-term adverse outcomes (Darney et al., 2013). These findings have led to the use of school-based prosocial behavior intervention programs and using evidence-based practices, which have been found to be successful for improving outcomes for students identified with behavioral problems (Elbertson et al., 2009). The introduction of prosocial intervention programs in schools has resulted in a change in the landscape of primary and secondary school classrooms to include instruction on appropriate behaviors in addition to traditional academic subjects (Durlak et al.,2011; Elbertson et al., 2009). Teachers are the central resource in education and contribute significantly to the implementation of behavior intervention programs in the classroom (Pas et al. 2015).

SWPBIS is a school-based intervention program that addresses the development of positive student behaviors. SWPBIS is a whole school approach to behavioral support

and is described as a framework, or model, for implementing intervention activities to create a positive school climate for both students and educators (Bradshaw et al., 2008; Sugai & Horner, 2006; Waasdorp et al., 2012). The systematic, decision-making model involves the use of data and procedures that are focused on supporting a change in staff and student behaviors through a three-tiered application of behavior intervention activities (Bradshaw et al., 2008; Sisask et al., 2013; Sugai & Simonsen, 2012). Although SWPBIS has been confirmed as an evidence-based approach, many questions remain about the factors, including those related to teachers, that may influence implementation of SWPBIS (Domitrovich et al., 2008).

Teachers, as primary instructional providers, are an essential component of successful program implementation. Teachers are at the center of the process of integrating new strategies and interventions into the educational environment (Franklin et al., 2012). Teachers are responsible for all academic instruction, employment of successful classroom management strategies, and because of recent legislative policies, use of positive behavioral supports (Brackett et al., 2012; Reinke et al., 2011). Teachers are impacted by this expansion in their role. Ransford et al. (2009) investigated how the additional responsibility for student mental health has changed teachers' psychological experiences of burnout and how teacher beliefs influence the implementation of the social-emotional curriculum. They found that the individual factors of burnout and efficacy related to specific implementation tasks, such as the frequency with which a task was implemented but did not have significant results for all measured levels of

implementation. This result indicated a relationship existed between specific implementation tasks and teachers' experience of burnout, (Ransford et al., 2009).

Teacher efficacy beliefs are self-judgments teachers make about their ability to influence student learning (Tschannen-Moran &Woolfolk Hoy, 2001). Knowledge of teacher self-efficacy beliefs and their influence on instructional behaviors is grounded in the theoretical framework of Albert Bandura's social cognitive theory (SCT; Tschannen-Moran & Woolfolk Hoy, 2001). Human agency, a tenet of SCT, is a powerful influence on functioning and makes behavior purposeful and self-regulated (Bandura, 1993). An assumption of SCT is that people are more likely to perform and sustain behaviors when they believe they are capable and will be successful (Bandura, 1993). This assumption suggests a causal relationship between behavioral outcomes and the self-regulatory mechanism of individual self-efficacy (Lent & Brown, 2013).

Feuerborn and Chinn (2012) compared teachers' beliefs about SWPBIS and their ability to control student behavior and the influence of these beliefs on implementation. They found that teachers' beliefs about SWPBIS and their self-efficacy in controlling student behavior affected their implementation to varying degrees with the perception of student discipline and behavior having the most significant effect. Although the results indicated a relationship, the scope of the study was limited to a specific context of beliefs about behavior. The study did not address what role teacher general self-efficacy beliefs had on the implementation of SWPBIS. It would be beneficial to understand more broadly whether teacher beliefs influence their implementation of intervention programs

to (a) meet the needs of students to be behaviorally successful and (b) facilitate the teachers' role as implementers of intervention programs in schools.

Minimal empirical information existed about the relationship between teacher self-efficacy beliefs and teachers' ability to achieve sustained implementation of SWPBIS programs (Franklin et al., 2012; Myers, et al., 2011). The literature includes calls for information about whether implementation of school-wide behavior programs can be affected by the experiences, attitudes, and personality of the individual teacher (Domitrovich et al., 2015). Researchers have also noted the need for information on what can be used to help develop effective professional development activities to influence implementation of SWPBIS programs (Malinen et al., 2013; Reinke et al., 2011). Limited research exists on how the implementation of SWPBIS programs is influenced by teacher self-efficacy beliefs and ultimately may influence the programs' sustainability and effectiveness on student outcomes (Coffey & Horner, 2012).

It is necessary to understand the dynamics that influence teachers' role in implementing SWPBIS programs given that teachers are frontline implementers of educational interventions. This information is needed to promote the integration of evidence-based practices into real-world results. This research study expanded on prior literature about influences on the implementation SWPBIS. I sought to provide empirical information addressing how teacher self-efficacy may be a factor for sustained implementation of SWPBIS and student outcomes.

Problem Statement

Domitrovich et al. (2008) described a gap in current research relating to the effective implementation of a school-wide prevention program and the many unknown factors that influence and mediate the transition of evidence-based practices into real-world results. It was unknown if a relationship exists between teacher self-efficacy beliefs and perceptions of the implementation of a specific behavioral intervention program, and if this relationship, if any, has a significant influence on student outcomes. I attempted to answer these questions.

SWPBIS is a behavior intervention approach designed to address behavior through tiered levels of intensity. Many school districts across the United States have implemented the program with varying degrees of success as a sustained school-wide behavioral support system (Coffey & Horner, 2012). The change in the academic landscape to include behavioral interventions has expanded the traditional teacher role to include mental health provider, and this change has led to questions relating to teacher beliefs about implementing new curricula (Ransford et al., 2009). Teacher beliefs in their ability to be successful in managing student behavior may be one of the unique variables to consider in the implementation of behavior intervention programs (Domitrovich et al., 2010; Gibbs & Powell, 2012). I also explored the role of teacher self-efficacy beliefs within the specific context of the sustained implementation of SWPBIS and student outcomes.

Purpose of the Study

The purpose of this quantitative study was to investigate the relationship between teacher self-efficacy beliefs, individual perceptions of the implementation of SWPBIS, and student outcomes. The independent variable (IV) was teacher self-efficacy beliefs. The dependent variables (DVs) were (a) evidence of SWPBIS implementation and (b) student outcomes.

Research Questions and Hypotheses

I developed the following RQs, and hypotheses based on a review of the literature:

RQ1: Do teacher beliefs of self-efficacy (IV) predict their perceptions of implemented behavior supports prescribed by SWPBIS (DV) at the classroom level?

$H_0$1: Teacher beliefs of self-efficacy, as measured by the Teachers' Sense of Efficacy Scale (TSES), do not significantly predict their beliefs of the behavior supports implemented at the classroom level, as measured by the Effective Behavior Support (EBS) Self-Assessment Survey.

$H_1$1: At least one of the teachers' beliefs of self-efficacy, as measured by the TSES, significantly predicts their beliefs of the behavior supports implemented at the classroom level, as measured by the EBS Self-Assessment Survey.

RQ2: Do teacher beliefs of self-efficacy (IV) correlate with student outcome data (DV) as measured by discipline referrals to the office?

$H_0$2: None of the teachers' beliefs significantly correlate to student behavioral outcome data.

$H_1$2: At least one of the teachers' beliefs of self-efficacy significantly correlates to student behavioral outcome data.

I conducted descriptive analyses to organize the demographic information of the participants and to calculate the mean, range, and standard deviation of the collected data. I used multiple linear regression to test the hypothesis for the first RQ and correlation analysis for the second RQ. Teacher self-efficacy beliefs were measured by the TSES developed by Tschannen-Moran and Woolfolk Hoy (2001). Teacher perceptions of SWPBIS implementation were measured by the EBS Self-Assessment Survey developed by Hagan-Burke et al. (2005).

Theoretical Framework

The theoretical framework for this study was teacher self-efficacy beliefs, understanding of which is grounded in Albert Bandura's (1977) SCT. This subsection includes an overview of SCT and teacher self-efficacy beliefs and discussion of the influence of teacher self-efficacy beliefs on educational program implementation. I also discuss how this theoretical framework applied to this study.

Social Cognitive Theory and Teacher Beliefs

SCT describes human function as agentic (Bandura, 2012). Human agency is the tendency for individuals to exercise their inner power to control and take actions that influence internal conditions and external experiences (Bandura, 2012). Thus, behavior is the display of the interactions of internal processes, such as feelings and judgments; external factors, such as how and when the experience occurred; and the subsequent

cognitive processing of the experience. The cognitive processes produce beliefs and judgments about the experience.

Bandura (1993, 2012) proposed that people's beliefs and judgments are intrapersonal factors that influence human functioning. Self-efficacy beliefs are a type of intrapersonal factor (Bandura, 1993). Self-efficacy refers to beliefs people have about their capabilities to successfully perform tasks, and these beliefs have far-reaching influence (Bandura, 1993). The range of influence self-efficacy beliefs have on an individual's function is broad, encompassing many aspects of behavior such as the choice of a plan of action and persisting with acts to complete a task when faced with limited or no success (Bandura, 2012).

Bandura (1993, 2012) described four types of major forces in the development of self-efficacy beliefs: vicarious experiences, verbal persuasion, psychological arousal, and mastery experiences. Vicarious experiences are those that occur through observation of others in task completion. Verbal persuasion happens when one person provides another verbal information about an experience and an exchange occurs. Psychological arousal occurs when individuals have an emotional or somatic response to their experiences. Finally, mastery experiences happen when the individual has the experience of successfully completing a task. Bandura (1977, 2012) described mastery experiences as the most potent influence on the development of self-efficacy beliefs. In a large cross-cultural study, Malinen et al. (2013) measured the four sources of teacher self-efficacy for inclusive educational practices and found that teachers consistently reported mastery

experiences as a strong predictor for using inclusive methods for students with special needs. The four influences are discussed in more detail in Chapter 2.

Teacher self-efficacy is the judgment teachers make about their abilities to produce student learning (Tschannen-Moran & Woolfolk Hoy, 2001). Teacher judgments about their instructional capabilities influence their orientation toward instructional practices and the creation of an environment that promotes learning (Bandura, 1993; Tschannen-Moran & Woolfolk Hoy, 2001). From an SCT perspective, teacher self-efficacy beliefs drive their behaviors in the classroom, including instructional practices used, motivations to try new teaching strategies, and willingness to persist with difficult students (Tschannen-Moran & Johnson, 2011; Tschannen-Moran & Woolfolk Hoy, 2001).Over the years, many researchers have conducted studies on this powerful factor in instructional practices. Klassen et al. (2011) reviewed teacher efficacy studies conducted from 1998 to 2009. They reported that although progress was made in understanding the concept of teacher self-efficacy beliefs and the many avenues of influence in education, many questions were yet to be explored (Klassen et al., 2011).

Teacher Self-Efficacy Beliefs and Program Implementation

Ashton et al. (1983) conducted one of the first studies that provided empirical evidence of a link between teacher self-efficacy and student outcomes. Subsequent researchers have explored the construct and found that teacher self-efficacy affects a variety of instructional practices and programs. For example, Lee et al. (2013) reported that teacher internal belief systems must be primed toward change for new ideas to be internalized and implemented into the classroom.

SCT provides individual-level factors essential to implementation, such as teacher perceptions about the intervention. Ransford et al. (2009) explored the connection between teacher psychological experiences and perceptions of curriculum support on the implementation of a social and emotional learning curriculum. They found an association between the variables and reported that to maximize the effectiveness of program implementation, it may be important to address individual factors like experiences of efficacy. Domitrovich et al. (2015) found that teacher perceptions of, and beliefs regarding, interventions, including how the interventions fit their teaching style, were related to their implementation of the program.

Application of Theory to This Study

The purpose of this study was to explore the influence of teacher self-efficacy beliefs on the sustained implementation of SWPBIS and ultimately student outcomes. Because SCT is the foundation of the construct of teacher self-efficacy beliefs, I used the theory to understand how these beliefs affect teacher perceptions of program implementation. I also used SCT to scaffold the interpretation and discussion of results for this study.

The construct of teacher self-efficacy beliefs relates to the current study because it identifies characteristics of variables that influence teacher behaviors within the classroom environment (see Tschannen-Moran & Woolfolk Hoy, 2001). Tschannen-Moran and Woolfolk Hoy (2001) described teacher self-efficacy beliefs as an overall general self-efficacy of instructional practices. This general self-efficacy is comprised of

three measurable areas: efficacy for instructional strategies, efficacy for student engagement, and efficacy for classroom management.

Nature of the Study

In this nonexperimental survey design research study, I recruited participants from local elementary school districts. Surveys were provided either in a hard copy or electronic format. The rationale of this design was consistent with the study purpose to determine the relationship between teacher self-efficacy beliefs, as measured on the TSES; perceptions of SWPBIS implementation, as measured by the EBS; and student outcomes.

Definitions

Implementation: The process of putting interventions in place (Lendrum & Humphrey, 2012).

Positive classroom management: Purposeful strategies, such as praise, rewards, or increased attention, that are used to increase or encourage desirable student behaviors (Tschannen-Moran & Woolfolk Hoy, 2001).

School-wide positive behavioral intervention and supports (SWPBIS): A systematic set of intensive behavioral supports and intervention practices designed for the establishment of a social culture that targets academic and social success for all students (Horner et al., 2010).

Social-emotional learning: A form of learning that integrates supports to promote competence, reduce social-emotional development risk factors, and increase protective mechanisms for positive emotional adjustment (Durlak et al., 2011).

Teacher self-efficacy: Judgments teachers make about their capabilities to affect student performance (Tschannen-Moran & Woolfolk Hoy, 2001).

I will further discuss these definitions in Chapter 3.

Assumptions

I had three main assumptions throughout this research study. The first was that individual teachers' sense of self-efficacy influences the teaching strategies they use and the learning of students. Based on this assumption, I assumed that a teacher with a high sense of self-efficacy will demonstrate high-quality instructional strategies and behaviors and implement SWPBIS with fidelity. My last assumption was that prevention/intervention behavior programs implemented in schools are typically not applied with sustained high-quality, an assumption that has support in the literature (see Domitrovich et al., 2008).

Scope and Delimitations

I established the scope of this study to address the gap in current research relating to teacher-based influences on student outcomes through sustained implementation of SWPBIS. The population of this study was teachers employed in a kindergarten through Grade 8 school district in which SWPBIS was being implemented district wide. Participation was voluntary. Generalizability of the results of this study to other school districts with similar characteristics may be limited by the lack of randomization in the sample. I used a convenience sample which may not be representative of the population because the participants did not have an equal probability of being selected as they would have if I had used random sampling procedures which limit my ability to generalize my

results (Creswell, 2009). The school district served a high proportion of students identified as students of color and students with low socioeconomic status with more than 80% of students qualifying for the free- or reduced-price lunch program.

I assessed teacher self-efficacy perceptions and perceptions about SWPBIS implementation. These data were examined in comparison with secondary student outcome data to determine whether a statistically significant relationship exists.

Limitations

I identified the following limitations related to design and methodological weaknesses: threats to internal validity, coverage error, nonresponse error, and measurement error. The considerations made in the design of this study included that participants (a) may not accurately represent the population due to lack of a randomized sample and (b) may be unwilling to provide accurate responses due to concerns or feelings related to their employment and possible retaliation by the school district. Limitations may also occur due to researcher bias and response bias. (Creswell. 2009) I did not believe that SWPBIS had been implemented in the target school district with fidelity which is researcher bias. The teachers in the study might not have believed SWPBIS to be effective for the specific students with whom they worked leading to response bias.

I used multiple survey modes to collect data as needed to address the limitations of the studyrelating to the use of a non-randomized sample. I also used multiple survey modes to provide the participants access to the surveys and to increase the response rate. Also, systematic administration procedures were used to obtain informed consent and

ensure anonymity of participants. The teachers were assigned a number only known to me for confidential data collection purposes. In Chapter 3, I provide a more detailed explanation of the procedures used in data collection.

Significance

The significance of this research is that it addressed a gap in the knowledge about the role of teachers as frontline implementers of SWPBIS. Specifically, the goal of this research study was to gather information about how teacher beliefs influence their actions to support and intervene with student behavior and ultimately have an impact on systematic SWPBIS implementation. The results of this study could be used to facilitate the improvement of professional development strategies for teachers and influence overall continuous and successful implementation of SWPBIS. The social change implications of this study are that it yields a better understanding of how teacher self-efficacy beliefs influence real-world implementation of SWPBIS. With this knowledge, educational leaders may be able to devise strategies that promote increased professional self-efficacy among teachers, which ultimately may improve instruction and student outcomes.

Summary

There was a gap in the current research regarding the understanding of the influence of teacher-based factors on adherence to implementation of a SWPBIS program. Specifically, this gap was the question of to what extent does teacher self-efficacy beliefs influence teachers' implementation of SWPBIS. Previous studies have shown that teacher self-efficacy influences teacher behaviors and implementation of

programs, but not within the specific context of SWPBIS (Klassen et al., 2011; Ransford et al., 2009; Rubie-Davies et al.; Sharma et al. 2012).

This chapter included a description of the theoretical framework of SCT, which was chosen because it defines teacher self-efficacy beliefs as an intrapersonal factor integral in the creation of an environment conducive to learning and because the theory laid the foundation for measuring the construct. This chapter also included definitions, assumptions, limitations, and the nature of this study. Finally, I discussed in this chapter that the significance of the study is it may promote positive student outcomes and school climates by fostering better understanding of what influences teachers to implement SWPBIS and to continue to do so over time.

In Chapter 2, I provide a detailed discussion of the literature supporting this study. Chapter 3 includes a discussion of the chosen methodology and procedures employed. Chapter 4 includes a presentation of the findings from the analysis of the collected data. In Chapter 5, I interpret the findings, consider their implications, offer recommendations for future research, and provide a conclusion to the study.

Chapter 2: Literature Review

Introduction

In the current cycle of school reform, the role of teachers in the United States has expanded beyond traditional duties. Federal and state policy makers have established educational reform laws with the goal of success for all students. The goal for universal success has led educators to recognize the importance of addressing the success of students through implementation of academic interventions and behavioral interventions (Durlak et al., 2011).

SWPBIS, a framework identified in the Individuals With Disabilities in Education Act (IDEA, is an example of a whole school behavior program. SWPBIS incorporates a three-tiered approach for the provision of a continuum of evidence-based practices with continuous progress monitoring for data-based decision-making (Sugai & Simonsen, 2012). Research studies have shown the value of its implementation for student behaviors and prescribed student outcomes (Bradshaw et al., 2009; Sugai & Simonsen, 2012). Many researchers continue to investigate which aspects of implementation influence the effectiveness and sustainability of SWPBIS as previous researchers found variable results (Bradshaw et al., 2010; Coffey & Horner, 2012; Djabrayan Hannigan & Hannigan, 2020; Domitrovich et al., 2010; Horner et al., 2010; Myers et al. 2011; Sugai & Simonsen, 2012). An area where additional information is needed relates to the influences on the effectiveness of implementation by teachers as the primary implementers of SWPBIS.

Teachers, as frontline implementers of programs and curriculum, are an integral component to the successful implementation of educational programs. Teacher behaviors

and instructional practices can be influenced by many factors ranging personality characteristics to external events such as participation in professional development activities (Durlak et al., 2011; Ransford et al., 2009). Knowledge of teacher self-efficacy beliefs is grounded in SCT. These beliefs act as self-regulatory processes to determine teacher behaviors (Bandura, 1993; Tschannen-Moran & Johnson, 2011). Teacher self-efficacy is strongly related to outcomes for teachers, such as motivation and readiness to help, and for students such as academic achievement (Caprara et al., 2006; Ransford et al., 2009; Sisask et al., 2013). Although there is research on how teacher self-efficacy influences instructional practices, a gap continues to exist in the empirical information related to the influence of teacher self-efficacy on the implementation of SWPBIS (Franklin et al., 2012; Myers et al., 2011). In this quantitative study, I explored the influence of teacher beliefs related to their ability to change student behavior on their SWPBIS implementation behaviors.

The purpose of this chapter is to (a) describe the context and theoretical foundation of this study and (b) explain how the theory of teacher self-efficacy can clarify the factors that may influence implementation of SWPBIS and professional development for teachers. This chapter begins with a description of the study contextual framework, the concepts of SWPBIS, and the changing role of the teacher. It then proceeds to a discussion of the selected theoretical framework including a discussion of SCT, human agency, and teacher self-efficacy. The chapter concludes with a summation of the literature reviewed and how this provided a rationale for the study.

Literature Search Strategy

I conducted a review of the literature using the search engine Google Scholar and the databases EBSCOhost, Psych Articles, PsychInfo, Sage Premier, ProQuest Central, and ScienceDirect which I accessed via Walden University Library. I also searched Walden University's ScholarWorks repository of dissertations and doctoral studies. The Google Scholar online search engine, which is linked to Walden University online library, was the primary resource utilized. Key search terms and phrases included *school-wide positive behavior supports and interventions*, *social-emotional learning*, *school reform*, *SWPBIS*, *school-based universal interventions*, *teacher efficacy*, *teacher self-efficacy*, *SCT*, *teacher beliefs*, *program implementation*, and *SWPBIS* programs. The literature used in this review was carefully selected based on similarities to the topic, theoretical framework, and procedures used in the current study. The range of years of publication was from 1977 to 2019 with the majority of articles published from 2010 to 2015. The literature chosen was limited to include topics relating to kindergarten through Grade 12 education, assessment/measurement of teacher self-efficacy, school-wide behavior programs, and educational program implementation. The criteria for exclusion in the literature review included works on teacher self-concept and teacher self-esteem.

Literature Review Related to Key Variables and/or Concepts

Behavior and Schools

Educational research studies have documented far-reaching negative outcomes for students identified with academic and behavioral problems (Darney et al., 2013). The recognition of this future for a selection of students, combined with school reform

movements and changes in educational legislation, has broadened the traditional view of educating students to include a behavioral feature. The consideration of student behavior and poor academic outcomes has led educational leaders to implement intervention programs and curriculum in primary and secondary schools addressing social-emotional learning and prosocial behaviors to mitigate these outcomes (Elbertson et al., 2009).

Previous researchers investigated an array of possible factors influencing the success of intervention programs and ultimately student outcomes (Bradshaw et al., 2010; Domitrovich et al., 2010; Losinski et al., 2014). Researchers studying school reform found evidence that characteristics of the school's climate influenced student achievement (Cohen, 2012; Ransford et al., 2009). School climate includes instructional practices, socioemotional learning, administrative support, community involvement, and safety in schools (Thapa et al., 2013).

School-Wide Positive Behavior Intervention and Supports

IDEA language changed the focus from individual student behavior to a focus of behavioral success for all students and a whole school intervention approach (Sugai & Horner, 2009). SWPBIS is a full school approach to behavioral support and described as a framework, or model, for implementing intervention activities to create a positive school climate for both students and educators (Bradshaw et al., 2008; Waasdorp et al., 2012). Educational leaders create a positive school climate by using data-driven systems and procedures targeted at supporting changes in staff and student behaviors (Bradshaw et al., 2008; Sisask et al., 2013). Sugai and Simonsen (2012) described the goal of the

model's whole school approach as preventing problem behaviors through a three-tiered application of a continuum of behavior intervention activities.

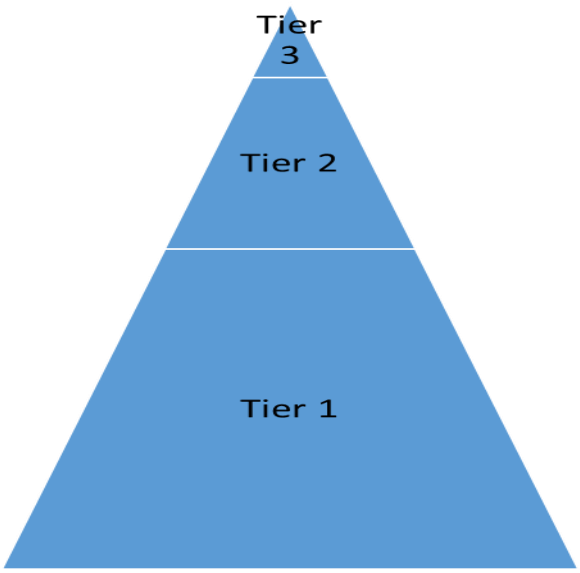
SWPBIS establishes three tiers of prevention and intervention strategies (Horner et al., 2010). This structure is consistent with a public health model of prevention where decisions for treatment are made based on data collected from evidenced-based practices described in Cook et al. (2015) and Waasdorp et al. (2012). In Tier 1, school staff screen all students, and the intervention strategies are low-level intensity, universal, and applied to all areas of the school (Franklin et al., 2012). Based on the results of the screening, students with problems not addressed by Tier 1 interventions are provided with more targeted interventions in Tier 2 (Bradshaw et al., 2010). Tier 3 interventions and supports are considered the most intensive and directly relate to the student's unique needs (Horner et al., 2010). Franklin et al. (2012) reviewed studies of school mental health programs and found Tier 3 interventions may be provided by a specialist and include a referral for special education services.

SWPBIS represents a continuum of intensities and frequency of applications targeting specific levels of need. The continuum approaches range from the lowest level, Tier 1, with a whole class instruction or curriculum, to the highest level, Tier 3, with individualized instruction provided by an expert (Bradshaw et al., 2010; Franklin et al., 2012; Sugai & Horner, 2006). The middle of the range is Tier 2, which includes activities such as small group instruction (Franklin et al., 2012; Sugai & Horner, 2006). The Tier 1 and Tier 2 activities are typically provided by the classroom teacher (Franklin et al.,

2012). Figure 1 is a visual representation of the three-tiered model of behavior intervention supports.

Figure 1

Model of Three-Tiered Continuum of Behavioral Intervention Supports



Note. Adapted from "A Promising Approach for Expanding and Sustaining School-Wide Positive Behavior Support," by G. Sugai and R. R. Horner, *School Psychology Review, 35*(2), p. 247 (https://doi.org/10.1080/02796015.2006.12087989). Copyright 2006 by the National Association of School Psychologists. Reprinted with permission (see Appendix A).

The Changing Role of the Teacher

With a focus in schools for higher expectations for achievement and a recognition of the need to address student behavior, a teacher's role changed to include duties beyond academic instruction (Ransford et al., 2009). As a result of the expanded responsibilities,

teacher roles now include being the primary implementer of non-academic instruction and curriculum (Elbertson et al., 2009). Sugai and Simonsen (2012) reported more than 16,000 school teams, including teachers and administrators, were trained to implement some form of PBIS. Franklin et al. (2012) reported out of 49 participating elementary schools, teachers were actively involved in the provision of more than half of the mental health interventions offered, thus providing evidence of the changing role of teachers. Adding program implementation to the traditional teacher role resulted in questions about teacher beliefs and implementing new curricula (Ransford et al., 2009).

Studies on the relationship between teacher beliefs and implementation of social-emotional intervention programs indicated varying results. Ransford et al. (2009) reported a negative association between teacher burnout and new program implementation, and conversely, a positive association between teacher self-efficacy and program implementation. Sisask et al. (2013) studied the relationship between teacher beliefs and their ability to help students with mental health issues; they concluded teacher job satisfaction related to their ability to create a climate of learning that supports student well-being and academic achievement. Whear et al. (2013) conducted a meta-analysis of studies about the role of training targeted at improving teacher classroom management skills; the authors found no difference between the effectiveness in training programs to produce better outcomes for teachers or students. Feuerborn and Chinn (2012) reported the perceptions teachers had about SWPBIS and their ability to control student behavior affected implementation to varying degrees, with the perceptions of student discipline and behavior having the most significant effect. Feuerborn and Chinn (2012) did not

address how teacher general self-efficacy beliefs influenced implementation of SWPBIS. Thus, understanding more about what influences teachers and their instructional choices is beneficial to (1) meet the needs of students and (2) facilitate the teacher role as implementers of school intervention programs.

Theoretical Framework: Teacher Self-Efficacy

Albert Bandura's SCT of development provided the foundation for the definition of teacher self-efficacy. SCT describes human function from the perspective of agency. Bandura (1977, 1993, 2012) described human agency as the tendency for individuals to take actions with reciprocating influences on their function and external events. Human behavior is purposeful, controlled, and the result of the application of agency (Bandura, 2012). Thus, behaviors are the result of the interaction of the context in which experiences occur, thoughts about and understandings of the experiences, and the subsequent self-judgments, or self-efficacy beliefs, about this cognition.

Self-efficacy is the beliefs individuals have in their capability to successfully perform a task and to obtain specific outcomes; it is a powerful interpersonal factor (Bandura, 1993, 2012). Bandura proposed self-efficacy beliefs influence every aspect of behavior, from the motivation to do the task to the ability to continue when unsuccessful, and belief in one's capabilities had a powerful influence on the individual's willingness and emotional well-being (1993). The intrapersonal component becomes a driving force in the actions an individual takes and those not chosen based on these perceptions.

In SCT, self-efficacy beliefs are developed through four major influences (Bandura, 2012). Tschannen-Moran and Johnson (2011) described the four major

influences on an individual's self-efficacy beliefs as proposed by Bandura: vicarious experiences, verbal persuasion, physiological arousal, and mastery experiences. A vicarious experience occurs through observation of role-modeling activities when an individual sees another complete a task or interacts with an individual with similar experiences through a mentoring program. Verbal persuasion occurs during the discussion an individual has when given feedback on behavior. Psychological arousal is the internal processes such as somatic and emotions that flavor the experience (Pajares, 2002; Tschannen-Moran & Johnson, 2011). Mastery experiences occur when the individual completes the task successfully; these experiences were described by Bandura (1997, 2012) as the most powerful source in building self-efficacy. More experiences of successful completion of a task motivate an individual to continue and vice versa; in contrast repeated unsuccessful attempts lead to decreased effort and stress (Tschannen-Moran & Johnson, 2011).

The construct of self-efficacy and its influence on human functioning was applied to the beliefs influencing teachers and their instructional practices, which may influence student outcomes. The vicarious experience may be achieved through watching a master teacher use a teaching strategy or when experiences are shared through social interactions. Gebbie, et al.(2012) described the potential of this experience in a qualitative study of three cases where preschool teachers participated in an online learning environment for classroom behavior management and were provided the opportunity to give and make suggestions for strategies with their cohort. The results of this study indicated teacher reports of self-efficacy increased due to the interactions with

peers in the online social community (Gebbie et al., 2012). Verbal persuasion in the classroom may occur through a coaching session with administrators or mentor teachers providing feedback on the teachers' observed behaviors. For example, Jennings, et al. (2013) reported significant findings from a randomized sample of 50 teachers on well-being and efficacy from systematic coaching from an intervention facilitator.

Malinen et al. (2013) studied the four sources of teacher self-efficacy as IVs to understand teacher self-efficacy for inclusive practices from a global viewpoint. This large cross-cultural study included participants from China (n = 451), Finland (n = 855), and South Africa (n = 605) with data collection through self-report questionnaires. The data were analyzed through three phases: confirmatory factor analysis for the structure of teacher self-efficacy, test and modification of the hypothetical model of teacher self-efficacy, and addition of three covariates to the model to control for the effects of age, gender, and teacher type. The authors found across all cultures studied, teachers consistently reported mastery experiences of teaching students with special needs as a strong predictor for efficacy in employing inclusive practices. The emotions gained from the success of these mastery experiences provided physiological and emotional arousal, and bolstered teacher self-efficacy (Malinen et al., 2013).

Teacher Self-Efficacy.

Teacher self-efficacy is defined as judgments teachers make about their capabilities to affect student performance (Tschannen-Moran & Woolfolk Hoy, 2001). As a representation of an individual's psychological functioning, teacher self-efficacy influences one's motivation and ability to take continued action in the face of challenges

(Domitrovich et al., 2008). The judgments made of the ability to improve student outcomes, from within the SCT framework, is monumental. These judgments guide instructional practices, behaviors displayed with children, classroom management, implementation of new curriculum, and willingness to work with students with learning and behavioral problems (Tschannen-Moran & Johnson, 2011; Tschannen-Moran & Woolfolk Hoy, 2001). These judgments can become self-fulfilling prophecies by validating teacher beliefs of capabilities and offering motivation to keep trying, or by validating beliefs of incompetence leading to less effort or ultimately giving up.

A study in the mid-1970s by the RAND Corporation was the first attempt to measure teacher self-efficacy (Klassen et al., 2011; Tschannen-Moran & Woolfolk Hoy, 2001). This seminal study identified a positive relationship between teacher beliefs in their abilities and student achievement in reading (Tschannen-Moran & Woolfolk Hoy, 2001). The construct of teacher efficacy identified by RAND was expanded upon by Bandura (1993) when he described three types of self-efficacy directly influencing student outcomes: student self-efficacy; teacher self-efficacy, and collective self-efficacy. In each of these types of intrapersonal elements, self-regulating choices affect student outcomes.

Teacher self-efficacy affects a variety of instructional practices and programs, and a better understanding of the construct can facilitate a positive school climate supporting student outcomes. Klassen et al. (2011) in a review of studies from 1998 to 2009 pointed out teacher efficacy research continued to be a significant focus of researchers with the expansion of the breadth of research to include qualitative and mixed method approaches,

domain-specific research, and international and collective efficacy studies. The authors acknowledged progress was made in the last 40 years, but questions remained about sources of teacher efficacy, links between teacher efficacy and student outcomes, and measurement and conceptualization of the construct (Klassen et al., 2011). These are valuable considerations in the present study of the relationship between teacher self-efficacy and program implementation of a SWPBIS program. The prediction identified from prior research studies was high levels of teacher self-efficacy result in efficacious and continuous application of instructional practices that result in positive student outcomes (Gibbs & Powell, 2012; Ruble et al.., 2011; Sisask et al., 2013; Tschannen-Moran & Johnson, 2011; Tschannen-Moran & Woolfolk Hoy, 2001).

General Teacher Self-Efficacy

Teacher self-efficacy is a complex construct with diverse sources. Two dimensions of teacher self-efficacy were identified. The first dimension is general teacher self-efficacy, which is the belief teachers hold that students can learn the material (Silverman & Davis, 2006). The second dimension is personal self-efficacy, which is the belief teachers hold that students can learn from their instruction (Silverman & Davis, 2006). Personal self-efficacy, teacher beliefs the outcomes are a result of their actions, as an internal mechanism, appears to influence instructional practices and program implementation (Bandura, 2012). Lee et al. (2013) conducted a research study investigating the potential for pedagogical change due to the relationship of elementary and secondary teacher self-efficacy and mastery experience style professional development. The results of the study indicated a tendency for a shift in pedagogy

regardless of how long individuals had taught or their achieved levels of professional success (Lee et al., 2013).

Lee et al. (2013) reported internalization and application of new ideas about teaching into classroom practices occurred when an individual's internal belief system supported a change. Chambers Cantrell et al. (2013) reported significant results noting teachers ratings of high-self efficacy were positively related to student reading comprehension and overall reading achievement, thus confirming teacher personal beliefs are a factor in their success with students. This result was reported as occurring despite low levels of program implementation. Dicke et al. (2014) described statistically significant effects finding teacher personal self-efficacy of classroom management moderated their feelings of stress and acts of emotional exhaustion.

Teacher Self-Efficacy and Student Outcomes. The relationship between student outcomes and teacher self-efficacy was the topic of many research studies (Klassen et al., 2011). Based on the predictive nature of the theory of teacher self-efficacy, the typical hypothesis was teachers with high levels of self-efficacy tended to produce stronger positive student outcomes. Lee et al. (2013) reported teachers with high self-efficacy set high expectations for their students and were effective in using strategies that helped students reach those high expectations. Teachers with high self-efficacy encouraged students to make choices in learning, employed effective classroom management strategies that relied on intrinsic rewards rather than extrinsic rewards, and believed in their ability to impact students (Lee et al., 2013).

Although much research was done to identify the influence of teacher self-efficacy and its relationship to student outcomes, questions remain. This gap was displayed by consistent results in studies that highlighted the relationship between teacher self-efficacy and student outcomes when working with specific student populations or classroom experiences, such as significant disruptive behaviors. Gibbs and Powell (2012) studied teacher efficacy beliefs regarding classroom behavior. The results of their study indicated high levels of teacher individual efficacy did not prevent exclusion of students viewed as highly disruptive from the classroom (Gibbs & Powell, 2012). Ruble et al. (2011) studied the relationship and practice of teacher self-efficacy in working with students with autism by comparing teacher ratings of interpersonal self-efficacy to ratings of the four influencers in the development of self-efficacy identified by Bandura. They found no significant correlation between teacher sense of mastery (years of teaching) or social persuasion (administrative support) and their beliefs in their ability to be effective teaching students with autism. The researchers found a significant association with physiological affective states and beliefs of their ability to teach students with autism (Ruble et al., 2011).

Teacher Self-Efficacy and Context. The context (how, when, where, and why) of a teacher's experiences significantly influenced the development of self-efficacy beliefs (Tschannen-Moran & Johnson, 2011). Tschannen-Moran and Johnson (2011) explained individual judgments of teacher competence in instruction included judgments of the resources available. For example, the resources may include the quality of the curriculum and contextual factors such as school climate and leadership. Conditions must

exist that support the teacher's development of self- efficacy (Sisask et al., 2013). The conditions needed will vary based upon the goal. Sisask et al. (2013) reported precursor conditions for the development of teacher self-efficacy in addressing student mental health issues included a climate valuing the teachers and provision of skills development training.

In a longitudinal study, Beets et al. (2008) found school-level factors influenced teacher participation in school-wide activities. A reciprocating relationship was reported as teacher participation, in turn, influenced the fidelity of implementation of a school-based prevention and social character development program. The authors found evidence of direct, positive relationships between teacher beliefs about a supportive school climate, use of the required classroom materials, and participation in school-wide activities (Beets et al., 2008). Fidelity of implementation had a direct relationship to teacher perceptions of the context of a school climate and support for them as participants and the program.

Teacher Self-efficacy and Program Implementation. Studies of the factors influencing the fidelity and successfulness of program implementation in educational settings showed teacher-level characteristics as a significant influence. Han and Weiss (2005), through a literature review of the factors influencing teacher program implementation, identified four characteristics of a sustainable classroom mental-health program and provided a naturalistic sequential model of implementation within the educational setting. The authors identified the following four characteristics of a sustainable program: (1) judged as able to meet the needs of the students by the teachers, (2) evidence-based as effective in changing student emotional and behavioral

functioning, (3) practical and easily implemented on a continuous basis with minimal resources, and (4) adaptable to a variety of classroom environments (Han & Weiss, 2005).

In their quantitative research study, Domitrovich et al. (2015) expanded upon the Han and Weiss (2005) model. Domitrovich et al. (2015) examined the association between individual and organizational factors, program dosage, and quality of a universial classroom-based intervention game. This expansion of ideas resulted in the introduction of a broader range of individual and organizational factors that may contribute to the real-world variations seen in the implementation of school-based interventions previously identified (Domitrovich et al., 2015). Their findings showed that of the individual-level factors, teacher perceptions and beliefs in the interventions and the fit of the intervention to their teaching style were related to their implementation of the program (Domitrovich et al., 2015).

Summary and Conclusions

In schools, teachers are integral to the implementation of all programs and their behaviors are reciprocally influenced by the instructional practices they employ through their judgments of efficacy. Bandura's SCT describes human behavior as purposeful and self-regulated (Bandura, 1993). Human functioning involves agency that is multidimensional in nature, and a powerful influence in this functioning is the interpersonal judgment of self-efficacy (Bandura, 1977, 1993, 2012). SCT assumes individuals are more likely to perform and sustain behaviors when they believe they are capable and the effort will be successful, suggesting a causal relationship between

behavioral outcomes and the self-regulatory mechanism of individual self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). When this assumption is applied to teachers, the prediction is high levels of teacher self-efficacy will result in the application of instructional practices that result in positive student outcomes (Tschannen-Moran & Woolfolk Hoy, 2001). Teacher behaviors and instructional practices can be influenced by a variety of factors. Learning outcomes are potentially influenced by the relationship between a teacher's personality, beliefs, and contextual factors, lending grave importance to educators to understand the intricacies of this relationship (Rubie-Davies, Flint, & McDonald, 2011).

Studies published about the implementation of school-wide behavior programs addressed many aspects and factors of programs, including reviews of the conceptual nature of the program (Horner et al., 2010; Sugai & Horner, 2006), the impact of program implementation on the organizational health and the school environment (Bradshaw et al., 2008; Bradshaw et al., 2009), and impact on student outcomes (Coffey & Horner, 2012; Cook et al., 2015; Kellam et al., 2014). Researchers also addressed factors influencing effective and successful implementation of social-emotional learning programs, including school climate (Cohen, 2012; Collie, et al., 2012) and teacher characteristics (Brackett et al., 2012). However, minimal empirical information exists about the involvement of teacher self-efficacy beliefs relating to their role as the frontline implementers of SWPBIS programs and the influence on sustained implementation (Franklin et al., 2012; Myers et al., 2011). The literature calls for information about the experience of the individual teacher and how teacher self-efficacy influences the

implementation of school-wide behavior supports to facilitate the development of beneficial professional development for teachers (Malinen et al., 2013; Reinke et al., 2011). Additionally, Domitrovich et al. (2015) suggested those who support teachers assess for alignment between the teacher attitudes and personality and the proposed intervention program, as this was a factor identified as significant in the successful implementation of behavioral supports.

This research study provided empirical information addressing how teacher self-efficacy may be a factor for adherence to implementation of the SWPBIS program. This empirical investigation of teacher self-efficacy, as it related to behavioral program implementation, was important and time worthy with the current climate of school reform and the continued expansion of the role of teachers beyond what is considered traditional instruction. This research study informed the gap in literature relating to the influence of teacher self-efficacy beliefs and implementation of universal behavior support and intervention programs and, ultimately, student outcomes.

Chapter 3: Research Method

Introduction

The purpose of this study was to investigate whether teacher beliefs of self-efficacy can predict teacher adherence to implementation of the SWPBIS program and fewer behavioral issues for their students. The RQs of this nonexperimental, quantitative survey study concerned whether a statistically significant relationship exists between three aspects of general teacher self-efficacy beliefs and (a) the sustained implementation of the SWPBIS framework, and (b) behavioral outcomes for students. In this chapter, I discuss the quantitative research methodology of this study. This discussion includes a presentation of the RQs; the rationale behind the survey design of the study; the methodology, including instrumentation and materials and data collection and analysis procedures; threats to validity; and ethical considerations.

Research Design and Rationale

In this quantitative research study, I addressed the following RQs and hypotheses:

RQ1: Do teacher beliefs of self-efficacy (IVs) predict their perceptions of implemented behavior supports prescribed by the SWPBIS framework (DV) at the classroom level?

$H_0$1: Teacher beliefs of self-efficacy, as measured by the TSES, do not significantly predict teacher beliefs about the behavior supports implemented at the classroom level, as measured by the EBS Self-Assessment Survey.

$H_1$1: At least one of subdomains of teacher beliefs of self-efficacy, as measured by the TSES, significantly predicts teacher beliefs about the behavior supports implemented at the classroom level, as measured by the EBS.

RQ2: Do teacher beliefs of self-efficacy (IVs) correlate with student outcome data (DV), specifically discipline referrals to the office?

$H_0$2: None of the teachers' beliefs significantly correlate to student behavioral outcome data.

$H_1$2: At least one of teachers' beliefs of self-efficacy significantly correlates to student behavioral outcome data.

I performed multiple linear regression analyses to test the hypotheses.

The design of this study was nonexperimental, quantitative survey research. The IVs were the three subscales of teacher beliefs of self-efficacy. I measured the IVs using the TSES, which assesses efficacy beliefs across three areas: efficacy for instructional strategies, efficacy for student engagement, and efficacy for classroom management (Tschannen-Moran & Woolfolk Hoy, 2001). This survey provides a measure of teacher judgments of their capabilities to execute a broad range of skills considered necessary for good teaching (Tschannen-Moran & Woolfolk Hoy, 2001). Although a total score for teacher self-efficacy can be derived from the TSES, it was not used for this study. Rather, I used subscale scores for analysis.

The two DVs of this study were (a) implementation of behavior supports within the classroom environment, as measured by the EBS, and (b) student behavior data, as measured by office discipline referrals (ODRs). I gave the EBS, a self-report survey, to

the teachers in the study to measure their implementation of behavioral support systems within a specific area of the SWPBIS structure, classroom management systems. The second DV was student behavioral data, specifically the mean and standard deviation of the total number of minor and major ODRs the participating teacher wrote for classroom-level behavior.

The purpose of this study was to explore the relationship between the IVs; the three aspects of teacher self-efficacy beliefs; and the DVs of implementation of SWPBIS at the classroom level and student behavioral outcomes, specifically the mean number of discipline referrals sent to the office. As the study involved use of a convenience sample and nonexperimental design, correlational analyses were used (see Gravetter & Wallnau, 2009). The rationale of this design was consistent with the purpose of the study by using teachers as the primary source of data (Humphrey et al., 2016). The survey design used in this study was consistent with methods used in prior research to gain reliable data about teacher perceptions of self-efficacy (e.g., Sharma et al., 2012; Skaalvik & Skaalvik, 2014; Tschannen-Moran & Woolfolk Hoy, 2001). The survey design was also consistent with methods used in prior research to obtain information regarding fidelity and quality of program implementation (Hagan-Burke et al., 2005; Mitchell & Bradshaw, 2013; Safran, 2006).

Methodology

Population

The population of this study was first- through sixth-grade teachers implementing SWPBIS. Participants were recruited from elementary school districts within San

Bernardino County, California. The participants of this study represented a convenience sample. Participation in the study was based on teachers volunteering to be part of the study.

Sampling and Sample Procedures

The participants of this study represented a convenience sample of elementary school teachers, including general and special education teachers who taught Grades 1–6. Participation in the study was based on the teachers volunteering to be part of the study. I drew the convenience sample from elementary schools located within a 75-mile radius of my home. The teachers were recruited from schools in at least the 2nd year of implementation of SWPBIS. Program implementation status was obtained from school district websites and individual school websites.

I generated a list of potential volunteers from the school district contact lists for teachers found on district websites. Exclusion criteria were high school teachers, long-term substitute teachers, and teaching interns. Participation in the study occurred electronically or in face-to-face settings based on participants' geographical location and proximity to me. If the teacher’s location was close enough to me, I went in person to that participant to collect the data. Emails with the survey instruments were sent to those participating electronically by email addresses obtained from the school contact lists. Participants who completed paper copies of the surveys were given the instrument by me at the school site.

The proposed sample size was determined using G*Power, Version 3.1.9.2 for Windows and Macintosh (Faul, et al., 2009). The a priori analysis was conducted to

choose a sample size to control the statistical analysis for the probability of rejecting the null hypothesis if it was true (Type-1 probability [Alpha]) or keeping the null hypothesis if it was false (Type- 2 error probability [Beta]; (Mayr, et al., 2007). A large effect size (ES) was chosen to determine the significance of multiple and multiple partial correlations, which according to Cohen (1992), $f^2 = .35$. The G*Power calculated sample size was 46 for an exact linear multiple regression: a random model for a two-tailed test with H_1rho-squared equal to .35, predictors equal to 3, and alpha set to .05. The alpha level of 0.05 was consistent with the conventional value used in research studies to determine if a result is significant and the probability of a Type 1 error is low (Faul et al., 2009; Gravetter & Wallnau, 2009).

Procedures for Recruitment, Participation, and Data Collection

Data collection proceeded through a multi-mode process including both electronic and face-to-face means. The purpose of the mixed-mode data collection was to ensure coverage of the sample and obtain enough data for analysis. Before undertaking data collection, appropriate permissions to conduct research were obtained. Permission to conduct this research study was solicited from the target school districts through direct contact with school managers and the Institutional Review Board of Walden University through the dissertation process.

The first step in data collection was to address informed consent. I explained the details of the study to the participants, including (a) my credentials, (b) the purpose of the study, (c) the research design, (d) the process for collecting and using data, and (e) the procedures for safeguarding confidentiality. I also answered any questions. Once

participant consent was obtained, the TSES and EBS surveys were administered to teachers employed at local elementary school districts. The surveys were individually administered through hard copies and electronic distribution, as necessary. I took printed surveys to school sites on teacher development days and school-site staff meetings. The surveys were administered outside the normal duty day to prevent association of participation as an assigned work duty. I worked with the school site administrator to administer the surveys. The surveys were distributed to individuals within a group setting and collected upon completion. The specific steps for individual administration are listed below.

1. Printed hard copies of the survey instruments for each teacher at the school site.
2. Prepared survey packets by stapling both surveys together and assigning a participant number to the surveys packet.
3. Scheduled time with the site administrator to administer surveys after staff development meetings or during teacher collaboration times.
4. Arrived before the meeting and prepared materials for simplified distribution and collection using well marked boxes.
5. Presented the study: introduced and explained the research study, the survey instruments used, how data would be used, voluntary participation, limitations of the study, anonymity, and informed consent.
6. Asked the administrator to leave (as needed) to help alleviate feelings that participation is compulsory due to the presence of the supervisor.

7. Explained participation was voluntary and everyone would get the survey.
8. Explained all surveys, complete and incomplete, would be collected and turned in by the participant into the secure collection box.
9. Explained two surveys were given and both must be completed as part of the study.
10. Explained informed consent and how participants needed to sign the consent form on the first page of the survey packet.
11. Handed out survey packets to each person present and reminded them to leave their surveys, whether they chose to participate or not, in the collection box.
12. Allowed teachers 20 to 30 min to complete the surveys.
13. Retrieved the survey collection box.

Student behavioral outcome data generated by each participating teacher was obtained from the school administrator. Schools tracked student behavior data, such as office referrals, in-school suspensions, out-of-school suspensions, and expulsions, through student information management software. Within the SWPBIS framework, office referrals are used as measures of student behavioral outcomes and categorized into two types. Minor ODRs are given for behaviors of low intensity that violate the tenets of the school-wide behavioral expectations whereas major ODRs are given for high intensity, serious, and/or dangerous behaviors (Gion, et al., 2014). An example of an ODR form is in Appendix B. The mean number of referrals written by each teacher (n = 1; M_{minor}, M_{major}) was calculated by dividing the total sum of the referrals by the number of all referrals written for the category to provide a summary of the student behavioral

variable. The weighted mean of the referrals was used to adjust for the possibility of a larger contribution to the total group by one of the discipline referral categories (Gravetter & Wallnau, 2009). School district administrators were asked for access to the real-time data for the target school sites.

Instrumentation and Operationalization of Constructs

The survey items for this research study were the Effective Behavior Support (EBS) Self-Assessment Survey – v. 2.0 and the TSES. Previous research established the psychometric properties of the surveys used in the current study, making them appropriate to use.

The EBS survey is an individually administered tool used to gain a collective sense of SWPBIS implementation across multiple areas within the school (Sugai, et al., 2000). The Educational and Community Supports (ECS) group, which operates PBISApps, created the database *School-Wide Information System (SWIS) Suites for PBIS Assessment and PBIS Evaluation*. The ECS group recommended the EBS as a useful tool for teams to gain information about staff perceptions of SWPBIS across four systems of behavioral support. The evaluation tool is provided on their public website.

The EBS is organized into four surveys addressing different systems of behavioral support: (a) school-wide discipline systems, (b) non-classroom management systems, (c) classroom management systems, and (d) systems for individual students engaging in chronic behavior (Hagan-Burke et al., 2005; Safran, 2006; Sugai et al., 2000). Each question on the survey relates to one of the four systems in SWPBIS. This instrument is

typically used in its entirety by school leaders to gain an overall measure of implementation practices.

Hagan-Burke et al. (2005) used it in an alternative way when they investigated the usefulness of the instrument to evaluate program effectiveness through individual administration and as a tool to be used in applied research. They investigated the internal consistency of the EBS by statistically examining two conditions: (a) currently in place and (b) priority for the future of the school-wide survey. The results of the study indicated both conditions of the EBS school-wide component had adequate internal consistency (Hagan-Burke et al., 2005).

Safran (2006) also used the EBS in applied research. This study determined the total scale reliability for the two conditions of *current status* ($\alpha = .85$), which can be interpreted as having moderate to high reliability, whereas total scale *improvement priority* ($\alpha = .94$) has a high reliability. The results of the one-way analysis of variance (ANOVA) mean scores provided patterns of ratings for SWPBIS implementation in the four domains (school-wide systems, non-classroom settings systems, classroom systems, individual student systems) for *current status* with an effect size measured by partial eta squared (Safran, 2006). The results indicated significant differences across the four subscales, $F(3, 316) = 78.336$, $p < .001$, $\eta_p^2 = .43$ (Safran, 2006). Follow-up Tukey tests showed all post hoc comparisons were significant ($p < .001$) except for contrast of non-classroom with school-wide systems (Safran, 2006). Safran (2006) used a second one-way ANOVA to determine the effect size for the subscale mean scores for the condition of improvement priority and reported a high, moderate effect size $F(3, 316) = 9.739$, $p <$

.001, η_p^2 = .09. The post hoc Tukey comparisons of individual subscale means only differentiated individual student systems from the other three subtests ($p < .001$). Thus, the EBS ratings were interpreted at the item analysis level to determine educator beliefs about the behavior supports implemented (Safran, 2006). The current study used an item analysis approach of the classroom systems scale as factors of the DV. Each of the 11 questions on the scale was analyzed in conjunction with the three levels of the TSES.

Mitchell and Bradshaw (2013) conducted a repeated measures study using the classroom systems subscale of the EBS as a measure of the quality of classroom management. The survey was completed by teachers in 37 schools. The classroom system subscale is an 11-item scale measuring the use and quality of PBIS strategies within the classroom (Mitchell & Bradshaw, 2013). Previous studies established the survey had adequate internal consistency (Cronbach's alpha [α]=.83) and one-factor structure (Hagan-Burke et al., 2005; Safran, 2006).

O'Brennan, et al. (2014) conducted a study examining student behavior while accounting for teacher perceptions of the individual student, classroom, and school-level factors. The classroom systems subscale of the EBS was used to measure the classroom factors. A Cronbach's alpha of .83 was computed, indicating adequate internal consistency. The methods included multi-level data analyses examining the relationship between teacher perceptions of student behavior after accounting for the significant demographic variables at the individual, classroom, and school-wide levels (O'Brennan et al., 2014). The 11-item classroom systems subscale was used to assess the overall use of SWPBIS (O'Brennan et al., 2014). The results of the study found teacher reported use

of behavior management strategies in the classroom was nonsignificant (coef. = -0.013, std. error= 0.001).

The TSES is an individually administered survey instrument used to assess teacher general self-efficacy beliefs about their ability to make changes (Tschannen-Moran & Woolfolk Hoy, 2001). The TSES is a Likert scale instrument organized into three subscales of self-efficacy (efficacy of student engagement, efficacy of instructional strategies, efficacy of classroom management) and provides a measure of overall teacher self-efficacy. The scores generated from the instrument were collected and analyzed in this study. Scores on the scales range from 1 (nothing) to 9 (a great deal). The unweighted means, calculated for each subcategory, were the measures used in the analysis for this study.

Tschannen-Moran and Woolfolk Hoy (2001) based the TSES on Bandura's SCT. The long form used in this study has 24 items. Tschannen-Moran and Woolfolk Hoy conducted psychometric analysis to develop the TSES. They reported the following reliabilities for the subscales: α=0.91 for the efficacy of instruction, α=0.90 for the efficacy of classroom management, and α=0.87 for efficacy for engagement (Tschannen-Moran & Woolfolk Hoy, 2001). The intercorrelations for the TSES subscales were reported as 0.60 (instruction), 0.70 (management), and 0.58 (engagement). These results provided evidence of the high reliability of the TSES in the measurement of teacher self-efficacy.

The validity of the TSES was computed by assessing the correlation of the instrument to existing tools of teacher self-efficacy (Tschannen-Moran & Woolfolk Hoy,

2001). The existing tools were RAND 1, RAND 2, General Teaching Efficacy, and Personal Teaching Efficacy. The results of these correlations were that the TSES was positively related to other measures of personal teaching efficacy with correlation coefficients of $r = 0.18$, $r = 0.53$, $r = 0.64$, and $r = 0.16$, respectively (Tschannen-Moran & Woolfolk Hoy, 2001).

The construct validity and reliability were checked for the survey instruments before the planned descriptive and inferential analyses were completed. The data were collected once authorization to proceed was provided by the Walden University Institutional Review Board. The data were analyzed for Cronbach's alpha to confirm internal consistency and factor analysis to determine how the participants responded to the questions (Tschannen-Moran & Woolfolk Hoy, 2001).

Data Analysis Plan

This was a correlational research study to explore the relationship between the IVs and DVs. Data analysis included descriptive statistics to organize the data and statistical analysis of the relationship between the IVs and DVs (Gravetter & Wallnau, 2009). The descriptive statistics included measures of central tendency, the standard deviation, and frequencies of the main characteristics of the data from the TSES, EBS, and ODRs.

SPSS data analysis software was used to analyze the data for this study. Data were reviewed for completeness before analysis. Completeness was indicated by all responses on both surveys being answered. Incomplete surveys, although not used in the data analysis, were retained in a secure location. All incomplete surveys were kept

separate from completed surveys in a secured file cabinet. All surveys were retained until the study was completed and all documents were destroyed based upon Walden University recommendations.

The first step in preparing the data for analysis was to check the reliability of the survey instruments by conducting an exploratory factor analysis to extract the common factors in the responses of the TSES and EBS and to compute the Cronbach's alpha reliability coefficients. The next step was to prepare the TSES data by calculating the unweighted mean for each category for each participant. The TSES instrument was organized into three subscales of self-efficacy and an overall measure of general teacher self-efficacy. Although the overall measure of general teacher self-efficacy could be calculated from the TSES, the three subscales were to be used as the IVs in this study. The response options on the TSES ranged from 1 = *nothing* to 9 = *a great deal*. The unweighted mean was calculated for the items deteremined by the test developer for each category. Factor analysis establishes how participants responded to the questions and defined constructs of an instrument (Green & Salkind, 2008; Tschannen-Moran & Woolfolk Hoy, 2001). The assumption of the factor analysis is the obtained responses of the measured variables are linearly related to the constructs (Green & Salkind, 2008).

The next step in the data analysis was to prepare the EBS for analysis. The responses on the EBS were converted into numerical data. The EBS obtains responses on the status of program implementation based on the categories of *In Place*, *Partially In Place*, or *Not in Place* (Hagan-Burke et al., 2005); these ratings were converted to the values of 3, 2 and 1, respectively. Scores for each question were entered in SPSS by each

participant. Cronbach's alpha reliablity coefficients for the EBS were computed and an ANOVA was used to determine if a pattern existed in the ratings of the implementation of behavioral supports.

The student behavioral outcome data were analyzed in SPSS to determine the mean and standard deviation of minor and major ODRs for each teacher (m_1 = minor referral, m_2 = major referral). The mean value was chosen to summarize the central tendency and to account for possible differences in a teacher's class size (Gravetter & Wallnau, 2009). The discipline referral means (DV) were used in the multiple linear regression analysis with the data of the TSES.

SPSS was used to conduct descriptive and inferential analysis of data. The descriptive analysis included the computation of the central tendency, the mean for normal distribution standard deviations, and frequencies of the data. If the distribution was not normal, the median was used to describe central tendency and the semi-interquartile range as a description of the variability. Frequencies were computed from the collected demographic data, which included gender, ethnicity, years of teaching experience, and years of program implementation. The means and standard deviations were calculated for years of teaching and years of program implementation.

SPSS was used to conduct inferential statistical analyses to determine the correlations between the data obtained on the TSES, EBS, and student outcome data. A multiple linear regression analysis was used to analyze the data obtained from the three subcategories (IV_1, IV_2, and IV_3) of the TSES and the converted numerical data of the EBS items (DV) to provide information relating to the first RQ of whether a relationship

exists between teacher beliefs of self-efficacy and implementation of SWPBIS. A multiple linear regression analysis was used to analyze data from the TSES and student discipline data to answer the second RQ of whether a relationship exists between the three subcategories of teacher self-efficacy (IV_1, IV_2, and IV_3) and student outcome data.

SPSS was used to conduct multiple linear regression analysis to determine how well the teacher self-efficacy measures of the TSES predicted the elements of implementation of SWPBIS and student outcome data. The three predictor conditions of the IV measured by the TSES were efficacy of instruction, efficacy of classroom management, and efficacy for engagement. The DV for the first RQ was the converted numerical score for each item measured on the. The DV for the second RQ was the weighted mean calculated from the sum of both categories of ODRs ($m_1 + m_2$ / total number of referrals).

Assumptions of Statistical Tests

The statistical tests used for data analysis were factor analysis and multiple linear regression. Descriptive statistics were run on the data in SPSS to test the shape of the distribution for all variables. If the assumption of a normal distribution was violated, then a follow up statistical test was used that does not depend upon normal distribution. An ANOVA was proposed to determine the characteristics of the mean values and IVs, respectively.

An assumption of factor analysis is that obtained responses of the measured variables (of the TSES) would be linearly related to the constructs (Green & Salkind, 2008). SPSS was used to calculate the maximum likelihood factor analysis if the sample

was normally distributed. If the distribution was not normal, Costello and Osborne (2005) recommended using the pricipal axis factors for extraction.

An assumption of an ANOVA is the variances of the DV are the same for all the populations (Green & Salkind, 2008). To account for a violation of the assumption of independence, a statistic that is not dependent upon equal variance in the population, such as a Welch statistic, was conducted. Another assumption for an ANOVA is that scores on the test variables are independent without outliers (Green & Salkind, 2008). If the variables did not meet the assumptions of the ANOVA, the Kruskal Wallis test would have been used.

An assumption of the multiple linear regression analysis is that the predictor and DVs should be normally distributed with a linear relationship (Field, 2017; Green & Salkind, 2008). This is tested by creating a scatterplot of the data (Fields, 2017). Another assumption of this analysis is that the predictor variables are independent of each other (Green & Salkind, 2008). If the assumptions were violated, the multiple linear regression analysis would have been abandoned and a non-parametric test, such as Kruskal-Wallis Test, would have been chosen.

Threats to Validity

The possible threats to the validity of this study were internal and external. An internal threat to validity was the sampling procedure on a volunteer basis. The use of volunteers may result in participants being predisposed or biased about the implementation of SWPBIS. The volunteer procedure may have resulted in a sample

insufficient to obtain significant results. Multiple modes of recruitment were used to combat this threat to internal validity.

I administered the survey within the professional community in which I work. This type of survey administration may have resulted in threats to validity based upon a response bias toward or against me or a perception that participation might be linked to a perceived threat of employment (Creswell, 2009). Participants within my district may have been biased toward me. To combat this, participants were provided a detailed explanation of the study, information regarding anonymity of participation, and use of information for research purposes. I used my Walden University email address to contact participants.

Threats to validity may have been created due to the hard copy versus electronic administration. To encourage participation of a diverse group in the face-to-face sessions, snacks and drinks were provided. An external threat to validity was the data collection taking place following staff meetings. This was typically a time when the staff were provided with information regarding their regular workday and staff may have seen the addition of the study as an intrusion. To correct for this, information was provided in advance, at least one staff meeting before the day of the administration.

Ethical Procedures

Many ethical issues were considered in the development of this study. These considerations ranged from protection and safety of the participants to storage and destruction of collected data. The ethical procedures are listed below to address these considerations. The appropriate application was filed with the Walden University

Institutional Review Board (IRB). The purpose of this process was to ensure the protection of participants. I completed the application process and obtained approval, approval number 11-28-18-0191737, prior to beginning data collection.

The plan to protect the identities of respondents in the study was that personal demographic data were limited to only basic information: gender, school, grade taught, years of teaching experience, and years of SWPBIS implementation. Participant names were not requested and eliminated from survey documents. The surveys were coded with a participant number before distribution for administration. Identities of individual student data were protected using a secondary data source. Individual student behavioral data was avoided by using cumulative data. The queries used to generate the reports from the student information management software focused on totals for categories of behavior data. There was no personal contact with students and individual names were not used in the collection or analysis of data.

Signed informed consent was obtained from each participant before the administration of the survey items. The informed consent addressed the nature of the study, voluntary participation, confidentiality of participation, and the limitations to confidentiality. Informed consent also included a declaration of access to and the storage and destruction of the collected data.

The final ethical consideration was the storage and disposal of collected data. I stored the collected data in a locked file cabinet in my home. The data were handled only when in use for administration and analysis. Access to the data was limited to me, my

dissertation chair, and my other committee members. The data will be retained for a period of time as directed by the procedures and guidelines of Walden University.

Summary

The purpose of this chapter was to discuss the methods of this study. This was a nonexperimental, survey design quantitative study. The IV was teacher self-efficacy and the DVs were evidence of implementation and student behavioral outcomes. The participants were drawn from a convenience sample of teachers in an elementary school district. A correlational analysis was used to determine the relationship between the IV and DVs to answer RQs 1 and 2. The data were converted and cleaned before being analyzed using SPSS. Descriptive statistics were used to organize and summarize the data. Inferential statistics were used to analyze the hypotheses that teacher beliefs of self-efficacy influenced implementation of SWPBIS and student behavioral data. The analysis of data is further addressed in Chapter 4.

Chapter 4: Results

Introduction

The purpose of this study was to investigate whether relationships exist between teacher self-efficacy beliefs and their implementation of a SWPBIS program, and teacher self-efficacy beliefs and student behavioral outcomes. I sought to answer two RQs in this investigation. The first RQ was, Did teacher self-efficacy beliefs significantly predict the teachers' perceptions of implementation of SWPBIS? The second RQ was, Did a significant relationship exist between teacher self-efficacy beliefs and student ODRs? Briefly summarized, the hypotheses of the study were that at least one of the aspects of teacher self-efficacy beliefs significantly predicted teacher perceptions of SWPBIS implementation and at least one of the aspects of teacher self-efficacy had a significant relationship to student behavioral outcomes.

In this chapter, I describe the data collection and analysis processes and present the results obtained from the analysis. The chapter begins with a discussion of the data collection, which includes descriptions of the time frames over which data were collected, the descriptive statistics of the characteristics of the data, and the discrepancies in the collection of data from that presented in the proposal. The chapter also includes descriptions of the process used in the recruitment of the participants, baseline descriptive characteristics of the sample, and the external validity of the sample. The discussions of the analyses performed, which include the statistical assumptions and details of the effect size, are organized by RQ. Finally, the chapter closes with a summary of the answers to the RQs and a transition to Chapter 5.

Data Collection

I collected data for this study from three school districts within a 75-mile radius of my location. Eleven schools were used in the study. The proposal for the study included a mixed-mode invitation process using both electronic communications (emails) and face-to-face meetings to elicit participation, obtain informed consent from teachers, and collect data. Letters of permission to use the instruments are in Appendices C and D. Data collection began in December 2018 and ended in June 2019. This was a longer time frame than estimated due to difficulties in recruiting enough participants for the study.

In the first 4 months of data collection, less than 10% of those invited decided to participate in the study. The deficit in the number of volunteers to fulfill the minimal amount needed for the sample to obtain significant results ($N = 46$) led me to submit a request to the Walden University IRB to modify the proposed procedures. The requested change was to add an additional school district for data collection. The additional school district met the study requirements of being within the same county, having elementary schools within a 75-mile radius of me, and being in at least the 2nd year of implementation of SWPBIS. Once IRB approval was received, on-site meetings were used to elicit participation from volunteering teachers. With the addition of the school district, the response rate improved resulting in a sample size of 54 participants. This was a greater number of participants than indicated in the proposal as needed for significant results ($N = 46$).

I sent emails to potential participants, and to obtain their informed consent, to the first through 6th-grade teachers of two of the three local school districts. I sent invitations

to approximately 200 teachers in eight of 11 schools. Emails were used to introduce the study, provide informed consent and collect data. Bulk list emails were sent to potential participants as blind carbon copies to preserve anonymous participation. The study documents were included as an attachment. The potential participant was instructed to reply with their consent to participate by email, print and complete the attachments, and return the paper copies to me. Follow-up emails were sent to teachers introduced to the study by email. The response rate from the email solicitation for volunteers was low. One person accepted the invitation in the initial round of solicitations.

To address the low response rate, I held face-to-face recruitment meetings on-site at four of 11 schools after obtaining IRB approval. During the on-site visits, the documents were presented in a packet. The packet included the informed consent and both surveys. The presentation format included an introduction of the study by the administrator; an explanation by me of the study; the consent form; and details of participation, which included the opportunity for nonparticipation and instructions of how to opt out of the study. The potential participants were asked to provide demographic information, complete both surveys, and return the completed forms directly to me. For the sake of anonymity, packets were handed out to and collected from all the teachers at the time of administration and were directly placed in a manila envelope. The option was given for the teachers to take the surveys and return them later. In this instance, the survey was left with the teacher with instructions of how to return the completed survey to me. Seventy-five teachers were given the surveys in on-site meetings. Of the seventy-

five potential participants, 53 completed the surveys. Twenty-two declined to participate, and one survey was not used as it was incomplete.

I obtained the student outcome data from the school administrator. The data collected represented sum totals of the ODRs written by the teacher. The ODRs were collected from each school site and accounted for the period of the entire school year up to the date of data collection. As the ODRs were collected by classroom, student names were not part of the data collection. The teacher's name was identified on the ODRs so it could be matched to completed surveys for analysis.

Discrepancies in Data Collection

A discrepancy from the proposal relates to the survey instrument used to collect teacher self-efficacy data. The survey instrument described in the proposal was the TSES developed by Woolfolk and Hoy (1990) based on their interpretation of the Gibson and Dembo (1984) Teacher Efficacy Scale (TES). The TES was the instrument attached to the proposal when submitted for IRB approval. Thus, the TES was the instrument that was approved by the IRB for data collection. Once the discrepancy was noted, steps were taken to obtain appropriate permissions from the authors of the original and interpreted surveys, the committee chair, and the program administrator to proceed with data analysis.

The change in the instruments used to measure teacher self-efficacy did not impact the basic theoretical premise of the study, which was Bandura's SCT. Both the TES and TSES instruments were based upon Bandura's theory (Tschannen-Moran & Woolfolk Hoy, 2001; Woolfolk & Hoy, 1990). However, the change affected the analysis

plan approved by IRB as the TSES has three subscales and a composite score for teacher self-efficacy and the TES has two subscales. Both instruments are individually administered surveys used to assess teacher self-efficacy beliefs of their ability to make changes in student learning. Both instruments are Likert scales. The TES is a two-factor (personal and general teaching efficacy) scale with alpha values ranging from 0.75 to 0.81 for personal teaching efficacy and 0.64 to 0.77 for general teaching efficacy obtained through a factor analysis of the 22-question survey. The scale scores are created for each factor by computing and unweighted average of the responses loading .35 or greater on that factor (Woolfolk & Hoy, 1990). The two factors are independent, yet moderately related with correlations ranging from 0.15 to 0.20 (Tschannen-Moran & Woolfolk Hoy, 2001). Also, the TES instrument is appropriate for use in investigating the RQs of whether teacher self-efficacy predicts teacher beliefs of implementation of SWPBIS and a relationship to student outcome data (Hoy & Woolfolk, 1990).

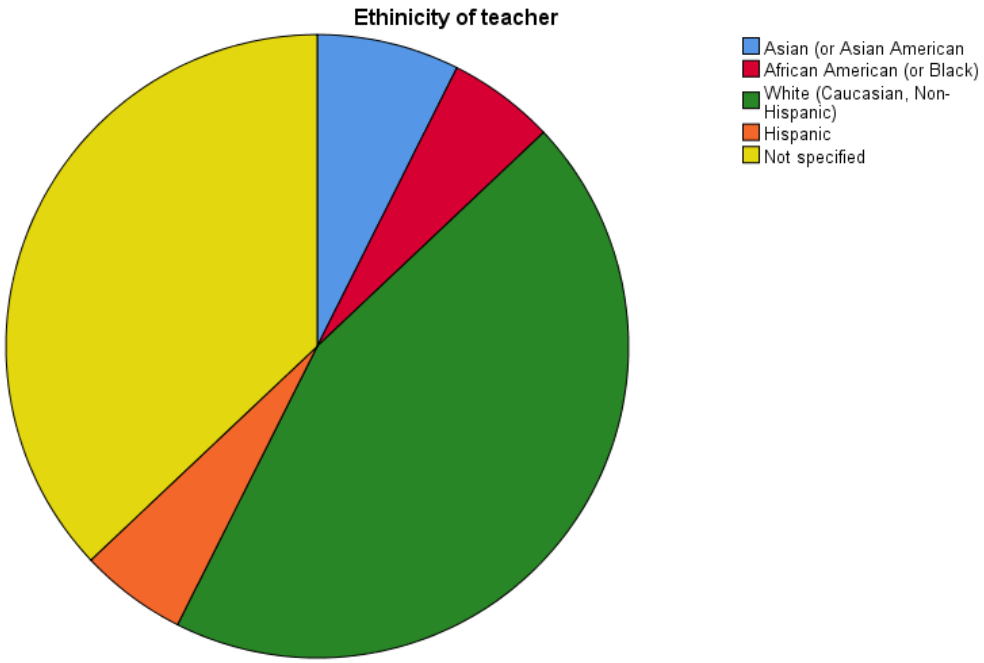
A discrepancy in the data collection process related to the student behavioral outcome data generated by each participating teacher. Schools and districts in this study gathered and stored the information in substantially different ways. The original proposal called for the data to be collected and analyzed from two types. In the original proposal, the ODRs to be collected were minor ODRs given for behaviors of low intensity and major ODRs given for high intensity, serious, and dangerous behaviors. All the schools did not track these data. For example, one school only tracked major ODRs. Thus, the total numbers of ODRs written by each teacher was used rather than the weighted mean from the two types as a summarizing value of student behavioral outcomes.

External Validity

The total number of participants was 54. This sample consisted of 51 females and three males. Of the 54 participants, 37% did not respond when asked about ethnic background. The remainder of the sample reported 7.4% Asian (or Asian American), 5.6% Black (African American), 44.4% White (Caucasian, Non-Hispanic) and 5.6% Hispanic (see Figure 2).

Figure 2

Ethnic Background of Sample



The population data for schools in San Bernardino County were obtained from the California Department of Education, Educational Demographics Office website (2019). These data represented the population from which the sample was taken. The data were reported for the 2013–2014, 2014–2015, 2015–2016, 2016–2017, and 2017–2018 school

years. The total number of full-time equivalent teachers was stable over the reported years with growth in the total number of teachers from 2013-14 to 2017-18 of about 669 teachers (Educational Demographics Office, 2019). The ethnic background of the population was also stable at less than or equal to 1% American Indian or Alaska Native, Filipino, Native Hawaiian or Pacific Islander, and two or more races; less than 3% Asian and none reported; 5% Black or African American; 20-22% Hispanic or Latino; and 60 to 68% White.

The sample used in this study included teachers identifying as Black or African American in a percentage that was consistent with the reported percentages in the population. There were more teachers in the sample identifying as Asian or Asian American than in the population. The teachers in the sample identifying as White (Caucasian, Non-Hispanic) and Hispanic were less than the numbers reported in the population. The differences between the sample and population may be a result of the process used to report and collect demographic information.

Ethnographic information was obtained by a self-report process in school districts, and this was the process I used for this study. In the case of the school districts, the teacher may have been more compelled to provide the data for employment purposes than when completing the participant information for the study. For example, a non-response was given in less than 3% of the population compared to 37% of the study sample. Another difference noted was the categories of ethnicity for the population of teachers who reported was more distinctive than the categories that were identified for the study. For example, in this study the ethnic categories of Filipino and Indian were

combined into the category of Asian, which may account for the higher percentage reported for the study than in the population.

Results

Data analysis for this study included a factor analysis, descriptive analysis, and multiple linear regression analyses. An ANOVA was described in the proposal for this study but was not used as it was inappropriate for use in this study. Factor analysis was used to identify the pattern of responses for the sample on the TES and used to determine the pattern of responses representing the two aspects of teacher self-efficacy, personal efficacy, and general efficacy. Descriptive statistics were used to organize the demographic information for this study. The demographic information provided by the teachers included the number of years teaching and number of years implementing SWPBIS. Descriptive statistics were conducted on the two aspects of the IVs of teacher self-efficacy and the two DVs- response data on the EBS, and the student outcome data.

I performed multilinear regression analysis to investigate the first RQ of whether the two aspects of teacher self-efficacy beliefs generated from the TES were predictors of SWPBIS implementation as measured by the EBS. Multilinear regressions were used to analyze the second RQ to investigate any significant correlations between the two aspects of the TES and ODRs. The associated probability (*p*) values were included with a 95% confidence interval except when corrected for RQ1 with the Bonferroni correction.

Factor Analysis

I conducted factor analysis on the TES to create the scale scores for the two independent factors of personal efficacy and general teaching efficacy for this study.

Woolfolk & Hoy (1990) describe creating the PTE and GTE scales for the sample by computing the unweighted average of the responses loading at .35 or greater on that factor. The items were coded so high scores on both scales represented high levels of efficacy for the item. The scoring was reversed on items 1, 5, 6, 7, 8, 11, 12, 14, 15, 16, 18, 19, and 22, which all but one loaded on the personal efficacy scale (Woolfolk & Hoy, 1990); the response for item 15 loaded on the general teaching efficacy scale. To illustrate the purpose of reverse coding, the response of *Strongly Agree* on the statement, "I have enough training to deal with almost any learning problem" must be reversed so the respondent receives a score of 6 rather than 1.

The responses from the 22 items for the TES were factor analyzed using principal component analysis. I conducted the analysis based upon the a priori hypothesis that the measure consisted of two independent dimensions. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .63, which indicates the suitability of conducting the factor analysis on the data. Varimax rotation procedure was used. The rotated component matrix is shown in Table 1 for the items loading for personal efficacy (PTE) and general teaching efficacy (GTE) factors. The two factors accounted for 34% of the variance. Specifically, the PTE factor accounted for 21% of the variance and the GTE factor accounted for 13%. Items that loaded greater than .35 were used to compute unweighted means to represent the scores of PTE and GTE for individual participants. If a question loaded at greater than .35 on both factors, it was assigned to the factor where it had a greater load value.

Table 1

TES Factor Analysis: Item of PTE and GTE; Rotate Component Matrix

Question	Personal efficacy	General teaching efficacy
7-R	.702	
11-R	.667	
22-R	.655	
6-R	.612	
12-R	.592	
18-R	.579	
14-R	.549	
13	-.533	
16-R	.531	
21	-.375	
15-R		.670
20		.654
19-R		.575
9		.573
2		.522
10		.487
8-R		.471
5-R		.391

Note. TES = Teacher Efficacy Scale; PTE = personal teacher efficacy; GTE = general teacher efficacy; R = reversed score value. The extraction method was principal component analysis. The rotation method was varimax with Kaiser normalization. Rotation converged in three iterations.

Descriptive Statistics

The following tables provide the descriptive statistics for the participant samples, the two aspects of efficacy identified for the IV of teacher self-efficacy, and the DVs of EBS and ODRs. The sample consisted of 54 participants. Of the sample, 7.4% reported teaching for 0 to 3 years, 5.6% reported teaching for 3 to 5 years, 77.8% reported teaching for 5 or more years, and 9.3% did not specify the number of years teaching. Of the sample, 7.4% of participants reported implementing SWPBIS for 0 to 3 years, 14.8% reported teaching 3 to 5 years of implementation, 61.1% reported 5 or more years of implementation, and 16.7% did not specify the number of years implementation. The descriptive statistics for self-reported number of years teaching and years implementing SWPBIS are listed in Table 2.

Table 2

Years of Teaching and Implementing SWPBIS

	Years of Teaching		Years Implementing SWPBIS	
	Frequency	Percent	Frequency	Percent
0-3 years	4	7.4	4	7.4
3-5 years	3	5.6	8	14.8
5+ years	42	77.8	33	61.1
Not Specified	5	9.3	9	16.7
Total	54	100.0	54	100.0

The TES scores were generated by calculating the unweighted mean from those responses that loaded greater than .35 in the factor analysis. The PTE scale included ten

items and the GTE scale included eight items. The final scores were standardized because the scales had unequal numbers of items. The mean value for GTE was 4.31 with a standard deviation of .69; Cronbach's alpha [α] = .73 for eight items. The mean value for PTE was 4.40 with a standard deviation of .50; Cronbach's alpha [α] =.64 for ten items. The reliability of GTE was in the acceptable range. The reliability for PTE was in the moderate range. Table 3 presents the descriptive statistics for the TES- PTE and TES-GTE scales. (See Discrepancy in Data Analysis section)

Table 3

PTE and GTE: Means and Standard Deviations

	n	Min.	Max.	Mean	SD
GTE	54	2.63	5.75	4.31	.692
PTE	54	2.78	5.22	4.40	.483

The responses for the EBS items were coded so a high score indicated the SWPBIS strategy was in place in the classroom. The scores were 3 = *In Place*, 2 = *Partially in Place*, 1 = *Not in Place,* and 0 = *No Response*. A reliability analysis was conducted on the EBS instruments and the obtained Cronbach's alpha [α] was .728, indicating the EBS had satisfactory reliability.

Overall, responses on the EBS instrument indicated varying levels of implementation of SWPBIS with many participants, 50% or more, indicating that most classroom strategies were in place. The percentage of teachers responding SWPBIS

classroom systems were in place ranged from a high of 85.2% for Question 1 to a low of 24.1% for Question 10 (Table 4).

Table 4

EBS Survey Variable: Percentages of Sample Responses

	In Place	Partial in Place	Not in Place	No Response
EBS 1	85.2	11.1	1.9	1.9
EBS 2	53.7	25.9	18.5	1.9
EBS 3	77.8	20.4	0.0	1.9
EBS 4	59.3	35.2	3.7	1.9
EBS 5	44.4	40.7	14.8	0.0
EBS 6	50.0	31.5	16.7	1.9
EBS 7	50.0	40.7	9.3	0.0
EBS 8	61.1	33.3	5.6	0.0
EBS 9	46.3	42.6	11.1	0.0
EBS 10	24.1	51.9	24.1	0.0
EBS 11	55.6	38.9	3.7	1.9

Note: $N = 54$

Measurements of skewness and kurtosis for the EBS are reported in Table 5. The generated values indicate varying distributions for the responses. The distribution of the scores tended towards a negative skewness of the distribution for most of the questions

on the EBS survey. This result indicates many of the responders rated the SWPBIS items with a score of three (3) or as "In Place". The acceptable range for kurtosis was within ±2.0, indicating appropriate distribution of the values. The distribution of the responses for questions #1 (12.47), #3 (10.15) #4 (2.63) and #11 (2.3) were outside of this acceptable range. See Table 5 for details.

Table 5

EBS: Central Tendency and Symmetry Distribution

Items	Mean	SD	Skewness	Kurtosis
Q1	2.80	.56	-3.34	12.47
Q2	2.31	.84	-.86	-.45
Q3	2.74	.56	-2.80	10.15
Q4	2.52	.67	1.42	2.63
Q5	2.30	.72	-.512	-.890
Q6	2.30	.82	-.82	-.314
Q7	2.41	.66	-.67	-.54
Q8	2.55	.60	1.021	.09
Q9	2.35	.68	.57	-.69
Q10	2.00	.70	0.00	-.90
Q11	2.48	.67	-1.33	2.30

Note: *N=54*

To obtain a score for the number of ODRs written, the total number of ODRS written by each participant was used for analysis. The data included outlying data points which were filtered out based upon the results of a boxplot graph of the total number of referrals written (see Appendix E). Twenty-three (44.2%) teachers did not write any

referrals and 80.8% of teachers wrote six or fewer referrals. Three teachers wrote more than 20 referrals. The distribution of the data was positively skewed (4.90). The nonparametric statistic, chi-square test, was run to determine a goodness of fit. For the sample, $\chi^2(16, n = 54) = 149.37$ indicating greater frequency of responses were in the critical range.

Multiple Linear Regression

The statistical test used for the data analyses of the RQs was multiple linear regression. The assumption of a normal distribution of the data for the self-efficacy factors was indicated by the results of the Kolmogorov-Smirnov test of Normalcy on the PTE scale $D(54) = .088$, $p=.05$, and GTE scale $D(54) = .100$, $p=.05$. The assumption of normal distribution of the data for all the EBS survey items and the ODRs written was not met and was addressed in subsequent analyses.

The RQs addressed in the study were whether the two factors of teacher of self-efficacy predicted the teachers' perceptions of implementation of SWPBIS and the student outcomes of ODRs. One of my hypotheses was that a correlation between at least one of the factors of teacher self-efficacy and the implementation activities of SWBPIS existed. The second hypothesis of the study was that a relationship existed between at least one of the aspects of teacher self-efficacy and the student outcome data represented by ODRs.

Research Question 1

The first RQ was analyzed using SPSS to conduct multiple linear regression. The hypothesis tested was whether the IVs, the two aspects of teacher efficacy, predicted the

DV of implementation of the SWPBIS strategies in the population. Specifically, it was used to assess whether the population correlation coefficient was equal to zero or alternatively if the population slope was equal to zero. The generated scaled scores of PTE and GTE were analyzed with each of the 11 EBS survey items. The DVs were the 11 EBS items: 1 (expected student behavior and routines in classrooms are stated positively and defined clearly), 2 (problem behaviors are defined clearly), 3 (expected student behavior & routines in classrooms are taught directly), 4 (expected student behaviors are acknowledged regularly and positively reinforced, 5 (problem behaviors received consistent consequences), 6 (procedures for expected and problem behaviors are consistent with school-wide procedures), 7 (classroom-based options exist to allow classroom instruction to continue when problem behavior occurs), 8 (instruction and curriculum materials are matched to student ability in math/reading/language), 9 (students experience high rates of academic success), 10 (opportunities for access to assistance and recommendations via observation/coaching) and 11 (transitions between instructional & non-instructional activities are efficient and orderly).

Multiple linear regression analysis was used to explore if the nature of the relationship between the aspects of teacher efficacy and the EBS survey items was predictive. The purpose of this analysis was to identify whether teacher self-efficacy can predict implementation of SWBPIS. The following section describes the evaluation tests of the assumption for multicollinearity, outliers, normality, linearity, homoscedasticity, and independence of residuals.

Tests of Assumptions for Research Question 1

Multicollinearity. Multicollinearity was evaluated viewing the correlation coefficients among the predictor variables. All bivariate correlations were small to medium for each of the variables (see Tables 6-16). Thus, the violation of the assumption of multicollinearity was not evident. The following tables contain the correlation coefficients.

Table 6

Correlation Coefficients Among PTE, GTE and EBS-Q1

Variable	EBS-Q1	PTE	GTE
EBS-Q1	1.00	.378	.153
PTE	.378	1.00	.564
GTE	.153	.564	1.00

Note. $N = 54$.

Table 7

Correlation Coefficients Among PTE, GTE and EBS-Q2

Variable	EBS-Q2	PTE	GTE
EBS-Q2	1.00	.213	.076
PTE	.213	1.00	.564
GTE	.076	.564	1.00

Note. $N = 54$.

Table 8

Correlation Coefficients Among PTE, GTE and EBS-Q3

Variable	EBS-Q3	PTE	GTE
EBS-Q3	1.00	.163	.066
PTE	.163	1.00	.564
GTE	.066	.564	1.00

Note. $N = 54$.

Table 9

Correlation Coefficients Among PTE, GTE and EBS-Q4

Variable	EBS-Q4	PTE	GTE
EBS-Q4	1.00	.308	.110
PTE	.308	1.00	.564
GTE	.110	.564	1.00

Note. $N = 54$.

Table 10

Correlation Coefficients Among PTE, GTE and EBS-Q5

Variable	EBS-Q5	PTE	GTE
EBS-Q5	1.00	.266	.139
PTE	.266	1.00	.564
GTE	.139	.564	1.00

Note. $N = 54$.

Table 11

Correlation Coefficients Among PTE, GTE and EBS-Q6

Variable	EBS-Q6	PTE	GTE
EBS-Q6	1.00	.378	.153
PTE	.3781	1.00	.564
GTE	.1153	.564	1.00

Note. $N = 54$.

Table 12

Correlation Coefficients Among PTE, GTE and EBS-Q7

Variable	EBS-Q7	PTE	GTE
EBS-Q7	1.00	.215	.240
PTE	.215	1.00	.564
GTE	.240	.564	1.00

Note. $N = 54$.

Table 13

Correlation Coefficients Among PTE, GTE and EBS-Q7

Variable	EBS-Q8	PTE	GTE
EBS-Q8	1.00	.101	.251
PTE	.101	1.00	.564
GTE	.251	.564	1.00

Note. $N = 54$.

Table 14

Correlation Coefficients Among PTE, GTE and EBS-Q9

Variable	EBS-Q9	PTE	GTE
EBS-Q9	1.00	.306	.256
PTE	.306	1.00	.564
GTE	.256	.564	1.00

Note. $N = 54$.

Table 15

Correlation Coefficients Among PTE, GTE and EBS-Q10

Variable	EBS-Q10	PTE	GTE
EBS-Q10	1.00	.072	-.092
PTE	.072	1.00	.564
GTE	.092	.564	1.00

Note. $N = 54$.

Table 16

Correlation Coefficients Among PTE, GTE and EBS-Q11

Variable	EBS-Q1	PTE	GTE
EBS-Q11	1.00	.231	-,018
PTE	.231	1.00	.564
GTE	-.018	.564	1.00

Note. $N = 54$.

Outliers, Normality, Linearity, Homoscedasticity, and Independence of Residuals. Outliers, normality, linearity, homoscedasticity, and independence of residuals were evaluated by examining the Normal Probability Plot (P-P) of the Regression Standardized Residual (Figures 3-13) and the scatterplots of the standardized residuals against the (unstandardized) predicted values (Figures 14-24) (Laerd Statistics, 2021). My examinations indicated no major violations of these assumptions. The tendency of the points to lie in a reasonably straight line (Figures 3-13), diagonal from the bottom left to the top right, provided supportive evidence that the assumption of normality was not grossly violated (Laerd Statistics, 2021). The random patterns in the scatterplot of the standardized residuals (Figures 14-25) indicated the assumption of homoscedasticity was met.

Figure 3

EBS-Q1: Normal Probability Plot (P-P) of the Regression Standardized Residuals

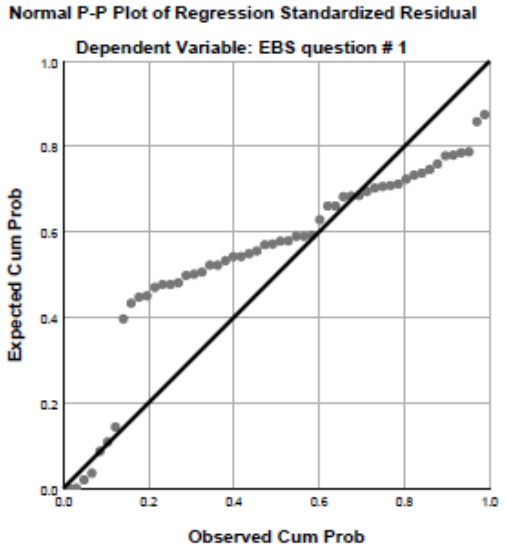


Figure 4

EBS-Q2: Normal Probability Plot (P-P) of the Regression Standardized Residuals

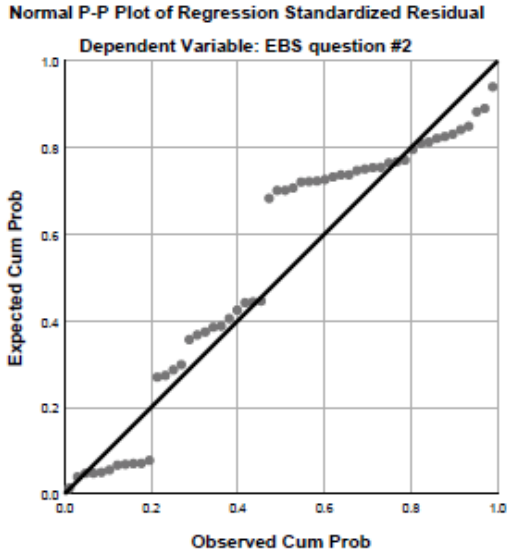


Figure 5

EBS-Q3: Normal Probability Plot (P-P) of the Regression Standardized Residuals

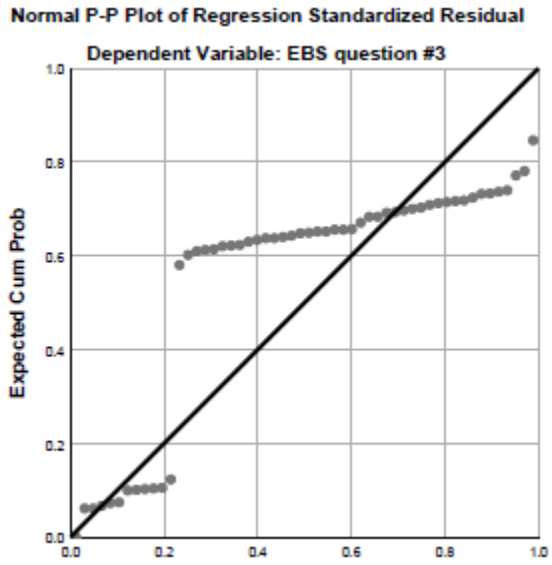


Figure 6

EBS-Q4: Normal Probability Plot (P-P) of the Regression Standardized Residuals

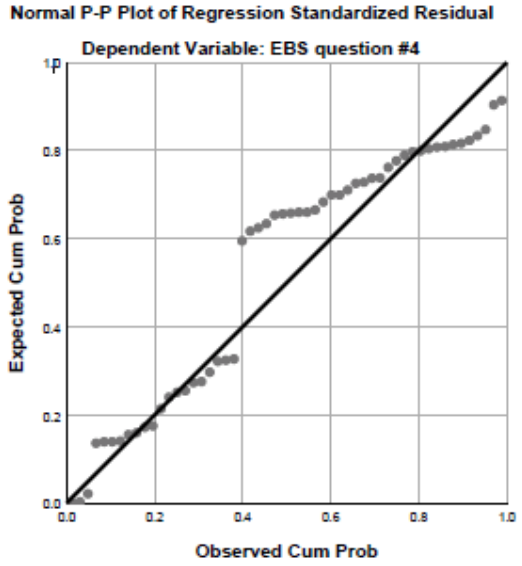


Figure 7

EBS-Q5: Normal Probability Plot (P-P) of the Regression Standardized Residuals

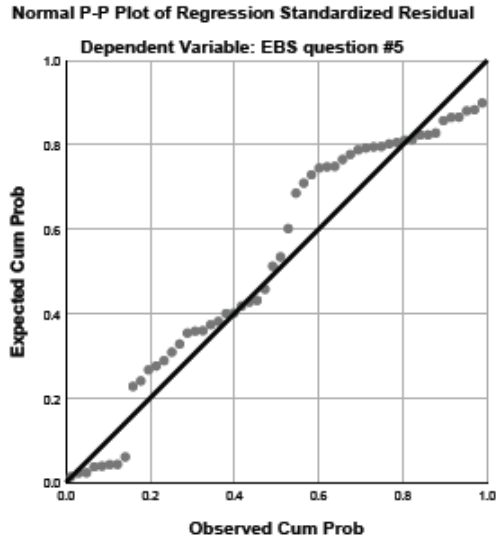


Figure 8

EBS-Q6: Normal Probability Plot (P-P) of the Regression Standardized Residuals

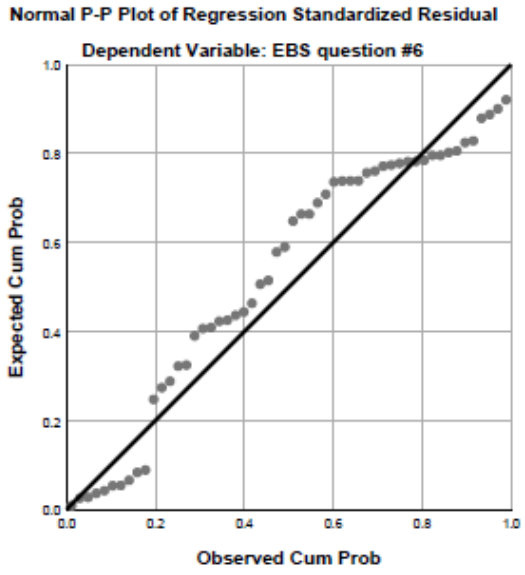


Figure 9

EBS-Q7: Normal Probability Plot (P-P) of the Regression Standardized Residuals

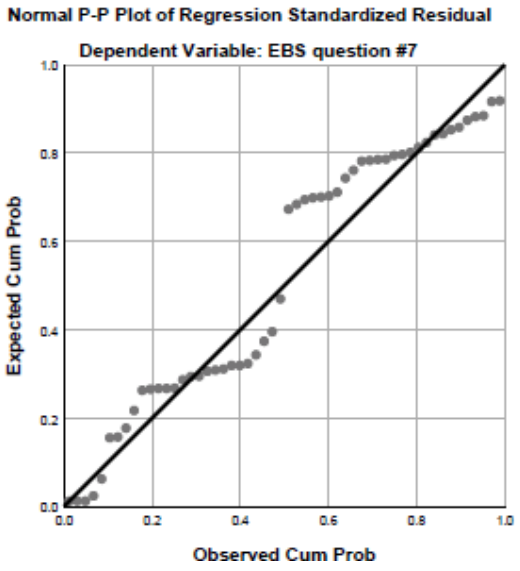


Figure 10

EBS-Q8: Normal Probability Plot (P-P) of the Regression Standardized Residuals

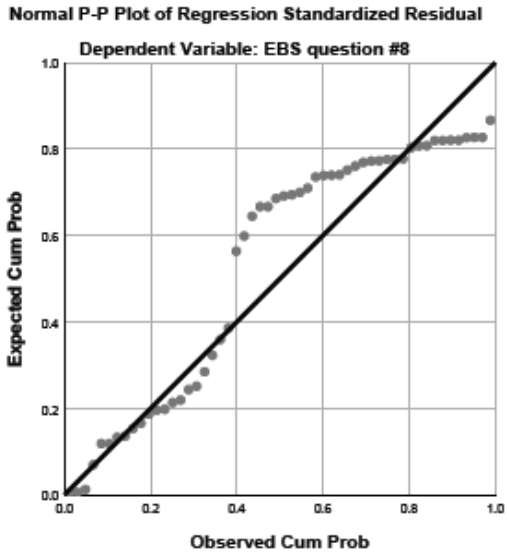


Figure 11

EBS-Q9: Normal Probability Plot (P-P) of the Regression Standardized Residuals

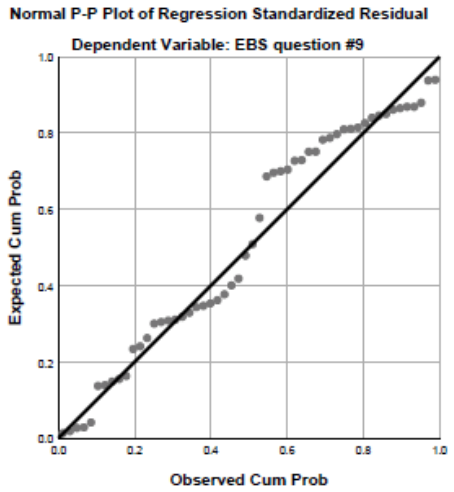


Figure 12

EBS-Q10: Normal Probability Plot (P-P) of the Regression Standardized Residuals

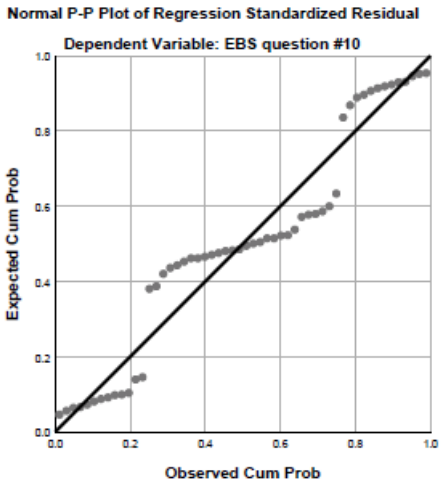


Figure 13

EBS-Q11: Normal Probability Plot (P-P) of the Regression Standardized Residuals

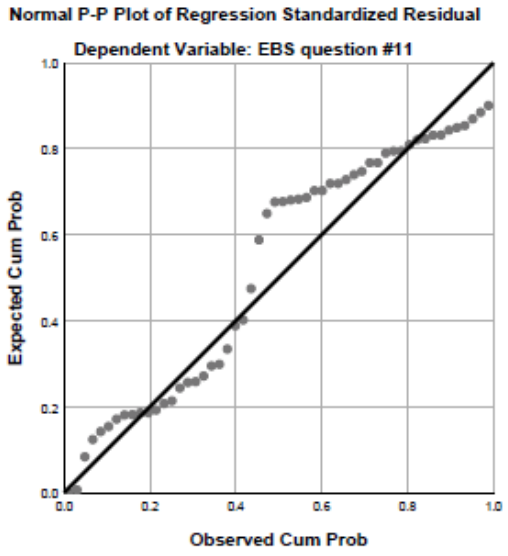


Figure 14

Scatterplot of the Standardized Residuals EBS Question #1

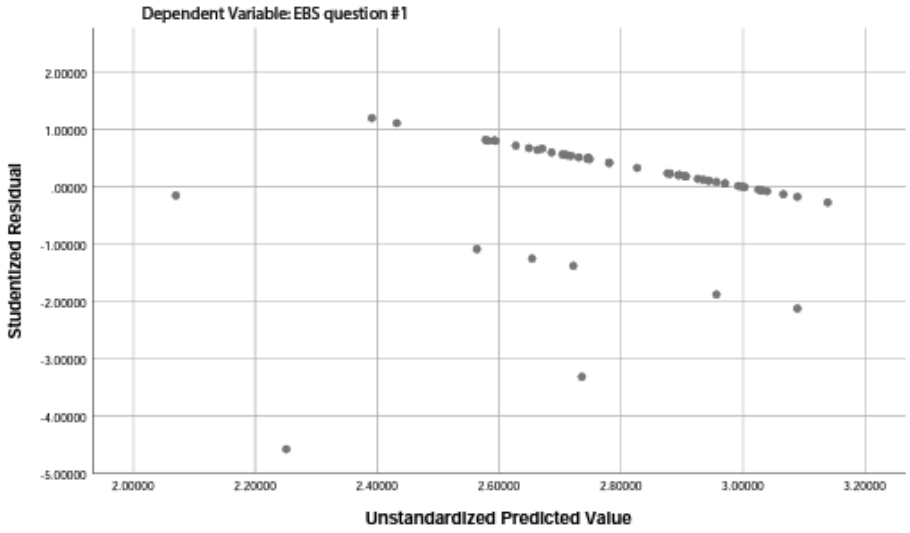


Figure 15

Scatterplot of the Standardized Residuals EBS Question #2

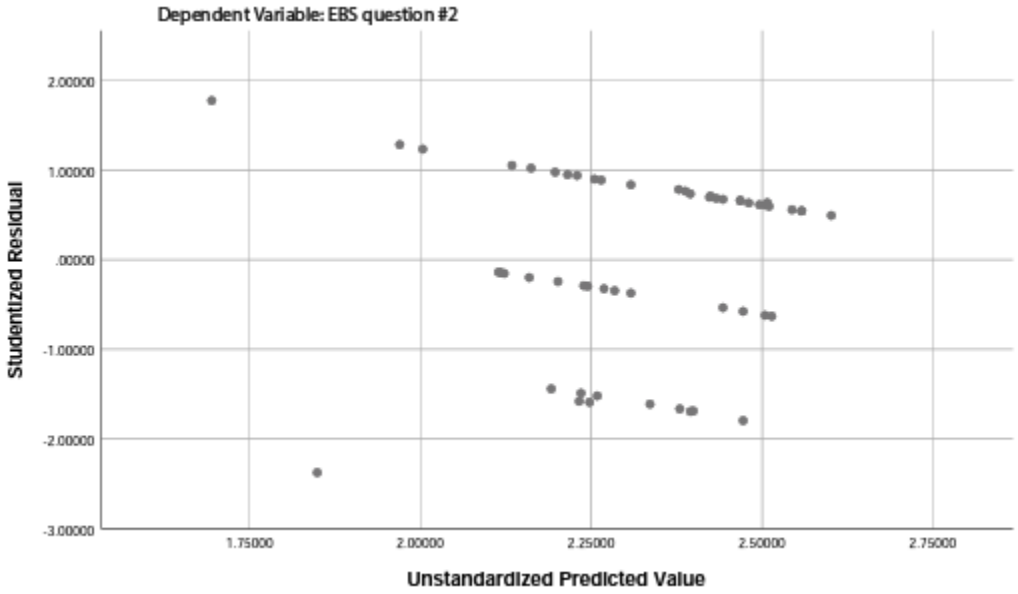


Figure 16

Scatterplot of the Standardized Residuals EBS Question #3

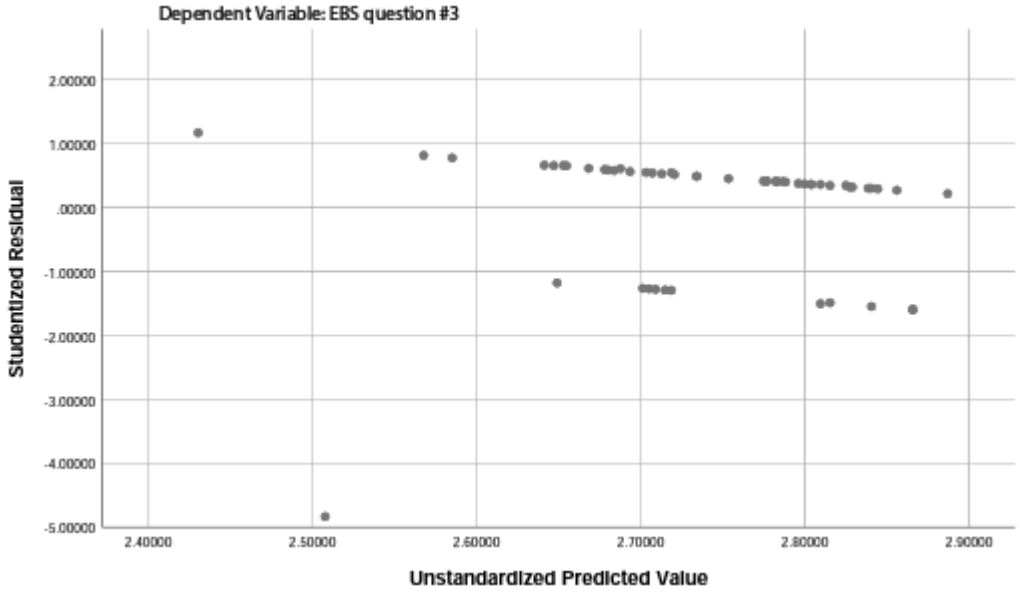


Figure 17

Scatterplot of the Standardized Residuals EBS Question #4

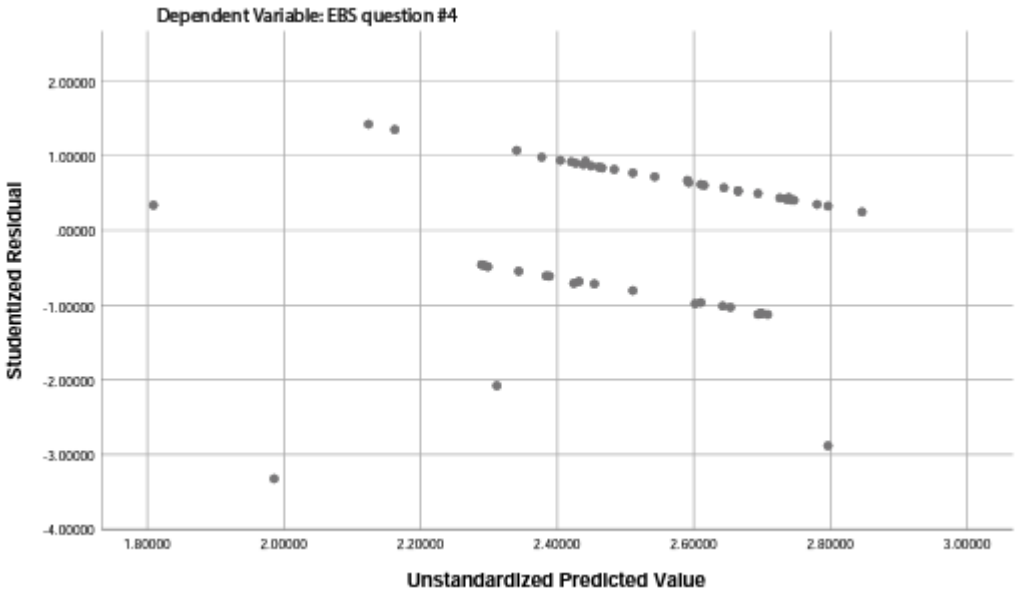


Figure 18

Scatterplot of the Standardized Residuals EBS Question #5

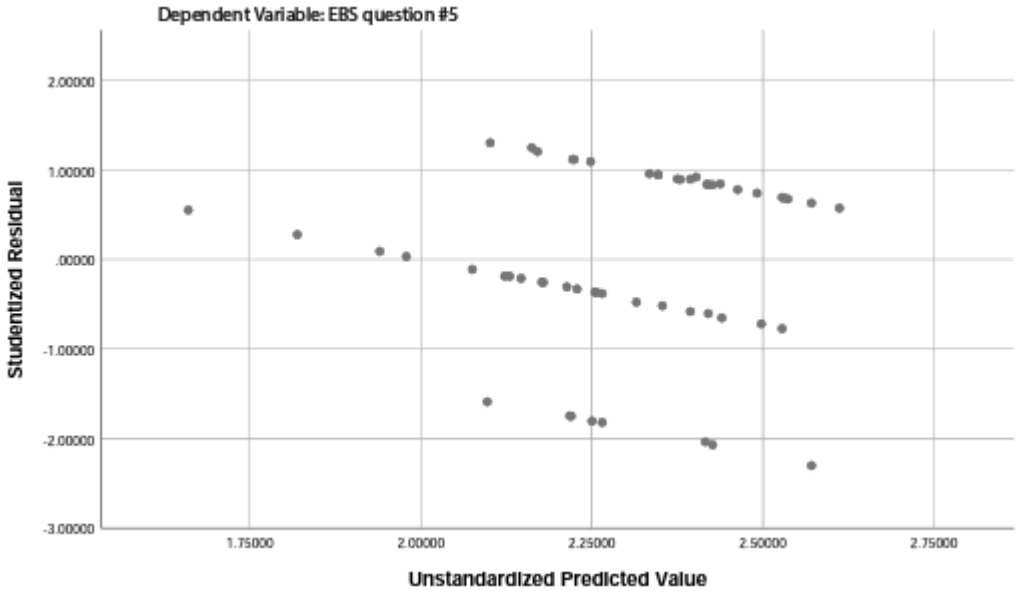


Figure 19

Scatterplot of the Standardized Residuals EBS Question #6

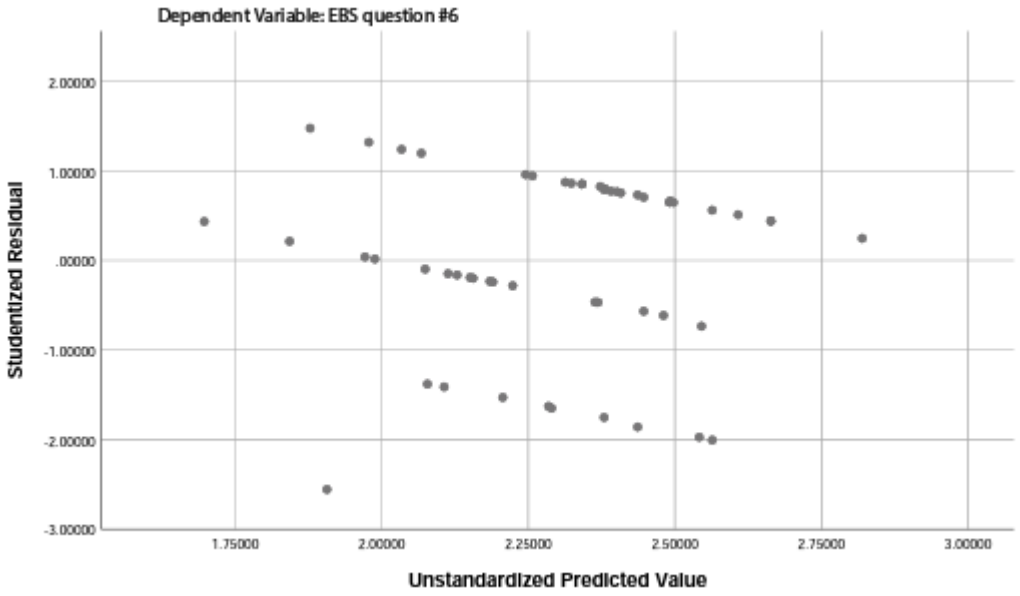


Figure 20

Scatterplot of the Standardized Residuals EBS Question #7

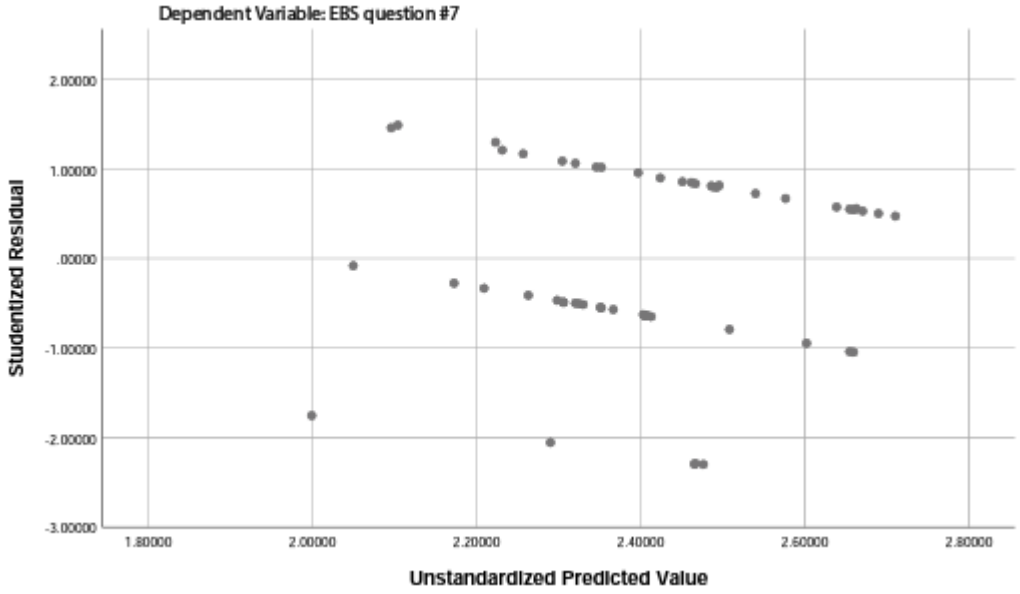


Figure 21

Scatterplot of the Standardized Residuals EBS Question #8

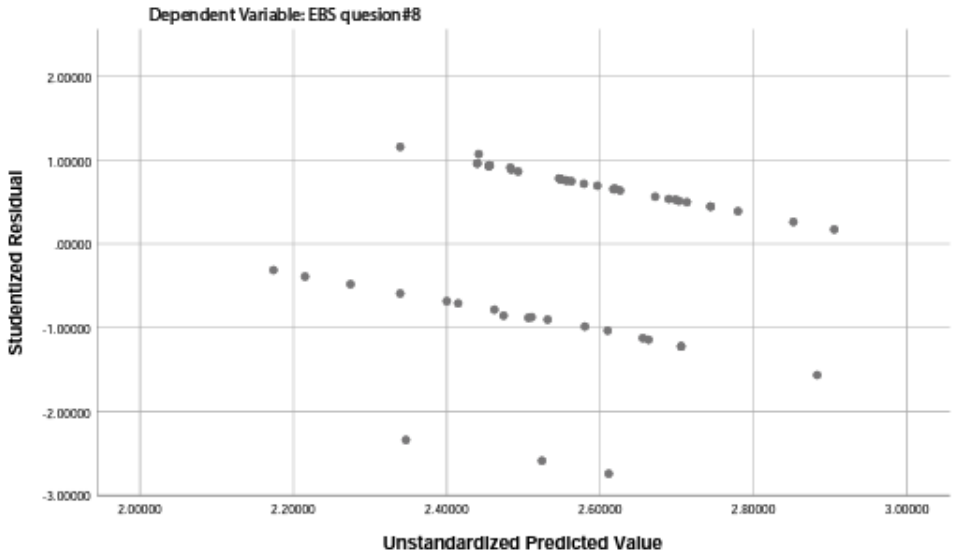


Figure 22

Scatterplot of the Standardized Residuals EBS Question #9

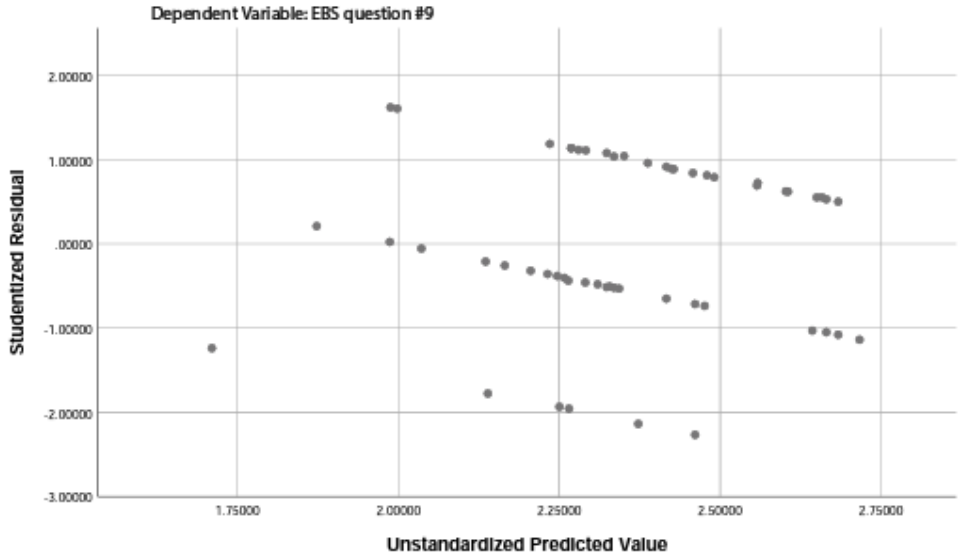


Figure 23

Scatterplot of the Standardized Residuals EBS Questions #10

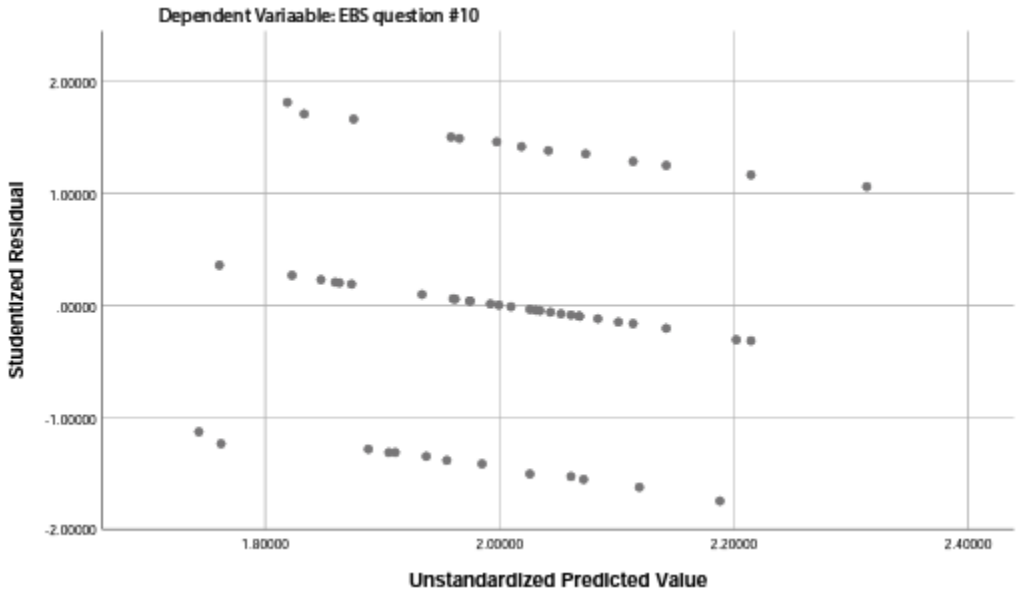
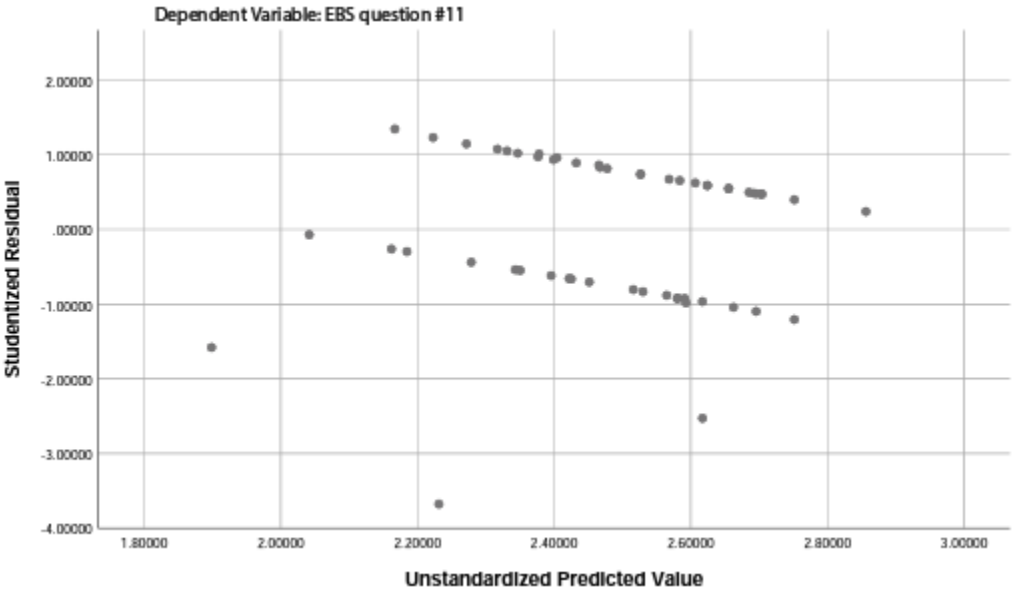


Figure 24

Scatterplot of the Standardized Residuals EBS Question #11



Inferential Results for Research Question 1

Bivariate linear regression, α = .0045 (two-tailed), was used to examine the efficacy of PTE and GTE in predicting the responses of the 11 questions of the EBS. A Bonferroni correction was conducted on the alpha value of .05 to account for potential Type 1 (false positive) error in the DV (Laerd Statistics, 2021; Andrade, 2019). The corrected alpha value used to determine statistical significance was set at .0045. The IVs were PTE and GTE. The DVs were the EBS Q1- EBS-Q11. The null hypothesis was that PTE and GTE would not significantly predict implementation of the SWPBIS as indicated by the responses on the EBS-Q1-EBS-Q11. The alternative hypothesis was that PTE and GTE would significantly predict the implementation of the SWPBIS as indicated by the responses on the EBS-Q1-EBS-Q11. The assumptions of multicollinearity, outliers, normality, linearity, homoscedasticity, and independence of residuals were initially analyzed, and no serious violations were noted (see *Tests of Assumptions*). Described below are the models for each of the comparisons conducted.

EBS-Q1: The model as a whole did not significantly predict activities related to the implementation of SWPBIS, $F(2,51) = 4.429$, $p = .017$, $R^2 = .148$. The p value is greater than the corrected value of .0045 obtained through the Bonferroni correction. The R^2 (.148) value indicated that approximately 15% of the variations in EBS-Q1 is accounted for by the linear combination of the predictor variables (PTE and GTE). In the final model, PTE was not statistically significant with PTE (t = 2.730, $p < .01$). GTE (t = -.311, p =.712) did not significantly contribute to the model for the EBS-Q1. See Table 17. The final predictive equation was:

EBS-Q1 = .918 + .498(PTE) - .071(GTE)

Table 17

Regression Analysis Summary EBS-Q1 by PTE and GTE

Variable	*B*	*SE B*	*β*	*t*	*p*
PTE	.498	.672	.472	2.730	<. 009
GTE	-.071	.127	-.038	0.371	.712

Note. *N*= 54.

EBS-Q2: The model as a whole did not significantly predict activities related to the implementation of SWPBIS, $F(2,51) = 1.291$, $p = .284$, $R^2 = .048$. The *p* value is greater than the corrected value of .0045 obtained through the Bonferroni correction. The R^2 (.048) value indicated that approximately 4% of the variations in EBS-Q2 is accounted for by the linear combination of the predictor variables (PTE and GTE). In the final model, neither PTE (t = .249, *p* = *.138*) nor GTE (t = -.37, *p* = .712) significantly contributed to the model for the EBS-Q2. See Table 18. The final predictive equation was: EBS-Q2 = .742 + .435(PTE) - .079(GTE).

Table 18

Regression Analysis Summary EBS-Q2 by PTE and GTE

Variable	*B*	*SE B*	*β*	*t*	*p*
PTE	.435	.289	.249	1.507	.138
GTE	-.079	.201	-.065	0.391	.697

Note. *N*= 54.

EBS-Q3: The model as a whole did not significantly predict activities related to the implementation of SWPBIS, $F(2,51) = .725$, $p = .489$, $R^2 = .166$. The *p* value is greater than the corrected value of .0045 obtained through the Bonferroni correction. The R^2 (.166) value indicated that approximately 16% of the variations in EBS-Q3 is accounted for by the linear combination of the predictor variables (PTE and GTE). In the final model, neither PTE (t = 1.106, $p = .274$) nor GTE (t = -.230, $p = .819$) significantly contributed to the model for the EBS-Q3. See Table 19. The final predictive equation was:

EBS-Q3 = .1.939 + .213(PTE) - .031(GTE)

Table 19

Regression Analysis Summary EBS-Q3 by PTE and GTE

Variable	*B*	*SE B*	*β*	*t*	*p*
PTE	.213	.192	.185	1.106	.274
GTE	-.031	.134	-.039	-.230	.819

Note. *N*= 54.

EBS-Q4: The model as a whole did not significantly predict activities related to the implementation of SWPBIS, $F(2,51) = 2.868$, $p = .066$, $R^2 = .318$. The *p* value is greater than the corrected value of .0045 obtained through the Bonferroni correction. The R^2 (.318) value indicated that approximately 32% of the variations in EBS-Q4 is accounted for by the linear combination of the predictor variables (PTE and GTE). In the final model, neither PTE (t = 2.247, *p* =*.029*) nor GTE (t = -.583, *p* =.562) significantly contributed to the model for the EBS-Q4. See Table 20. The final predictive equation was:

EBS-Q4 = .719 + .498(PTE) - .090(GTE)

Table 20

Regression Analysis Summary EBS-Q4 by PTE and GTE

Variable	*B*	*SE B*	*β*	*t*	*p*
PTE	.498	.222	.361	2.247	.029
GTE	-.090	.155	-.094	-.583	.562

Note. *N*= 54.

EBS-Q5: The model as a whole did not significantly predict activities related to the implementation of SWPBIS, $F(2,51) = 1.951$, $p = .153$, $R^2 = .071$. The *p* value is greater than the corrected value of .0045 obtained through the Bonferroni correction. The R^2 (.071) value indicated that approximately 7% of the variations in EBS-Q5 is accounted for by the linear combination of the predictor variables (PTE and GTE). In the final model, neither PTE (t= 1.685, *p =.098*) nor GTE (t = -.100, *p* =.921) significantly contributed to the model for the EBS-Q5. See Table 21. The final predictive equation was:

EBS-Q5 = .572 + .409(PTE) - .017(GTE)

Table 21

Regression Analysis Summary EBS-Q5 by PTE and GTE

Variable	*B*	*SE B*	*β*	*t*	*p*
PTE	.409	.243	.275	1.685	.098
GTE	-.071	.169	-.016	-.100	.921

Note. *N*= 54.

EBS-Q6: The model as a whole did not significantly predict activities related to the implementation of SWPBIS, $F(2,51) = 2.238$, $p = .117$, $R^2 = .081$. The *p* value is greater than the corrected value of .0045 obtained through the Bonferroni correction. The R^2 (.081) value indicated that approximately 8% of the variations in EBS-Q6 is accounted for by the linear combination of the predictor variables (PTE and GTE). In the final model, neither PTE (t = 2.034, *p* =.047) nor GTE (t = -1.628, *p* =.110) significantly contributed to the model for the EBS-Q6. See Table 22. The final predictive equation was:

EBS-Q6 = 1.186 + .558(PTE) - 312(GTE)

Table 22

Regression Analysis Summary EBS-Q6 by PTE and GTE

Variable	*B*	*SE B*	*β*	*t*	*p*
PTE	.558	.275	.331	2.034	.047
GTE	-.312	.191	-.265	-1.628	.110

Note. *N*= 54.

EBS-Q7: The model as a whole did not significantly predict activities related to the implementation of SWPBIS, $F(2,51) = 1.822$, $p = .172$, $R^2 = .067$. The *p* value is greater than the corrected value of .0045 obtained through the Bonferroni correction. The R^2 (.067) value indicated that approximately 7% of the variations in EBS-Q7 is accounted for by the linear combination of the predictor variables (PTE and GTE). In the final model, neither PTE (t = .711, *p* =.*481*) nor GTE (t = 1.062, *p* =.293) significantly contributed to the model for the EBS-Q7. See Table 23. The final predictive equation was:

EBS-Q7 = .995 + .159(PTE) + .166(GTE)

Table 23

Regression Analysis Summary EBS-Q7 by PTE and GTE

Variable	*B*	*SE B*	*β*	*t*	*p*
PTE	.159	.224	.116	.711	.481
GTE	.166	.156	.174	1.062	.293

Note. *N*= 54.

EBS-Q8: The model as a whole did not significantly predict activities related to the implementation of SWPBIS, $F(2,51) = 1.787$, $p = .178$, $R^2 = .065$. The *p* value is greater than the corrected value of .0045 obtained through the Bonferroni correction. The R^2 (.065) value indicated that approximately 6% of the variations in EBS-Q8 is accounted for by the linear combination of the predictor variables (PTE and GTE). In the final model, neither PTE (t = -.361, *p =.719*) nor GTE (t = 1.736, *p* = .089) significantly contributed to the model for the EBS-Q8. See Table 24. The final predictive equation was:

EBS-Q8 = 1.811 - .074(PTE) + .248(GTE)

Table 24

Regression Analysis Summary EBS-Q8 by PTE and GTE

Variable	*B*	*SE B*	*β*	*t*	*p*
PTE	-.074	.205	-.059	-.361	.719
GTE	.248	.143	.285	1.736	.089

Note. *N*= 54.

EBS-Q9: The model as a whole did not significantly predict activities related to the implementation of SWPBIS, $F(2,51) = 2.951$, $p = .061$, $R^2 = .104$. The *p* value is greater than the corrected value of .0045 obtained through the Bonferroni correction. The R^2 (.104) value indicated that approximately 10% of the variations in EBS-Q9 is accounted for by the linear combination of the predictor variables (PTE and GTE). In the final model, neither PTE (t = 1.507, *p =1.38*) nor GTE (t = -.391, *p* =.697) significantly contributed to the model for the EBS-Q9. See Table 25. The final predictive equation was:

EBS-Q9 = .377 + .333(PTE) + .119(GTE)

Table 25

Regression Analysis Summary EBS-Q9 by PTE and GTE

Variable	*B*	*SE B*	*β*	*t*	*p*
PTE	.333	.225	.237	1.478	.146
GTE	.119	.157	.122	.759	.452

Note. *N*= 54.

EBS-Q10: The model as a whole did not significantly predict activities related to the implementation of SWPBIS, $F(2,51) = .824$, $p = .444$, $R^2 = .031$. The *p* value is greater than the corrected value of .0045 obtained through the Bonferroni correction. The R^2 (.031) value indicated that approximately 3% of the variations in EBS-Q10 is accounted for by the linear combination of the predictor variables (PTE and GTE). In the final model, neither PTE (t = 1.095, *p* =.279) nor GTE (t = -1.171, *p* =.247) significantly contributed to the model for the EBS-Q10. See Table 26. The final predictive equation was:

EBS-Q10 = 1.687 + .265(PTE) - .198(GTE)

Table 26

Regression Analysis Summary EBS-Q10 by PTE and GTE

Variable	*B*	*SE B*	*β*	*t*	*p*
PTE	.265	.242	.183	1.095	.279
GTE	-.198	.169	-.195	-1.171	.247

Note. *N*= 54.

EBS-Q11: The model as a whole did not significantly predict activities related to the implementation of SWPBIS, $F(2,51) = 2.398$, $p = .101$, $R^2 = .086$. The *p* value is greater than the corrected value of .0045 obtained through the Bonferroni correction. The R^2 (.086) value indicated that approximately 4% of the variations in EBS-Q11 is accounted for by the linear combination of the predictor variables (PTE and GTE). In the final model, neither PTE (t = 2.186, *p* =*.033*) nor GTE (t = -1.344, *p* =.185) significantly contributed to the model for the EBS-Q11. See table 27. The final predictive equation was:

EBS-Q11 = 1.238 + .488(PTE) - .209(GTE)

Table 27

Regression Analysis Summary EBS-Q11 by PTE and GTE

Variable	*B*	*SE B*	*β*	*t*	*p*
PTE	.488	.223	.354	2.186	.033
GTE	-.209	.156	-.218	-1.344	.185

Note. *N*= 54.

Based upon the results of the multiple linear regression, the combination of GTE and PTE produced no predictive relationships with any of the EBS questions. The results were not statistically significant. The results of this analysis did not support rejection of the null hypothesis for RQ1 that no aspects of the TSES have a predictive relationship with the strategies for implementation of SWPBIS as measured on the EBS.

Research Question 2

The second RQ was analyzed using SPSS to conduct multiple linear regression. The hypothesis tested was whether the IVs, the two aspects of teacher efficacy, predicted the student outcomes, specifically, the total number of ODRs in the population. Specifically, it was used to assess whether the population correlation coefficient was equal to zero or alternatively if the population slope was equal to zero. The generated scaled scores of PTE and GTE were analyzed with the total number of ODRs written by the teachers from the beginning of the school year until the day of data collection. The

following section describes the tests of the assumption for multicollinearity, outliers, normality, linearity, homoscedasticity, and independence of residuals.

Tests of Assumptions for Research Question 2

Multicollinearity. Multicollinearity was evaluated viewing the correlation coefficients among the predictor variables. All bivariate correlations were small to medium for each of the variables (see Table 28). Thus, the violation of the assumption of multicollinearity was not evident. The following table contain the correlations coefficients.

Table 28

Correlation Coefficients Among PTE, GTE & ODRs

Variable	ODRs	PTE	GTE
ODRs	1.00	.085	-,110
PTE	.085	1.00	.564
GTE	-.110	.564	1.00

Note. $N = 54$.

Outliers, Normality, Linearity, Homoscedasticity, and Independence of Residuals. Outliers, normality, linearity, homoscedasticity, and independence of residuals were evaluated by examining the Normal Probability Plot (P-P) of the Regression Standardized Residual (Figure 25) and the scatterplot of the standardized residuals (Figure 26). The examinations indicated no major violations of these assumptions. The

straight line running diagonally from the bottom left to the top-right is evidence the assumption of normality has not been grossly violated. The lack of a systematic pattern in the scatterplot of the standardized residuals (Figure 26) supports that the assumptions have been met.

Figure 25

Normal probability plot (P-P) of the regression standardized residuals

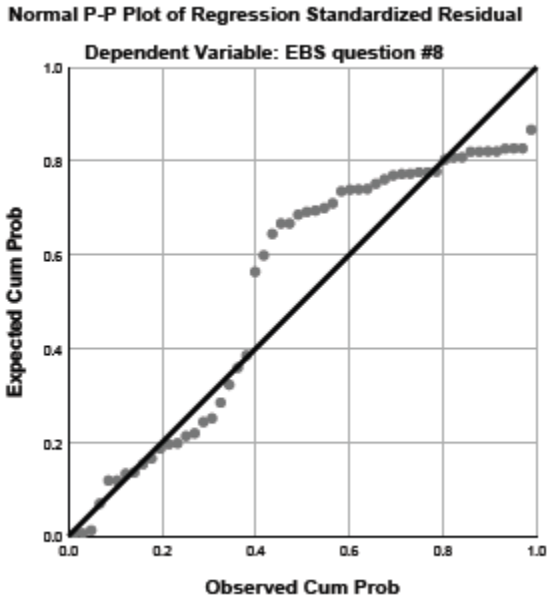
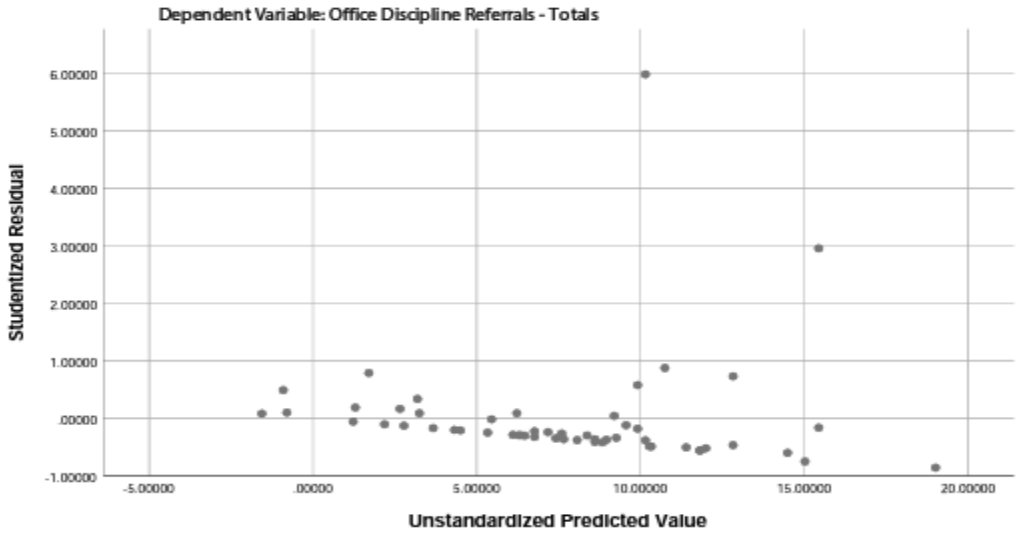


Figure 26

Scatterplot of the standardized residuals ODR



Inferential Results for Research Question 2

Bivariate linear regression, $\alpha = .05$ (two-tailed), was used to examine the efficacy of PTE and GTE in predicting the total number of ODRs. The IVs were PTE and GTE. The DV was the total ODRs written. The null hypothesis was that PTE and GTE would not significantly predict student outcome data, or ODRs. The alternative hypothesis was that PTE and GTE would significantly predict the number of ODRs written. The assumptions of multicollinearity, outliers, normality, linearity, homoscedasticity, and independence of residuals were initially analyzed, and no serious violations were noted

(see *Tests of Assumptions* RQ2). Described below is the model for the multiple linear regression conducted.

The model as a whole did not significantly predict activities related to the implementation of SWPBIS, $F(2,51) = 1.151$, $p = .321$, $R^2 = .044$. The R^2 (.044) value indicated that approximately 4% of the variations in ODRs is accounted for by the linear combination of the predictor variables (PTE and GTE). In the final model, neither PTE ($t = 1.296$, $p = .201$) nor GTE ($t = -1.393$, $p = .170$) significantly contributed to the model for the ODRs. Thus, the null hypothesis of the second RQ that the aspects of teacher efficacy do not have a significant effect on the number of ODRs written cannot be rejected (Table 29). The final predictive equation was:

ODRs = -3.365 + 9.5113(PTE) – 7.131(GTE)

Table 29

Regression Analysis Summary ODRs by PTE and GTE

Variable	*B*	*SE B*	*β*	*t*	*p*
PTE	9.513	7.341	.215	1.296	.201
GTE	-7.131	5.120	-.231	-1.393	.170

Note. *N*= 54.

Summary

The purpose of this chapter was to discuss the results of the study, including data collection and analysis. This study addressed two RQs. The first question was whether

the aspects of teacher efficacy were predictors of implementation strategies for SWPBIS within the classroom. The second was whether the aspects of teacher efficacy had a relationship with student outcome data, ODRs written. The methods I used to investigate these questions were multiple regression analyses.

The multiple regression analysis indicated that there were no significant effects from PTE and GTE on the teachers' responses to the EBS questions. To account for the potential for a false positive outcome in the analysis of the first RQ, I used the Bonferroni correction to determine the alpha value of .0045. I used the corrected alpha value to determine the significance of the results in RQ1. None of the obtained values met this value set for statistical significance. The multiple regression analysis for RQ2 also indicated that there was no significant effect found from the analysis of the relationship between PTE and GTE and the number of ODRs written.

In Chapter 5, I summarize and interpret the study findings. The chapter includes a description of the limitations of the study. Suggestions for possible continued research based upon the results are also included, in addition to a discussion of the study's implications for positive social change. The chapter also includes a conclusion to the study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to explore the relationships between teacher self-efficacy beliefs and (a) perceptions of program implementation of a SWPBIS program, and (b) student behavioral outcomes. This was a nonexperimental quantitative survey study with a sample size of 54 elementary teachers. I conducted this study to add empirical information to the literature about the relationship, if any, between teacher self-efficacy beliefs and implementation of SWPBIS in elementary schools. The key findings of this study indicated no significant relationship between teacher self-efficacy beliefs and the number of ODRs written (the student outcome data). Also, there was no significant effect of two factors in teacher self-efficacy beliefs (as measured by the TES) on any aspect of SWPBIS program implementation (as measured by the EBS Self-Assessment Survey). I begin this chapter by interpreting the key findings of the study. This chapter includes interpretations of the results and a description of the limitations of the study. The chapter concludes with suggestions for possible continued research and implications for positive social change, methodology, and practice.

Interpretation of the Findings

The data analyses I used to answer the two RQs included linear and multiple regression analyses. The RQs of this study were.

RQ1: Do teacher beliefs of self-efficacy (IVs) predict their perceptions of implemented behavior supports prescribed by the SWPBIS framework (DV) at the classroom level?

RQ2: Do teacher beliefs of self-efficacy (IVs) correlate with student outcome data (DV), specifically discipline referrals to the office?

I performed a multilinear regression analysis to investigate the association between the IVs and DVs in the first and second RQs for the study. The null hypothesis of RQ1 was that none of the factors of teacher self-efficacy had a predictive effect on any of the items of the EBS. The results for the analysis for RQ1 indicated that no significant effect existed between the interaction of the two factors of teacher self-efficacy beliefs, personal self-efficacy (PTE) and general teacher efficacy (GTE), and any of the 11 questions from the EBS. Thus, the null hypothesis was not rejected.

I also used multilinear regression to investigate RQ2 and determine whether a significant predictive relationship existed between at least one of the factors of teacher self-efficacy and the number of ODRs written. The null hypothesis was that no relationship existed between either of the factors of teacher self-efficacy and the number of ODRs written. The result of the analysis was that there was no significant relationship between the factors of teacher self-efficacy and student outcomes. The null hypothesis was not rejected.

The results of the bivariate correlation analysis showed that for RQ1, relationships between one, or both, factors of self-efficacy and the perception of SWPBIS implementation strategies ranged in significance. Out of the 11 items analyzed with the two factors, five items were found to have significant relationships to PTE. Three items were found to correlate with GTE. One item, Question 9, was found to correlate with both PTE and GTE. The results of the multilinear regression analysis for RQ2 indicated

no significant effect from the analysis of the relationship between PTE and GTE and ODRs written. Thus, the level of teacher self-efficacy beliefs, personal or general, appeared to have no significant relationship with the amount of ODRs written for this sample.

I based this study on Bandura's (1993) SCT, in which he proposed that functional behaviors are strongly influenced by internal processes such as self-efficacy beliefs. Bandura (2012) described behaviors as a part of the agentic process and displays of the complex circuitous interaction between the internal processes, external factors, and resultant cognitive processing of experiences. These complex interactions produce belief, expectations and judgments about the experience. The concept of teacher self-efficacy beliefs, explained through Bandura's (1993) theory, is a strong internal factor and are judgments teachers make about their instructional capabilities to influence student learning. This construct was further explained through the research of Tschannen-Moran and Woolfolk-Hoy (2001). Tschannen-Moran and Woolfolk-Hoy described teacher self-efficacy beliefs as a key factor in which behaviors, such as instructional practices, are chosen and implemented in the classroom.

I conducted this study to provide empirical information about how teacher self-efficacy may influence the implementation of SWPBIS and, consequently, student outcomes. This study was conducted to add to the literature relating to the role teacher self-efficacy beliefs play as an influencer of instructional behaviors and implementation of SWPBIS in schools. Finally, this study was conducted to explore whether teacher self-efficacy beliefs influence student behavioral outcomes. The current study provides

insight on how teacher self-efficacy beliefs influence educational practices of program implementation. Klassen et al. (2012) conducted a review of teacher efficacy studies conducted over 11 years and found that although progress had been made in understanding the effects of teacher self-efficacy beliefs, questions remained about the influence of these beliefs in education. This study addressed the gap in the literature.

Teacher Self-Efficacy and Implementation of a School-Wide Positive Behavioral Intervention and Supports Program

I performed multilinear regression analysis to explore whether a predictive relationship existed between aspects of teacher efficacy and implementation of SWPBIS. There were no significant statistical results obtained from the analyses between the two factors of teacher self-efficacy and the 11 questions of the EBS. This finding was not consistent with Domitrovitch et al.'s (2015) and Beets et al.'s (2008) determination of a direct positive relationship between school-level factors, such as teacher beliefs about a supportive school climate, and teacher participation in school-wide implementation activities, and that individual teacher-level characteristics may influence program implementation.

An unexpected finding of this study related to the questions on the EBS. Questions 1, 3, and 4 related to actions of implementation under direct control of the teacher. Specifically, the questions asked whether the teacher clearly stated student behavior expectations (EBS Question 1), directly taught about the behavioral expectations (EBS Question 3), and positively reinforced behaviors (EBS Question 4). The fourth question related to the efficiency and orderliness of transitions in the

classroom (EBS Question 11). The responses to these questions, wherein responses fell on the two extremes of either "not in place" or "in place," resulted in a skewed graph where the tails were heavier than in a normal distribution. This may be a result of what Domitrovich et al. (2015) described as the individual-level factors that affect program implementation.

Domitrovich et al. (2015) showed that individual teacher perceptions and beliefs in the interventions and the fit of the intervention to their teaching style related to their implementation of the program. Also, Han and Weiss (2005) described four characteristics and the naturalistic sequence of implementation within the classroom as (a) teacher judgments about the program fit with student needs, (b) program evidence as to effectiveness in changing student emotional and behavioral functioning, (c) program practicallity and ease of implementation over time with minimal resources, and (d) adaptability of the program to a variety of classroom environments.

Teacher Self-Efficacy and Student Outcomes

The results of this study showed no significant relationship was found between teacher self-efficacy and student behavioral outcomes. The results obtained in this study may reflect prior research that showed inconsistent results in studies that attempted to highlight the relationship between teacher self-efficacy and student outcomes when working with specific student populations or classroom experiences, such as significant disruptive behaviors. Gibbs and Powell (2012) found high levels of teacher individual self-efficacy did not prevent them from excluding highly disruptive students from the class. Ruble, Usher, and McGrew (2011) found no significant correlation between teacher

sense of mastery (years of teaching) or social persuasion (administrative support) and their beliefs in their ability to be effective teaching students with autism. Caution is suggested in the interpretation as the results of the analysis were not significant, suggesting no relationship between teacher self-efficacy and as student outcome data; however, ODRs were not recorded and reported systematically based upon the implementation of SWPBIS guidelines. This is further discussed in the limitations section.

The predicted results of the analysis of teacher self-efficacy beliefs and student discipline outcomes were an inverse relationship between the two variables. My expectation was that a higher level of teacher self-efficacy would be associated with fewer school discipline referrals. My expectation was based upon prior research studies, including a study conducted by Lee et al. (2013) who reported teachers with high self-efficacy set high expectations for their students and were effective in using strategies that help students reach those high expectations. Lee et al. (2013) also found teachers with high personal self-efficacy employed effective classroom management strategies that relied on intrinsic rather than extrinsic rewards.

Limitations

The limitations of this study, as described in Chapter 1, related to design and methodological weaknesses. The identified threats were to internal validity, coverage error, nonresponse error, and measurement error. Based on the procedures in this study, one limitation to generalizability was the lack of a randomized sample. In a randomly chosen sample, each person has an equal probability of being a participant in the study

and greater likelihood of truly representing the population (Creswell, 2009). The participants of this study were volunteers. They represented a convenience sample drawn from schools local to me. The nature of a local sample may have affected the generalizability in that the participants may not be a true representation of the target population.

The geographical location, which could be described as a rural desert area, may prevent these results from translating into expected outcomes in a metropolitan, or urban, school setting. Another threat to the generalizability of the results was that the sample was composed of elementary school teachers serving first grade through 6th grade. This limitation in the grade range may prevent generalizability of the results in schools that have a wider range of grades (e.g., transitional kindergarten to 8th grade) or in a middle or high school environment.

Another limitation noted in Chapter 1 was the teachers may be unwilling to provide accurate responses due to concerns or feelings relating to their employment and possible retaliation by the school district. The procedures I used to mitigate this limitation included a discussion of the informed consent and a description of (a) how participant identities would be kept anonymous by being assigned a numerical identifier known only to me, and (b) what measures would be used to secure the data and avoid sharing of individual responses with the school district or staff. This limitation was minimal, and the systematic procedures and presentation of the study were conducted in a manner that if a staff member chose not to participate, I was the only one aware of the choice.

An unexpected limitation to the study and interpretation of the results occurred in the analysis of the ODRs. The collection of ODR data was nonuniform across the schools. SWPBIS directs that ODRs are collected as part of the ongoing data-driven decision-making model with levels of violations ranging range from low to high. The schools included in the study did not record all levels of infractions consistently and it was possible the participating teachers did not report all levels of infractions with an ODR. Thus, this inconsistency in the data may have led, or at least contributed, to the obtained non-significant results rather than a true lack of relationship between the IV of teacher self-efficacy and the DV of ODRs. Caution is suggested in the interpretation of the results.

Another limitation in the interpretation of the results of this study is due to the small sample size along with the lack of normal distribution for many of the EBS items. A nonparametric test, Spearman's rho, was used to initially determine if a correlation relationship existed between the two factors of teacher self-efficacy and perceptions of implementation of SWBPIS when the descriptive analysis results indicated that the items of the EBS were skewed distributions for the sample. The multilinear regression analysis, a test strong enough to analyze variables that do not have a normal distribution when there is a large sample size, was used to further analyze the data to determine if there was a predictive nature in the relationship between PTE and GTE and the items of the EBS. As this study used a small sample size, the ability to accurately interpret and the generalizability of the results of the multilinear regression analysis is limited. Caution is

suggested in the interpretation of the results that a predictive relationship exists between the variables.

An additional limitation relating to the small sample size is that the original power analysis was for a desired large effect size. This led to the determination that 54 participants would be an adequate number for the study. This may have been too few for statistical significance. A power analysis ran with a medium effect size would have been more appropriate in the determination of the number of participants needed for the study.

Finally, the limitations to this study due to researcher bias and response bias identified in Chapter 1 were addressed through the procedures used in this study. My bias was due to a lack of trust that the target districts implemented SWPBIS with fidelity. To minimize this influence, I used the reliability and validity measures within SPSS to determine which EBS implementation strategies were in place. Also, I relied on questionnaires developed and validated through previous research. I exercised objectivity when soliciting participants by providing partially scripted information. The limitation of the study relating to whether teachers believed the SWPBIS framework was effective for the specific students with which they worked was measured and addressed within the use of the established survey instruments.

A suggestion to address many of the limitations of this study was to use multiple modes of administration for the surveys. Multiple modes were attempted in this study, including face-to-face meetings in a group setting, face-to-face meetings with individuals, and electronic (email) solicitations. However, the participant response rate was initially low and nonexistent through the electronic modes. Thus, the data collection relied heavily

upon face-to-face interactions to obtain an appropriate number of participants to conduct the study.

Recommendations

One recommendation for future research is to quantitatively examine the role teacher self-efficacy beliefs have on SWPBIS implementation over an extended period. In this study, I found aspects of teacher self-efficacy beliefs had a moderate correlational relationship to two SWPBIS implementation activities. Future research could further explore this relationship by conducting a longitudinal study targeting measurements of sustained SWPBIS implementation along with measures of teacher self-efficacy beliefs to further expand on the relationship over time.

Also, future research may consider an experimental design study with measurements occurring before and after SWPBIS professional development activities designed based upon Bandura's (1993) four types of experiences that influence the development of self-efficacy beliefs: vicarious experiences, verbal persuasion, psychological arousal, and mastery experiences. The purpose of the study would be to obtain empirical data and to investigate the response of the development of teacher self-efficacy beliefs based on professional development strategies specifically designed based upon SCT.

A methodological recommendation I have for future research is to use a larger sample size with a random selection of participants. This recommendation is to facilitate the generalizability of the results to the broader population of teachers using SWPBIS. Another recommendation I have is to ensure that the student outcome data, ODRs, are

recorded with consistency across the sample of teachers. This would help eliminate any possible hesitancy in the interpretation of the results.

Implications

The results of this study provided empirical data about the relationship between teacher self-efficacy beliefs and SWPBIS implementation. The results of this study provided information about teacher self-efficacy and SWBPIS implementation in an elementary education setting which addressed a gap in the current literature. The results of this study can be used by education leaders to facilitate positive social change through the potential to enhance current professional development strategies for teachers when implementing SWPBIS by the incorporating strategies and activities that support development of teacher self-efficacy. This study can also be used by education leaders to promote positive social change through increased understanding of the need for support for teachers in the systematic implementation of behavioral support programs for students which ultimately may positively impact the community.

The findings of this study indicated there is value in understanding how teacher self-efficacy beliefs factor in the implementation of educational programs. Domitrovich et al. (2015) found teacher perceptions and beliefs in the interventions and the fit of the intervention to their teaching style were related to their implementation of the program. This consideration may facilitate how new programs are introduced to support teachers and the sustained implementation of school-wide educational programs. This consideration may influence how programs are reviewed overtime and what supports are needed by teachers to facilitate consistent implementation of the program. The results of

this study supported the potential integration of professional development activities that include analysis and development of individual-level factors, such as teacher self-efficacy beliefs. The findings of this study also indicated the importance of considering how teacher self-efficacy beliefs interact with program implementation, which leads to the potential for positive outcomes for students and communities by increasing the effectiveness of prosocial program implementation in schools.

Conclusion

The purpose of this chapter was to provide a summary of the study and key findings. In this chapter, I included interpretations of the results, a description of the study limitations, suggestions for continued research, and potential implications for positive social change. The focus of this quantitative study was to provide empirical evidence informing the gap in research relating to the influence of teacher self-efficacy beliefs on the implementation of a SWPBIS program and ultimately on student outcomes. The results of this study did not provide significant evidence that aspects of teacher efficacy were predictors of implementation strategies for SWPBIS within the classroom. The results of this study did not provide statistically significant findings that the aspects of teacher efficacy related to student outcome data, ODRs written.

Although program implementation activities, items on the EBS, and student outcomes, the number of ODRs written, did not significantly correlate to teacher self-efficacy for this sample, the results of the study do not preclude that there is value in our understanding of how teacher individual-level factors impact the implementation of a school-wide intervention program. Due to school reform practices, schools are becoming

places where students receive instruction in academic and non-academic subjects. More formal research on nonacademic educational program implementation could lead to the development of model programs that reach and are effective for more students. Teachers, as implementers of academic and non-academic programs in schools, are one of the most valuable resources in education. Maximizing teacher skills and creating an environment cultivating learning is a worthwhile endeavor. When program implementation can be positively influenced, there is a far-reaching impact and a benefit to both students and teachers for the stakeholders to understand those factors that increase fidelity and success.

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Appendix A: Permission to Use Image of the Three-Tiered Model of Behavior

Intervention Supports

From: Robert Horner
Sent: Tuesday, July 21, 2020 7:24:10 PM
To: Angela Burnell

Subject: RE: Request to use the pyramid image of the tiered framework in a research study

Angela

Please accept this email as formal approval to use the adapted figure depicting the multi-tiered framework that you submitted I your email July 19.

We wish you well with your dissertation, and look forward to learning more about teacher perception during PBIS implementation.

Rob Horner

From: Angela Burnell
Sent: Sunday, July 19, 2020 8:18 PM
To: Sugai, George; Robert Horner
Cc: Jimmy M. Brown
Subject: Request to use the pyramid image of the tiered framework in a research study

Dear Dr. Horner, Dr. Sugai, and Dr. Anderson

I am a doctoral student from Walden University writing my dissertation titled Teacher Self-Efficacy Beliefs: Implementation of a Positive Behavior Intervention Program, under the direction of my dissertation committee chaired by Dr. James Brown who can be reached at . The Walden University IRB Committee can be contacted email at IRB@mail.waldenu.edu.

I would like your permission to use an adapted image of the pyramid of the tiered framework of support. I would like to include the adapted image in the literature review section of my dissertation. I will include an appropriate citation and reference in my dissertation. I have attached a copy of the image.

If this use is acceptable, please indicate so by replying to me through e-mail: . If you have additional questions, please do not hesitate to call me at

Sincerely,
Angela Burnell
Doctoral Candidate

Appendix B: Sample Office Discipline Referral Form

[redacted] Referral Form

Student Name: Staff Member:
Time of Incident: Date of Incident: Grade:
Minor_____ Major_____

Location	Problem Behavior	Environment Factors	Motivation
Gate On bus/bus area Cafeteria MPR Classroom Library Office Hallway Quad Restroom PE Area Playground	Disruption Defiance Disrespect Abusive/Inappropriate language Committed Obscene Act Technology violation Fighting Physical aggression Harassment/Bullying Theft Skipping Class Tobacco Vandalism Arson Forgery Weapon Drugs/Alcohol Chronic Minor Offenses: (attach documentation)	Adult request/directive Oral instruction Individual seat work Group work Managing materials External interruption (guest, PA, phone call, etc.) Classroom transitions Passing period Teasing from peers Changes to routine Guest teacher Assembly Recess	Gain peer attention Gain adult attention Gain/obtain item Gain/obtain activity Avoid peer(s) Avoid adult(s) Avoid seat work Avoid group work

Additional Comments:

Others involved in incident:
None Peers Staff Guest Teacher
Last Contact with Parent/ Guardian:

Phone: ___/___/___ Conference: ___/___/___ Note Home: ___/___/___

==========

Received in Office by: _____ Received in Office at: ____:___
Administrative Action Taken:
Ensured student receives Tier One Supports
Evaluated skill level: Academic/Behavior
Discussed Environmental Factors
Developed behavior contract
Reviewed student data for patterns/trends
Develop BSP Referred to SST
Detention Suspension: ____ IHS:____
Checked understanding of expectations Counselor intervention
Met with/talked to guardian
Assigned adult mentor (check-in/check-out)
Forwarded copy of referral to parent/guardian
Provided additional Tier Two Supports:
Restricted Activity: _____

Administrator's Signature: _____ Date: _____

Appendix C: Permission to use Sample Office Discipline Referral Form

From: Jamie Ohashi
Sent: Thursday, June 15, 2023 1:44 PM
To: Angela Burnell **Subject:** RE: Request to use sample ODR form

Good Afternoon Ms. Burnell,

Thank you for reaching out! I am more than happy to grant permission for use of the Office Discipline Referral Form as part of your study. Good luck in your academic endeavors.

Sincerely,
Jamie Ohashi

From: Angela Burnell
Sent: Thursday, June 15, 2023 12:05 PM
To: Jamie Ohashi
Subject: Request to use sample ODR form

Dear Mrs. Ohashi,

I am a doctoral student attending Walden University. I am in the process of writing my dissertation titled *Teacher Self-Efficacy Beliefs: Implementation of a Positive Behavior Intervention Program,* under the direction of my dissertation committee chaired by Dr. James Brown. I am contacting you to request your permission to use your sample Office Discipline Referral Form in my research study. The form would be used under the following conditions:

The form will be included as a sample form of those used by school districts to document student behaviors in a school-wide positive behavior intervention program. The form will be included in the publication of my dissertation with appropriate citations and credit to you given. The sample form will not be sold or used with any compensated activity or curriculum development activity. If you wish, I will send a copy of my completed research study to your attention upon completion of the study.

If you agree with its use, please let me know by replying to me through e-mail: XXXXXXXXX. If you have additional questions, please do not hesitate to call me at XXXXXXXXXX. Also, my dissertation chair can be reached at XXXXXXXX and the Walden University IRB Committee can be contacted by email at XXXXXXXXXXXX. I am grateful for your time and consideration of my request. Thank you.

Sincerely,
Angela Burnell
Doctoral Candidate

Appendix D: Permission to Use the Teachers' Sense of Efficacy Scale

THE OHIO STATE UNIVERSITY COLLEGE OF EDUCATION AND HUMAN ECOLOGY

ANITA WOOLFOLK HOY, PH.D.

PROFESSOR
PSYCHOLOGICAL STUDIES IN EDUCATION

Dear

You have my permission to use the *Teachers' Sense of Efficacy Scale* in your research. A copy the scoring instructions can be found at:

http://u.osu.edu/hoy.17/research/instruments/

Best wishes in your work,

Anita Woolfolk Hoy

Anita Woolfolk Hoy, Ph.D.
Professor Emeritus

COLLEGE OF EDUCATION
29 WEST WOODRUFF AVENUE
COLUMBUS, OHIO 43210-1177

WWW.COE.OHIO-STATE.EDU/AHOY

PHONE 614-292-3774
FAX 614-292-7900
HOY.17@OSU.EDU

Re: Request to use TES- Short Form for Doctoral Dissertation

Anita Woolfolk Hoy <anitahoy@mac.com>
Tue 2/14/2023 7:32 AM
To: Angela Burnell <angela.burnell@waldenu.edu>

2 attachments (113 KB)
Scoring the TSES.pdf; ATT00001.htm;

Good morning Angela,

You are welcome to use the TES or the TSES (the current name for the Ohio State Teacher Efficacy Scale) in your research as you describe below. The TSES has proved a more effective instrument for assessing efficacy. This website might be helpful to you. It has the instrument and scoring instructions. I have attached them as well:

http://u.osu.edu/hoy.17/research/instruments/

Best wishes in your work.

Appendix E: Permission to Use the Effective Behavior Support Self-Assessment Survey

From: Sugai, George <[redacted]>
Sent: Monday, September 3, 2018, 3:14 AM
To: Angela Burnell; [redacted]; [redacted]
Subject: Re: Request to use the EBS Survey/Questionnaire Classroom form in a research study

Angela,

Sounds like interesting study. Permission as indicated. Also, please note/indicate if adapted or altered.

As an aside, please note that EBS Survey has not be validated for research purposes, that is, specific technical adequacy studies have not been conducted. Its main use has been for self-assessment to secure staff understanding and commitment and primarily for team action planning related to implementation of PBIS framework. Currently, the Tiered Fidelity Inventory has replaced the EBS Survey and is used as a validated instrument to assess implementation fidelity of PBIS systems. For more information, see https://www.pbis.org/evaluation/evaluation-tools

George

George Sugai
Carole J. Neag Endowed Professor
University of Connecticut
Neag School of Education
Storrs, Connecticut

From: Angela Burnell [redacted]
Sent: Monday, September 3, 2018 3:17 AM
To: [redacted]; Sugai, George; [redacted]
Subject: Request to use the EBS Survey/Questionnaire Classroom form in a research study

Dear Dr. Horner, Dr. Sugai, and Ms. Todd:

I am a doctoral student from Walden University writing my dissertation titled Teacher Self-Efficacy Beliefs: Implementation of a Positive Behavior Intervention Program, under the direction of my dissertation committee chaired by Dr. James Brown who can be reached at [redacted] The Walden University IRB Committee can be contacted email at IRB@mail.waldenu.edu.

I would like your permission to use the Effective Behavior Support Survey, version 2.0, - Classroom Edition survey/questionnaire instrument in my research study. I would like to use and print your survey under the following conditions:
I will use the surveys only for my research study and will not sell or use it with any compensated or curriculum development activities.
I will include the copyright statement on all copies of the instrument.
I will send a copy of my completed research study to your attention upon completion of the study.
If these are acceptable terms and conditions, please indicate so by replying to me through e-mail: [redacted]. If you have additional questions, please do not hesitate to call me at [redacted]

Sincerely,
Angela Burnell
Doctoral Candidate

Appendix F: Boxplot of Office Discipline Referral-Total